PROVINCIAL ADMINISTRATION OF KWAZULU-NATAL
DEPARTMENT OF PUBLIC WORKS

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

BILLS OF QUANTITIES

with GCC for Construction Works - Second Edition 2010

RETURNABLE DOCUMENT

ONE VOLUME APPROACH

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

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Tel Number: 033 - 8971300
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Region:
Regional Manager
Province of KwaZulu-Natal : Department of
X9041
Pietermarizburg
3200
Tel Number: 033-897 1421 / 1422
Fax Number: 033-897 1399

Tender Number:	ZNTM 01192 W	Project Code:	WIMS 062326
CIDB Grading:	7GB or higher	Document Date:	19-Apr-2024
ECDP Number:	N/A	Contract Period:	20 Calendar Months

Contracting Party: _____

CIDB Registration number: _____

Central Suppliers Database Registration Number: _____

PROVINCIAL ADMINISTRATION OF KWAZULU-NATAL
DEPARTMENT OF PUBLIC WORKS

BILLS OF QUANTITIES

FOR

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

Quantity Surveyor

AIM Quantity Surveyors
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3631
Tel Number 031 266 7856
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qranderee@aimqs.com

Structural / Civil Engineer

Young + Satharia Consulting Engineers
P.O. Box 37070
Overport
4067
Tel Number 031 207 7252
Fax Number 031 207 7259
abdool@yands.co.za

Employer

Head: Public Works
of Transport
Private Bag X 9041
PIETERMARITZBURG
3200
Tel Number: 033 - 8971300
Fax Number: 033 - 8971399

Region

Regional Manager
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Tender Number: **ZNTM 01192 W**

Project Code: **WIMS 062326**

CIDB Grading: **7GB or higher**

Document Date: **19-Apr-24**

ECDP Number: **N/A**

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

THE TENDER

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2. PART T2: RETURNABLE DOCUMENTS

THE CONTRACT

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IMPORTANT NOTICE TO TENDERERS

Any reference to words Tender or Tenderer herein and/or in any other documentation shall be construed to have the same meaning as the words Tender or Tenderer. These forms are for internal and external use for the KZN Department of Public Works, Provincial Administration of KwaZulu-Natal.

"Quality" shall mean totality of features and characteristics of a product or service that bears on the ability of the product or service to satisfy stated or implied needs.

"Enterprise" shall mean the legal Tendering Entity or Tenderer who, on acceptance of the Offer, would become the contractor.

1 The Department reserves the right not to award to the lowest bidder.

2 In addition, the Department will conduct a detailed risk assessment prior to the award of the bid.

3 Tender Documents must be purchased prior or downloaded from e-Tender Portal (https://www.etenders.gov.za) before the starting time of tender briefing meeting.

4 The bid document can be downloaded from e-Tender Portal at no cost, however should any bidder require a printed/hard copy of the bid document, a non-refundable payment in the amount of R610.00 must be made for collection thereof as per the banking details indicated below. Proof of payment must be produced upon collection of the bid document.

5 No tender documents will be issued at the tender briefing meeting and no site inspection meeting certificates will be issued at the tender briefing meeting.

6 Bidders who attend without a bid document will not be allowed at the briefing meeting.

7 Late submissions will not be accepted.

8 Faxed or e-mailed bids are not accepted.

9 Only Bidders registered within the applicable CIDB grading and Central Suppliers Database will be eligible to submit bids.

10 Multiple award of bids will be limited (unless by exception due to circumstances) in order to spread the work amongst many successful bidders and to minimise the risk to the Department. Multiple awards shall be limited to the ceiling value of the applicable CIDB grading of the recommended bidder unless previous contracts awarded has been more than 60% completed in terms of the actual scope of the contract and time expended are within the allocated time lines of the contract period of the contract with specific reference to the activity based construction program and concise demonstration has been given that the bidder has the capability and resources to complete the project successfully.

11 The Preference points system is applicable for this bid is 80/20, where 20 points of specific goals will be allocated as follows:

- Ownership by People who are Youth	:	10
- Ownership by People who are Women	:	05
- Promotion of enterprises located in uMsunduzi Local Municipal area for work to be done or services to be rendered	:	05

12 Sub-contracting as a condition of tender is compulsory for this bid. The successful bidder must subcontract 30% of the value of the contract to an EME or QSE.

KWAZULU-NATAL PROVINCE
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SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

THE TENDER

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
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SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

PART T1. - TENDER PROCEDURES

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

T1.1 - TENDER NOTICE AND INVITATION TO TENDER

T1.1 TENDER NOTICE AND INVITATION TO TENDER

THE KZN DEPARTMENT OF PUBLIC WORKS INVITES TENDERS FOR THE PROVISION OF:

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**
Advertisement date:	**19 April 2024**	**Closing date:**	**23 May 2024**
Closing time:	**11:00**	**Validity period:**	**84 Calender Days**

It is estimated that tenderers must have a CIDB contractor grading designation of 7GB or higher. No alternative Class of work, as refered to in Clause 25(3)(a)(i) of the CIDB Regulations, as amended, is anticipated for this project.

	It is estimated that Potentially Emerging enterprises should have a CIDB contractor grading of ***(N/A)*** and satisfy the criterion stated in the Tender Data. *(Only applicable if Client has an Official Mentorship programme in place to assist potentially emerging enterprises)* All Tenderer's should have a CIDB Class of Construction Contractor Grading Designation as indicated above. No Tenderer with a PE status can be considered If **"N/A"** is indicated above because the Department does not have an Official Mentorship Programme in place to assist a Potentially Emerging Enterprise.

Only Tenderder's who are responsive to the following responsiveness criteria are eligible to submit Tenders:

X	Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations for a : 7GB or higher, class of construction work, are eligible to have their Tenders evaluated.
X	Joint ventures are eligible to submit tenders provided that: 1 every member of the joint venture is registered with the CIDB; 2 the lead partner has a contractor grading designation in the 7GB or higher, class of construction work; or not lower than one level below the required the required grading designation in the class of works construction works under considerations and possess the required recognition status 3 the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a : **7GB** or a value determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations.
X	Tender document must be properly received on or before the tender closing date and time specified on the invitation, fully completed and signed in ink (All as per Standard Conditions of Tender).
X	Submission of Compulsory Returnable Schedules documents as per List of returnable documents.
X	Tax Compliance Status (TCS) PIN number and Tenderder's or entity tax reference number.
X	Contractor's Safety, Health and Environmental Declaration.
X	Complete priced Bill of Quantities to be submitted on the day of the Tender closing date.
X	Proof of good standing with the Compensation Commissioner - In terms of Section 84(1)(b) of the Compensation for Occupation Injuries and Disease Act, 1993, a Tenderder may not be awarded a contract if he/she is not registered and in good standing with the Compensation Commissioner.
X	Certified Proof of Paid Municipal Rates and Taxes (Attach) (T2.23)
X	Certified Proof of UIF Registration (Attach) (T2.24)
X	Financial Standing and other resources of Business Declaration (T2.8)
X	Compulsory Enterprise Questionnaire (T2.18)
X	**Tenderers must meet the minimum qualifying score for functionality criteria first before they can be considered for price and preference by means of specific goals**
X	Invitation to Tender - SBD 1

Please note the following for POPIA:
By submitting this tender, I hereby acknowledge consent that the KZN Department of Public Works, may, from time to time, collect/store/use/destroy/delete/share or otherwise process my Company and Director's/Shareholders personal information as the context or circumstances may require and as contemplated in terms of POPIA. ☐ (TICK)

THE FOLLOWING PARTICULARS MUST BE FURNISHED (FAILURE TO DO SO MAY RESULT IN YOUR TENDER BEING DISQUALIFIED)

Name of Tenderer: _____

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 TO VERIFY ON LINE COMPLIANCE SUPPLIER STATUS VIA SARS e-FILING (T2.19) YES ☐ or NO ☐

ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS / SERVICES / WORKS OFFERED? [If yes, enclose proof] YES ☐ or NO ☐

This tender will be evaluated according to the preferential procurement model in the Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2022:

☒ 80/20 Preference point scoring system ☐ 90/10 Preference point scoring system

NOTE	Refer to T2.35 - Functionality Criteria	
Functionality requirement:	50	Points
Price:	80	points

1. The Specific Goal/s Allocated Points in terms of this tender:

Preference points system:
Preferences are offered to Tenderder's who have attained points for the specific goals in accordance with the table below; Documentary Proof required to satisfy the points claimed are also indicated in the table below:

No	Specific Goal	Number of Points Allocated
1	Ownership by People who are Youth Documentary Proof Required: 1) Certified copy of Identity Document/s 2) SANAS Approved B-BBEE Certificate	**10 points**
2	Ownership by People who are Women Documentary Proof Required: 1) Sworn Affidavit; signed and dated by Commissioner of Oaths 2) Certified Copy of Identity Document/s	**05 points**
3	Promotion of enterprises located in a specific municipal area for work to be done or services to be rendered Documentary Proof Required: 1) Proof of Municipal Account depicting Physical Address of the business OR 2) Lease Agreement	**05 points**
4		
5		
6		
7		
8		

2.	Other specific goals (according to the PPPFA):		
(a)	Contract participation goal by awarding contracts to targeted enterprises	0	Points
(b)	[insert specific goal]	0	Points
(c)	[insert specific goal]	0	Points
(d)	[insert specific goal]	0	Points
Total must equal **10 or 20 points**		**20**	Points

Notes:

1 The successful Tenderder will be required to fill in and sign a written GCC 2010 2nd Edition Contract.

2 Tenderders should ensure that Tenders are delivered timeously to the correct address. If the Tender is late, it will not be accepted for consideration.

3 The requirements in respect of the application of either 80/20 and 90/10 preference points scoring system, will apply and the points reflected above for preferences will be adjusted accordingly on a pro-rata basis if required.

4 The Tender box is generally open during official working hours.

5 All Tenders must be submitted on the official forms – (Not to be re-typed)

6 This Tender is subject to the PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT FOR CONSTRUCTION WORKS (GCC2010) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT

7 **The documentary proof required to satisfy the points claimed for specific goals in terms of this tender, are duly indicated on the table (1) above.**

8 Where stated in the tender data that a two-envelope system has been followed, open only the non-financial proposal of valid tenders in the presence of tenderer's agents, who choose to attend, at the time and place stated in the tender data and announce the name of each tenderer whose technical proposal is opened.

Evaluate that non-financial proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals are to be opened.

Open only the financial proposals of tenderers who, in the Functionality evaluation score, have more than the minimum number of points for Functionality stated in the tender data, and announce the score obtained for the non-financial proposals and the total price and any preferences claimed. Return unopened financial proposals to tenderers whose non-financial proposals failed to achieve the minimum number of points for Functionality.

THE PHYSICAL ADDRESS FOR COLLECTION OF TENDER DOCUMENTS:

Tender documents may be collected during working hours at the following address :

Department of Public Works, Physical Address, Pietermaritzburg, Southern Region

A non-refundable tender deposit of R610 is payable as per the tender advertisement , on collection of the Tender documents. The Tenderders must deposit the the above amount into the Department's bank account. The Account details are:

Account Name: KZN PROV GOV-WORKS
Bank Name: STANDARD BANK
Account Number: 052106446
Bank Code: BUSINESS CHEQUE
Reference No: Ref No 14019647

The Tenderder must attach the account statement with above reference, to this Tender as proof of payment of the deposit.

COMPULSORY CLARIFICATION MEETING

A Compulsory clarification Meeting with representatives of the Employer will take place as follows:

Main Boardroom, Department of Transport, (MTS) Motor Transport Services Directorate, Block A, 231 Prince Alfred Street, Pietermaritzburg, 3200

on: **Wednesday, 08 May 2024 at 11:00am**

QUERIES REGARDING THE TENDERING PROCEDURE OR TECHNICAL INFORMATION MAY BE DIRECTED TO:

DOPW Project Manager:	Mr. Mkuseli Madubela	**Telephone no:**	033-897 1421 / 1422
Cell no:	082 929 8413	**Fax no:**	033-897 1399
E-mail:	mkuseli.madubela@kznworks.gov.za		

DEPOSIT / RETURN OF TENDER DOCUMENTS:

Telegraphic, telephonic, telex, facsimile, electronic, posted and / or late tenders will **not** be accepted.

Requirements for sealing, addressing, delivery, opening and assessment of tenders are stated in the **Tender Data document.**

All tenders must be submitted on the official forms – (not to be re-typed)

TENDER DOCUMENTS MAY BE:	**DEPOSITED IN THE TENDER BOX AT:**
	Southern Region Southern Region Office, 10 Prince Alfred Street Pietermarizburg 3200

PA-04.1: SUMMARY FOR TENDER OPENING

Project title:	**MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender / Bid no:	ZNTM 01192 W	**WIMS no:**	WIMS 062326

To facilitate **announcing details of an Offer at the opening** of Tenders at the stated venue as recorded in this document, the Tenderer shall provide by way of summary below the following information.

Name of Tendering Entity: _____

Tender Sum

R _____ (as stated in the Form of Offer, inclusive of VAT)

Amount in Words

_____

_____

I, _____(name of person authorised to sign on behalf of Tenderer) certify that the offer is fully in accordance with this Tender Document and specifications.

Duly signed at _____ on this day of _____of _____. 200___

_____ _____

Signature Date

(of person authorised to sign Tender)

NB: THIS IS ONLY FOR TENDER OPENING PURPOSES AND DOES NOT REPLACE THE OFFER AND ACCEPTANCE FORM (DOW-07 KZN)

Tenderers attention is drawn to the fact that Offer and Acceptance Form (DOW-07 KZN) should be completed in full and signed as the official Offer to the Employer. Failure to submit the DOW-07 KZN could lead to the Tenderer's offer being disqualified and non-responsive

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
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SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

T1.2 - TENDER DATA

T1.2 TENDER DATA

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Project Code:	**WIMS 062326**		
Tender no:	**ZNTM 01192 W**	**Closing date:**	**23 May 2024**
Closing time:	**11:00**	**Validity period:**	**84 Calender Days**

Clause number:		
	The conditions of Tender are the Standard Conditions of Tender as contained in Annexure C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts as per Board Notice **423 of 2019** in Government Gazette **42622 of 8 August 2019** as amended from time to time. (see www.cidb.org.za) Refer to Conditions of Tender as bound into this document. The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender. Each item of data given below is cross-referenced to the clause marked "C" in the above mentioned Standard Conditions of Tender.	
C.1.1	The Employer is the Head: Public Works (Province of KwaZulu-Natal : Department of Transport-Province of KwaZulu-Natal)	
	For this contract the single volume approach is adopted. This procurement document has been formatted and compiled under the headings for a single volume approach as contained in table 5 of the CIDB's "Standard for Uniformity in Engineering and Construction Works Contracts." The list of Returnable Documents identifies which of the documents a Tenderder must complete when submitting a Tender. The Tenderder must submit his Tender by completing the Returnable Documents including the priced Final Summary of the Bills of Quantities, signing the "Offer" section in the "Form of Offer and Acceptance" and delivering the whole of the procurement document back to the Department bound up as it was when it was received.	
C.1.2	The single volume procurement document issued by the Employer comprises the following:	
	TENDER	
	Part T1: Tendering procedures	
	T1.1 -	Tender Notice and Invitation to Tender
	T1.2 -	Tender Data
	T1.3 -	Annexure C - Standard Conditions of Tender
	Part T2: Returnable documents	
	T2.1 -	List of returnable documents
	T2.2 -	Returnable schedules (See different forms listed in ***T2.1 - Returnable Schedule***)
	CONTRACT	
	Part C1: Agreements and Contract Data	
	C1.1 -	Form of Offer and Acceptance
	C1.2 -	Contract Data
	C1.3 -	Form of Guarantee (C1.3)
	Part C2: Pricing data	
	C2.1 -	Pricing Instructions
	C2.2 -	Preliminaries
	C2.3 -	Bill of Quantities
	Part C3: Scope of works	
	C3.1 -	Scope of Works
	C3.2 -	Specification for HIV/AIDS awareness
	C3.3 -	HIV/STI Compliance report

	Part C4: Site information	
	C4.1 -	Site Information
	Part 5: List of Drawings/Annexure's	
	C5.1 -	List of Drawings
	C5.2 -	Model Preambles for Trades 2008
	C5.3 -	General Electrical Specifications
	C5.4 -	General Mechanical Specifications
	C5.5 -	Map of Tender submission location
	C5.6 -	Joint Venture Agreement
	C5.7 -	Builders Lien Agreement
	C5.8 -	OHSE Plan Structure
	C5.9 -	Client's specific requirements for the Contractor's detailed OHSE Plan
	C5.10	OHS Baseline Risk Assessment
	C5.11	Health and Safety Bill of Quantities
	C5.12	EPWP Employment Contract
	C5.13	Scope of Works in Respect of Work Relating to EPWP
	C5.14	Additional Specifications - EPWP
	C5.15	EPWP BOQ
	C5.16	Attendance Register - Infrastructure and Other projects

C.1.4	The Employer's agent (Engineer/Principal Agent) is:	
	Name:	**Cassim Kadwa Architect & Valuer cc**
	Capacity:	**Principal Agent/Engineer**
	Address:	**P.O. BOX 50015 Musgrave Road , Durban , Durban , 4062**
	Tel:	**031 201 8008**
	Fax:	**031 202 8008**
	E-mail:	**info@ckav.co.za**
	Responsible person:	**Cassim Kadwa Architect & Valuer cc**
	The second sentence shall read "Communications can be in any of the official languages recognised in KwaZulu-Natal which is English, Afrikaans or Zulu but writing is preferred in English as this is generally accepted as a business language"	

C.1.6	**PP2-Competitive Selection Procedure**	**Design by Employer**
	PP2B-Open Procedure	
	Tenderers must meet the minimum qualifying score for functionality criteria first before they can be considered for price and preference.	

C.2.1 For eligibility refer to **T1.1 Tender Notice and Invitation to Tender**

A contract will only be entered into with a Tenderder who has in his employ management and supervisory staff satisfying the requirements of the scope of work for labour intensive competencies for supervisory and

management staff during the contract validity of the contract.

Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations for a :

7GB or higher class of construction work, are eligible to have their tenders evaluated.

Joint ventures are eligible to submit tenders provided that:

1 every member of the joint venture is registered with the CIDB;

2 the lead partner has a contractor grading designation in the 7GB or higher, class of construction work; or

not lower than one level below the required the required grading designation in the class of works construction works under considerations and possess the required recognition status

3 the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a :

7GB or a value determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations.

See end of T2.3 AUTHORITY FOR CONSORTIA OR JOINT VENTURES TO SIGN TENDER for combinations of JV's arrangements.

C.2.7 For particulars regarding a pre-tender site inspection meeting (clarification meeting), see **T1.1 Tender Notice and Invitation to Tender.**

C.2.12	Alternative tender offer permitted: **Yes** ☐ **No** ☒ X
	If a tenderer wishes to submit an own alternative tender offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the Employer's standards and requirements. A tenderer may submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted. Provided that the tenderer's main tender offer is according to specification and would under normal circumstances be recommended for acceptance, his alternative tender offer may also be considered for the purpose of the award of the contract. Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal. Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the contract for the tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements. The modified Pricing Data must include an amount equal to 5% of the amount tendered for the alternative offer to cover the Employer's costs of confirming the acceptability of the detailed design before it is constructed.
	Only the complete Service as per the Bills of Quantities
C.2.13.2	Tenderers are to ensure that their company details appear on the entire relevant Tender documentation and must be legible.
C.2.13.3	Part of each tender offer communicated on paper shall be submitted as an original, plus ONE copy of the tender document including supporting documents and priced Bill of Quantities where applicable, scanned onto a readable compact disk (CD) in pdf format, at the Tenderders own cost. The CD must be clearly marked with the tender information and company details.
C.2.13.4	The second sentence shall read as follows "The Employer will hold all authorised signatories jointly and severally liable on behalf of the tenderer". Tenderders proposing to contract as a Joint Venture shall submit a valid Joint Venture Agreement before the Joint Venture's offer could be accepted. Individuals, Partnerships and Companies proposing to contract as a party to a Joint Venture shall be jointly and severally liable on behalf of the Joint Venture.
C.2.13.5	The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are as per **T1.1 Tender Notice and Invitation to Tender.**
	A Open Procedure will be followed
C.2.15	The closing time for submission of tender offers is as per **T1.1 Tender Notice and Invitation to Tender.**
C.2.16	The tender offer validity period is as per **T1.1 Tender Notice and Invitation to Tender.**
C.2.17	Sub-clause C2.17 does not preclude the negotiation of the final terms of the contract with the preferred tenderer, following a competitive selection process, should the Employer elect to do so and provided that the competitive position of the preferred tenderer is not affected.
	The tenderer is to submit the Priced Bills of Quantities with the Returnable's at the closing of the tender.
	The tenderer must submit to the Employer, names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the works together with satisfactory evidence that
C.2.19	Access shall be provided for inspections, tests and analysis as may be required by the Employer.
C.2.22	Tenderers **do not** have to return all retained tender documents within 28 days after expiry of the Tender validity period.
	Tenderers are to refer to **List of Returnable Schedules** and **Scope of Works** to establish what is required to be submitted with this tender.
C.3.4	The location for opening of the tender offers, immediately after the closing time thereof shall be at: **Province of KwaZulu-Natal : Department of Transport, Southern Region Office, 10 Prince Alfred Street, Pietermaritzburg, 3200 at the time indicated on T1.1 Notice and Invitation to Bid**

C.3.8	The employer must determine, on opening and before detailed valuation, whether each Tender offer properly received: a) complies with the requirements of the Conditions of Tender. b) has been properly and fully completed and signed, and c) is responsive to the other requirements of the Tender documents. A responsive tender is one that conforms to all the terms, conditions and specifications of the tender documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer's opinion, would: a) detrimentally affect the scope, quality, or performance of the Works, services or supply identified in the Scope of Work or b) significantly change the Employers or the Tenderers risks and responsibilities under the contract, or c) affect the competitive position of other Tenderers presenting responsive tenders, if it were to be rectified. Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.
C.3.13	**Tender offers will only be accepted if:** (a) Tenderders must be registered on Government's Central Supplier Database (CSD) and include their master registration number (MAAA number) on the cover page of the tender document in order to enable the institution to verify the tenderers tax status on the CSD (b) the Tenderder is registered with the Construction Industry Development Board in an appropriate contractor grading designation is required for this tender and the Tenderder has submitted a CIDB certificate of registration which clearly indicates the status "Active" (c) the Tenderder is not in arrears for more than 3 months with municipal rates and taxes and municipal services charges. (d) the Tenderder has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the Tenderder's ability to perform to the contract in the best interests of the employer or potentially compromise the Tender process. (e) the tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act, 2004 (Act No. 12 of 2004) as a person prohibited from doing business with the public sector; and (f) the Tenderder has not: i) abused the Employer's Supply Chain Management System; or ii) failed to perform on any previous contract and has been given a written notice to this effect. (g) the Tenderder is registered with: i) the Unemployment Insurance Fund (UIF); and ii) the Workmen's Compensation Fund (h) the Tenderder submitted Authority to Sign the tender. (i) the Tenderder submitted Financial standing & other resources of Business Declaration. (j) the Tenderder submitted Equipment Schedules, if applicable. (k) the Tenderder signed the Form of Offer that is part of the Form of Offer and Acceptance. (l) the Tenderder submitted Preference Certificate, if applicable. (m) the Tenderder submit Final Summary of Bill of Quantities at tender closing. (n) the Tenderder submitted Bidder's Disclosure. (o) the Tenderder submitted Site Inspection Certificate from the Compulsory Briefing Meeting (p) All information required to assess 'Functionality" as per Tender Data scheduled requirements Providing the form of offer and acceptance does not contain any qualifying statements, it will constitute the formation of a contract between the employer and the successful Tenderder as described in the form of offer and acceptance.
C.3.15	Tenderders are informed that any formal dispute shall be resolved by being referred to Arbitration only.
C.3.17	Provide to the successful Tenderder one copy of the signed contract document and one copy of an unpriced bills of quantities

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

T1.3 - Annexure C - Standard Conditions of Tender

T1.3 - Annexure C - Standard Conditions of Tender

Note: Where this document refers to Bid or Bidder it shall be read as tender or tenderer

C.1 General

C.1.1 Actions

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

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

Note: 1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.

2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.

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

C.1.2 Tender Documents

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

C.1.3 Interpretation

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

C.1.3.2 These conditions of tender, the **tender data** and tender schedules which are required for tender evaluation purposes, shall form part of any contract arising from the invitation to tender.

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

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

b) **comparative offer** means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to have been taken into consideration;

c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process;

d) **fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels.

C.1.4 Communication and employer's agent

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

C.1.5 Cancellation and Re-Invitation of Tenders

C.1.5.1 An employer may, prior to the award of the tender, cancel a tender if-

a) due to changed circumstances, there is no longer a need for the engineering and cor works specified in the inviteation;

b) funds are no longer available to cover the total envisaged expenditure; or

c) no acceptable tenders are received.

d) there is a material irregularity in the tender process.

C.1.5.2 The decision to cancel a tender invitation must be published in the same manner in which the original tender invitation was advertised.

C.1.5.3 An Employer may only with the prior approval of the relevant treasury cancel a tender invitation for the second time.

C.1.6 Procurement procedures

C.1.6.1 General

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

C.1.6.2 Competitive negotiation procedure

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

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

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

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

C.1.6.3 Proposal procedure using the two stage-system

C.1.6.3.1 Option 1

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

F.1.6.3.2 Option 2

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

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

C.2 Tenderer's obligations

C.2.1 Eligibility

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

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

C.2.2 Cost of tendering

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

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

C.2.3 Check documents

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

C.2.4 Confidentiality and copyright of documents

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

C.2.5 Reference documents

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

C.2.6 Acknowledge addenda

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

C.2.7 Clarification meeting

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

C.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five (5) working days before the closing time stated in the **tender data**.

C.2.9 Insurance

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

C.2.10 Pricing the tender offer

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

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

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

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

C.2.11 Alterations to documents

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

C.2.12 Alternative tender offers

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

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

C.2.12.3 An alternative tender offer must only be considered if the main tender offer is the winning tender.

C.2.13 Submitting a tender offer

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

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

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

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

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

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

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

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

C.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the **tender data**.

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

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

C.2.15 Closing time

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

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

C.2.16 Tender offer validity

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

C.2.16.2 If requested by the employer, consider extending the validity period stated in the **tender data** for an agreed additional period with or without any conditions attached to such extension.

C.2.16.3 Accept that a tender submission that has been submitted to the employer may only be withdrawn or substitutes by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted. If the validity period lapses before the employer evaluating the tender offer(s), the contractor reserves the right to review the price based on Consumer Price Index (CPI)

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

C.2.17 Clarification of tender offer after submission

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

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

C.2.18 Provide other material

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

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

C.2.19 Inspections, tests and analysis

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

C.2.20 Submit securities, bonds and policies

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

C.2.21 Check final draft

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

C.2.22 Return of other tender documents

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

C.2.23 Certificates

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

C.3 The employer's undertakings

C.3.1 Respond to request from the tenderer

C.3.1.1 Unless otherwise stated in the **tender data**, respond to a request for clarification received up to five (5) working days before the tender closing time stated in the **tender data** and notify all tenderers who collected tender documents.

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

a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements;

b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or

c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.

C.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three (3) days before the tender closing time stated in the **tender data**. If, as a result a tenderer applies for an extension to the closing time stated in the **tender data**, the Employer may grant such extension and, shall then notify all tenderers who collected tender documents.

C.3.3 Return late tender offers

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

C.3.4 Opening of tender submissions

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

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

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

C.3.5 Two-envelope system

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

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

C.3.6 Non-disclosure

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

C.3.7 Grounds for rejection and disqualification

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

C.3.8 Test for responsiveness

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

a) complies with the requirements of these Conditions of Tender,

b) has been properly and fully completed and signed, and

c) is responsive to the other requirements of the tender documents.

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

a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work,

b) significantly change the Employer's or the tenderer's risks and responsibilities under the contract, or

c) affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified.

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

C.3.9 Arithmetical errors, omissions and discrepancies

C.3.9.1 Check Responsive tenders for discrepancies between amounts in words and amounts in figures.Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.

C.3.9.2 Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with C.3.11 for:

a) the gross misplacement of the decimal point in any unit rate;

b) omissions made in completing the pricing schedule or bills of quantities; or

c) arithmetic errors in:

i) line items totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or

ii) the summation of the prices.

C.3.9.3 Notify the tenderer of all errors or omissions that are identified in the tender offer and either confirm the tender offer as tendered of accept the corrected total of prices

C.3.9.4 Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows:

a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected.

b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

C.3.10 Clarification of a tender offer

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

C.3.11 Evaluation of tender offers

The Standard Conditions of Tender standardize the procurement processes, methods and procedures from the time that tenders are invited to the time that a contract is awarded. They are generic in nature and are made project specific through choices that are made in developing the Tender Data associated with a specific project.

Conditions of tender are by definition the document that establishes a tenderer's obligations in submitting a tender and the employer's undertakings in soliciting and evaluating tender offers. Such conditions establish the rules from the time a tender is advertised to the time that a contract is awarded and require employers to conduct the process of offer and acceptance in terms of a set of standard procedures

The CIDB Standard Conditions of Tender are based on a procurement system that satisfies the following system requirements:	
Requirement	**Qualitative interpretation of goal**
Fair	The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information.
Equitable	Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.
Transparent	The only grounds for not awarding a contract to a tenderer who satisfies all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest.
Competitive	The system provides for appropriate levels of competition to ensure cost effective and best value outcomes.
Cost effective	The processes, procedures and methods are standardized with sufficient flexibility to attain best value outcomes in respect of quality, timing and price, and least resources to effectively manage and control procurement processes.

The activities associated with evaluating tender offers are as follows:

a) Open and record tender offers received
b) Determine whether or not tender offers are complete
c) Determine whether or not tender offers are responsive
d) Evaluate tender offers
e) Determine if there are any grounds for disqualification
f) Determine acceptability of preferred tenderer
g) Prepare a tender evaluation report
h) Confirm the recommendation contained in the tender evaluation report

C.3.11.1 General

The employer must appoint an evaluation panel of not less than three persons conversant with the proposed scope of works to evaluate each responsive tender offer using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

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SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

PART T2 - RETURNABLE DOCUMENTS

T2.1 LIST OF RETURNABLE DOCUMENTS

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Project Manager:	**Mr. Mkuseli Madubela**	**Tender no:**	**ZNTM 01192 W**

1. RETURNABLE SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES

(Tenderer to Insert a tick (√) in the "Returnable document" column to check which documents he/she returned with the tender)

Tender document name	Returnable document	
Bidder's Disclosure - SBD 4 (T2.11)	**Yes**	
Authority to Sign Tender (T2.2)	**Yes**	
Authority for Consortia or Joint Venture's to Sign Tender (T2.3)	**Yes**	
Special Resolution of Consortia or Joint Venture's (T2.4)	**Yes**	
Schedule of Proposed Sub-Contractors (T2.6)	**Yes**	
Joint Venture Involvement Declaration (T2.5)	**Yes**	
Capacity of Tenderer (T2.7)	**Yes**	
Annual Financial Statement for past financial year (2.15)	**Yes**	
Site Inspection Certificate as proof for attendance of compulsory briefing meeting (T2.10)	**Yes**	
Preference Points Claim Form (T2.9)	**Yes**	
Compulsory Enterprise Questionnaire (T2.18)	**Yes**	
Financial Standing and other resources of Business Declaration (T2.8)	**Yes**	
Contractor's Safety, Health and Environmental Declaration (T2.17)	**Yes**	
Complete Priced Bill of Quantities (T2.22)	**Yes**	
Certified Proof of CIDB Registration Number (T2.27)	**Yes**	
Contract Form - Purchase of Goods/Works - Part 1 (T2.29)	**Yes**	
Contract Form - Purchase of Goods/Works - Part 2 (T2.30)	**Yes**	
Functionality Criteria (T2.34)	**Yes**	
Invitation to Tender - SBD 1 (T2.35)	**Yes**	

2. RETURNABLE SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES BUT TO BE SUPPLIED BY THE TENDERER

(Tenderer to Insert a tick (√) in the "Returnable document" column to check which documents he/she returned with the tender)

Tender document name	Returnable document	
Tax Compliance Status (TCS) PIN to verify on line Compliance Supplier Status via e-Filing (T2.19)	**Yes**	
Certified Proof of Good Standing with the Compensation Commissioner (Attach) (T2.20)	**Yes**	
Proof of payment of Tender deposit (T2.28)	**Yes**	
Certified Proof of Paid Municipal Rates and Taxes (Attach) (T2.23)	**No**	N/A
Certified Proof of UIF Registration (Attach) (T2.24)	**No**	N/A
Certified Proof of Registration Number on the Central Suppliers Database (T2.26)	**Yes**	
Annual Financial Statement for past financial year (2.15)	**Yes**	
Entire tender document including returnable and supporting documents, scanned as PDF onto a CD, clearly marked with the Tender information.	**Yes**	

3. RETURNABLE SCHEDULES THAT WILL BE INCORPORATED INTO THE CONTRACT

(Tenderder to Insert a tick (√) in the "Returnable document" column to check which documents he/she returned with the Tender)

Tender document name	Returnable document	
Form of Offer and Acceptance (Bound into Section 1 of 2) (T2.21)	**Yes**	
Record of Addenda to Tender Documents (T2.12)	**Yes**	
Particulars of Electrical Contractor (T2.13)	**Yes**	
Equipment Schedules-Mechanical / Electrical / Security Material (T2.16)	**Yes**	
Schedule of Imported Materials and Equipment (T2.14)	**Yes**	
Confirm Receipt of Offer and Acceptance (T2.21a)	**Yes**	

4. OTHER DOCUMENTS THAT WILL BE INCORPORATED INTO THE CONTRACT

(Tenderder to Insert a tick (√) in the "Returnable document" column to check which documents he/she returned with the Tender)

Tender document name	Returnable document	
Bill of Quantities (T2.22)	**Yes**	
Form of Guarantee (C1.3)	**Yes**	
List of Drawings/Annexure's (C5.1)	**Yes**	
The National Industrial Participation Programme (T2.25)	**Yes**	
Required Structure of Contractor's detailed OHSE Plan (T2.31)	**Yes**	
Client's specific requirements for the Contractor's detailed OHSE Plan (T2.32)	**Yes**	
Base line Risk Assessment (T2.33)	**Yes**	

5. DOCUMENTS REQUIRED FOR THE EVALUATION OF FUNCTIONALITY

(Tenderder to Insert a tick (√) in the "Returnable document" column to check which documents he/she returned with the Tender)

Tender document name	Returnable	
5 x Letters of credit reference from suppliers (not older than 3 months)	**Yes**	
Signed letter from a registered financial institution confirming intention to issue provision of a guarantee	**Yes**	
Latest audited financial statement to be issued by an Accountant (practice number shown) not a Broker, and must be certified	**Yes**	
Utility bill (not older than 3 months) / valid signed lease agreement / proof of ownership of the company offices	**Yes**	
Schedule of projects of similar value and nature - 7GB or Higher, completed within the last 5 years (x1 project to have Heritage typology e.g. AMAFA recognised / Heritage listed building)	**Yes**	
Provide 4 No. reference letters for above-listed projects either from the Client / Consultants / Project Manager, commenting on bidder's positive performance	**Yes**	
Submission of a project-specific organogram, indicating the individual's role & capacity specific to this project, whether management / technical staff, etc.	**Yes**	
CVs with references, experience and relevant qualifications of personnel involved in the project as per the Project-specific organogram	**Yes**	
Submission of a detailed project-specific Method Statement	**Yes**	
Submission of a detailed project-specific Works Programme	**Yes**	
Social Corporate Responsibility clearly indicating the amount to be spent, not less than 0.1% of the project value	**Yes**	

T2.2 AUTHORITY TO SIGN TENDER

RESOLUTION of a meeting of the Board of *Directors / Members / Partners of:

_____

_____

(Legally correct full name and registration number, if applicable, of the Enterprise)

held at *(town)*: _____ on *(date)*: _____

RESOLVED that:

1. The Enterprise submits a Tender to the KZN Department of Public Works in respect of the following project:

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

Tender Number: **ZNTM 01192 W**

2.
*Mr./Mrs./Ms: _____

in *his/her capacity as: _____ *(Position in the Enterprise)*

and who will sign as follows: _____ (Authorised Signatory)

be, and is hereby, authorised to sign the Tender, and any and all other documents and/or correspondence in connection with and relating to this Tender, as well as to sign any Contract, and any and all documentation, resulting from the award of the Tender to the Enterprise mentioned above.

	Name	Capacity	Signature
1			
2			
3			
4			
5			
6			
7			
8			

Note:

*1. * Delete which is not applicable.*

2. NB. This resolution / Power of Attorney must be signed by all the Directors / Members / Partners of the Legal Tendering Enterprise authorising the Representative to make this Offer.

3. Should the number of Directors / Members/Partners exceed the space available above, additional names and signatures must be supplied on a separate page.

*4. In the case of the tendering Enterprise being a Close Corporation, a **certified copy of the Founding Statement** of such corpora - tion must be attached to this tender.*

ENTERPRISE STAMP (If Any)

T2.3 AUTHORITY FOR CONSORTIA OR JOINT VENTURES TO SIGN TENDER

RESOLUTION of a meeting of the Board of *Directors / Members / Partners of:

_____

_____

(*Legally correct full name and registration number, if applicable, of the Enterprise)*

held at *(town)*: _____ on *(date)*: _____

RESOLVED that:

1. The Enterprise submits a Tender, in consortium/Joint Venture with the following Enterprises:

   _____

   _____

   (List all the legally correct full names and registration numbers, if applicable, of the Enterprises forming the Consortium/Joint Venture)

   to the Province of KwaZulu-Natal : Department of Transport in respect of the following project:

   SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

   Tender Number: **ZNTM 01192 W**

2. * Mr. / Mrs. / Ms.: _____ in

   *his/her Capacity as: _____ *(Position in the Enterprise)*

   and who will sign as follows: _____
   be, and is hereby, authorised to sign a consortium/joint venture agreement with the parties listed under item 1 above, and any and all other documents and/or correspondence in connection with and relating to the consortium/joint venture, in respect of the project described under item 1 above.

3. The Enterprise accepts joint and several liability with the parties listed under item 1 above for the due fulfilment of the obligations of the joint venture deriving from, and in any way connected with, the Contract to be entered into with the Department in respect of the project described under item 1 above.
4. The Enterprise chooses as its *domicilium citandi et executandi* for all purposes arising from this joint venture agreement and the Contract with the Department in respect of the project under item 1 above:

   Physical address: _____

   _____

   _____

   _____ (Postal Code)

   Postal Address: _____

   _____

   _____

   _____ (Postal Code)

Telephone number: *(Dialling Code followed by number)* _____

Fax number: *(Dialling Code followed by number)* _____

Email Address : _____

***BOARD OF DIRECTORS / MEMBERS / PARTNERS in Consortium of Joint Venture**

	Name	Capacity	Signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Note:

*1. * Delete which is not applicable.*

2. NB. This resolution / Power of Attorney must be signed by all the Directors / Members / Partners of the Tendering Enterprise.

3. Should the number of Directors / Members/Partners exceed the space available above, additional names and signatures must be supplied on a separate page.

ENTERPRISE STAMP (If Any)

Deemed to satisfy joint venture arrangements	Designation
Grading 2 + Grading 2 + Grading 2	= 3
Grading 3 + Grading 3 + Grading 3	= 4
Grading 4 + Grading 4	= 5
Grading 4 + Grading 3 + Grading 3	= 5
Grading 5 + Grading 5	= 6
Grading 5 + Grading 4 + Grading 4	= 6
Grading 6 + Grading 6	= 7
Grading 6 + Grading 5 + Grading 5	= 7
Grading 7 + Grading 7 + Grading 7	= 8
Grading 8 + Grading 8 + Grading 8	= 9

Tenderers who envisage entering into a Joint Venture shall complete a submit a Joint Venture Agreement (see copy of CIDB's agreement elsewhere in this document) with this Tender.

THE CIDB JOINT VENTURE GRADING DESIGNATION CALCULATOR sums the capacity of all joint venture partners and calculates a grading designation for the joint venture

T2.4 SPECIAL RESOLUTION OF CONSORTIA OR JOINT VENTURES

RESOLUTION of a meeting of the duly authorised representatives of the following legal entities who have entered into a consortium/joint venture to jointly tender for the project mentioned below: (*legally correct full names and registration numbers, of the Enterprises forming a Consortium/Joint Venture)*

_____

_____

2. _____

_____

3. _____

_____

4. _____

_____

5. _____

_____

6. _____

_____

7. _____

_____

8. _____

_____

held at: _____ *(place)* on _____ *(date)*

RESOLVED that:

A. The above-mentioned Enterprises submits a Tender in Consortium/Joint Venture to the Province of KwaZulu-Natal : Department of Transport in respect of the following project:

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

Tender Number: **ZNTM 01192 W**

Project Code: **WIMS 062326**

B. Mr/Mrs/Ms: _____ in

*his/her Capacity as: _____ *(Position in the Enterprise)*

and who will sign as follows: _____
be, and is hereby, authorised to sign the Tender, and any and all other documents and/or correspondence in connection with and relating to the Tender, as well as to sign any Contract, and any and all documentation, resulting from the award of the Tender to the Enterprises in Consortium/Joint Venture mentioned above.

C. The Enterprises constituting the Consortium/Joint Venture, notwithstanding its composition, shall conduct all business under the name and style of:

_____

D. The Enterprises to the Consortium/Joint Venture accept joint and several liability for the due fulfilment of the obligations of the Consortium/Joint Venture deriving from, and in any way connected with, the Contract entered into with the Department in respect of the project described under item A above.

E. Any of the Enterprises to the Consortium/Joint Venture intending to terminate the consortium/joint venture agreement, for whatever reason, shall give the Department 30 days written notice of such intention. Notwithstanding such decision to terminate, the Enterprises shall remain jointly and severally liable to the Department for the due fulfilment of the obligations of the Consortium/Joint Venture as mentioned under item D above.

F. No Enterprise to the Consortium/Joint venture shall, without the prior written consent of the other Enterprises to the Consortium/Joint Venture and of the Department, cede any of its rights or assign any of its obligations under the consortium/joint Venture and of the Department, cede any of its rights or assign any of its obligations under the consortium/joint venture agreement in relation to the Contract with the Department referred to herein.

G. The Enterprises choose as the *domicilium citandi et executandi* of the consortium/joint venture for all purposes arising from the consortium/joint venture agreement and the Contract with the Department in respect of the project under item A above:

Physical address: _____

_____

_____

_____ (Postal Code)

Postal Address: _____

_____

_____

_____ (Postal Code)

Telephone number: *(Dialling Code followed by number)* _____

Fax number: *(Dialling Code followed by number)* _____

Email Address : _____

***BOARD OF DIRECTORS / MEMBERS / PARTNERS in Consortium of Joint Venture**

	Name	Capacity	Signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

Note:

1. ** Delete which is not applicable.*

2. ***NB.*** *This resolution / Power of Attorney must be signed by all the Duly Authorised Representatives of the Legal Entities to the Consortium/Joint Venture submitting this Tender.*
3. *Should the number of Duly Authorised Representatives of the Legal Entities joining forces in this Tender exceed the space available above, additional names and signatures must be supplied on a separate page.*
4. *Resolutions, duly completed and signed, from the separate Enterprises who participate in this Consortium/Joint Venture must be attached to the Special Resolution.*

T2.5 JOINT VENTURES INVOLVEMENT DECLARATION

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

DECLARATION RELATING TO A TENDER SUBMITTED BY A JOINT VENTURE :

I/We the undersigned parties do hereby declare that our respective involvement in the Works, of which I/we tender by Joint Venture, would be as follows :-

Party No. 1	
CENTRAL SUPPLIERS DATABASE REGISTRATION NO:	
TenderDERS CIDB REGISTRATION NUMBER:	
Name	
Address	
Percentage involvement	%

Party No. 2	
CENTRAL SUPPLIERS DATABASE REGISTRATION NO:	
TENDERERS CIDB REGISTRATION NUMBER:	
Name	
Address	
Percentage involvement	%

Party No. 3	
CENTRAL SUPPLIERS DATABASE REGISTRATION NO:	
TenderDERS CIDB REGISTRATION NUMBER:	
Name	
Address	
Percentage involvement	%

Signed - Party No. 1

I/We *(Full Name)* _____

duly authorised in my capacity as _____

of *(Enterprise name)*: _____

do jointly and severally accept responsibility for the due performance of the Works contained in the above project should such Tender submitted by the Joint Venture be accepted.

_____ _____

Signed by Authorised Representative Date

Signed - Party No. 2

I/We *(Full Name)* _____

duly authorised in my capacity as _____

of *(Enterprise name)*: _____

do jointly and severally accept responsibility for the due performance of the Works contained in the above project should such tender submitted by the Joint Venture be accepted.

_____ _____

Signed by Authorised Representative Date

Signed - Party No. 3

I/We *(Full Name)* _____

duly authorised in my capacity as _____

of *(Enterprise name)*: _____

do jointly and severally accept responsibility for the due performance of the Works contained in the above project should such tender submitted by the Joint Venture be accepted.

_____ _____

Signed by Authorised Representative Date

T2.6 SCHEDULE OF PROPOSED SUBCONTRACTORS

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

We notify you that it is our intention to employ the following Subcontractors for work in this contract. The Subcontractors will all be CIDB registered and their CIDB Registration number shall be submitted below.

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

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

No	Name and address of proposed Subcontractor	Nature and extent of work	Year Completed	Value (R):	Contact Tel No:	Previous experience with Subcontractor
1						
	CIDB Registration Number:					
2						
	CIDB Registration Number:					
3						
	CIDB Registration Number:					
4						
	CIDB Registration Number:					
5						
	CIDB Registration Number:					

Name of authorised representative	**Signature**	**Capacity**	**Date**
Name of Enterprise:			

T2.7 CAPACITY OF TENDERER			
Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

1. **WORK CAPACITY:** (The Tenderer is requested to furnish the following capacity particulars and to attach additional pages if more space is required. Failure to furnish the particulars may result in the Tender being disregarded.)

1.1. **Artisans and Employees:** *(Artisans and Employees to be ,or are ,employed for this project)*

Categories of Employee - Key Personnel (part of Business Enterprise)	Professional Registration No.	Date of Employment	Number
Site Agent			
Project Manager			
Foreman			
Quality Control & Safety Officer-Construction Supervisor			
Artisans			
Unskilled employees			
Others			

1.2. **Provide full particulars of the following Assets:** *(Assets owned and to be hired - Indicate owned assets)*

Machinery	Plant	Equipment	Vehicles

1.3. Workshops:

Address of Main Workshop:	Address of Regional Workshop (If Applicable):

1.4. Other offers submitted at time of this tender for which results are pending:
(Any other client's tender must also be included)

Tender No.	Project Name	Client Name & Contact No.	Value Tendered in R's	Date Tender submitted	Contact Detail

2. PARTICULARS OF THE TENDERERS CURRENT AND PREVIOUSLY COMPLETED COMMITMENTS:

2.1. Current private sector projects: *(List the 5 projects closest to the contractor grading designation of this project)*

1	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	
2	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	
3	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	
4	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	
5	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	

2.2. Current Government sector projects: *(List the 5 projects closest to the contractor grading designation of this project)*

1	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	
2	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	
3	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	
4	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	
5	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Scheduled date of completion	

2.3. Previously completed projects: *(List the 5 projects closest to the contractor grading designation of this project)*

1	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Date completed	
2	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Date completed	
3	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Date completed	
4	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Date completed	
5	Project Name		Date of commencement	
	Place (town)		Contract Amount (R)	
	Reference / Contact person		Contract period	
	Contact Tel. No.		Date completed	

Name of Tenderer	Signature of authorised representative	Date

T2.8 FINANCIAL STANDING AND OTHER RESOURCES OF BUSINESS DECLARATION

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

(a) Based on the track record determined on the Minimum Average Annual Turnover coupled to the assessed Works Capabilities of Contracting Enterprises, the Construction Industry Development Board (CIDB) awards Grading Designations and accordingly registers it on the system.

(b) However, it regularly occurs that a Contractor will at the same time submit tenders for a number of projects that are advertised during an overlapping period. Moreover, the Contractor may be busy with a Contract that is of the registered CIDB Grading Designation (value) or is even attending to a number of smaller valued Contracts.

(c) It therefore becomes the prerogative of a Tenderer in such instances to prove to the Department that the Enterprise has the capacity in every respect to attend to more than one (1) contract at a time.

(d) A Tenderer who wishes to be considered for this tender Contract award, over and above other tenders that they have submitted, shall submit when requested by the DoPW the necessary proof that:

(i) he/she has access to additional finance (inclusive of a PERFORMANCE GUARANTEE BY A REGISTERED FINANCIAL INSTITUTION),

(ii) he/she has additional Human Resources available to successfully complete this project.

(iii) he/she has adequate Equipment, Plant and Machinery that all of the above can, undoubtedly, be sourced for this tender. (Please submit to the DoPW the name and contact details of the supplier if the Tenderer is going to hire Equipment, Plant or Machinery, when requested.)

(e) Tenderer to submit their latest 12 months audited financial statements with the returnable documents.

I, the undersigned,

_____

(name of person authorized to sign on behalf of the Tenderer

understand that it is the responsibility of the Tenderer to prove and provide when requested by the DoPW, evidence of the good Financial Standing of the Business to complete the Contract successfully.

Furthermore, it is understood that failure to provide when requested by DoPW, at least the information as stated in paragraphs (d)(i)(ii) AND (iii) above will not enable the Evaluation Team to assess the CURRENT financial standing of the Business and the failure to provide said information when requested will, therefore, invalidate the Tender.

I accept and understand that the KZN Department of Public Works, as representative of the Provincial Administration of KwaZulu-Natal in this tender, may act against me and the Tenderer, jointly and severally, should this declaration and/or any information provided be found to be false.

Duly signed at……. on this the…... day of……. 20..

Full Name of Signatory	Name of Enterprise
Capacity of Signatory	Signature of authorised representative

T2.9 PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

Project Title:	SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANS
Tender Number:	ZNTM 01192 W
Project Code:	WIMS 062326

SBD 6.1

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

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

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

1. GENERAL CONDITIONS

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

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

1.2 **To be completed by the organ of state**

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

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

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

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

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

(a) Price; and

(b) Specific Goals.

1.4 **To be completed by the organ of state:**

The maximum points for this tender are allocated as follows:

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

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

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

2. DEFINITIONS

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

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

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

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

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

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. **POINTS AWARDED FOR PRICE**

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

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

80/20 or 90/10

$Ps=80(1-(Pt-P\ min)/(P\ min))$ or $Ps=90(1-(Pt-P\ min)/(P\ min))$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

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

3.2.1. **POINTS AWARDED FOR PRICE**

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

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

Ps=80(1+(Pt-P max)/(P max) **or** **Ps=90(1+(Pt-P max)/Pmax)**

Where
Ps = Points scored for price of tender under consideration
Pt = Price of tender under consideration
Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

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

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

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

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

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

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

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

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

The specific goals allocated points in terms of this tender	Number of Points allocated (90/10 system) (to be completed by the Organ of State)	Number of Points allocated (80/20 system) (to be completed by the Organ of State)	Number of points claimed (90/10 system) (To be completed by the tenderer)	Number of points claimed (80/20 system) (To be completed by the tenderer)
Ownership by People who are Youth	10 Points			
Ownership by People who are Women	05 Points			
Promotion of enterprises located in uMsunduzi Local Municipal area for work to be done or services to be rendered	05 Points			

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: ……
……
……
……

T2.10 SITE INSPECTION MEETING CERTIFICATE

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**
Site Inspection Date:		**Wednesday, 08 May 2024 at 11:00am**	

This is to certify that I, _____
(Name of authorised Representative)

representing _____
(Name of Enterprise)

visited the site on: _____ *(Date)*

I have made myself familiar with all local conditions likely to influence the work and the cost thereof. I further certify that I am satisfied with the description of the work and explanations given at the site inspection meeting and that I understand the work to be done, as specified and implied, in the execution of this contract.

I declare that the representative, named above, is my authorised representative and **not** a third party agent and that my representative's attending of this site meeting, shall be deemed conclusive proof that my Enterprise are fully aware of what was said and discussed at this meeting.

Name of Tenderer	Signature	Date

Name of DOPW Representative	Signature	Date

This form is only to be completed when applicable to the tender and if a Compulsory Briefing meeting has been called.

Departmental Stamp:

T2.11 BIDDER'S DISCLOSURE - SBD 4

NOTE TO THE COMPILER OF THIS DOCUMENT : PLEASE PRINT THE PDF VERSION OF THE BIDDER'S DISCLOSURE - SBD4 AND ATTACH TO THE BID DOCUMENT. NO CHANGES / AMENDMENTS MUST BE MADE TO THE SBD4 NATIONAL TREASURY FORM.

SBD4

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest1 in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	**Identity Number**	**Name of State institution**

2.2 Do you, or any person connected with the bidder, have a relationship

1 the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:
……
……

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES/NO**

2.3.1 If so, furnish particulars:
……
……

3 DECLARATION

I, the undersigned, (name)……. in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure;

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

3.3 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 consortium2 will not be construed as collusive bidding.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

3.4 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.

3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring

---

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

institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

3.6 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.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.
I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

…… ……
Signature Date

…… ……
Position Name of bidder

T2.12 RECORD OF ADDENDA TO TENDER DOCUMENTS

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

The undersigned confirm that the following communications received from the employer before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:

	Date	Title or Details	No. of Pages
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

Attach Additional Pages if more space is required

Tenderer to attach proof of receipt of above listed addenda

Signed		**Date**	
Name		**Position**	
Tenderer			

T2.13 PARTICULARS OF ELECTRICAL CONTRACTOR

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

Name of Electrical Contractor: _____

Address: _____

_____

_____

_____

Telephone Number: _____
(Area Code)(Number)

Fax Number: _____
(Area Code)(Number)

Registration number at the Electrical Contracting Board of S.A.:	

Name of authorised representative	**Signature**	**Date**

T2.14 SCHEDULE FOR IMPORTED MATERIALS AND EQUIPMENT

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

This schedule should be completed by the tenderer. *(Attach additional page(s) if more space is required)*

Item	Material / Equipment	Quotation (Excluding VAT)
1		R
2		R
3		R
4		R
5		R
6		R

The Contractor shall list imported items, materials and/or equipment which shall be excluded from the Contract Price Adjustment Provisions (if applicable) and shall be adjusted in terms of currency fluctuations only. Copies of the supplier's quotations for the items, materials or equipment (provided that such costs shall not be higher than the relevant contract rate as listed above) should be lodged with the Principal Agent / Engineer of the Department of Public Works within 60 (sixty) days from the date of acceptance of the tender. No adjustment of the local VAT amount, nor the contractor's profit, discount, mark-up, handling costs, etc. shall be allowed. (See P&G E16)

These net amounts will be adjusted as follows:

FORMULA:

The net amount to be added to or deducted from the contract sum:

$$A = V\left(\frac{Z}{Y} - 1\right)$$

A = the amount (R) of adjustment

V = the net amount (supplier's quotation) (R) of the imported item

Y = exchange rate 14 days prior to closing date of tender submission

Z = exchange rate on the date of the Bill of Lading* of exporters invoice.

** A bill of lading (sometimes abbreviated as B/L or BoL) is a document issued by a carrier which details a shipment of merchandise and gives title of that shipment to a specified party. Bills of lading are one of three important documents used in international trade to help guarantee that exporters receive payment and importers receive merchandise. A straight bill of lading, which is referred to above, is used when payment has been made in advance of shipment and requires a carrier to deliver the merchandise to the appropriate party. It is therefore the date of the paid up invoice when the shipment leaves the exporter's location.*
[http://en.wikipedia.org/wiki/Bill_of_lading]

Name of authorised representative	Signature	Date

T2.15a LATEST 12 MONTH ANNUAL FINANCIAL STATEMENT

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

ATTACH A CERTIFIED COPY OF THE ANNUAL FINANCIAL STATEMENT OF THE COMPANY FOR THE PAST FINANCIAL YEAR TO THIS PAGE FOR ADJUDICATION PURPOSES

NOTE

In the case of a Tender by a Joint Venture, certified copies of the annual financial statements of the past financial year in respect of each party to the Joint Venture must be attached to this page

ATTACH COMPANY LATEST 12 MONTHS ANNUAL FINANCIAL STATEMENTS TO THIS PAGE

T2.16 EQUIPMENT SCHEDULES

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

The Tenderer shall complete the following schedules giving details of the various items of materials or equipment that he includes in his offer.

TECHNICAL DATA: STANDBY GENERATOR

Manufacturer:	
Model number:	
Serial number:	

Voltage	
KVA	
Frequency	
RPM	
Cylinder/stroke	
Fuel capacity and consumption	
Sound pressure level	
Condenser air flow rate	
Attenuation type	
Battery Type	
AMF Change Over Panel Type	
Starter Motor Type and Voltage	
Standard Compliance	

Project Code: **WIMS 062326**

EQUIPMENT SCHEDULES

TECHNICAL DATA: UNINTERRUPTABLE POWER SUPPLY UPS

Manufacturer	
Model	
Frequency	
Harmonic Distortion Reduction	
Operating Temperature	
Range of Protection – Lightning Strike	
KVA	
Maximum current, cooling mode	
Agent	
Telephone number of Agent	
Brochure enclosed	Yes/No

TECHNICAL DATA: PARCEL X-RAY UNITS

Manufacturer	
Model	
Dimension /Size	
Resolution	
Zoom ranges	
External Radiation Levels	
Standard Compliance	
Electrical nominal voltage	Volts
Monitor Type and size	
Agent	
Telephone no of Agent	
Brochure enclosed	Yes/No

Project Code: **WIMS 062326**

EQUIPMENT SCHEDULES

TECHNICAL DATA: **WALK THROUGH DETECTOR**

Manufacturer	
Model	
Timer mode	
No of sequential settings per time switch	
No of N/O and N/C contacts per setting	
Adjustable time lapse between settings	
Operating voltage	
Operating current	
Agent	
Telephone number	
Brochure enclosed	Yes/No

TECHNICAL DATA: **TURNSTILE**

Manufacturer	
Size	
Range	
Voltage	
Battery Back Up Time	
Finish	
Agent	
Telephone number	
Brochure enclosed	Yes/No

Project Code: **WIMS 062326**

EQUIPMENT SCHEDULES

TECHNICAL DATA: **PARAPLEGIC LIFT**

Manufacturer	
Panel thickness	
Load	
Stops	
Car Size	
Door Opening	
Door Type	
Speed	
Type of Drive	
Speed Control	
Type of Car and Landing Buttons	
Type of Landing Door Frames	
Type of Door	
Internal Finishes	
Pit	
Head Room	
Battery Type	
Method of joining panels	
Floor construction	
Standard Compliance	
Agent	
Telephone number of Agent	
Brochure enclosed	Yes/No

Project Code: **WIMS 062326**

EQUIPMENT SCHEDULES

TECHNICAL DATA: **AIR-CONDITIONING AND VENTILATION INSTALLATION**

Area:		
Manufacturer:		
Model number:	WCPU	
	Cooling Tower	
Serial number:	WCPU	
	Cooling Tower	
Voltage		V
Starting amps		A
Running amps		A
System supply gauge pressure		kPA
System return gauge pressure		kPA
Condenser water inlet temperature		°C
Condenser water outlet temperature		°C
Condenser water flow rate		l/s
Blower unit air inlet temperature		°C
Blower unit air outlet temperature		°C
Blower unit air flow rate		m³/s
Conditioned room air temperature after 1 hour, Design		°C
Conditioned room air temperature after 1 hour, Actual		°C

T2.17 CONTRACTOR'S SAFETY, HEALTH AND ENVIRONMENTAL DECLARATION

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

In terms of Regulation 5(1)(h) of the Construction Regulations of February 2014 a Contractor may only be appointed to perform construction work if the Client is satisfied that the Contractor has the necessary competencies and resources to carry out the work safely in accordance with the Occupational Health and Safety Act, Act 85 of 1993 and the Construction Regulations of February 2014. In line with this requirement the Contractor is required to read through this document carefully, sign it and submit it with his/her Tender.

DECLARATION

1. I, the undersigned hereby declare and confirm that I am fully conversant with the Occupational Health and Safety Act, Act 85 of 1993 and the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specifications attached to this document.
2. I hereby declare that my company and its employees has the necessary competency and resources to safely carry out the construction works under this contract in compliance with the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specifications.
3. I hereby confirm that adequate provisions has been made in my Tender to cover the cost of all Safety, Health and Environmental duties and responsibilities imposed on me by the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specifications.
4. I hereby undertake that if my Tender is accepted, to provide before commencement of the Works under the contract or as required by the Conditions of the Contract, a suitable and sufficiently documented Construction Safety, Health and Environmental Management Plan in accordance with Regulation 7(1)(a) of the Construction Regulations of February 2014, which shall be subject for approval by the Client.
5. I confirm that I may not commence with any part of construction work under the contract until my Construction Safety Health and Environmental Management Plan has been approved in writing by the Client.
6. I hereby confirm that copies of the following documentation will be kept on site for viewing and inspection purposes for the duration of the construction work:
   a) Client's Construction Safety, Health and Environmental Specification.
   b) Approved Construction Safety, Health and Environmental Plan.
   c) Occupational Health and Safety Act, Act 85 of 1993.
   d) Construction Regulations of February 2014.
7. I agree that my failure to complete and execute this declaration to the satisfaction of the Client will mean that I am unable to comply with the requirements of the Occupational Health and Safety Act, Act 85 of 1993 and the Construction Regulations of February 2014, and accept that my Tender will be rejected.

Duly signed at……. on this the…... day of……. 20…..

Full Name of Signatory	Name of Enterprise
Capacity of Signatory	Signature of authorised representative of Tenderer

T2.18 Compulsory Enterprise Questionnaire

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

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 registration number, if any:	
Section 4: CSD Number:	

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 6 partners*

Section 6: Particulars of companies and close corporations

Company registration number	
Close corporation number	
Tax reference number	

Section 7: SBD4 issued by National Treasury must be completed for each tender and be attached as a tender requirement

The undersigned, who warrants that he/she is duly authorised 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 or 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

iv) 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			

T2.19 TAX COMPLIANCE STATUS (TCS) PIN TO VERIFY ON LINE COMPLIANCE SUPPLIER STATUS VIA SARS e-FILING

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

TAX CLEARANCE REQUIREMENTS

It is a condition of Tender that the taxes of the successful tenderer must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the tenderer's tax obligations. It is a condition of this Offer of Commission that your practice remains in good standing with SARS (South African Revenue Services) in terms of its tax clearance.

1. In order to meet this requirement Tenderders are required to apply via e-filing at any SARS branch office nationally. The Tax Complance Status (TCS) requirements are also applicable to foreign Tenderders / individuals who wish to submit tenders.
2. SARS will then furnish the tenderer with a Tax Compliance Status (TCS) **PIN** that will be valid for a period of 1 (one) year from the date of approval.
3. In tenders where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Compliance Status (TCS) PIN.
4. Application for Tax Compliance Status (TCS) PIN can be done via e-filing at any SARS branch office nationally or on the website www.sars.gov.za.
5. Tax Clearance Certificates may be printed via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

IMPORTANT NOTICE

1. The South African Revinue Services (SARS) has phased out the issuing of paper Tax Clearance Certificates.
2. From 18 April 2016 SARS introduced an enhanced Tax Compliance (TCS) system.
3. The new system allows taxpayers to obtain a Tax Compliance Status (PIN), which can be utilised by authorised third parties to varify taxpayers compliance status online via SARS e-filing.
4. Tenderers are required to fill in clearly, legibly, in bold print and black ink the SARS (TCS) PIN number and Tax Reference number in the space hereunder:

Tax Compliance Status(TCS) PIN Number	
Company / Tendering Entity Tax Reference Number	

Name of Tenderer: .....

Signature of tenderer: .....

Date: .....

T2.20 CERTIFIED PROOF OF GOOD STANDING WITH THE COMPENSATION COMMISSIONER

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

ATTACH A CERTIFIED COPY OF PROOF, THAT THE TENDERER IS IN GOOD STANDING WITH THE COMPENSATION COMMISSIONER, TO THIS PAGE FOR ADJUDICATION PURPOSES

NOTE

In the case of a Tender by a Joint Venture, certified copies of proof of Good Standing with the Compensation Commissioner in respect of each party to the Joint Venture must be attached to this page

T2.21 - FORM OF OFFER AND ACCEPTANCE

Tender no: ZNTM 01192 W

OFFER

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

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

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 PRICES INCLUSIVE OF VALUE ADDED TAX IS:

Amount (in words):	
Amount in figures:	**R**

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 (s)				
Name (s)				
Capacity				
For the tenderer				
	(Name and address of tenderer)			
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	Agreement and Contract Data, (which includes this agreement)
Part C2	Pricing data
Part C3	Scope of work.
Part C4	Site information and drawings and documents or parts thereof, which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the returnable schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this form of offer and acceptance. 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 securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the tenderer (now contractor) within five (5) working days of the date of such receipt notifies the employer in writing of any reason why he/she cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

Signature (s)			
Name (s)			
Capacity			
For the employer			
	(Name and address of employer)		
Name and signature of witness			

Schedule of Deviations

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

1.1.1. Subject:
Details:

1.1.2. Subject:
Details:

1.1.3. Subject:
Details:

1.1.4. Subject:
Details:

By the duly authorised 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 returnable 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.

T2.21a CONFIRMATION OF RECEIPT

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET			
Tender no.:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

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

the _____ (day)

of _____ (month)

_____ (year)

at _____ (Place)

For the Contractor:

_____
Signature

_____
Name

_____
Capacity

Signature and name of witness:

_____
Signature

_____
Name

T2.22 - FINAL BILL OF QUANTITY SUMMARY

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

ATTACH SUMMARY PAGE OF THE BILL OF QUANTITIES

T2.23 - PROOF OF PAID MUNICIPAL RATES & TAXES

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

ATTACH PROOF OF PAID MUNICIPAL RATES & TAXES TO THIS PAGE FOR ADJUDICATION PURPOSES

NOTE

In the case of a Quotation by a Joint Venture, proof of paid municipal rates and taxes for each member of the Joint Venture should be attached to this form.

T2.24 - CERTIFIED PROOF OF VALID UIF REGISTRATION

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

ATTACH A CERTIFIED COPY OF PROOF, THAT THE TENDERER IS IN GOOD STANDING WITH THE **UIF** TO THIS PAGE FOR ADJUDICATION PURPOSES

NOTE

In the case of a Tender by a Joint Venture, certified copies of proof of Good Standing with the **UIF** in respect of each party to the Joint Venture must be attached to this page

The contractor must submit proof of UIF Contributions made to the fund to the Principal Agent on a monthly basis for the duration of the contract.

Should the contractor default on his monthly payments, the Employer will pay the outstanding payments due and the contractor will be liable for payments made by the Employer on behalf of the contractor, plus any additional cost associated with this process.

T2.25 THE NATIONAL INDUSTRIAL PARTICIPATION PROGRAMME

This document must be signed and submitted together with your tender

INTRODUCTION

The National Industrial Participation (NIP) Programme, which is applicable to all government procurement contracts that have an imported content, became effective on the 1 September 1996. The NIP policy and guidelines were fully endorsed by Cabinet on 30 April 1997. In terms of the Cabinet decision, all state and parastatal purchases / lease contracts (for goods, works and services) entered into after this date, are subject to the NIP requirements. NIP is obligatory and therefore must be complied with. The Industrial Participation Secretariat (IPS) of the Department of Trade and Industry (DTI) is charged with the responsibility of administering the programme.

1 PILLARS OF THE PROGRAMME

1.1 The NIP obligation is benchmarked on the imported content of the contract. Any contract having an imported content equal to or exceeding US$ 10 million or other currency equivalent to US$ 10 million will have a NIP obligation. This threshold of US$ 10 million can be reached as follows:

(a) Any single contract with imported content exceeding US$10 million.

or

(b) Multiple contracts for the same goods, works or services each with imported content exceeding US$3 million awarded to one seller over a 2 year period which in total exceeds US$10 million.

or

(c) A contract with a renewable option clause, where should the option be exercised the total value of the imported content will exceed US$10 million.

or

(d) Multiple suppliers of the same goods, works or services under the same contract, where the value of the imported content of each allocation is equal to or exceeds US$ 3 million worth of goods, works or services to the same government institution, which in total over a two (2) year period exceeds US$10 million.

1.2 The NIP obligation applicable to suppliers in respect of sub-paragraphs 1.1 (a) to 1.1 (c) above will amount to 30 % of the imported content whilst suppliers in respect of paragraph 1.1 (d) shall incur 30% of the total NIP obligation on a pro-rata basis.

1.3 To satisfy the NIP obligation, the DTI would negotiate and conclude agreements such as investments, joint ventures, sub-contracting, licensee production, export promotion, sourcing arrangements and research and development (R&D) with partners or suppliers.

1.4 A period of seven years has been identified as the time frame within which to discharge the obligation.

2 REQUIREMENTS OF THE DEPARTMENT OF TRADE AND INDUSTRY

2.1 In order to ensure effective implementation of the programme, successful tenderers (contractors) are required to, immediately after the award of a contract that is in excess of R10 million (ten million Rands), submit details of such a contract to the DTI for reporting purposes.

2.2 The purpose for reporting details of contracts in excess of the amount of R10 million (ten million Rands) is to cater for multiple contracts for the same goods, works or services; renewable contracts and multiple suppliers for the same goods, works or services under the same contract as provided for in paragraphs 1.1.(b) to 1.1. (d) above.

3 Tender SUBMISSION AND CONTRACT REPORTING REQUIREMENTS OF TenderDERS AND SUCCESSFUL TenderDERS (CONTRACTORS)

3.1 Tenderders are required to sign and submit this Standard Tenderding Document (SBD 5) together with the Tender on the closing date and time.

3.2 In order to accommodate multiple contracts for the same goods, works or services; renewable contracts and multiple suppliers for the same goods, works or services under the same contract as indicated in sub-paragraphs 1.1 (b) to 1.1 (d) above and to enable the DTI in determining the NIP obligation, successful Tenderders (contractors) are required, immediately after being officially notified about any successful Tender with a value in excess of R10 million (ten million Rands), to contact and furnish the DTI with the following information:

- Tender / contract number.
- Description of the goods, works or services.
- Date on which the contract was accepted.
- Name, address and contact details of the government institution.
- Value of the contract.
- Imported content of the contract, if possible.

3.3 The information required in paragraph 3.2 above must be sent to the Department of Trade and Industry, Private Bag X 84, Pretoria, 0001 for the attention of Mr. Elias Malapane within five (5) working days after award of the contract. Mr. Malapane may be contacted on telephone (012) 394 1401, facsimile (012) 394 2401 or e-mail at Elias@thedti.gov.za for further details about the programme.

4 PROCESS TO SATISFY THE NIP OBLIGATION

4.1 Once the successful Tenderder (contractor) has made contact with and furnished the DTI with the information required, the following steps will be followed:

a. the contractor and the DTI will determine the NIP obligation;
b. the contractor and the DTI will sign the NIP obligation agreement;
c. the contractor will submit a performance guarantee to the DTI;
d. the contractor will submit a business concept for consideration and approval by the DTI;
e. upon approval of the business concept by the DTI, the contractor will submit detailed business plans outlining the business concepts;
f. the contractor will implement the business plans; and
g. the contractor will submit bi-annual progress reports on approved plans to the DTI.

4.2 The NIP obligation agreement is between the DTI and the successful Tenderder (contractor) and, therefore, does not involve the purchasing institution.

Tender number:	_____	Closing date:	_____
Name of tenderer:	_____		
Postal address:	_____		
	_____		
Signature:	_____	Name (in print):	_____
Date:	_____		

T2.26 - CERTIFIED PROOF OF REGISTRATION ON CENTRAL SUPPLIERS DATABASE

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Bid no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

ATTACH A CERTIFIED COPY OF PROOF, THAT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIERS DATABASE TO THIS PAGE FOR ADJUDICATION PURPOSES

NOTE

In the case of a Tender by a Joint Venture, certified copies of proof of registration on the Central Suppliers Data Base in respect of each party to the Joint Venture must be attached to this page

T2.27 - CERTIFIED PROOF OF CIDB REGISTRATION NUMBER

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

ATTACH A CERTIFIED COPY OF PROOF, THAT THE TENDERER IS REGISTERED WITH THE CONSTRUCTION INDUSTRY DEVELOPMENT BOARD (CIDB) TO THIS PAGE FOR ADJUDICATION PURPOSES

NOTE

In the case of a Tender by a Joint Venture, certified copies of proof of registration with the CIDB in respect of each party to the Joint Venture must be attached to this page

T2.28 - PROOF OF PAYMENT OF TENDER DEPOSIT

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

ATTACH A COPY OF PROOF OF PAYMENT WHERE AVAILABLE OF THE TENDER DEPOSIT BY THE TENDERER, TO THIS PAGE FOR ADJUDICATION PURPOSES

NOTE

In the case of a Tender by a Joint Venture a certified copy of proof of payment where available of the tender deposit is only necessary in respect of any one party to the Joint Venture and must be attached to this page

T2.29 CONTRACT FORM - PURCHASE OF GOODS/WORKS-Part 1

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

PART 1 (TO BE FILLED IN BY THE TENDERER)

1. I hereby undertake to supply all or any of the goods and/or works described in the attached tendering documents to Head: Public Works (Department of Public Works: Province of KwaZulu-Natal) in accordance with the requirements and specifications stipulated in tender number ZNTM 01192 W at the price/s quoted.
2. The following documents shall be deemed to form and be read and construed as part of this agreement:

   (i) Tendering documents, viz
   - Invitation to tender;
   - Tax Compliance Status (TCS) **PIN**;
   - Pricing schedule(s);
   - Technical Specification(s);
   - Preference claims for SPECIFIC GOAL/S, for this tender in terms of the Preferential Procurement Regulations 2022;
   - Bidder's Disclosure;
   - Special Conditions of Contract;

   (ii) General Conditions of Contract for construction works Edition 2 - GCC2010; and
3. (iii) Other (specify)
4. I confirm that I have satisfied myself as to the correctness and validity of my Tender; that the price(s) and rate(s) quoted cover all the goods and/or works specified in the Tenderding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.
5. I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfilment of this contract.
6. I declare that I have no participation in any collusive practices with any Tenderder or any other person regarding this or any other Tender.

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

NAME (PRINT):	_____	Witnesses:
CAPACITY:	_____	1. _____
SIGNATURE:	_____	
NAME OF FIRM:	_____	2. _____
DATE:	_____	Date:

T2.30 CONTRACT FORM - PURCHASE OF GOODS/WORKS-Part 2

PART 2 (TO BE FILLED IN BY THE PURCHASER)

1. I _____ in my capacity as

_____

accepts your tender under reference ZNTM 01192 W dated _____for the supply of goods/works indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating delivery instructions is forthcoming.
3. I undertake to make payment for the goods/works delivered in accordance with the terms and conditions of the contract, within 30 (thirty) days after receipt of an invoice accompanied by the delivery note.

ITEM NO.	PRICE (ALL APPLICABLE TAXES INCLUDED)	BRAND	DELIVERY PERIOD	B-BBEE STATUS LEVEL OF CONTRIBUTION	MINIMUM THRESHOLD FOR LOCAL PRODUCTION AND CONTENT (if applicable)

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

SIGNED AT _____ON_____
[Place] *[Date]*

NAME (PRINT): _____

SIGNATURE: _____

OFFICIAL STAMP:

Witnesses:

1. _____

2. _____

Date:

T2.31 - OHSE PLAN STRUCTURE

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

A detailed OHSE Plan is to be submitted by the successful tenderer as per Construction Regulation 7(1)(a). The following are the minimum standard legal documentation that must form part of the OHSE Plan based on the risks attached in executing this project titled;

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

NOTE TO THE COMPILER OF THIS DOCUMENT : PLEASE INSERT PROJECT SPECIFIC OHSE PLAN STRUCTURE AS RECEIVED FROM THE KZN DoPW OFFICIAL APPOINTED TO THE PROJECT OR AN APPOINTED PROFESSIONAL CONSTRUCTION HEALTH AND SAFETY AGENT.

T2.32 - OHSE CLIENT SPECIFIC REQUIREMENTS

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**
Tender no:	**ZNTM 01192 W**
Project Code:	**WIMS 062326**

NOTE TO THE COMPILER OF THIS DOCUMENT : PLEASE INSERT PROJECT SPECIFIC OHSE CLIENT SPECIFIC REQUIREMENTS AS RECEIVED FROM THE KZN DoPW OFFICIAL APPOINTED TO THE PROJECT OR AN APPOINTED PROFESSIONAL CONSTRUCTION HEALTH AND SAFETY AGENT.

T2.33 - BASELINE RISK ASSESSMENT			
Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

NOTE TO THE COMPILER OF THIS DOCUMENT : PLEASE INSERT PROJECT SPECIFIC BASELINE RISK ASSESSMENT AS RECEIVED FROM THE KZN DoPW OFFICIAL APPOINTED TO THE PROJECT OR AN APPOINTED PROFESSIONAL CONSTRUCTION HEALTH AND SAFETY AGENT.

T2.34 - Quality Criteria

The bidder needs to score a minimum of **65 points** for the quality criteria to be considered responsive for this Bid.

TENDER EVALUATION CRITERIA AND SCORING:

The weighting for Quality out of 100 sub-points is as follows:

Evaluation Criteria		Deliverables	Points	Sub-Points		Sub-Criteria	Proof of Document attached (Yes/No)	Sub-Criteria
1	**Financial Standing**							
1.1		Submission of all financial requirements stipulated in the tender.	**10 Points**	5	Sub-Points *(1 point x 5)*	**X5 Letters of credit reference from suppliers (not older than 3 months).** • X5 Letters of credit reference from 5 No. relevant suppliers of major building materials (e.g. bricks, plumbing, concrete, cement, roofing, etc.) with combined credit limit of R1 000 000.00. Letter to be on official letterheads, stamped, signed and credit limits stipulated.		
1.2				3	Sub-Points *(3 points x 1)*	**Tenderer's ability to provide a letter of intent for provision of a guarantee.** • Signed letter from a registered financial institution confirming intention to issue provision of a guarantee.		
1.3				2	Sub-Points *(2 points x 1)*	**Audited Financial Statement.** • Latest financial statement to be issued by an Accountant (practice number shown) not a Broker, and must be certified.		
2	**Competency, Experience and Resource Capacity**							
2.1		Tenderer to demonstrate their technical competency, human resource capacity and relevant project experience.	**55 Points**	7	Sub-Points *(7 points x 1)*	**Proof of company offices.** • Utility bill (not older than 3 months) / valid signed lease agreement / proof of ownership of the company offices.		
2.2				36	Sub-Points *(Points for full information of projects - maximum 4)* *15 points – (5 points x 3)* *9 points – x1 Heritage typology project)* *12 points – (3 points x 4)*	**Schedule of projects of similar value and nature-7GB or Higher, completed within the last 5 years (x1 project to have Heritage typology e.g. AMAFA recognised / Heritage listed building).** • List of four (4) similar projects completed in the CIDB General Building (GB) category including one (1) Heritage typology, with specific reference to: - Project name, project description / type (nature - 7GB or Higher), contract amount/value, contract period/duration (start & completion dates) & Reference contact person: Name of Client/Project Manager /Principal Agent with contact details. **(5 points per project for full information and incomplete information will be 0 points)** - x1 Heritage project name, project description to prove heritage building (on Award Letter/Completion Certificate /Reference Letter), contract amount/value, contract period/duration (start & completion dates) & Reference contact person. **(9 points for Heritage typology for full information)** • Attach **completion certificates** for the above-listed projects, signed by the Institution / Client / Principal Agent, indicating successful project completion. **(2 point per certificate)**		
2.3				12	Sub-Points *3 points x 4*	Provide 4 No. **reference letters** for above-listed projects either from the Client / Consultants / Project Manager, commenting on bidder's positive performance. **(3 points per reference letter)**		

3	**Tenderer's Project Management Structure, Organogram and Experience of Resources Proposed for the Project**							
3.1		Tenderer to submit detailed project organogram that sets out the roles and responsibilities of each proposed team member, backed by their curriculum vitae that demonstrates extensive experience, together with a project implementation structure.	**11 Points**	3	Sub-Points	**Submission of a project-specific organogram, indicating the individual's role & capacity specific to this project, whether management / technical staff, having the following information:**		
					1 point	- Name and surname		
					1 point	- Number of years of experience (minimum 4yrs or higher)		
					1 points	- Role & capacity		
3.2				8	*Sub-Points*	**CVs with references, experience and relevant qualifications of personnel involved in the project as per the Project-specific organogram.** *[To obtain points, a person must have proven track record in the area of construction being considered with minimum working experience of 4yrs or higher]*		
					2 points	- Construction Manager *(*registered with SACPCMP*)*		
					2 points	- Quantity Surveyor (NQF Level 6 or higher)		
					2 points	- Site Foreman		
					2 points	- Safety Officer (registered with SACPCMP)		

4	**Methodology and Approach**							
4.1		Detailed method statement and works programme.	**24 Points**	10	*Sub-Points*	**Submission of a detailed project-specific Method Statement.** • Detailed statement of the proposed methodology of the construction works to be applied to this specific project, describing the process / approach for completion of the works and the required timelines, taking into account the context of the site and the nature of the project. The following must be considered:		
					2 points	- Site organization including material storage handling and distribution.		
					2 points	- OHS management and compliance.		
					2 points	- Productivity maintenance and management through programming, progress tracking, etc.		
					2 points	- Site documentation control and management.		
					2 points	- Resourcing strategy, including resource deployment plan.		
4.2				8	*Sub-Points*	**Submission of a detailed project-specific Works Programme.** • Detailed programme of work which should outline the following:		
					4 points	- List of all activities from inception to completion with key milestones and duration or timeframes (considering decanting plan, site establishment, hoarding, scaffolding, specialized trades, etc.)		
					4 points	- Indication of all trades and the critical path (start to finish relationships between activities).		
4.3				6	*Sub-Points*	**Social Corporate Responsibility clearly indicating the amount to be spent, not less than 0.1% of the project value.**		
					3 points	• From the (NGO) Non-Profit Organizations database within uMsunduzi Ward 27 or outer areas that will be issued out during the site briefing meeting, a Bidder to identify an organization from the list and specify what you intend to do and for how much.		
					3 points	• Supporting documentation confirming obligation made by the offerer and indicating the value thereof (e.g. signed letter of intent / contract agreement).		
	(Weighting will be multiplied by the scores allocated during the evaluation process to arrive at the total functionality points)							
	Minimum quality score to qualify for further evaluation					**65%**		

TENDER EVALUATION CRITERIA AND SCORING PRICE AND SPECIFIC GOALS				
	Evaluation Criteria	**Deliverables / Goal** **Sub-Criteria**	**Points**	
	Price	A maximum of 80 or 90 Points is allocated for Price.		Points
	Specific Goal 1	Ownership by People who are Youth	10	Points
	Specific Goal 2	Ownership by People who are Women	5	Points
	Specific Goal 3	Promotion of enterprises located in uMsunduzi Local Municipal area for work to be done or services to be rendered	5	Points
	Specific Goal 4	0		Points
	Specific Goal 5	0		Points
	Specific Goal 6	0		Points
	Specific Goal 7	0		Points
	Specific Goal 8	0		Points

EVALUATION SCHEDULE : REPORT ON CONTRACTOR'S COMPETANCE AND PERFORMANCE ON SIMILAR PROJECT FOR BID RECOMMNEDATION PURPOSES BY PRINCIPAL AGENT/EMPLOYER

Bid No/Project Name:

FEEDBACK FROM REFENCES

As part of the functionality/mandatory component of the bid process feedback is required from current or previous contracts to rate the performance of the Bidder.

The employer who is completing the assessment is to indicate in the box below which discipline the firm was involved, start date and end date including the contract amount of the project:

SERVICE RENDERED	Yes/No	START DATE	END DATE	CONTRACT AMOUNT
Infrastructure: Building	YES			

The employer is further requested to rate the tendering organisation/bidder for the five keyservices to be rendered as indicators of either excellent or good or average or poor or no ratings.

SERVICE RENDERED	(A Rating) Excellent	(B Rating) Good	(C Rating) Average	(D Rating) Poor	(E Rating) No Rating
Overall project planning and time management of the contractor					
Order of material and long lead items(Procurement of materials)					
Compliance with construction program					
Application of resources to the project and adequacy of labour force and equipment					
Site management and reporting and adherence to Site instructions					
Administration of subcontractors					
Was the contract completed in time					
Quality of workmanship and Quality Assurance testing					
Rectification of condemned work					
Tidiness of the site and OHS management					
Handling of labour relations on site.					

Comment from the Employer/Principal Agent

The undersigned, who is warrants that he/she is duly authorized to do so on behalf of the enterprise, confirms that the content of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

Signed		Date	
Name		Position	
Contact details		Company Stamp	

PART A
INVITATION TO TENDER - SBD 1

YOU ARE HEREBY INVITED TO TENDER FOR REQUIREMENTS OF THE KWA-ZULU NATAL DEPARTMENT OF WORKS					
TENDER NUMBER:	ZNTM 01192 W	**CLOSING DATE:**	45435	**CLOSING TIME:**	11:00
DESCRIPTION					
THE SUCCESSFUL TENDERER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT					
TENDER RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE TENDER BOX SITUATED AT *(STREET ADDRESS)*					

SUPPLIER INFORMATION				
NAME OF TENDERER				
POSTAL ADDRESS				
STREET ADDRESS				
TELEPHONE NUMBER	CODE		NUMBER	
CELLPHONE NUMBER				
FACSIMILE NUMBER	CODE		NUMBER	
E-MAIL ADDRESS				
VAT REGISTRATION NUMBER				
	TCS PIN:		**CSD No:**	

B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE (Tick YES or NO)	Yes		B-BBEE STATUS LEVEL SWORN AFFIDAVIT (Tick YES or NO)	Yes
	No			No
If YES, State the name of the verification agency accredited by SANAS				

ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	Yes		NO		ARE YOU A FOREIGN BASED SUPPLIER FOR **THE GOODS /SERVICES**	YES		NO	
	[IF YES ENCLOSE PROOF]				**(IF YES ANSWER PART B:3 BELOW)**				
SIGNATURE OF TENDERER					**DATE**				
CAPACITY UNDER WHICH THIS TENDER IS SIGNED (Attach proof of authority to sign this tender; e.g. resolution of directors, etc.)									
TOTAL NUMBER OF ITEMS OFFERED					**TOTAL TENDER PRICE (ALL INCLUSIVE)**				

TENDERING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:		**TECHNICAL INFORMATION MAY BE DIRECTED TO:**	
DEPARTMENT/ PUBLIC ENTITY		CONTACT PERSON	
CONTACT PERSON		TELEPHONE NUMBER	
TELEPHONE NUMBER		FACSIMILE NUMBER	
FACSIMILE NUMBER		E-MAIL ADDRESS	
E-MAIL ADDRESS			

PART B

TERMS AND CONDITIONS FOR TENDERING - SBD 1

1. TENDER SUBMISSION:

1.1. TENDERS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE TENDERS WILL NOT BE ACCEPTED FOR CONSIDERATION.

1.2. ALL TENDERS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED (NOT TO BE RE-TYPED) OR ONLINE

1.3. TENDERERS MUST REGISTER ON THE CENTRAL SUPPLIER DATABASE (CSD) TO UPLOAD MANDATORY INFORMATION NAMELY: (BUSINESS REGISTRATION/ DIRECTORSHIP/ MEMBERSHIP/IDENTITY NUMBERS; TAX COMPLIANCE STATUS; AND BANKING INFORMATION FOR VERIFICATION PURPOSES). B-BBEE CERTIFICATE OR SWORN AFFIDAVIT FOR B-BBEE MUST BE SUBMITTED TO TENDERING INSTITUTION.

1.4. WHERE A TENDERER IS NOT REGISTERED ON THE CSD, MANDATORY INFORMATION NAMELY: (BUSINESS REGISTRATION/ DIRECTORSHIP/ MEMBERSHIP/IDENTITY NUMBERS; TAX COMPLIANCE STATUS MAY NOT BE SUBMITTED WITH THE TENDER DOCUMENTATION. B-BBEE CERTIFICATE OR SWORN AFFIDAVIT FOR B-BBEE MUST BE SUBMITTED TO TENDERING INSTITUTION.

1.5. THIS TENDER IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT ARE THE CLAUSES CONTAINED IN THE GENERAL CONDITIONS OF CONTRACT (2010) (SECOND EDITION) PUBLISHED BY THE SOUTH AFRICAN INSTITUTION OF CIVIL ENGINEERING. COPIES OF THESE CONDITIONS OF CONTRACT MAY BE OBTAINED THROUGH MOST REGIONAL OFFICES OF THE SOUTH AFRICAN INSTITUTION OF CIVIL ENGINEERING, OR BY VISITING THEIR WEBSITE AT WWW.SAICE.ORG.ZA; AND, IF APPLICABLE, ANY OTHER LEGISLATION OR SPECIAL CONDITIONS OF CONTRACT.

2. TAX COMPLIANCE REQUIREMENTS

2.1 TENDERERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.

2.2 TENDERERS 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 TAX COMPLIANCE STATUS (TCS) 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 TENDERERS MAY ALSO SUBMIT A PRINTED TCS TOGETHER WITH THE TENDER.

2.5 IN TENDERS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE PROOF OF TCS / PIN / CSD NUMBER.

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

2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE.

3. QUESTIONNAIRE TO TENDERING FOREIGN SUPPLIERS

3.1. IS THE TENDERER A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	YES		NO	
3.2. DOES THE TENDERER HAVE A BRANCH IN THE RSA?	YES		NO	
3.3. DOES THE TENDERER HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	YES		NO	
3.4. DOES THE TENDERER HAVE ANY SOURCE OF INCOME IN THE RSA?	YES		NO	

IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN, IT IS NOT A REQUIREMENT TO OBTAIN A TAX COMPLIANCE STATUS / TAX COMPLIANCE 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 TENDER INVALID.

PROVINCIAL ADMINISTRATION OF KWAZULU-NATAL
DEPARTMENT OF PUBLIC WORKS

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

BILLS OF QUANTITIES

with GCC for Construction Works - Second Edition 2010

CONTRACTUAL SECTION

ONE VOLUME APPROACH

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

Principal Agent
Cassim Kadwa Architect & Valuer cc
P.O. BOX 50015 Musgrave Road
Durban
Durban
4062
031 201 8008 - Tel Number
031 202 8008 - Fax Number
info@ckav.co.za

Architect
Cassim Kadwa Architect & Valuer cc
P.O. Box 50015 Musgrave Road
Durban

4062
031 201 8008 - Tel Number
031 202 8008 - Fax Number
info@ckav.co.za

Employer:
Head: Public Works
Transport
Private Bag X 9041
PIETERMARITZBURG
3200
Tel Number: 033 - 8971300
Fax Number: 033 - 8971399

Region:
Regional Manager
Province of KwaZulu-Natal : Department of
X9041
Pietermarizburg
3200
Tel Number: 033-897 1421 / 1422
Fax Number: 033-897 1399

Tender Number: **ZNTM 01192 W**
CIDB Grading: **7GB or higher**
ECDP Number: **N/A**

Project Code: **WIMS 062326**
Document Date: **19 April 2024**

Contracting Party: _____
CIDB Registration number: _____
Central Suppliers Database Registration Number: _____

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

THE CONTRACT

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

C1 - AGREEMENT AND CONTRACT DATA

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

FORM OF OFFER AND ACCEPTANCE

FORM OF OFFER AND ACCEPTANCE

Tender No - ZNTM 01192 W

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

C.1.1 - FORM OF OFFER AND ACCEPTANCE

THE OFFER AND ACCEPTANCE FORM IS BOUND INTO **SECTION 1** (See end of Returnable Documents) OF THIS DOCUMENT AS PART OF THE RETURNABLE DOCUMENTS. ONCE A CONTRACT IS CONCLUDED WITH A SUCCESSFUL TENDERER, THIS PAGE WILL BE REPLACED WITH THE FILLED AND SIGNED OFFER AND SIGN ACCEPTANCE BY THE EMPLOYER AND IT WILL BECOME PART OF THE CONTRACT.

PLEASE SUBMIT THE OFFER AND ACCEPTANCE FORM WITH THE OTHER RETURNABLE DOCUMENTS.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

C1.2 - CONTRACT DATA

C 1.2 CONTRACT DATA:
with GCC for Construction Works - Second Edition 2010

CONTRACT DATA FOR:

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

Tender no: **ZNTM 01192 W**

The General Conditions of Contract are the clauses contained in the General Conditions of Contract (2010) (Second Edition) published by the South African Institution of Civil Engineering. Copies of these conditions of contract may be obtained through most regional offices of the South African Institution of Civil Engineering, telephone number 011 805 5947 or by visiting their website at www.saice.org.za.

CONTRACT SPECIFIC DATA
The following contract specific data are applicable to this contract:

CONTRACT VARIABLES

This schedule contains all variables specific to this document and is divided into pre-tender and post-tender categories. The pre-tender category must be completed in full and included in the tender documents. Both the pre-tender and post-tender categories form part of this **agreement.**

Spaces requiring information must be filled in, shown as 'not applicable' or deleted but not left blank. Where choices are offered, the non-applicable items are to be deleted. Where insufficient space is provided the information should be annexed hereto and cross referenced to the applicable clause of the schedule. Key cross reference clauses are italicised in *[ ]* brackets.
The Engineer/Principal Agent, in accordance with Clause 1.1.1.16, shall obtain the specific approval from the Employer before executing any of his functions according to the "Conditions under which Consultants are appointed", or in the event where an employee of the Employer represents the Employer, the relevant General Delegations applicable at the time of executing his/her duties as described in Clause 3.1.2.

Part 1: CONTRACT DATA PROVIDED BY THE EMPLOYER:

PRE-TENDER INFORMATION

CONTRACTING AND OTHER PARTIES

[1.1.1.15] **Employer:**

Head: Public Works (Province of KwaZulu-Natal : Department of Transport: Province of KwaZulu-Natal)

Postal address:
Private Bag X 9041
PIETERMARITZBURG
3200

Tel: ***033 - 8971399*** Fax: ***033 - 8971300***

[1.2.1.2] Physical address:
191 Prince Alfred Street
PIETERMARITZBURG
3200

[1.1.1.16] **Employers Agent 1**
Cassim Kadwa Architect & Valuer cc

Agent's service:
Architect

Postal address:
P.O. Box 50015 Musgrave Road
Durban
4062

Tel: ***031 201 8008*** Fax: ***031 202 8008***

Employers Agent 2
AIM Quantity Surveyors

Agent's service:
Quantity Surveyor

Postal address:
P.O. Box 1405
Wandsbeck
3631

Tel: ***031 266 7856*** Fax: ***031 266 7857***

Employers Agent 3
Young + Satharia Consulting Engineers

Agent's service:
Structural / Civil Engineer

Postal address:
P.O. Box 37070
Overport
4067

Tel: ***031 207 7252*** Fax: ***031 207 7259***

Employers Agent 4
Sydney Naidoo & Associates

Agent's service:
Electrical Engineer

Postal address:
P.O. Box 70379
Overport
4067

Tel: ***031 465 3020*** Fax: ***086 579 4678***

Tender no:	**ZNTM 01192 W**
	Employers Agent 5 ***Dihlase Consulting Engineers (Pty) Ltd*** ***Agent's*** service: ***Mechanical / Wet Services / Fire Engineer*** Postal address: ***Postnet Suite 77, Private Bag X3*** ***Westville*** ***3630*** Tel: insert ***031 266 7861*** Fax: ***031 266 7862***
	Employers Agent 6 ***KNR Safety Consultants*** ***Agent's*** service: ***Occupational Health and Safety Consultant*** Postal address: ***22 English Road, Chasevalley*** ***Pietermaritzburg*** ***3201*** Tel: insert ***033 347 1249*** Fax: ***086 726 3734***
	Employers Agent 7 ***[Agents Name]*** ***Agent's*** service: ***[Identify Agent's Service, eg. Engineer]*** Postal address: ***[P.O. Box number]*** ***[Name of town]*** ***[Code]*** Tel: insert ***[Tel Number including Area Code]*** Fax: ***[Fax Number including Area Code]***
	Employers Agent 8 ***[Agents Name]*** ***Agent's*** service: ***[Identify Agent's Service, eg. Engineer]*** Postal address: ***[P.O. Box number]*** ***[Name of town]*** ***[Code]*** Tel: insert ***[Tel Number including Area Code]*** Fax: ***[Fax Number including Area Code]***
	PART 1: DATA PROVIDED BY THE EMPLOYER
[1.1.1.13]	**Defects Liability Period** The defects liability period is: **A time measured from the date of the Certificate of Completion.** Defects Liability Period is 12 Months for the whole of the Works
	Latent Defect Period
[5.16.3]	The latent defect period is: 5 years after the Final Approval Certificate
	Documentation required before Commencement of the Works:
[5.3.1]	The documentation required before commencement with the Works execution are;
[4.3]	Health and Safety Plan: The Contractor shall deliver his Health and Safety Plan of the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.
[5.6]	Initial Programme: The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date.
[6.2]	Guarantee: The Contractor shall deliver his chosen Guarantee (security) for this Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.
[8.6]	Insurance: The Contractor shall deliver his insurance for the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.
	Cash flow by contractor: The Contractor shall deliver his Cash flow for the Works within 14 calendar days after notice from the Employer, prior to the Commencement Date.
	Priced Bill of Quantity: The Contractor shall deliver his Priced Bill of Quantity within 14 calendar days after notice from the Employer, prior to the Commencement Date.
	Programme: The Contractor is required to submit his Programme of Works in terms of Clause 5.6.1 and 5.3.1 and the Principal Agent is required to approve this within 7 days in terms of Clause 5.6.3
	Other requirements:
[5.3.2]	The time to submit the documentation required before commencement with Works execution is: 14 calendar days

	Non-Working days
[5.8.1]	Non-Working days: **Sundays** Special non- working days: **All Nationally Recognized Public Holidays and the year end break**
[5.8.1]	First Year end break - commences: ***15-Dec-24*** ends on: ***13-Jan-25*** Second Year end break - commences: ***15-Dec-25*** ends on: ***12-Jan-26*** Third Year end break - commences: ***15-Dec-26*** ends on: ***11-Jan-27*** Fourth Year end break - commences: ***N/A*** ends on: ***N/A***
	Engineer/Principal Agent to consult with Employer
[3.1.3]	The Engineer shall obtain the specific approval from the Employer before executing any of his functions according to the "Conditions under which Consultants are appointed", or in the event where an employee of the Employer represents the Employer, the relevant General Delegations applicable at the time of executing his/her duties.
	Security
[6.2.1]	The time to deliver the deed of guarantee is Prior to site hand over in terms of clause 5.3.1 and 5.3.2.
[6.2.1]	Please see CONTRACT DATA - below to select Guarantee Option
	Commencement Date
	Commencement date means the date of Site Hand over that should not occur prior to the tenderer receiving one fully signed copy of the Offer and Acceptance in terms of the Form of Offer and Acceptance.
	*The **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)* *The agreement ("this document") consists of;* *1. Agreement and Conditions of Contract.* *2. Form of Offer and Acceptance.* *3. Contract Data.* *4. Scope of Works.* *5. Site Information.* *6. Drawings & documents referred to in the 1 to 4 above.* *(See Form of Offer and Acceptance)*
[5.3.1]	The contractor shall commence executing the Works within 7 calendar days from the Commencement Date.
[5.4.1]	***Possession of the* site** will be given within 10 calendar days after the **contractor** has fulfilled the conditions (4.3, 5.6, 6.2, 8.6) and received the notification from the Employer of Site Hand Over where the contractor will receive one fully signed copy of the Form of Offer and Acceptance from the **employer.**
[5.6.1]	The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date.

	CONTRACT DETAILS		
[1.1.1.33]	***Works*** description: Refer to document C3 – Scope of Work.		
[1.1.1.30]	***Site*** description: Refer to document C4 – Site Information.		
	Specific options that are applicable to a **State** organ only Where so :		
[6.10.6.2]	***1)*** Interest rate legislation: ***(a)*** in respect of interest owed by the **employer**, the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975), will apply; and ***(b)*** in respect of interest owed to the **employer**, the interest rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999), will apply		
	2) Lateral support insurance to be effected by the contractor:	***Yes X***	***No***
	3) Payment will be made for materials and goods	***Yes X***	***No***
	4) Dispute resolution by litigation	***Yes***	***No X***
	5) Extended **defects** liability period applicable to the following elements:	***Electrical, Mechanical and Civil work***	
[8.6.1.1.2]	The Value of material, supplied by the Employer, and not included in the Contract Price, is:	***R0.00***	
[8.6.1.1.3]	The amount to cover Professional Fees, not included in the Contract Price, for repairing damage and loss to be included in the insurance: ***30% of the Contract Price***		
[8.6.1.3]	The limit for indemnity for liable insurance is:	***Unlimited***	
[6.5.1.2.3]	The percentage allowance to cover overhead charges for contractor and subcontractors, is:	***33.30%***	

[1.1.1.14]	**Practical Completion Date** The Practical Completion date is: **A time measured from the Commencement date.**
	For the **works** as a whole: The whole of the works shall be completed within: ***20*** *Months (which shall be deemed to include all Non – Working Days, Special Non – Working Days and the year-end Builders Annual Industry Holiday Periods).*
[5.5.1]	The date for **practical completion** shall be ***To be determined***
[5.13.1]	The penalty per calendar day shall be : ***0.04% of the Contract Price, rounded to the nearest R10***
	***For the* works** in **sections:** ***The date for* practical completion** from the **commencement date** and the **penalty** per **calendar day:** Portion 1:
[5.5.1]	***N/A***
[5.13.1]	***0.04% of the Contract Price, rounded to the nearest R10***
	Portion 2:
[5.5.1]	***N/A***
[5.13.1]	***0.04% of the Contract Price, rounded to the nearest R10***
	Portion 3:
[5.5.1]	***N/A***
[5.13.1]	***0.04% of the Contract Price, rounded to the nearest R10***
	Portion 4:
[5.5.1]	***N/A***
[5.13.1]	***0.04% of the Contract Price, rounded to the nearest R10***
	Portion 5:
[5.5.1]	***N/A***
[5.13.1]	***0.04% of the Contract Price, rounded to the nearest R10***
	Portion 6:
[5.5.1]	***N/A***
[5.13.1]	***0.04% of the Contract Price, rounded to the nearest R10***
[1.3.2]	***The* law** applicable to this **agreement** shall be that of the: **Republic of South Africa**
[6.10.1.5]	The percentage advance on materials not yet built into the Permanent Works is: ***80.00%***
[6.10.3]	Percentage retention on amounts due to contractor is: ***The Percentage retention is nil. The only security required by the Employer will be such as selected by the Contractor on the Form of Offer and Acceptance and Part 2: CONTRACT DATA PROVIDED BY THE CONTRACTOR, point 2 - Documents, of the Contract Data.*** Maximum retention is: ***0.00%*** *of the Contract Price*
[6.8.1]	Notwithstanding anything to the contrary contained in the General conditions of Contract and Preliminaries, this contract could only, when the construction period exceeds 6 months **and** the contract exceeds R1,000,000.00, be subject to a Contract Price Adjustment Factor.
[6.8.2] *[6.8.3]*	Clause 6.8.2 the last part of the sentence saying *"calculated according to the formula and the conditions set out in the Contract Price Adjustment Schedule."* must be replaced by *"calculated according to the Contract Price Adjustment Provisions (CPAP) Indices Application Manual for use with P0151 indices (Revised 1 January 2013)" as published by Statistics South Africa. The Contract Price Adjustment Provision (CPAP) will be subject to the most recently released indices by Statistic South Africa. Tenderers are advised that with reference to Clause 3.4.6 of the Contract Price Adjustment Provisions (CPAP) Indices Applications Manual, the Head: Public Works will not accept the submission by Tenderers of lists of additional items."*
[6.8.2] *[6.8.3]*	Where this contract is a Lump Sum contract, the contract will only be subject to Contract Price Adjustment Provisions (CPAP)(Revised 1 January 2013) where the contract period equals or exceeds 6 calendar months. The applicable work group shall be WG 180 for domestic buildings or WG 181 for commercial and industrial buildings only.
[5.14.5]	***The following clause must be added to clause 5.14.5:*** *[5.14.5.6]* The employers agent shall submit the **final account** within 3 calendar months to the principal agent.
[10.5]	The determinations of disputes shall be by ARBITRATION ONLY.
[10.5.3]	The number of Adjudication Board Members to be appointed is: **One** Replace the last part of the clause with the following: *"..on the application of either party, by the Chairman, or his nominee of the Association of Arbitrators."*
[10.9.1]	
	***Where* CPAP** is applicable, the **contract sum** will be adjusted in accordance with the Contract Price Adjustment Provisions (**CPAP**) as set out in the **CPAP** Indices Application Manual as published by Statistics South Africa, dated 1 January 2013 and any amendments thereto: 1) Glass etc. measured in specialist section Metalwork, will be adjusted in terms of the index for that work group unless specifically stated otherwise in the bills of quantities. 2) In case of uninterruptible power supplies, elevators, escalators and hoists, generating sets, motor-alternator sets and intercommunication systems shall be adjusted in accordance with Work Group 170. 3) Further to clause 3.4.6 of the CPAP Indices Application Manual, the listing of additional items for exclusion by Tenderer's, will not be permitted. ***Alternative Indices:* Not Applicable** Details of changes made to the General Conditions of Contract for construction works (2010) Second Edition

	Clause	
[1.1]	*[1.1.1.5]*	**COMMENCEMENT DATE –** means the actual date of Site Hand over that should not occur prior to the Tenderer receiving one fully signed copy of the Offer and Acceptance in terms of the Form of Offer and Acceptance.
	[5.12.2.2]	**ABNORMAL CLIMATIC CONDITIONS** - means conditions over and above what could reasonably be expected for the specific locality where the Works are being executed and include inter alia exessive rain, heat, cold, wind and any other climatic condition that would not normally be experienced during the season that the Works are executed in that area. The South African Weather Service's (http://www.weathersa.co.za) 10 year average climatic conditions statistics would be what could be reasonably expected for the specific locality where the Works are executed.
	[6.2.1]	**CONSTRUCTION GUARANTEE –** means an on demand guarantee at call obtained by the **contractor** from an institution approved by the **employer** in terms of the **employer's** construction guarantee form as selected in the Offer and Acceptance Form and the **contract data.**
		CONSTRUCTION PERIOD – means the period commencing on the **commencement date** and ending on the date of **due completion date.** This period will be deemed to commence on actual site hand over date to the contractor and end on the date of practical completion and shall include all annual industrial holiday periods, Sundays and public holidays.
		CORRUPT PRACTICE – means the offer, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.
		FINAL ACCOUNT - The document prepared by the principal agent, which reflects the contract value of the works at final approval or termination.
		FRAUDULENT PRACTICE – means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any tenderer and includes collusive practise among tenderers (prior to or after the tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive the tenderer of the benefits of free and open competition.
		INTEREST – the interest rates applicable on this contract, whether specifically indicated in the relevant clauses or not, will be in terms of the legislation of the Republic of South Africa, and in particular:
	(a)	in respect of interest owed by the **employer,** the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975), will apply; and
	(b)	in respect of interest owed to the employer, the interest rate as determined by the Minister of Finance, from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No. 1 of 1999), will apply
	[1.1.1.16]	**ENGINEER/PRINCIPAL AGENT –** means the person or entity appointed by the **Employer** and named in the **Contract Data** as the **Engineer /Principal Agent** to act as agent of the **Employer**. In the event of an Engineer/**Principal Agent** not being appointed, then all the duties and obligations of an Engineer/**Principal Agent** as detailed in the **Contract** shall be fulfilled by a representative of the **Employer** as named in the **Contract Data. (Hereafter referred to as Engineer)**
	[1.1.1.21]	**GENERAL ITEMS -** or preliminaries means items stipulated in the Pricing Data relating to general obligations, site services, facilities and/or items that cover elements of the cost of the work which are not considered as proportional to the quantities of the Permanent Works.
	[4.4.1]	Add the following to the clause 4.4.1: *"The Contract shall only use subcontractors who are duly registered with the CIDB and who has an ACTIVE status at the time of submitting the tender"*
	[6.2.1]	Refer to Offer and Acceptance form for the various options that the contractor may choose from in providing a form of **Guarantee** under "GUARATEE OPTIONS".
	[6.10.6.2]	Replace *"at the prime overdraft rate, as charged by the Contractor's Bank,"* with *"..at the interest rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No. 55 of 1975).* " Omit *",on all overdue payments from the date on which the same should have been paid..."* and replace with " only after 30 calendar days from receiving written notice from the Contractor that the amount is overdue,.."
	SPECIAL CONDITIONS OF CONTRACT	
[5.12.3]		Omit clause 5.12.3 and add the following: *"5.12.3. If an extension of time is granted, the Contractor shall be paid such additional time-related General Items, including for special non-working days, if applicable as are appropriate regarding to any other compensation which may already have been granted in respect of the circumstances concerned.The reasons for extension of time that would invoke payment of time related General Items are inter alia;* *5.12.3.1 Failure to give possession of the site to the contractor.* *5.12.3.2 Making good physical loss and repairing damage to the works where the contractor is not at risk.* *5.12.3.3 Contract instructions not occasioned by default by the contractor.* *5.12.3.4 Failure to issue construction information timeously or the late issue of a contract instruction following a request from the contractor.* *5.12.3.5 Late acceptance by the principal agent of a design undertaken by a selected subcontractor where the contractor's obligations have been met.* *5.12.3.6 Suspension or cancellation termination invoked by a nominated or selected n/s subcontractor due to default by the employer or the principal agent.* *5.12.3.7 Insolvency of a nominated subcontractor.* *5.12.3.8 A direct contractor.* *5.12.3.9 Opening up and testing of work and materials and goods where such work is according to in accordance with the contract documents.* *5.12.3.10 The execution of additional work for which the quantity included in the bills of quantities is not sufficiently accurate.* *5.12.3.11 Late or failure to supply materials and goods for which the employer is responsible.* *5.12.3.12 Suspension of the works."*
[5.14.5.1]		Omit entire clause 5.14.5.1
[5.16.4]		Add the following new clause *"5.16.4. Upon the issue of a Final Approval Certificate, unless otherwise provided in the Contract:* *5.16.4.1. The performance Guarantee (if any) shall be returned within 14 days to the guarantor in terms of Clause 7."*
[6.2.2]		Replace the following *"..it shall be deemed that the Contractor has selected a security of ten percent retention of the value of the Works."* with *"..it shall be deemed that the Contractor has selected a security of a bank or insurance guarantee of 5% of the value of the Works and a payment reduction of 5% of the value certified in the payment certificate excluding value added tax."*
[6.2.3]		Add to clause 6.2.3 the following "*The Contractor shall provide proof of paid-up premium payments to accompany his payment certificate as proof that his performance guarantee has not expired yet. The Contractor will not receive payment without proof of the validity of their performance*
[9.3.2.2]		Omit *"without prejudice to the exercise of any lien the Contractor may have acquired over the Employer's property."*
		Duties and functions of the **Engineer** requiring the specific approval of the **Employer** BEFORE execution of any part of these duties are as follows:
	(a)	Determinations of contractors claims for extension of time (revision of the contract completion date). All claims for extension of time shall be submitted by the **Engineer,** together with the **Engineer's** recommendations, to the **Employer** for determination. Omit "Engineer" in clause 42.2
	(b)	Drawings, instructions or communications of any kind requiring variations of the works and involving EXTRA's shall NOT be given effect by the **Contractor** UNTIL BOTH the "Official Variation Order" and the "Financial Request for Variation Order and Additional Funds" form, as issued by the Department of Public Works, have been approved and signed by the **Employer**.
	(c)	Insurance policies to be approved by the **Employer** within 21 days of the date of the **Commencement** of the Works.
	(d)	Any notice of disagreement raised by the **Contractor** or written Dispute Notice given by the **Contractor** to the **Engineer** shall be submitted by the **Engineer**, together with the **Engineer's** recommendations, to the **Employer** for determination.
	(e)	The issue of the certificate of practical completion, certificate of completion and the final approval certificate shall be signed and submitted by the **Engineer**, to the **Employer** for final approval and signature. The certificates shall not be considered as officially issued until signed by the

MANAGING PROJECT DURATION

(a) The Contractor shall co-ordinate his programme with all other contractors whose work may precede or be executed simultaneously to his own. The Contractor will be called upon to plan and control the project using the Project Evaluation and Review Technique (PERT) or other approved Critical Path Method (CPM) network analysis of his events and activities and those of the dub-contractors in his employ and must co-ordinate his planning with any other contractor employed on the project. A fortnightly project control report will be expected from the Contractor in writing, evaluating any gains or delays against the critical path and he should allow for all costs involved in planning reviewing and updating the programme to the satisfaction of the Principal Agent against this item.

(b) Activity-and total float shall belong to the Employer.

(c) The Contractor shall deliver his programme of work within 10 calendar days after notice from the Employer, prior to the Commencement Date.
It is a condition of this contact that, the contracter submit to the Engineer/principal agent a detailed CPM Programme which shall be to the approval of the Engineer/principal agent. In this regard tenderers are advised to consult with the Engineer/Principal Agent as to the format and requirements of the programme as no claim whatsoever will entertained should the programme fail to meet the requirements of the Engineer/Principal Agent. Failure to submit the programme within the stipulated time may result in the contractor being held in breach of contract.

The approved programme will form the basis of time management of the project and extension of time will not be guaranteed unless the Contractor has strictly complied with this provision.

The programme shall make allowance for rain and the number of rain days allowed within the critical path shall be on the provisions of the clause dealing with inclement weather and claiming for delays in performance in this bill.
Allowance for the above must be made under this item as no claims for failing to comply with this precondition will later be entertained.

INCLEMENT WEATHER AND CLAIMS FOR DELAYS IN PERFORMANCE

(a) The Contract Sum includes a monthly allowance of 3 working days inclement weather during which rainfall exceeds 10mm per day for months as indicated in the Scope of Works. These days shall be reflected on the critical path of the Contractor's programme as specified in MANAGING PROJECT DURATION above.

(b) Claims for delays in performance due to inclement weather shall be calculated separately for each calendar month and for the project as a whole. Delays or gains to the critical path shall be reflected in all revisions of the programme. An extension of time will only be granted where the following conditions are met:

(i) The criteria to be used for WORK stoppages shall be for safety hazards or poor quality of work.
(ii) The Employer's site representative or the Employer's Principal Agent, if the site representative is not available shall be notified when the Contractor stops the work and intends to claim performance delays. The Employer representative shall inspect the situation together with the Contractor and give an immediate decision.

1. The stoppage claimed must cause a delay in the Completion Date of work. If the critical activities can proceed and a non-critical activity is delayed due to inclement weather no claims for delay shall be granted.
2. No claims for stoppages less than 2(two) hours per day shall be considered.
3. Claims granted for more than 2 (two) hours, but less than 10 (ten) hour (lunch included) day, shall be added together and expressed as full days.
4. All claims shall be submitted in writing to the Principal Agent within one working day of the actual stoppage.
5. The total delay in performance granted to the Contractor expressed in days shall be added to the contractual Completion Date of each section of the Works. The contractual penalty clause shall only come into effect after this newly arrived date.
6. Total delays (in hours) will be rounded up or down to the nearest integer for the calculation of Working Days. The total hours (including lunch) per Working Day shall be 10 unless otherwise indicated on the Contractor's programme.
7. Where the programmed delays for inclement weather exceed the actual delays incurred the Completion Date(s) will not be adjusted.
8. Where the project includes builder's holidays the programmed durations for inclement weather shall be adjusted pro-rate to the actual Working Days.
9. The total of all monthly delays due to inclement weather shall be calculated in accordance with the example given below:

Description		Months					Total
		Sept	Oct	Nov	Dec	Jan	
		Hours	Hours	Hours	Hours	Hours	Hours
Programmed	Rain days	0	30	30	15	15	90
Actual	Rain days	16	22	35	15	18	106
Difference		-16	8	-5	0	-3	-16
8 hrs/day*		Estimated Extension of time - in working days					2

See point 5.2 in the Scope of Works for the specific days the tenderer must allow for in this contract.

Tender no: **ZNTM 01192 W** **Part 2: CONTRACT DATA PROVIDED BY THE CONTRACTOR:**

POST-TENDER INFORMATION

Note: All information for this section requires consultation with the **Contractor**. The **Engineer/Principal Agent** shall not pre-select any of the alternatives available to the **Contractor.**

1 CONTRACT DETAILS

[1.1.1.9] **Contractor Name:** .....

[1.2.1.2] Postal address:

.....

.....

.....

Tel no ..... Fax no .....

Tax / VAT Registration No: ..... e-mail .....

Physical address:

.....

.....

.....

[1.1.1.10] The accepted **contract price** inclusive of **tax** is R :

.....

[Amount in words]

Payment Of Preliminaries (Clause 6.7, 6.8, 6.10 and 6.11)

The preliminaries amounts shall be paid in terms of:

***Alternative A**	**Yes**
****Alternative B**	**N/A**

** Assessed by the Engineer/Principal Agent as an amount prorated to the value of the Work duly executed in the same ratio as the Preliminaries bears to the Contract Price excluding VAT, Preliminary amount, Contingencies and any CPAP.*

*** Calculated from the priced Bill of Quantity/Lump Sum document. The Contractor and the Engineer/Principal Agent shall agree on a division of the priced Preliminaries items into: initial establishment charge, monthly charge and final disestablishment charge.*

If the Contractor and the Engineer/Principal Agent can not agree, within 10 Working Days from the Commencement Date, on such a division then the Engineer/Principal Agent shall make a division of the Preliminaries to be incorporated in the valuations for each monthly payment certificate as follows;

10% of the General Items/Preliminaries amount shall not be varied

15% of the General Items/Preliminaries shall only be varied in proportion of the Contract Price to the Contract Sum

75% of the General Items/Preliminaries shall be varied in proportion to the revised Construction Period compared with the initial Construction Period.

Alternative A

Adjustment of Preliminaries (Clause 6.7, 6.8, 6.10 and 6.11)

For the adjustment of Preliminaries both the Contract Sum and the Contract Value (including tax) shall exclude the amount of Preliminaries, all Contingency Sum(s) and any provision for Cost Price Adjustment Provisions:-

- An amount which shall not be varied.

- An amount varied in proportion to the contract value as compared to the Contract Sum.

- An amount varied in proportion to the Construction Period as compared to the initial Construction Period (excluding revisions to the Construction Period to which the Contractor is not entitled) to adjustment of the Contract Value in terms of the agreement.

The Contractor shall provide a breakdown of charges (including tax) within 15 working days of the date of acceptance of tender and, where applicable, an apportionment of Preliminaries per section

If the Contractor and the Principal Agent cannot agree, within ten (10) Working Days from the Commencement Date, on such a division then the Principal Agent shall make a division of the Preliminaries to be incorporated in the valuations for each monthly payment certificate as follows;

10% of the amount shall not be varied

15% varied in proportion of the Contract Value to the Contract Sum

75% varied in proportion to the revised Construction period compared with the initial Construction Period

Sectional Completion : Subdivision of Preliminaries Costs

For the adjustment of preliminaries for sections of the work the value of fixed, value, and time related amounts of the preliminaries for each section is required. The contractor is to provide such information within fifteen (15) working days of taking possession of the site, failing which the categorised preliminaries amounts shall be prorated to the value of each section.

The above shall apply equally for projects where sectional completion was not contemplated at tender stage but subsequently occurred on an adhoc basis during construction of the works as agreed between the client and the employer. The original priced categorised amounts for fixed, value, and time related amounts shall be prorated to the value of each section.

When an extension of time has been granted in terms of the GCC and the preliminaries require to be adjusted accordingly, the pertinent sectional (subdivided) categorised preliminaries amounts shall be utilised, where applicable and not the overall preliminary amounts.

Where sectional completion is required in terms of the agreement, the Contractor shall provide the Principal Agent with the division of the above categorized amounts into sections. Should the Contractor fail to provide such information within the period stipulated the categorized amounts shall be prorated to the value of each section.

YES *yes / no*

or

Alternative B

The Contractor shall within 15 working days of the date of possession of the site provide the Principal Agent with a detailed breakdown of Preliminaries amounts for the works as a whole, or per section where applicable, including administrative and supervisory staff charges and for the use of construction equipment in terms of the programme.

NO *yes / no*

The contractor is informed that only option 'A' shall apply

2 DOCUMENTS

Contract documents marked and annexed hereto:

Priced **Bills of Quantities:** **Yes** ☐ **No** ☐

Lump Sum document: : **Yes** ☐ **No** ☐

Guarantee Options:

Not applicable

2.2 DESIGN BRIEF

Not applicable ☐ **YES or NO**

2.3 DRAWINGS ☐ **YES or NO**

See list of drawings/Annexure's attached to this document. ☐ **YES or NO**

2.4 DESIGN PROCEDURES ☐ **YES or NO**

Not applicable

Contract drawings: **Yes** ☐ **No** ☐

Other documents**:**

	Waiver of the Contractors lien or right of continuing possession is required.	**YES**

GUARANTEE OPTIONS

The Tenderer agrees to provide a bank or insurance guarantee in accordance with clause 6.2.3 of the Conditions of the GCC2010 Contract within the period stated in the Contract Data. This guarantee shall be for a sum equal to an amount stated in the Contract Data.

Guarantees submitted must be issued by either an insurance company duly registered in terms of the Insurance Act (Long Term Insurance Act No 52 of 1998 or Short Term Insurance Act No 53 of 1998) or by a bank duly registered in terms of the Banks Act No 94 of 1990, on the pro-forma referred to above. No alterations or amendments of the wording of the pro-forma will be accepted.

(a) the tenderer accepts that in respect of contracts up to R1 million, a payment reduction of 5% of the contact value will be applicable and will be reduced by the Employer in terms of the applicable conditions of contract.

(b) in respect of contracts above R1 million, the Tenderer offers to provide security as indicated below: select one option

(i) cash deposit of 10 % of the Contract Price	
(ii) bank or insurance Performance Guarantee of 10 % of the Contract Price	
(iii) cash deposit of 5% of the Contract Price and a payment reduction of 5% of the value certified in the payment certificate (excluding VAT)	
(iv) bank or insurance guarantee of 5% of the Contract Price and a payment reduction of 5% of the value certified in the payment certificate (excluding VAT)	

NOTE: Where the Tenderer has not selected one of the guarantee options above, the default option will be as if the Tenderer has selected a security of a bank or insurance guarantee of 5% of the value of the Works and a payment reduction of 5% of the value certified in the payment certificate excluding value added tax. - See GCC2010 clause 6.2.2 as amended in Contract Data.

3 SIGNATURES OF THE CONTRACTING PARTIES

Thus done and signed at.....on .....of.....20.....

Name of signatory — for and behalf of the **Employer** who by signature hereof

Capacity of signatory

as Witness.

Thus done and signed at.....on .....of.....20.....

Name of signatory — for and behalf of the **Contractor** who by signature hereof

Capacity of signatory — as Witness.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

C1.3 - FORM OF GUARANTEE

C1.3 PERFORMANCE GUARANTEE - GCC FOR CONSTRUCTION WORKS (2nd Edition - 2010)

Head: Public Works
KZN Department of Public Works:
Private Bag X 9041
PIETERMARITZBURG
3200

Sir,

ON DEMAND PERFORMANCE GUARANTEE

Tender Number ZNTM 01192 W	Project Code WIMS 062326

For use with the General Conditions of Contract for Construction Works, Second Edition, 2010.

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: _____

Physical Address: _____

"Employer" means: The Provincial Administration of KwaZulu-Natal in its Department of Public Works

"Contractor" means: _____

"Engineer" means: _____

"Works" means: **SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**

"Site" means: _____

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

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

Amount in Words:

"Guaranteed Sum" means: The maximum aggregate amount of: 10% _____
Of Contract Sum

Amount in Words: _____

"Expiry Date" means: _____

CONTRACT DETAILS

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

PERFORMANCE GUARANTEE

1 The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.

2 The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the Expiry Date or the date of issue by the Engineer of the Certificate of Completion of the Works or the date of payment in full of the Guaranteed Sum, whichever occurs first. The Engineer and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.

3 The Guarantor hereby acknowledges that:

3.1 any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;

3.2 its obligation under the Performance Guarantee is restricted to the payment of money.

4 Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:

4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Engineer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;

4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;

4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum Certified in 4.

5 Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:

5.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or

5.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and

5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.

6 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.

7 Where the Guarantor has made payments in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Payment Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

8 Payment by the Guarantor in terms of 4 or 5 shall be made with seven (7) calendar days upon receipt of the first written demand to the Guarantor.

9 Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.

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

11 The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.

12 This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.

13 This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.

14 Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Court Act No 32 of 1944, as amended, to this jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at _____

Date _____

Guarantor's signatory (1) _____

Capacity _____

Guarantor's signatory (2) _____

Capacity _____

Witness signatory (1) _____

Witness signatory (2) _____

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

PART C2 - PRICING DATA

C2.1 PRICING INSTRUCTIONS GCC FOR CONSTRUCTION WORKS (Second Edition 2010)			
Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

C2.1 Pricing Instructions

Where any item is not relevant to this specific contract, such item is marked N/A (signifying "not applicable")

The adjustment of the preliminaries each item priced is to be allocated to one or more of the three categories by insertion of "F", "V", "T" as the case may be against the price in the "rate" column immediately preceding the "amount" column, where "F" denotes a fixed amount (amount not varied), "V" denotes an amount variable in proportion to value and "T" denotes an amount variable in proportion to time.

1 MASSES AND MEASURING UNITS

These shall be in accordance with the Measuring Units and National Measuring Standards Act No. 76 of 1973 and amendments thereto.

The pages of each of these documents are numbered consecutively and before the Tenderer submits his tender he should check the number of pages, and if any are found missing or duplicated, or the figures or writing indistinct, or the documents contain any obvious error, he should apply to the Head : Public Works AT ONCE and have same rectified as no liability whatsoever will be admitted by the Administration in respect of errors in Tender due to the foregoing.

2 PRICES FOR VARIATIONS

Where prices or quotations for variations are submitted by the Contractor during the currency of the Contract, it is to be clearly understood that these are for the purpose of consideration by the Head : Public Works and that there is no assumption of acceptance. The Contractor will be notified of acceptance of prices or quotations either by insertion of the amount on the variation order or by written intimation.

3 SCALE

The scale to which the Drawings are made is only to be made use of when no figured dimensions are given either on the Drawings or in the tender documents and the figured dimensions are always to be followed though they may not coincide with the scale of the Drawings, but dimensions where possible are to be taken from the buildings.

4 PROVISIONAL ITEMS

All items described as "Provisional" shall be used as directed by the Employer and measured and valued or paid for.

No work for which "Provisional" items are allowed shall be commenced without written instructions from the Head : Public Works.

5 TIMELY ORDERING OF MATERIALS

The Contractor is warned to place all orders for materials or special articles as early as possible, as he will be held solely responsible for any delay in the delivery of such goods.
Nevertheless this tender is conditional upon no liability being attached to the Contractor if delivery of materials is rendered impossible by reason of any act of the Government.

6 ELECTRICAL LIGHTING, POWER AND WATER

The Contractor shall provide any artificial lighting which may be necessary or required for the proper execution of the works, and provide electric power and water required by all Sub-Contractors, Nominated Sub-Contractors and Sub-Contractors appointed directly by the Employer.

The Contractor shall give all notices and pay all fees in connection with temporary electrical and water connections and shall connect temporary Electrical and Water meters for and pay for all current and water consumed.

Tenderers are advised that the permanent light fittings and water points of any kind installed in the Works are not to be used to provide temporary lighting and supplement water requirements for construction purposes.

7 IMPORT PERMITS, DUTIES AND SURCHARGES.

All tenders by means of which imported products are being called for, must use the rate of exchange 14 days prior to the closing date indicated in the tender documents. If this day falls on a weekend or public holiday, the next working day must be used.

Furthermore, Tenderers must submit documentary proof (in the form of a certified copy) from their bank or legally recognised financial institution, clearly indicating what the rate of exchange was 14 days prior to the closing date, as mentioned above.

Together with this, the Tenderer must confirm that the tender price relating to an imported product, was based on the rate of exchange 14 days prior to the closing date as mentioned above.

8 STANDARD SYSTEM OF MEASUREMENT WHERE BILLS OF QUANTITIES FORM PART OF THE TENDER DOCUMENTS

The work executed under this Contract has been measured in accordance with the;

Standard System of Measuring Builders Work (6th Edition)

including all amendments unless descriptions of items indicate a deviation and it shall be understood that the system of measurement which is herein adopted is the only system of measurement which will be recognised in connection with this contract. Any contradictions to this system of measurement contained in the “Model Preambles for Trades 2008” shall be disregarded (unless same have been accommodated in the system of measurement) but applicable rates shall be included for all requirements stated and not measured separately in compliance with this system.

9 PRICING OF ROCK EXCAVATIONS

It is a condition of this tender that should the tenderer elect to price the Rock Excavation included in this tender, the rates must be market related and should be identically priced for the same classification of excavations and not vary for similar billed items in the different sections.

10 BROAD BASED BLACK ECONOMIC EMPOWERMENT

1. It is the deliberate policy of the Provincial Administration of KwaZulu-Natal to foster and to encourage the economic empowerment of Black South Africans. This policy will be implemented without prescription and without prejudicing the principles and the integrity of the Provincial Administration of KwaZulu-Natal. Subject to these constraints and also subject to good business practise and commercial consideration, it is therefore considered appropriate that the Provincial Administration of KwaZulu-Natal should encourage business relationships with companies which actively pursue Affirmative Action and Black Economic Empowerment Programmes.

2. In responding to this tender you are therefore encouraged to devote attention to these two subjects of Affirmative Action and Economic Empowerment. In addition, in considering the appointment of sub-contractors, you are requested to extend the spirit of these policies.

3. The foregoing enunciations of this policy are not intended to be prescriptive nor to preclude any individual or operation from responding to this tender.

11 REGISTRATION ON THE CENTRAL SUPPLIERS DATABASE

1. In terms of the Public Finance Management Act (PFMA), 1999 (Act No 1 of 1999) Section 38 (1) (a) (iii) and 51 (1) (iii) and Section 76 (4) of PFMA National Treasury developed a single platform, The Central Supplier Database (CSD) for the registration of prospective suppliers including the varification functionality of key supplier information.
2. Prospective suppliers will be able to self - register on the CSD website: www.csd.gov.za
3. Once the supplier information has been varified with external data sources by National Treasury a unique supplier number and security code will be allocated and communicated to the supplier. Suppliers will be required to keep their data updated regularly and should confirm at least once a year that their data is still current and updated.
4. Suppliers can provide their CSD supplier number and unique security code to organs of state to view their varified CSD information.
5. Tenderers are required to fill in clearly, legibly, in bold print and black ink their CSD supplier number in the space hereunder:

Name of Supplier	
Central Supplier Database (CSD) Supplier Number:	

12 TAX CLEARANCE REQUIREMENTS

It is a condition of tender that the taxes of the successful tenderer must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the Tenderder's tax obligations. It is a condition of this Offer of Commission that your practice remains in good standing with SARS (South African Revenue Services) in terms of its tax clearance, during the project, which is required to process your payment certificates.

1. In order to meet this requirement tenderers are required to apply via e-filing at any SARS branch office nationally. The Tax Complance Status (TCS) requirements are also applicable to foreign Tenderders / individuals who wish to submit Tenders.
2. SARS will then furnish the Tenderder with a Tax Compliance Status (TCS) PIN that will be valid for a period of 1 (one) year from the date of approval.
3. In tenders where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Compliance Status (TCS) PIN.

4 Application for Tax Compliance Status (TCS) PIN can be done via e-filing at any SARS branch office nationally or on the website www.sars.gov.za.

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

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

Security PIN Number	
Company / Entity Tax Reference Number	

13 BILLS OF QUANTITIES/LUMP SUM DOCUMENT

The Bills of Quantities document forms part of and must be read and priced in conjunction with all the other documents forming part of the contract documents, the Standard Conditions of Tender, Conditions of Contract, Standard Preambles to all Trades, Specifications, Drawings and all other relevant documentation.

14 VALUE ADDED TAX

The tender price must include for Value Added Tax (VAT). All rates, provisional sums, etc. in the Bills of Quantities must however be net (exclusive of VAT) with VAT calculated and added to the Total Value thereof in the Final Summary.

15 FIXED PRICE CONTRACT

Should the Bills of Quantities/Lump Sum Document be a fixed price contract, the following clause must be inserted in the Pricing Instructions:

Tenderders are to take note that the contract price adjustments are not applicable to this contract. Tenderders should therefore make provision in the Contract Sum, schedule of rates, etc. for possible price increases during the contract period, as no claims in this regard shall be entertained.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

C2.2 - Preliminaries for GCC for Construction works - 2nd Edition 2010

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

SECTION NO. 1
BILL NO. 1
C2 .2 PRELIMINARY AND GENERAL

	NOTES	UNIT	QUANTITY	RATE	AMOUNT
i)	The agreement is to be the General Conditions of Contract for Works of Civil Engineering Construction (2010) (Second Edition) , published by the S. A. Institution Of Civil Engineering.				
ii)	The Preliminaries are to be the Construction and management requirements for works contracts - Part 1: General engineering and construction works (SANS 1921-1: 2004 Edition 1) prepared by Standards South Africa and shall be deemed to be incorporated herein.				
iii)	Tenderers are referred to the abovementioned documents for the full intent and meaning of each clause thereof (hereinafter referred to by heading and clause number only) for which such allowance must be made as may be considered necessary.				
iv)	Where standard clauses or alternatives are not entirely applicable to this contract such modifications, corrections or supplements as will apply are given under each relevant clause heading.				
v)	Where any item is not relevant to this specific contract such item is marked N/A (signifying "not applicable").				
vi)	Adjustment of the preliminaries: each item priced, is to be allocated to one or more of the three categories, where "F" denotes a fixed amount (amount not to be varied), "V" denotes an amount variable in proportion to value and "T" denotes an amount in proportion to time.				
vii)	Time (T) related Preliminaries will only be adjusted for omissions or additions, issued by the Employer, or delays caused by the Employer, for which variation and extension of time has been granted. ***See Contract Data*** .				
	SECTION A: GENERAL CONDITIONS OF CONTRACT				
A1	General (clause 1) F:..... V:..... T:.....	Item			
A2	Basis of Contract (clause 2) F:..... V:..... T:.....	Item			
A3	Engineer (clause 3) F:..... V:..... T:.....	Item			
A4	Contractor's General Obligation (clause 4) F:..... V:..... T:.....	Item			
A5	Time and Related Matters (clause 5) - As referred to in the Contract Data under Special Condition of Contract. The Contract Period shall be deemed to include all Non – Working Days, Special Non – Working Days and the year-end Builders Annual Industry Holiday Periods. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
A6	Payment and Related Matters (clause 6) F:..... V:..... T:.....	Item			
A7	Quality and Related Matters (clause 7) F:..... V:..... T:.....	Item			
A8	Risk and Related Matters (clause 8) F:..... V:..... T:.....	Item			
A9	Termination of Contract (clause 9) F:..... V:..... T:.....	Item			
A10	Claims and Disputes (clause 10) F:..... V:..... T:.....	Item			
	SECTION B: SANS 1921-1:2004 (Edition 1): CONSTRUCTION AND MANAGEMENT REQUIREMENTS FOR WORKS CONTRACTS: PART 1				
	Refer to the SCOPE OF WORK for detail requirements:				
B1	Scope F:..... V:..... T:.....	Item			
B2	Normative references F:..... V:..... T:.....	Item			
B3	Definitions F:..... V:..... T:.....	Item			
B4	Requirements for construction and management F:..... V:..... T:.....	Item			
B4.1	General F:..... V:..... T:.....	Item			
B4.2	Responsibilities for design and construction F:..... V:..... T:.....	Item			
B4.3	Planning, programme and method statements F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
B4.4	Quality assurance F:..... V:..... T:.....	Item			
B4.5	Setting out F:..... V:..... T:.....	Item			
B4.6	Management and disposal of water F:..... V:..... T:.....	Item			
B4.7	Blasting F:..... V:..... T:.....	Item			
B4.8	Works adjacent to services and structures F:..... V:..... T:.....	Item			
B4.9	Management of the Works and site F:..... V:..... T:.....	Item			
B4.10	Earthworks F:..... V:..... T:.....	Item			
B4.11	Testing F:..... V:..... T:.....	Item			
B4.12	Materials, samples and fabrication drawings F:..... V:..... T:.....	Item			
B4.13	Equipment F:..... V:..... T:.....	Item			
B4.14	Site establishment F:..... V:..... T:.....	Item			
B4.15	Survey control F:..... V:..... T:.....	Item			
B4.16	Temporary works F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
B4.17	Existing services F:..... V:..... T:.....	Item			
B4.18	Health and safety F:..... V:..... T:.....	Item			
B4.19	Environmental requirements F:..... V:..... T:.....	Item			
B4.20	Alterations, additions, extensions and modifications to existing works F:..... V:..... T:.....	Item			
B4.21	Inspection of adjoining structures, services, buildings and property F:..... V:..... T:.....	Item			
B4.22	Attendance on nominated and selected subcontractors F:..... V:..... T:.....	Item			
	SECTION C: SCOPE OF WORK in accordance with SANS 10403 *(The reference to Clauses refer to Table B.1 of SANS 1921-1:2004)*				
C1	Certification by recognised bodies - CLAUSE 4.4 F:..... V:..... T:.....	Item			
C2	Agrément certificates - CLAUSE 4.5 F:..... V:..... T:.....	N/A			
C3	Other services and facilities - CLAUSE 4.8 F:..... V:..... T:.....	Item			
C4	Recording of weather - CLAUSE 5.2 F:..... V:..... T:.....	Item			
C5	Management meetings - CLAUSE 5.3 F:..... V:..... T:.....	Item			
C6	Daily records CLAUSE 5.6 F:..... V:..... T:.....	Item			
C7	Bond and guarantees - CLAUSE 5.7 F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
C8	Permits - CLAUSE 5.9 F:..... V:..... T:.....	Item			
C9	Proof of compliance with the law - CLAUSE 5.10 F:..... V:..... T:.....	Item			
	SECTION D: SPECIFICATION DATA ASSOCIATED WITH SANS 1921-1:2004 (Table A.1)				
D1	Requirements for drawings, information and calculations for which the contractor is responsible CLAUSE 4.1.7 F:..... V:..... T:.....	Item			
D2	The responsibility strategy assigned to the contractor for the works CLAUSE 4.2.1 F:..... V:..... T:.....	Item			
D3	The planning, programme and method statements - CLAUSE 4.3 F:..... V:..... T:.....	Item			
D4	Samples of materials, workmanship and finishes - CLAUSE 4.12.1 F:..... V:..... T:.....	Item			
D5	Fabrication drawings that the contractor is to provide and deliver to the employer - CLAUSE 4.12.2 F:..... V:..... T:.....	Item			
D6	Office for the foreman CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D7	Telephone - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D8	Office for inspector of works - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D9	Telephone in office for inspector of works - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
D10	Sheds - CLAUSE 4.14.3 F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
D11	Provision and erection of signboards - CLAUSE 4.14.6 F:..... V:..... T:.....	Item			
D12	Termination, diversion or maintenance of existing services - CLAUSE4.17.1 F:..... V:..... T:.....	Item			
D13	Services which are known to exist - CLAUSE 4.17.3 F:..... V:..... T:.....	Item			
D14	Detection apparatus - CLAUSE 4.17.4 F:..... V:..... T:.....	Item			
D15	Additional health and safety requirements - CLAUSE 4.18 F:..... V:..... T:.....	Item			
	SECTION E: SPECIFIC PRELIMINARIES Section E contains Specific Preliminary items which apply to this contract except where "N/A" (Not Applicable) appears against the item.				
E1	**PROPRIETARY BRANDED PRODUCTS** The contractor shall take delivery of, handle, store, use apply and/or fix all proprietary branded products in strict accordance with the manufacturers' instruction after consultation with the manufacturer's authorised representative. F:..... V:..... T:.....	Item			
E2	**OVERTIME** Should overtime be required to be worked for any reason whatsoever, the costs of such overtime are to be borne by the Contractor unless the Engineer/Principal Agent has specifically authorised in writing, prior to the execution thereof, that costs for such overtime are to be borne by the Employer. F:..... V:..... T:.....	Item			
E3	**AS BUILT DRAWINGS** The position of construction breaks and the extent of individual concrete pours are to be recorded by the Contractor on the Structural Engineer's drawings and are to be submitted to the Engineer/Principal Agent and the Structural Engineer for their records. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

	SECTION E: SPECIFIC PRELIMINARIES	UNIT	QUANTITY	RATE	AMOUNT
E4	**SITE INSTRUCTIONS** Site Instructions issued on site are to be recorded in triplicate in a Site Instruction book which is to be maintained on site by the Contractor. F:..... V:..... T:.....	Item			
E5	**LABOUR RECORD** At the end of each week the Contractor shall provide the Engineer/Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all sub-contractors on the works each day. F:..... V:..... T:..... *<u>Note</u> : In the event that the contractor fails to satisfy the requirements of this specification, the Employer (Head: Public Works) may apply any of the sanctions provided in the contract. Sanctions may include the application of a financial penalty of .04% of the Contract Sum per calendar day of which the required report has not been submitted.*	Item			
E6	**PLANT RECORD** At the end of each week the Contractor shall provide the Engineer/Principal Agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used on the works. F:..... V:..... T:.....	Item			
E7	**NON CESSION OF MONIES** The Contractor shall not cede nor assign his rights or claims to any monies due or to become due under this contract. F:..... V:..... T:.....	Item			
E8	**SECTIONAL COMPLETION** When it is required that the contract be executed in sections or portions, the tenderer shall allow for all costs in this regard as no claim for additional costs will be entertained. F:..... V:..... T:.....	Item			
E9	**LOCAL LABOUR** It is a general requirement of this contract that persons normally resident in the locality of the works (Local Labour) be given preference for employment on the contract. Provided, however, that should adequate and appropriate Labour not be available within the locality, others may be employed subject to satisfactory proof being provided that every reasonable endeavour has been made to employ Local Labour. The Contractor shall identify the local community leaders with the purpose of negotiating with them regarding the utilization of Local Labour in the construction process. In this regard, the Contractor shall furthermore give preference, wherever possible to the employment of single heads of households, women and youth. The Contractor shall, in general, maximize the involvement of the local community. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
E10	**IMPORT PERMITS AND DUTIES** The responsibility for obtaining the necessary import permits shall rest with the successful Tenderer. No foreign exchange will be arranged or provided by the Administration. Tenderers are to allow in their tenders and pay the ordinary levy imposed on imported items in terms of item 196.10 of Part 8 of Schedule No. 1 of the Customs and Excise Act, 1964 with effect from 1 October 1989. F:..... V:..... T:.....	Item			
E11	**CONTRACT PRICE ADJUSTMENT PROVISIONS (CPAP)** Notwithstanding anything to the contrary contained in the GCC for Construction Works 2010 2nd Edition, this Contract shall only when the Construction Period exceeds 6 months and the Contract sum exceeds R1,000,000,00 be subject to the Contract Price Adjustment Provisions Indices Application Manual for use with P0151 indices (CPAP) (Revised 1 January 2013) as published by Statistics South Africa. Tenderers are advised that with reference to Clause 3.4.6 of the Contract Price Adjustment Provisions (CPAP) Indices Applications Manual, the Head: Public Works ***will not accept the submission by Tenderers of lists of additional items.*** Where this contract is a Lump Sum contract, the contract will be subject to Contract Price Adjustment Provisions (CPAP) only where the contract period equals or exceeds 6 calendar months. The applicable work group shall be WG 180 for domestic buildings or WG 181 for commercial and industrial buildings. F:..... V:..... T:.....	Item			
E12	**EPWP CONDITIONS AND SPECIFICATIONS** **12.1 EMPLOYMENT TARGETS** E12.1 a Employment Targets The contractor needs to provide a realistic estimate on the number of jobs that the project has the potential to create throughout the project duration as the project will be implemented using labour intensive construction methods on elements where it is economical and feasible for this construction method. No of jobs to be created = ……. *[Contractor to fill in an estimated number]* F:..... V:..... T:.....	Item			
	E12.1 b Employment requirements Tenderers are advised that this contract will be subject to the Expanded Public Works Program (EPWP) aimed at alleviating and reducing unemployment. Tenderers must allow for any costs for the employement of unskilled labour as per the requirements of the EPWP program; 1. 55% of unskilled labour to be women 2. 55% of unskilled labour to be youth aged between 18 and 35 years 3. 2% of unskilled labour to be people living with disability 4. 100% Unskilled labour utilised must reside within the boundries of the Municipality Ward where this contract is executed, with preference to the local community closest or at the walking distance to the contract site. Wherever possible local skilled tradesmen are to be employed on this contract with the view to maximize utilization of local resources. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	E12.1 c Labour rate and payment intervals The contractor should ensure that labour rate paid to unskilled local labour is commensurate to the daily task. When determining the rate, consideration should be given to that EPWP beneficiaries are mostly bread winners in their families, as the program intends alleviating poverty. There should also be consideration that the labour rate promotes creation of expanded number of jobs created and person days of work. Contractors should make endeavours to ensure that labourers, particularly unskilled are remunerated on fortnight basis and prior notification be made should there be a shortfall on their wages. The labour rate for local unskilled shall also be determined in consideration of the location of the project, i.e. for projects implemented in urbanized municipalities will not be the same as that for rural municipalities. F:..... V:..... T:.....	Item			
	12.2 LABOUR INTENSIVE CONSTRUCTION METHOD E12.2 a Labour Intensive Construction (LIC) method On site there must a person(s) having competency in managing and implementing LIC methods. *Foreman @ NQF Level 4 the Unit Standard on Implementing LIC methods on site. *Site Agent/ Managers @ NQF level 5 the Unit Standard on Manage Labour-Intensive Skills Programme both must be CETA accredited F:..... V:..... T:.....	Item			
	E12.2 b Labour Intensive Construction Method Those parts of the contract to be constructed using Labour Intensive methods will be marked in the BoQ with letter LI (indicating Labour Intensive) against every item so designated. Such works will only be constructed using method so indicated. Reference to be made to Guidelines for the implementation of Labour Intensive Infrastructure projects under EPWP. "Scope of Work in Respect of Work Relating to the Expanded Public Works Programme (EPWP)" F:..... V:..... T:.....	Item			
	E12.3 RECORD KEEPING 12.3.1 Every employer must keep in the project site office the following minutes of site progress minutes; contractors' monthly site progress reports; accurately recorded attendance register; proof of payment as means to verify authenticity of data in the EPWP Beneficiary form submitted with payment certificates. Copies of submitted EPWP beneficiary data forms should also be kept in the site office. F:..... V:..... T:.....	Item			
	12.3.2 The employer must keep this record for a period of at least three (3) years after the completion of the project in his/her office as the project site office would have been relocated. This should be safely kept for job creation data verifications and periodical audits on projects conducted by National and Provincial Department of Public Works after one (1) or two (2) quarters of submitting captured EPWP Data to the National EPWP coordinating Department. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	E12.4 EPWP REPORTING as per EPWP DATA FORM At the end of each month as part of site progress report and to be attached to every contractors' progress payment certificate; the contractor shall provide the principal agent & Public Works with a written records, as per EPWP data form; which will be reflecting, beneficiaries full name & surname; ID No and job description of labour employed by main contractor and sub-contractors on site. At the end of each month the contractor must submit the following documents to be attached to the Progress payment certificate: 1. EPWP monthly data collection form 2. Worker monthly payment upload 3. Worker monthly proof of payment i.e 3.1 Acknowledgement of receipt of payment or 3.2 Payslips 3.3 Bank statement highlighted the workers paid 4. Worker monthly training form 5. Monthly attendance register 6. Certified copies of ID's (once off) 7. ID size photos (once off) 8. Proof of UIF 9. Proof of COIDA F:..... V:..... T:.....	Item			
	E12.5 EPWP PROMOTION <u>12.5.1 EPWP signage board</u> EPWP Program at the project level shall always be promoted through have the projects signage board that embrace EPWP logo at the bottom, correct measurement for this signage board will be provided by the project leader during the site handing over meeting. the standard "HELVETIVA MEDUIM " letters are to be used . Professional title to be 10 mm above line . Line thickness to be 8 mm thick . Space between bottom of the line and bottom of the lettering below the line has to be 100 mm. Letter sizes are as follows : Helvetica meduim 100 mm black upper case to be for project name and owner . Helvetica meduim 75mm black upper case only to be used for professional titles.Project name and owner shall be black lettering on white background.board sizes are as follows : Board to be minomum 2000mm from ground level and to be constructed from reinforced formed chromadek panels minimum 0,6mm thick chromadek. The contractor is responsible for ensuring that the project board remains neatly and safely erected for the full duration including maintenance period,after which the project board and post are to be dismantled and handed to the client in good order. F:..... V:..... T:.....	Item			
	<u>12.5.2 Branding of labour apparel</u> Contractor & Sub-contractors' labourers shall be provided with EPWP branded Personal Protective Equipment (PPE), reflector vest with EPWP wording at the back is an ideal and cost effective means of promoting program on site. The contractor is then advised to price for both item 17.5.1 and 17.5.2 F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

	E12.6 COMMUNITY LIAISON OFFICER (CLO) UTILISATION OF A COMMUNITY LIAISON OFFICER In addition to the requirements of Clause E9, contained in this document; The Contractor shall allow for and pay any and all costs necessary for the engagement of the services of a Community Liaison Officer (CLO) for the full duration of this contract In the interest of providing a sound service to both the community and the Contractor, a CLO may only manage one project at a given time. A CLO will be identified by the local structures of the ward areas and appointed following fair and transparent interviewing process, to be conducted in the presence of local structures and the contractor representative, in order to assist the Contractor in the procurement of any local labour, etc. required for this project. The Contractor is to liaise with the CLO and afford him any assistance needed in ensuring sound working relations with the local community. **Key Responsibilities of the CLO are envisaged to include and not necessary be limited to:** 1. Assisting local leadership in conducting skills and resources audit which facilitates sourcing labour from within the ward or targeted areas for employment, as required by contractor. 2. Assisting in sourcing labour-only domestic sub-contractors and the procurement of materials from local resources, as required by the contractor. 3. Assisting the contractor by identifying areas of potential conflict and or threats to the project or to stakeholders in the project and recommend appropriate action to the contractor. 4. Assisting contractor and stakeholders in the project in the resolution of any conflict which may arise. 5. Establishing and ensuring that sufficient and open communication channels between the contractor and the work force are maintained. 6. Establish and ensuring that efficient and open communication channels between the contractor and the community are maintained 7. Identifying and reporting to the Contractor regarding issues where communication between stakeholder is necessary, recommend courses of action and facilitate such communications				
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	8. Assisting the Contractor and the work force in the establishment of grievance procedures and necessary recommenda-tion to the Contractor regarding the grievances and solution thereto. 9. Attending to site meetings and project implementation meetings as required by the Contractor and prepare periodic reports as may be required by the Contractor from time to time. 10. Attending to such other duties which are consistent with the functions of a CLO, as may be required by the Contractor from time to time. Tenderers are to price twice the rate of unskilled local labour rate against this item for any and all costs arising out of compliance with the foregoing and in the event of a Tenderer failing to price against this item or making inadequate financial provision against this item for compliance as aforesaid, then no claim for costs or additional cost incurred will be entertained by the Head: Works F:..... V:..... T:.....	Item			
	E12.7 SKILLS DEVELOPMENT ON SITE Contractor in conforming to the object of EPWP that its beneficiaries need to be capacitated with skills that will render them employable in the future. It is then the responsibility of the Contractor that mandatory life skills are provided to 100% of workforce on site and on the job training to labourers from whom the potential for further development has been identified. The latter is not mandatory to all as it covers technical skills. Contractor should also make provision for the possibility that there might be local youth that will need to be placed on the project with an intention to be provided support towards improving their level of competency and productivity. Contractor shall also provide all necessary on-the-job training to targeted labour to enable such labour to master and advance on techniques required to undertake the work in accordance with requirements of the contract in a manner that does not compromise workers health and safety. F:..... V:..... T:.....	Item			
	E12.8 LABOUR ONLY Sub Contracting for local emerging enterprises Tenderer's are advised that this contract is subject to the Expanded Public Works Programme (EPWP) and the following criteria will apply: <u>African Equity Ownership</u> a) The Tenderer is to allow for 5% of the total value of works to be undertaken by a Priority Population Group. This percentage excludes the costs of employing local unskilled labour. The allocation of this percentage from the Project, the screening of people, the selection of skills, will be for the Contractor to adjudicate. b) The Priority Population Group consists of women, youth and disabled people. c) The Contractor is to give first option for prospective PPG's from the surrounding areas of the Project. Should there be insufficient suitable people fitting the criteria of PPG's, the Contractor may hire people from further afield. This is to be done only after consultation with the Department of Works EPWP Co-ordinator and the Community Liaison Officer (CLO). d) A Mentor is to be employed by the Contractor, in consultation with the Department of Works for the purposes of quality control and liaison between the Contractor and the selected PPG's on site. The mentor will be responsible for ensuring an acceptable level of quality workmanship and that such work carried out by the PPG's is executed within the time frames stipulated. In so far as possible, the Contractor is encouraged to expand the PPG's skills, knowledge and performance levels. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	TENDERER'S TO NOTE CONDITIONS a) The contract to be entered into between the Contractor and the PPG's will be a LABOUR ONLY sub-contract. b) The Contractor will be responsible for ensuring that all materials for use by the PPG's in the works are to be on site timeously. The Contractor shall liaise with The Mentor and PPG to determine the nature and extent of materials required and the lead time necessary. c) The Contractor shall be responsible for the overall programming of the Works and he is to allow for monitoring the PPG's programme and progress. d) In conjunction with the Mentor, he is to allow for the supervision and mentoring (where necessary) of the PPG to ensure quality and adherence to standard building practice e) The Contractor is to allow for extra storage facilities on site for the PPG's tools and equipment. f) Basic tools shall be provided by the PPG's and where these are not available; the Contractor will supply him with the necessary tools and equipment and deduct the costs thereof from the interim claims made by the PPG g) Work requiring specialized tools will be provided free of chargeby the Contractor with the provision that these be returned upon completion of the Work. CO-ORDINATION The Contractor is to co-ordinate the work of all the PPG's, Sub-Contractors and Nominated Sub- Contractors appointed direct by the Employer in such a manner and at all times as will suit the building programme and he is to allow adequate access, for the PPG's, where required, to carry out their work in an efficient manner as no claims for extras in this connection will be entertained. F:..... V:..... T:.....	Item			
	ATTENDANCE The Contractor may allow for attendance upon the PPG's concerned to execute the work. The Contractor is to allow the PPG's the use of any scaffolding belonging to him while it remains so erected on the site. Where scaffolding is necessary for the use by any PPG and the Contractor has not erected any for his own use or has removed same after his own use, the Contractor shall supply sufficient scaffolding to the PPG to be erected and dismantled by the PPG and returned to the Contractor. This attendance upon PPG's to execute the work is to include for the scaffolding provisions as aforesaid and, in addition, is to include for co-operating to the fullest extent with all the parties, attending on off-loading materials, providing suitable storage for tools and materials used by the PPG's, use of general facilities such as latrines, etc., supply and cost of power, lighting, water and the like. F:..... V:..... T:.....	Item			
	E12.9 EPWP CONTRACT FOR LABOUR It is compulsory that shortly after the contractor and or sub contractor has appointed local labour, the employment contract should be signed by both parties, prior to commencement with works on site. The employment contract forms part of the Ministerial Determination or from the regional EPWP officials. Each contract will lapse at the end of each financial year therefore requiring the Contractor to do a renewal of each contract should the need of employment still exist for that particular labourer. F:..... V:..... T:.....				
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
	E12.10 EPWP SCOPE of WORK **Note:** Contractors are to price any item on the Bill of Quantities having below, bearing in mind that they are regarded as main sources of job creation, whether sub contracted or undertaken by the main contractor. Elements on the scope of work where application of Labour Intensive Construction methods as will indicated with letters (LI) are regarded feasible are as follows; i) Excavating trenches for foundations and any other civil works with the depth not more than 1.5 m ii) All masonry works which include concrete mixing on site; brickwork; plastering; screed works; jointing; etc. iii) Painting, Plumbing, Ironmongery; roof cladding; glazing; tilling; carpentry; flooring; waterproofing; etc. F:..... V:..... T:.....	Item			
	Note: It is a general requirement of this contract that persons normally resident in the ward of the works (local labour) be given preference for employment on the contract. Provided, however, that should adequate and appropriate labour not be available within the ward, others may be employed subject to satisfactory proof being provided that every reasonable endeavour has been made to employ local labour (Local Sub-contractor(s); Skilled; Semi-Skilled and Unskilled). The contractor shall in consultation with the local community leaders with the purpose of negotiating with them regarding the utilization of local resources in the construction process. In this regard, the contractor shall furthermore give preference, wherever possible to the employment of single heads of households, women and youth as well as families declared as most indigent by War on Poverty/ Sukuma Sakhe program profiling process. The contractor should aim, in general, to maximise the involvement of the local community, however workers from other communities should not exceed 20% of all persons working on the project, where local employees possess skills at level of competency that meet contractors requirements. <u>Payment for the labour-intensive component of the works</u> Payment for works identified in the Scope of Work as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the Scope of Work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict. <u>Linkage of payment for labour-intensive component of works to submission of project data</u> The Contractor's payment invoices shall be accompanied by labour information for the corresponding period in a format specified by the employer. If the contractor chooses to delay submitting payment invoices, labour returns shall still be submitted as per frequency and timeframe stipulated by the Employer. The contractor's invoices shall not be paid until all pending labour information has been submitted. <u>Applicable labour laws</u> The current Ministerial Determination (also downloadable at <u>www.epwp.gov.za</u>) Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice , shall apply to works described in the scope of work as being labour-intensive and which are undertaken by unskilled or semi-skilled workers. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
E13	**HIV/AIDS AWARENESS** Tenderers are to price against the following items for compliance with the SPECIFICATION FOR HIV/AIDS AWARENESS bound into this document (The clauses referred to are those of the Specification for HIV/AIDS)				
E13.1	Provide and maintain a condom dispenser in terms of Clause 5.1a) F:..... V:..... T:.....	Item			
E13.2	Provide and maintain HIV/AIDS awareness posters terms of Clause 5.1b) F:..... V:..... T:.....	Item			
E13.3	HIV /Aids Awareness Programme on Site for not less than 90% of workers inclusive of all direct and indirect costs; Engage a qualified service provider as described in the scope of works to conduct an HIV Awareness Programme in terms of Clause 5.2.1a) F:..... V:..... T:.....	Item			
E13.4	Arrange for workers to attend the HIV Awareness Programme in terms of Clause 5.2.1b) F:..... V:..... T:.....	Item			
E13.5	**Reporting** Prepare and attach to claims for payment a brief report in terms of Clause 5.3 (see also HIV/STI Compliance Report included with this document). F:..... V:..... T:..... ***Note: In the event that the contractor fails to satisfy the requirements of this specification, the employer (Head: Public Works) may apply any of the sanctions provided for in the contract. Sanctions may include the application of a financial penalty of .04% of the Contract Sum per calendar day of which the required reports has not been submitted.***	Item			
E14	**OCCUPATIONAL HEALTH AND SAFETY ACT NO. 85 OF 1993** Tenderers are to allow for costs in providing a project specific ' Construction Phase Safety, Health and Environmental Plan' in accordance with "Section 2 - Specification Data associated with SANS 1921-1:2004" clause C4.18 in "Part C3 - Scope of Work" F:..... V:..... T:.....	Item			
E15	**NOTICE BOARD, SITE OFFICE, ETC.** Tenderers are to allow for the provision and removal of a project notice board and a site office in accordance with the Principal Agent's requirements. F:..... V:..... T:.....	Item			
E16	**IMPORTED MATERIALS AND EQUIPMENT** Where imported items are listed in the tender documents, the tenderer shall provide all information called for, failing which the price of any such item, material or equipment shall be excluded from currency fluctuations. (***Refer to T2.14 - Schedule of Imported Materials and Equipment***. F:..... V:..... T:.....	Item			
E17	**CONTRACT DOCUMENTS** The drawings issues with these Tender documents do not comprise the complete set but serves as a guide only for tendering purposes and for indicating the scope of works to enable the Tenderer to acquaint him with the nature and extent of the works and the manner in which they are to be executed. Should any part of the drawings not be clearly legible to the Tenderer he shall, before submitting his Tender, obtain clarification in writing from the principal agent. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
E18	**GENERAL PREAMBLES** The Document Preambles will be the "ASAQS Model Preambles for Trades – 2008" and is obtainable from the various Regional Office's of the Department of Public Works and shall be read in conjunction with the Bills of Quantities and be referred to for the full descriptions of work to be done and materials to be used. F:..... V:..... T:.....	Item			
E19	**TRADE NAMES** Wherever a Trade Name for any product has been described in the Bills of Quantities the Tenderer's attention is drawn to the fact that any other product of equal quality may be used subject to the written approval of the Principal Agent being obtained prior to the closing date for submission of Tenders. F:..... V:..... T:.....	Item			
E20	**EXISTING PREMISES OCCUPIED** Refer to Scope of Works Part C3 of this Tender Document for information on the occupation of existing buildings. F:..... V:..... T:.....	Item			
E21	**INACCURATE AND DEFECTIVE WORK EXECUTED UNDER PREVIOUS CONTRACT** The contractor shall, after taking possession of the site and before commencing the work, check all levels, liners, profiles and the like and satisfy himself as to the dimensional accuracy of all work executed under the previous contract which may affect his work. Should any inaccurate or defective work be found, the contractor shall immediately notify the principal agent in writing requesting his instructions with regard thereto and afford every facility to those rectifying such inaccurate or defective work. F:..... V:..... T:.....	Item			
E22	**VIEWING THE SITE IN SECURITY AREAS** If the site is situated in a security area and the Tenderder must arrange with the Authorities to obtain permission to enter the site for Tenderding purposes. F:..... V:..... T:.....	Item			
E23	**COMMENCEMENT OF WORKS IN SECURITY AREAS** If the works falls within a security area, the contractor must arrange with the Authorities and give the necessary notices before commencement of the works. Should the contractor fail to make such arrangements, admission to the site may be refused and any additional costs will be for the contractor's account. F:..... V:..... T:.....	Item			
E24	**ENTRANCE PERMITS TO SECURITY AREAS** If the works fall within a security area, the contractor shall obtain entrance permits for his personnel and workmen entering the area and shall comply with all regulations and instructions which may be issued from time to time regarding the protection of persons and property under control of the Authority. F:..... V:..... T:.....	Item			
	Carried forward to collection			R	

		UNIT	QUANTITY	RATE	AMOUNT
E25	**SECURITY CHECK OF PERSONNEL** The principal agent may require the contractor to have his personnel and workmen, or a certain number of them, security classified. In the event of the principal agent requesting the removal of a person or persons from the works for security reasons, the contractor shall do so forthwith and shall thereafter ensure that such person or persons are denied access to the works and the site and/or to any document or information relating to the works. F:..... V:..... T:.....	Item			
E26	**PROHIBITION ON TAKING PHOTOGRAPHS** In terms of article 119 of the Defence Act, 44 of 1957, it is prohibited to sketch or to take photographs of any military site or installation or any building or civil works thereon or to be in possession of a camera or other apparatus used for taking photographs, except when authorised thereto by or on behalf of the Minister. The same prohibition is also applicable to all Correctional Institutions in terms of article 44.1(e) of the Correctional Services Act 8 of 1959. F:..... V:..... T:.....	Item			
E27	Management of Water Water for Construction purposes must be obtained from alternative water sources (i.e. supply other than water that is produced and distributed by a regulated water service authority from a licenced water treatment works for human consumption), eg dams, rivers, boreholes, springs, rainwater harvesting, recycled sewerage water,etc. The alternative water source shall not be of an inferior quality / standard than that required for construction purposes. The client reserves the rigfht through his agents to test such supplies or request certificates confirming the grade and nature of the water supply. Relevant knowledge of the respective area will be an advantage.				
	Carried forward to collection			R	

SECTION 1

SUMMARY – PRELIMINARY & GENERAL

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Section No. 1
Preliminary & General
Summary

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

PART C2.3 BILL OF QUANTITIES

Item No		Quantity	Rate	Amount R

SECTION NO. 2

BILL NO. 1

ALTERATIONS

SUPPLEMENTARY PREAMBLES

NOTE:

Tenderers are advised to study the Model Preambles for Trades before pricing this trade.

NOTE : Tenderers are advised to study the "Specification of Materials and Methods to be used" (PW 371 - 4th Revision October 1993) before pricing this bill

Proprietary items or materials

Proprietary items or materials where specified are to be of the brand specified - or other approved - by the Project Manager or Department Representative

Alterations

All tenderers will be deemed to have visited the site prior to submitting their tender to determine the nature and extent of the alteration and demolition work and the value of the materials to be recovered. No claim for a variation in the contract sum or the credit allowance for recoverable materials in respect of alteration /demolition items will be considered.

All sizes and dimensions stated herein are approximate and deemed only sufficient to identify the item of work concerned.

In taking down and removing existing work the utmost care must be taken to avoid any structural or other damage to the remaining portions of the building and the Contractor shall provide all shoring, needling, strutting, etc. to ensure the stability of all structures during the alteration/demolition work. The Contractor will be held solely responsible for the safety and stability of the buildings for the whole period of the contract and must make good any damage at his own expense.

Carried to Collection R

Bill No. 1
Alterations (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

The Contractor shall provide and afterwards remove all necessary temporary tarpaulins, barricades, screens, fencing, temporary waterproofing, dustproofing, etc. required to isolate any sections of new or existing buildings for purposes of excluding users of the remainder of the building or any unauthorised persons all to the satisfaction of the Representative/Agent and remove when directed.

The Contractor shall cover up and protect from injury all work not removed and shall make good at his own expense any damage that may occur.

Existing services must be maintained at all times to the existing buildings. If it is found necessary to disconnect any service than suitable temporary or alternate services must be provided to the existing buildings.

Special care shall be exercised during the progress of the work to ensure that any electrical installation, water supply pipes, telephone and other services which may be encountered are not interfered with and notice must be given to the Representative/ Agent if any disconnection or alterations become necessary.

The Contractor shall take all precautions to protect the existing roads, paving and gardens from damage during the course of the contract and on completion he shall clear away and make good all damage at his own expense.

Carried to Collection R

Bill No. 1
Alterations (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Building up of existing openings where given in number shall be deemed to include preparing existing surfaces all round, brickwork properly toothed and bonded to existing and shot pinned to concrete, wedging up and making good finishes on both sides to match existing.

Taking down existing walls is to include for dead shoring and propping under existing concrete slabs, beams, roof timbers, etc., for removing doors, windows, skirtings, curtain tracks, pelmets, cornices, etc. fixed to same and for making good to walls , floors, ceilings, etc. as described.

Removal of doors, windows, fittings, etc., is to include for their removal complete with frames, ironmongery, glass, quadrants, architraves, skirtings, burglar bars and all accessories to walls, reveals, around openings, for cutting out cills, etc., for hacking up flooring at openings and for making good.

Any water supply or other piping, etc. that may be encountered and found necessary to disconnect or cut are to be effectually stopped off and any new connections that may be necessary shall be made with the proper fittings to the satisfaction of the Representative/Agent. Where sanitary fittings, geysers, etc are to be removed the Contractor shall allow for removing all exposed waste or water supply pipes to the nearest suitable junction or connection and stopping off, as well as for making good plaster, screeds, etc.

The Contractor shall remove from the site all material, rubble, debris, rubbish, etc. resulting from the alterations/demolitions.

Carried to Collection R

Bill No. 1
Alterations (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Allow for watering the works sufficiently to prevent nuisance from dust.

Preparation shall imply the use of an approved screed or plaster repairing compound.

OLD MATERIALS TO BECOME THE PROPERTY OF THE CONTRACTOR :
Old materials from alterations except where described to be re-used or handed over, become the property of the Contractor, who must allow credit for same against the appropriate item and a credit total where indicated in the Final Summary.

OLD MATERIALS TO BE CARTED AWAY :
Old materials from alterations except where described to be re-used or handed over, as well as all rubbish, etc., must be regularly carted from the site and not be allowed to accumulate on or around the site.

OLD MATERIALS NOT TO BE RE-USED :
None of the old materials are to be used for new work except where specifically described as being set aside for re-use.

Asbestos Roof Coverings

All roofing works to be executed by a specialist roofing contractor.

All Asbestos removal and disposal to be undertaken by a registered Asbestos Removal/Cleaning specialist Company in accordance with current legislation and by laws.

CPAP WORK GROUP

Unless otherwise stated all items in this bill will be Work Group 102

Carried to Collection R

	MOVING OF FURNITURE, ETC. AND REPOSITIONING SAME				
	Notes:				
	1) Contractor to liaise with the Department of Transport with regards to the programming of the works (availability of rooms, etc.) so as to not disrupt the functioning of the facility.				
	2) Contractor to note that any damaged or stolen property regarding the item below will be for the Contractors account and will be deducted from the amounts due to the Contractor				
	TEMPORARY HOARDING, ETC.				
1	Temporary hoarding formed of corrugated sheet metal cladding on suitable timber framework 2100mm high, including removal on completion	m	276		
2	Extra over temporary hoarding formed of corrugated sheet metal cladding for double gate 4000 x 1800mm high, including removal on completion	No	2		
3	Drywall barrier 3000mm high formed of suitable timber framework covered on one side with 12,7mm gypsum board panels and finished with two coats interior quality PVA emulsion paint on one side including corners, ends, etc	m	20		
	REMOVAL OF EXISTING WORK				
	Breaking up and removing reinforced concrete including cutting off and removing reinforcement				
4	150mm Thick Slab within existing brickwalls	m²	804		
	Breaking down and removing brickwork, etc.				
5	One brick walls	m²	12		
6	One brick walls in patches	m²	100		
	Taking out and removing doors, windows, etc. from brickwork to be demolished				
7	Timber door frame only (Credit R .....)	m	14		
	Carried to Collection			R	

Bill No. 1
Alterations (Provisional)
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FOR KZN DEPARTMENT OF TRANSPORT

8	Timber window not exceeding 2,5m2 (Credit R .....)	No	1		
9	Steel window not exceeding 2,5m2 (Credit R .....)	No	2		
	Taking out and removing doors, windows, etc. including preparing opening to receive new (new doors and windows elsewhere measured)				
10	Timber single door only from one brick wall (Credit R .....)	No	1		
11	Timber double door, fixed fanlight and frame overall size 1700 x 3000mm from one brick wall (Credit R .....)	No	1		
	Carefully taking out doors, windows, etc, including thresholds, sills, etc, setting aside for re-use and later clean, make good and refix complete in similar new position				
12	Cashier cubicle window overall size 800 x 900mm high with high impact resistant glass including aluminium u-channel surround to top and sides (new u-channel to bottom elsewhere measured)	No	8		
13	Aluminium sliding door approximately 1500 x 2100mm high from one brick wall	No	1		
14	Aluminium shopfront 1350 x 2117mm high from one brick wall	No	1		
	Taking down and removing roofs, floors, panelling, ceilings, partitions, etc.				
15	Allow for covering and maintaining existing roofs in a perfectly watertight condition during alterations by means of heavy tarpaulins, properly secured and maintained in position to the approval of the Architect and make good all work damaged or disturbed after completion (Total area of alterations to roof coverings 2877m2)		Item		
	Carried to Collection			R	

Bill No. 1
Alterations (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	Note : The Contractor is advised that he will be held responsible for all damages, howsoever caused, to ceiling brandering, wall and floor finishes, fittings, etc., inside the existing rooms where the existing roof coverings have been removed for alterations, etc. and must make good all damage at his own expense to the approval of the Architect.			
16	Pitched roof including Metal Roof Sheeting, eaves soffit covering, fascias, barge boards, asbestos gutters and rain water pipes and timber supports (Credit R .....)	m²	2,155	
17	Pitched roof including "Broseley" roof tiles, eaves soffit covering, fascias, barge boards, asbestos gutters and rainwater pipes and timber supports ("Broseley" roof tiles to be set aside for re-use) (cleaning and refixing of roof tiles elsewhere measured) (Credit R .....)	m²	722	
18	Pitched roof including timber trusses, purlins, battens, etc. (Credit R .....)	m²	2,877	
19	Timber suspended floors including existing floor finish, skirtings, joists, bearers, steel support beams, etc. (Credit R .....)	m²	158	
20	Plasterboard ceilings including cornices, timber brandering, etc including preparing to receive new (Credit R .....)	m²	1,631	
21	Timber T&G ceilings including cornices, timber brandering, etc. including preparing to receive new (Credit R .....)	m²	102	
22	Acoustic tile suspended ceilings, including suspension grid, hangers, cornices, etc. including preparing to receive new (Credit R .....)	m²	347	
23	Drywall partitioning including doors, ironmongery, glazed borrowed lights, etc. (Credit R .....)	m²	88	
24	Glazed aluminium partitioning 2.4m high including doors, ironmongery, glazed borrowed lights, etc.	m	39	
	Carried to Collection			R

Bill No. 1
Alterations (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	Taking out/off and removing sundry metalwork				
25	Cashier cubicle window overall size 800 x 900mm high with high impact resistant glass including aluminium u-channel surround to top and sides	No	4		
26	520 x 440 x 115mm Deep overall cash transfer tray including counter complete	No	12		
	Refixing of existing roof tiles, etc. by replacing existing by fixing with copper clout nails to every second row of tiles including making good as required and including 38 x 38mm sawn softwood battens at 150mm centres and including an underlay of marine ply covered with malthoid fitted with counter battens to take tiles all in accordance with Architects specification and leave in perfectly watertight condition (removal, setting aside and cleaning elsewhere measured)				
27	Take from store "Broseley" roof tiles and install to new timber purlins complete	m²	722		
	Taking out and removing sundry joinery work				
28	100mm High Timber skirting from brickwork (Credit R .....)	m	1,168		
	Taking out and removing joinery fittings, etc.				
29	Timber floor cupboard, size overall 2800 x 600 x 1100mm high (Credit R .....)	No	2		
30	Timber wall cupboard, size overall 900 x 500 x 800mm high (Credit R .....)	No	2		
	Carefully taking out and removing ironmongery to existing doors including cleaning, buffing, polishing and refixing in similar new position				
31	Ironmongery from timber doors	No	100		
	Servicing ironmongery to existing windows				
32	Hinges, lockset, catches, balancing weights, etc. to timber window	No	50		
33	Hinges, lockset, catches, etc. to steel window	No	70		
	Carried to Collection			R	

Bill No. 1
Alterations (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	Taking up and removing vinyl floor coverings, carpeting, etc. including preparing to receive new floor finish				
34	Carpet tile floor covering	m²	1,055		
35	Vinyl tile floor covering	m²	245		
36	Vinyl sheet floor covering with welded joints	m²	147		
37	Timber laminate floor covering	m²	215		
	Hacking up/off and removing ceramic tile floor and wall finishes including removing mortar bed or backing and preparing concrete or brick surfaces for new screed, plaster or tile finishes				
38	150 x 150mm Tiles to walls	m²	356		
39	300 x 300mm Ceramic tiles to floors	m²	74		
40	Tile skirtings 100mm high	m	84		
	Hacking up/off and removing granolithic, screeds, plaster, etc from concrete or brickwork and preparing surfaces for new screeds, plaster, etc.				
41	30mm Screed from floors	m²	1,718		
42	30mm Granolithic from floors	m²	92		
43	Internal plaster from walls and columns	m²	2,050		
	Taking out and removing piping, sanitary fittings, etc. including disconnecting piping from fittings and making good floor and wall finishes (making good paintwork elsewhere)				
44	Stainless steel bowl sink and drainer on timber cupboard (Timber cupboard elsewhere removed) (Credit R .....)	No	1		
45	Vitreous china wash hand basin including brackets (Credit R .....)	No	14		
46	Vitreous china WC pan with cistern (Credit R .....)	No	14		
47	Vitreous china bowl urinal (Credit R .....)	No	2		
	Carried to Collection			R	

48	150 Litre Geyser including fittings, brackets and associated plumbing, piping, etc. (Credit R .....)	No	1		
	Carefully taking out and removing existing glazing and putty including preparing to receive new (new glazing elsewhere measured)				
49	Glazing to timber/steel windows	m²	3		
	BUILDING UP OPENINGS				
	Brickwork in NFP bricks in class II mortar in building up openings including making good plaster both sides including necessary precast concrete lintels (making good paintwork elsewhere)				
50	Opening size 800 x 900mm high overall in one brick wall	No	3		
51	Opening size 800 x 900mm high overall in 345mm cavity walls	No	1		
	Brickwork in NFP bricks in class II mortar in building up openings including opening to be blocked off with superwood board				
52	Half brick walls	m²	5		
	Sundries				
53	Cutting toothings and bonding new brickwork to existing	m²	25		
	MAKING GOOD OF FINISHES, ETC.				
	Making good screed				
54	Making good defects in screeded floors with "Pavelite" to receive new floor finish (new floor finish elsewhere measured)	m²	100		
55	Floors where one brick walls removed	m	3		
	Making good internal cement plaster				
56	Walls in patches	m²	1,230		
57	Walls where one brick walls removed	m	20		
	Carried to Collection			R	

Bill No. 1
Alterations (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	OPENINGS THROUGH EXISTING WALLS, ETC.			
	Break out and forming			
58	Carefully remove existing bricks from brick wall for the pocketing and supporting of new concrete slab (concrete slab elsewhere measured)	No	341	
	REPAIRS TO TIMBER WINDOWS			
	Carefully taking out and removing existing putty including installing new putty and leaving windows in good condition upon completion			
59	Putty to timber/steel windows	m	904	
	REPAIRS TO ROOF COVERING			
	Repair existing roof sheeting by replacing existing fixing screws and washers including making good as required and leave in perfectly watertight condition (cleaning and painting elsewhere measured)			
60	Corrugated iron roof sheeting	m^2	300	
	REPAIRS TO DAMAGED BRICKWORK/PLASTER			
	Repairing damaged face bricks by replacing with new			
61	Carefully remove existing damaged face bricks including replacing with new "Corobrik - Burnt Sienna FBS" or equal approved face bricks pointed with flush horizontal and vertical joints	No	520	
	Repair cracks in plastered walls by opening up cracks with a carborundum disk in an inverted V-shaped to 3mm or larger, clean and fill with "Pratley Flexiseal" or equal approved soft flexible crackfiller, in strict accordance with the manufacturer's instructions, and prepare to receive paint (paint elsewhere measured)			
62	2 - 3mm Cracks in plastered walls	m	150	
	Carried to Collection			R

	Repair cracks in brick walls by removing plaster 150mm wide on either side, cut 50mm deep grooves in mortar joint of every fourth brick course, supply and install Y10mm diameter mild steel rods and re-point mortar in wall cracks with "5 Star grout" or approved equivalent including making good plaster on completion (making good paintwork elsewhere) all in accordance with Engineers specification (See drawing No.900 Rev P01)				
63	Vertical Cracks in half brick walls	m	20		
64	Vertical Cracks in one brick walls	m	40		
65	Horizontal Cracks in half brick walls	m	20		
66	Horizontal Cracks in one brick walls	m	40		
	Repair cracks in brick walls by fixing 100x100x10 Steel L-sections to corner of brick wall junctions with 'RRL-12075N RAWLOK' sleeve anchors at 300mm centres all in accordance with Engineers specification (See drawing No.901 Rev P01)				
67	Vertical Cracks in half brick walls	m	60		
	CLEANING, ETC.				
	Thoroughly wet brickwork with clean water, wash down with 15% spirit of salt solution and rinse down with high pressure water jet including cleaning of window cills, reveals, etc.				
68	Existing external face brick walls	m²	1,505		
	Thoroughly wash down with sugar soap, remove any fungi and treat with fungicidal wash and rinse down with clean water				
69	Corrugated iron roof sheeting (measured on flat)	m²	300		
	High-pressure cleaning of existing floor tiles and wash down with 15% spirit of salt solution including re-instating of loose tiles and re-sealing				
70	Ceramic floor tiles	m²	19		
71	Quarry floor tiles	m²	166		
	Carried to Collection			R	

Bill No. 1
Alterations (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
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	Thoroughly wash with sugar soap, remove any fungi and rinse down with clean water				
72	Broseley roof tiles	m²	722		
	BUDGETARY ALLOWANCES				
73	Allow the Budgetary Amount of R 50 000.00 (Fifty Thousand Rand) for relocation of existing services, to be executed by the Contractor and deducted in whole or part if not required	Item			50,000 00
74	Allow the Budgetary Amount of R 50 000.00 (Fifty Thousand Rand) for sundry alteration works, to be executed by the Contractor and deducted in whole or part if not required	Item			50,000 00
	Carried to Collection			R	

Bill No. 1
Alterations (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Section No. 2

Bill No. 1

Alterations (Provisional)

COLLECTION PAGE

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FOR KZN DEPARTMENT OF TRANSPORT

Item No		Quantity	Rate	Amount R

BILL NO. 2

EARTHWORKS

For preambles see "Model Preambles for Trades"

SUPPLEMENTARY PREAMBLES

Nature of ground

The nature of the ground is assumed to be loose sandy material, therefore "earth", but possibly interspersed with "hard rock" or "soft rock".

The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock".

The nature of the ground is assumed to be silty clay with loose river boulders varying in size up to approximately 450mm diameter, therefore "earth", but possibly interspersed with "hard rock".

Trial holes indicate that the nature of the ground is silty clay to a depth of approximately 500mm with fine to medium loose sandy material below, therefore "earth". The trial holes also indicate that the water table is at a maximum depth of approximately 1000mm.

A soils investigation has been carried out on site by the engineer and the report is annexed to these bills of quantities. Descriptions of excavations shall be deemed to include all ground conditions classifiable as "earth" described in the above report and where conditions of a more difficult character are indicated these are separately measured

Carting away of excavated material

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site

Carried to Collection R

	Subterranean water				
	No information regarding subterranean water is available. The Tenderer must acquaint himself of the presence and depth of subterranean water and allow for same in his pricing				
	Filling				
	Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any multiple handling of material				
	Testing				
	Prices for filling are to include for all necessary density and other tests				
	CPAP WORK GROUP				
	Unless otherwise stated all items in this bill will be Work Group 104				
	PRUNING OF TREES, ETC.				
	Pruning of existing trees				
1	Allow the Budgetary Amount of R 20 000.00 (Twenty Thousand Rand) for pruning of all existing trees, etc. that project over the roof of the existing buildings		Item		20,000.00
	REMOVAL OF TREES, ETC.				
	Cutting down and removing, grubbing up roots and filling in holes				
2	Tree exceeding 500mm and not exceeding 1000mm girth	No	5		
3	Tree exceeding 1000mm and not exceeding 1500mm girth	No	5		
	Carried to Collection			R	

	EXCAVATION, FILLING, ETC OTHER THAN BULK				
	Excavation in earth not exceeding 2m deep				
4	Underpinning in alternating sections under existing foundations	m^3	936		
	Excavation in earth exceeding 2m and not exceeding 4m deep				
5	Underpinning in alternating sections under existing foundations	m^3	244		
	Earth filling supplied by the contractor under surface beds, etc.				
6	Over site of G2 material in accordance with SABS 1200 DM compacted to 95% Mod AASHTO density	m^3	4		
7	Over site of G7 material in accordance with SABS 1200 DM compacted to 98% Mod AASHTO density	m^3	4		
	Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 98% Mod AASHTO density				
8	Backfilling to trenches, holes, etc.	m^3	91		
	WORKING SPACE EXCAVATIONS				
	Back excavation of vertical sides of excavation in earth exceeding 500mm and not exceeding 1,5m deep for working space, including backfilling compacted to 93% Mod AASHTO density				
9	For placing and removing formwork to footings, ground beams, pile caps, etc. against excavated face	m^2	468		
	Back excavation of vertical sides of excavation in earth exceeding 1.5m and not exceeding 3m deep for working space, including backfilling compacted to 93% Mod AASHTO density				
10	For placing and removing formwork to footings, ground beams, pile caps, etc. against excavated face	m^2	116		
	Carried to Collection			R	

	EXCAVATIONS IN STRATA OF A MORE DIFFICULT CHARACTER			
	Extra over trench and hole excavations in earth for excavation in			
11	Soft rock	m^3	118	
12	Hard rock	m^3	59	
	Extra over all excavations for carting away			
13	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m^3	275	
	Risk of collapse of excavations			
14	Sides of trench and hole excavations not exceeding 1,5m deep	m^2	1,168	
	Keeping excavations free of water			
15	Keeping excavations free of water		Item	
	FILLING ETC.			
	Earth filling supplied by the contractor, compacted to 93% Mod AASHTO density			
16	Backfilling to trenches, holes, etc.	m^3	815	
	Compaction of surfaces			
17	Compaction of ground surface under floors, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 95% Mod AASHTO density	m^2	816	
	Prescribed density tests on filling			
18	"Modified AASHTO Density" test	No	6	
19	"Field Density" test including "Optimum Moisture Content" (four readings per test)	No	4	
	Carried to Collection			R

Bill No. 2
Earthworks (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	SOIL POISONING				
	Soil insecticide				
20	Under floors etc, including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m^2	816		
21	To bottoms and sides of trenches etc.	m^2	1,758		
	Carried to Collection			R	

Section No. 2

Bill No. 2

Earthworks (Provisional)

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Bill No. 2
Earthworks (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Item No		Quantity	Rate	Amount R

BILL NO. 3

CONCRETE, FORMWORK AND REINFORCEMENT

For preambles see "Model Preambles for Trades"

SUPPLEMENTARY PREAMBLES

NOTE:

Tenderers are advised to study the Model Preambles for Trades before pricing this trade.

Cost of tests The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the architect. The testing shall be undertaken by an independent firm or institution nominated by the contractor and to the approval of the architect. (Test cubes are measured separately)

Formwork Descriptions of formwork shall be deemed to include use and waste only (except where described as "left in" or "permanent"), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use. The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself.

Formwork to soffits of (solid) slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described

Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks"

Carried to Collection R

	CPAP WORK GROUP Unless otherwise stated all items in this bill will be Work Group 110				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	15MPa/20mm concrete				
1	Surface blinding under footings and bases	m^3	14		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	20MPa/20mm concrete				
2	Strip footings as underpinning in alternating sections under existing foundations	m^3	118		
	25MPa/20mm concrete				
3	Bases	m^3	7		
	REINFORCED CONCRETE				
	30MPa/20mm concrete				
4	Surface beds cast in panels on waterproofing	m^3	123		
5	Slabs including beams and inverted beams	m^3	28		
6	Stairs including landings, beams and inverted beams	m^3	2		
7	Isolated beams	m^3	1		
8	Ramps	m^3	2		
	30MPa/20mm concrete including "Penetron waterproofing admix"				
9	Slabs, including beams and inverted beams	m^3	15		
	Carried to Collection			R	

	30MPa/20mm concrete including "Penetron waterproofing admix" cast to falls				
10	Slabs, including beams and inverted beams	m^3	128		
	TEST CUBES				
11	Making and testing 150 x 150 x 150mm concrete strength test cubes (Provisional)	No	58		
	CONCRETE SUNDRIES				
	Finishing top surfaces of concrete smooth with a wood float/steel trowel				
12	Tops of beams, walls, etc.	m^2	42		
13	Surface beds, slabs, etc.	m^2	971		
14	Surface beds, slabs, etc to falls	m^2	642		
	ROUGH FORMWORK				
	Rough formwork to sides				
15	Strip footings	m^2	230		
16	Inverted beams	m^2	105		
17	Inverted beams above concrete	m^2	63		
18	Isolated beams	m^2	1		
19	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	79		
	Rough formwork to soffits				
20	Slabs	m^2	642		
	Carried to Collection			R	

	PERMANENT FORMWORK				
	0.8mm "Bondek" galvanised steel permanent decking system to soffits				
21	To soffits of slab propped up exceeding 1,5m high and not exceeding 3.5m high	m^2	150		
22	To soffits of stairs propped up exceeding 1,5m high and not exceeding 3.5m high	m^2	8		
	MOVEMENT JOINTS ETC.				
	Slip joints between horizontal concrete and brick surfaces including cement mortar bed				
23	Exceeding 300mm wide	m^2	113		
24	Not exceeding 300mm wide	m	371		
	Saw cut joints				
25	38 x 3mm Saw cut joints in top of concrete with the top 30mm increased to 8mm wide	m	150		
	Vertical joggle construction joints through concrete, including thick cement slurry to one face				
26	Surface beds not exceeding 300mmm thick	m	292		
	REINFORCEMENT (PROVISIONAL)				
	Mild steel reinforcement to structural concrete work				
27	Bars of various diameters	t	13.80		
	High tensile steel reinforcement to structural concrete work				
28	Bars of various diameters	t	20.70		
	Carried to Collection			R	

	High tensile steel dowel bars				
29	Drill hole 200mm deep in vertical side of reinforced concrete foundation for and including 12mm diameter x 500mm long high tensile steel dowel with one end grouted in with and including "Epidermix 395" epoxy grout	No	116		
	Fabric reinforcement				
30	Type 193 fabric reinforcement in concrete surface beds, slabs, etc.	m²	10		
31	Type 245 fabric reinforcement in concrete surface beds, slabs, etc.	m²	813		
	Carried to Collection			R	

Bill No. 3
Concrete, Formwork and Reinforcement
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Section No. 2

Bill No. 3

Concrete, Formwork and Reinforcement

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Bill No. 3
Concrete, Formwork and Reinforcement
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Item No		Quantity	Rate	Amount R

BILL NO. 4

MASONRY

For preambles see "Model Preambles for Trades"

SUPPLEMENTARY PREAMBLES

NOTE:

Tenderers are advised to study the Model Preambles for Trades before pricing this trade.

BRICKWORK

Sizes in descriptions

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

Hollow walls etc

Descriptions of hollow walls shall be deemed to include wall ties and leaving every fifth brick of the bottom course of the external skin open as a weep hole

Reinforced brick lintels

Lintels shall bear at least 160mm onto adjacent walling. Where such bearing cannot be obtained due to the proximity of adjacent openings the lintel shall be continuous

Face bricks

Bricks shall be ordered timeously to obtain uniformity in size and colour

Pointing

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc

Carried to Collection R

SAMPLES

Samples of all masonry building units, shall consist of a minimum of 6 units

PAVINGS

Quarry tiles, precast concrete, cement, terrazzo and similar tiles

Tiles shall be of approved manufacture, well burnt or cured, and uniform and true in size, shape and colour

Preparation of concrete floor beds, slabs, etc for pavings

Concrete surfaces shall be hacked (preferably by mechanical means) until all laitance, dirt, oil, etc. is dislodged and swept clean of all loose matter. Surfaces shall then be wetted and kept damp for at least six hours before slushing with 1:2 cement/sand and while still wet, pavings, etc. shall be laid on a 1:4 cement mortar bed not exceeding 25mm thick. Sand shall be clean, sharp river sand

Jointing of pavings

Pavings, etc, shall, except for crazy paving, be laid with continuous joints in both directions

CPAP WORK GROUP

Unless otherwise stated all items in this bill will be Work Group 116

Carried to Collection R

Bill No. 4
Masonry
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	FOUNDATIONS				
	Brickwork of NFX bricks (14 MPa nominal compressive strength) in class 1 mortar				
1	One brick walls	m²	115		
2	One and a half brick walls	m²	18		
3	Two brick walls	m²	9		
4	Three brick walls	m²	58		
	SUPERSTRUCTURE				
	Brickwork of NFP bricks in class II mortar				
5	Half brick walls against existing surfaces	m²	41		
6	Half brick walls in beamfilling	m²	122		
7	One brick walls in patches	m²	100		
8	One brick walls against existing surfaces	m²	56		
	Brickwork reinforcement				
9	75mm Wide reinforcement built in horizontally	m	71		
10	150mm Wide reinforcement built in horizontally	m	3,778		
11	230mm Wide reinforcement built in horizontally	m	214		
	"Fabcon" concrete prestressed fabricated lintels				
12	110 x 70mm Lintels in lengths not exceeding 3m	m	37		
13	150 x 70mm Lintels in lengths not exceeding 3m	m	12		
	Carried to Collection			R	

	FACE BRICKWORK				
	"Corobrik - Ruby Light Satin FBS" face bricks pointed with flush horizontal and vertical joints				
14	Extra over brickwork for face brickwork in English bond in patches	m²	100		
15	Extra over brickwork to beamfilling for face brickwork	m²	122		
	COPINGS, SILLS, ETC.				
	200 x 200 x 20mm "Terracotta Mazista" quarry tiles on brickwork with continuous joints in both directions and pointed on all exposed surfaces				
16	1500mm Wide approximately sills set flat and slightly projecting	m	6		
	Carried to Collection			R	

Bill No. 4
Masonry
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Section No. 2

Bill No. 4

Masonry

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Bill No. 4
Masonry
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Item No			Quantity	Rate	Amount R
	BILL NO. 5				
	WATERPROOFING				
	SUPPLEMENTARY PREAMBLES				
	NOTE:				
	Tenderers are advised to study the Model Preambles for Trades before pricing this trade.				
	Waterproofing Waterproofing of roofs, basements, etc shall be laid under a ten year guarantee. Waterproofing to roofs shall be laid to even falls to outlets etc with necessary ridges, hips and valleys. Descriptions of sheet or membrane waterproofing shall be deemed to include additional labour to turn-ups and turn-downs				
	CPAP WORK GROUP				
	Unless otherwise stated all items in this bill will be Work Group 120				
	DAMPPROOFING OF WALLS AND FLOORS				
	One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
1	In walls	m^2	20		
	One layer of 250 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
2	Under surface beds	m^2	816		
	250 micron "Consol Plastics Hyperlastic Orange" waterproof sheeting folded three times to be 25mm oversize on each side on 10mm thick mortar bed (See Engineers typical detail)				
3	On brick walls	m^2	66		
	Carried to Collection			R	

	LIQUID WATERPROOFING TO WALLS AND FLOORS				
	Three coats black bituminous emulsion waterproof coating				
4	On brick walls	m²	6		
	WATERPROOFING TO ROOFS, BASEMENTS, ETC.				
	"Sika Cemflex" membrane waterproofing				
5	On wet area walls	m²	356		
	4mm "Derbigum SP4" fully bonded waterproofing				
6	On flat roofs not exceeding 25 degrees from the horizontal	m²	642		
7	On tops and sides of inverted beams	m²	166		
8	Sealing edges to brickwork or concrete	m	181		
9	Additional membrane at 50mm diameter outlet	No	8		
	PROTECTIVE STONE DRESSING				
	19mm Crushed stone dressing evenly spread with larger stones around outlets				
10	50mm Thick on waterproofing to flat roofs	m²	642		
	PROTECTIVE ROOFING PAINT				
	Two coats "Silvakote" bituminous aluminium paint				
11	On waterproofing to roofs	m²	809		
	FLAT ROOF INSULATION				
	"Isoboard" or equal approved				
12	High density 32-36kg/m³ rigid extruded polystyrene 100% closed cell insulation boarding 50mm thick x 600mm wide with shiplap joints laid tightly butted on waterproofing membrane secured under 50mm stone dressing (waterproofing and stone elsewhere)	m²	642		
	Carried to Collection			R	

Bill No. 5
Waterproofing
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	JOINT SEALANTS ETC.				
	"Sikaflex 35SL" or equal and approved Polyurethane Horizontal Movement Joint Sealer				
13	Form 6mm wide movement joints in tiling through full depth of bedding coat over background movement joints, vertically and horizontally at approximately 4,5m centres and where tiling is continuous over different backgrounds, and seal with "Sikaflex 35SL" joint sealer	m	60		
	Two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc.				
14	8 x 30mm In saw cut joints in floors	m	150		
15	10 x 10mm In expansion joints in floors including raking out expansion joint filler as necessary (Provisional)	m	526		
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Section No. 2

Bill No. 5

Waterproofing

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BILL NO. 6

ROOF COVERINGS ETC.

SUPPLEMENTARY PREAMBLES

NOTE:

Tenderers are advised to study the Model Preambles for Trades before pricing this trade.

Straight cutting

Descriptions of all roof coverings are deemed to include for all straight cutting

Fixing

Fixing shall be done according to SABS 1200HB with minimum 225mm end laps.

The roof sheeting shall be fixed with "Leak King" or equal approved roof screws to timber purlins.

Prices of roof sheeting is to include for fixing of roof sheeting with hurricane clips at eaves.

Roof sheeting

The roof sheeting shall be double interlocking concealed fix klip-lok profile roll formed in continuous lengths and cut to length by a pneumatic cut off process from certified Z275 galvanised steel complying with ASTM 446 Grade "E" 3T.

The profile shall be roll formed with four ribs at centres not exceeding 233mm and a cover width not exceeding 700mm. These will include a male and female rib with capillary action breaks. The male rib shall incorporate spurs spaced no more than 200mm apart to ensure minimum crevice areas on side lap and stand proud of the rib for purposes of double interlocking action with adjacent sheets. Each trough shall incorporate two stiffener ribs.

Carried to Collection R

Fixing of roof sheeting

The roof sheeting shall be fixed to every purlin by means of clips having spurs which will securely hold the sheets in position and lock-in side lap and both centre ribs. The clips shall be manufactured from galvanised steel and shall be fixed to the steel purlin with three cadmium plated 24 x 16mm long self drilling/ tapping screws or with annular nails to timber purlins.

Flashings, etc.

Flashings shall be fixed to the roof sheeting with clips to obviate any direct fixing perforations. Prior to flashings being fixed, all troughs at the apex shall be stop ended to the full depth of the sheet in order to prevent any penetration of wind driven water. The trough shall be lipped at eaves end to form a drip.

Flashings shall be notched to the sheet profile where necessary and performed with special tools recommended by the manufacturer. Care shall be taken to ensure that no sheeting or flashing will be cut with abrasive disc on roof surface in order to prevent steel spatter from penetrating colour coated areas.

Finish to roof sheeting and flashings

The roof sheeting and flashings shall be finished one side with an epoxy primer of 4 to 6 microns and with a full top coat of silicone polyester of at least 22 microns complying with SABS 1091 (E18).

Certificate for galvanised roof covering

The contractor is to submit a certificate signed by the merchant, stating that the galvanised roof covering supplied, complies with the required thickness specified.

CPAP WORK GROUP

Unless otherwise stated all items in this bill will be Work Group 122

Unless otherwise stated all items in this bill will be Work Group 124

Carried to Collection R

Bill No. 6
Roof Coverings
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	ROOF TILES (PROVISIONAL)				
	"Broseley" Roof Tiles to match existing on site nailed with non-corrosive copper clout nails fixed at every second row and/or fixed with suitable non-corrosive clips as required to and including 38 x 38mm sawn softwood battens at 150mm centres and including an underlay of marine ply covered with malthoid fitted with counter battens to take tiles all in accordance with Architects specification				
1	Roof coverings with pitches to 45 degrees	m²	361		
2	Ridge tiles to match roofing tiles including soaker underlay, additional battens, etc and bedded and pointed in 1:3 cement mortar tinted to match tile colour	m	85		
3	Hip tiles to match roofing tiles including soaker underlay, additional battens, etc bedded and pointed in 1:3 cement mortar tinted to match tile colour	m	18		
	PROFILED METAL SHEETING AND ACCESSORIES				
	User note:				
	Supplementary preambles in connection with fixing of sheeting and accessories and laps are to be inserted when the Model Preambles for Trades (or other preambles not covering the fixing of sheeting and accessories and laps) are used				
	When the pitch of the roof is less than 9 degrees or if dustproofing is required then the description of roof covering "with side and end laps sealed" is to be used				
	Where roof coverings are fixed on top of rigid board insulation to purlins etc, descriptions of roof coverings shall include therefore. Note that sheeting is also available in corten steel, stainless steel, copper and aluminium				
	0,6mm 'S Profile' Z275 spelter galvanised corrugated sheet steel with side laps sealed fixed to timber purlins and 0,8mm galvanised sheet steel accessories				
4	Roof coverings with pitches not exceeding 25 degrees	m²	208		
5	Roof coverings with pitches to 45 degrees	m²	1,305		
	Carried to Collection			R	

6	Extra over roof sheeting for bending down troughs at eaves to form a drip	m	553		
7	Ridge capping 500mm girth	m	150		
8	Hip cappings 650mm girth	m	69		
9	Valley capping 462mm girth one time bent	m	18		
10	Barge flashing 462mm girth one time bent	m	100		
11	Side wall flashings 350mm girth	m	14		
12	Side wall flashing 350mm girth including counter flashing 185mm girth and necessary chase into brickwork including silicone sealant	m	20		
13	Head wall flashing 375mm girth including counter flashing 185mm girth and necessary chase into brickwork including silicone sealant	m	107		
14	Head wall flashings against chimney 350mm girth	m	9		
15	"Sondor" poly closures to suit profile of roof sheeting	m	554		
	ROOF AND WALL INSULATION				
	"Envirotuff Supreme 203 FR" aluminium foil based insulation				
16	Insulation laid taut over purlins (at approximately 1,80m centres) and fixed concurrent with roof covering, including taped laps and nylon straining wires	m²	1,512		
	SHEET METAL FLASHINGS, LININGS, COPINGS, ETC				
	0,8mm Class Z275 galvanised sheet steel accessories, with silicone polyester finish on one side				
17	Linings to valleys with riveted and soldered joints	m²	34		
	Carried to Collection			R	

Section No. 2

Bill No. 6

Roof Coverings

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Bill No. 6
Roof Coverings
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Item No		Quantity	Rate	Amount R

BILL NO. 7

CARPENTRY AND JOINERY

SUPPLEMENTARY PREAMBLES

Joinery

Descriptions of frames shall be deemed to include frames, transoms, mullions, rails, etc

Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes

Fixing

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete

Decorative laminate finish

Laminate finish shall be glued under pressure. Edge strips shall be butt jointed at junctions with adjacent similar finish

CPAP WORK GROUP

Unless otherwise stated all items in this bill will be Work Group 126

ROOFS, ETC.

a) The design, manufacture and transportation of the roof trusses, bracing, etc shall be under the control of a registered Engineer in accordance with SABS 0243. It shall be required from the manufacturer of the trusses to lodge a written guarantee that his construction has been designed by a qualified Structural Engineer and that he is in possession of a capability certificate issued by the Institute for Timber Construction and approved by the Architect.

Carried to Collection R

	b) Erection must be carried out as described in "The erection and Bracing of Timber Roof Trusses" published by the Truss Plate Association of South Africa Ltd. and the National Timber Research Institute, CSIR. c) Descriptions of roof trusses shall be deemed to include for design, manufacture, supply, hoisting and fixing in position, trimming ends, notching, etc. and for any temporary and permanent bracing. ----------				
	SA Pine				
1	19 x 100mm Tongued and grooved ceilings including 38 x 50mm S.A Pine brandering at 400mm centres in one direction	m²	150		
	EAVES, VERGES, ETC.				
	"Everite" medium density plain nutec-cement				
2	9 x 230mm Fascias and barge boards, including aluminium H-profile jointing strips	m	655		
	FLOORS ETC.				
	"Marine Ply" boards primed on the underside installed in a brick bond pattern screwed at 150mm centres around the border and across the centre of the sheet in both directions, all screws to be counter sunk and filled with wood filler, including sanding down to smooth surface to receive new floor finish (floor finish elsewhere measured) all in strict accordance with manufactures instructions				
3	9mm Thick "Marine Ply" boards to be cut into a nominal size of 1200 x 2400mm	m²	83		
	SKIRTINGS				
	"Ornamental Mouldings" or equal approved moulded hardwood				
4	21 x 140mm Skirtings, including 22mm quadrant beads, plugged	m	907		
	Carried to Collection			R	

Bill No. 7
Carpentry and Joinery
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	DOORS, ETC.				
	Tenderers are referred to Architect's drawings numbered 1774-WD120 to WD125 attached to these bills of quantities for tender purposes.				
	Semi-solid flush panel SABS 545 Class 4 dry interior medium duty swing doors with concealed hardwood edges and faced both sides with hardboard hung to timber frames				
5	44mm Door 813 x 2032mm high (Door Types 37,43)	No	4		
6	44mm Door 896 x 2118mm high (Door Type 70)	No	1		
7	44mm Door 1140 x 2120mm high (Door Type 97)	No	1		
	Semi-solid flush panel SABS 545 Class 4 dry interior medium duty swing doors with viewing panel with concealed hardwood edges and faced both sides with hardboard hung to timber frames				
8	44mm Door 813 x 2032mm high overall size with rebated meeting stiles, with 1 No. viewing panels, rebated all round including (Door Types 58a) (glazing elsewhere measured)	No	1		
9	44mm Door 813 x 2110mm high overall size with rebated meeting stiles, with 1 No. viewing panels, rebated all round including (Door Types 58b) (glazing elsewhere measured)	No	1		
	Semi-solid timber moulded panels interior single leaf swing doors with concealed hardwood edges and faced both sides with fanlight hung to timber frames				
10	44mm Door 813 x 2610mm high (Door Type 77a)	No	1		
	Solid timber moulded hardwood door with commercial veneer on both sides hung to timber frames				
11	44mm Swing door 1200 x 2100mm high (Door Type 2)	No	1		
12	44mm Sash double door 1500 x 2032mm high with rebated meeting stiles, each leaf with 10 No. viewing panels, rebated all round including 12 x 12mm hardwood glazing beads both sides (glazing elsewhere measured) (Door Type 68)	No	1		
	Carried to Collection			R	

	Hardwood swing door with viewing panels and solid timber panels fixed to frame, with fanlight hung to timber frames				
13	44mm Sash single leaf swing door 950 x 3000mm high overall size with rebated meeting stiles, with 6 No. viewing panels, rebated all round including fanlight (glazing elsewhere measured) (Door Type 60)	No	1		
	Hardwood swing door with rebated meeting stiles with viewing panels fixed to frame, with fanlight hung to timber frames				
14	44mm Sash double equal leaf swing door 1500 x 3000mm high overall size with rebated meeting stiles, with 10 No. viewing panels per leaf, rebated all round including fanlight (glazing elsewhere measured) (Door Type 63)	No	1		
15	44mm Sash double equal leaf swing door 1700 x 3000mm high overall size with rebated meeting stiles, with 10 No. viewing panels per leaf, rebated all round including fanlight (glazing elsewhere measured) (Door Type 55)	No	1		
	Purpose made SABS 545 Class 1 exterior hardwood heavy duty double equal leaf swing door with rebated meeting stiles with timber and glazed panels (glazing elsewhere measured) with commercial veneer to both sides hung to timber frames				
16	44mm Door, 1500 x 2092mm high with opening for glazed panels with and including 12 x 12mm hardwood glazing beads both sides (glazing elsewhere measured) (Door Type 22)	No	1		
	FRAMED FRAMES, ETC.				
	Wrought meranti				
17	76 x 53mm Frames	m	50		
	BEADS, ARCHITRAVES, ETC.				
	Wrought meranti				
18	22mm Quarter round quadrant beads	m	70		
19	22 x 100mm Architraves	m	101		
	Carried to Collection			R	

	STAIRS, ETC.				
	Wrought Meranti				
20	Timber balustrades with 70 x 70mm vertical timber posts fixed to floors filled in with 30 x30mm timber posts at 100mm centres with bottom end framed into bottom rail and top end framed into handrail including 70 x30mm timber bottom rail and 70 x 70mm timber handrail all in accordance with Architects detail (See drawing No.1773-WD161)	m	8		
	FITTINGS				
	CUPBOARDS TO KITCHENS, ETC.				
	Kitchens				
	Tenderers are referred to Architect's drawing numbered 1773-JD132 and 1773-JD133 attached to these bills of quantities for tender purposes				
21	L-shaped floor cupboards overall girth 7394 x 600 x 950mm high formed of 16mm BisonLam or equal approved melamine faced board tops, sides, shelves, etc (Colour: super white) with peen edging externally; 16mm BisonBord or equal approved cupboard doors and drawer fronts with Formica B13 or equal approved 0.7mm high pressure laminate finish on both sides, with 230mm stainless steel barrel type handles, Blum hinges and ball bearing drawer runners; 600mm wide "Avonite F1-7711" or equal approved solid counters 12mm thick with 44mm overhangs and returns and 100mm high splash-backs with 1 No. 1500 x 500mm cut-out for sink and timber post support cladded in "Avonite F1-7711" or equal approved; 100mm high recessed 16mm BisonBord or equal approved skirting with Formica B13 or equal approved 0.7mm high pressure laminate finish; all executed complete	No	1		
22	Wall cupboards overall size 4226 x 348 x 600mm high formed of 16mm BisonLam or equal approved melamine faced board tops, sides, shelves, etc (Colour: super white) with peen edging externally; 16mm BisonBord or equal approved cupboard doors with Formica B13 or equal approved 0.7mm high pressure laminate finish on both sides, with 230mm stainless steel barrel type handles and Blum hinges; 325mm wide "Avonite F1-7711" or equal approved solid top 12mm thick with 48mm overhangs and returns; all executed complete	No	1		
	Carried to Collection			R	

	Registry Room				
	Tenderers are referred to Architect's drawing numbered 1773-JD134 attached to these bills of quantities for tender purposes				
23	Floor cupboards overall size 1728 x 600 x 1000mm high formed of 16mm BisonLam or equal approved melamine faced board tops, sides, shelves, etc. with peen edging externally; 600mm wide "Avonite F1-7711" or equal approved solid counters and sides 12mm thick with 40mm overhangs and 50mm returns; 100mm high recessed 16mm BisonBord or equal approved skirting with Formica B13 or equal approved 0.7mm high pressure laminate finish; all executed complete	No	2		
	Cashier Cubicles				
	Tenderers are referred to Architect's drawing numbered JD137 attached to these bills of quantities for tender purposes				
24	Floor cupboards overall size 1600 x 1200 x 1000mm high formed of 16mm BisonLam or equal approved melamine faced board tops, sides, shelves, etc (Colour: super white) with peen edging externally and with cut-outs for 3 component power skirting; 16mm BisonBord or equal approved cupboard doors and drawer fronts with Formica B13 or equal approved 0.7mm high pressure laminate finish on both sides, with 230mm stainless steel barrel type handles, Blum hinges and ball bearing drawer runners; 1200mm wide overall "Avonite F1-7711" or equal approved solid counters 12mm thick with 44mm overhang and return on one side and 150mm overhang and return on the other, with 1 No. 470 x 420mm cut-out for transfer tray and including "Avonite F1-7711" or equal approved finish 12mm thick to front and exposed sides of cupboard with cut-outs for 3 component power skirting; 100mm high recessed 16mm BisonBord or equal approved skirting with Formica B13 or equal approved 0.7mm high pressure laminate finish; including all timber blocks, cleats and silicone sealant to close off gaps; all executed complete	No	7		
	Carried to Collection			R	

25	Floor cupboards overall size 1960 x 1200 x 1000mm high formed of 16mm BisonLam or equal approved melamine faced board tops, sides, shelves, etc (Colour: super white) with peen edging externally and with cut-outs for 3 component power skirting; 16mm BisonBord or equal approved cupboard doors and drawer fronts with Formica B13 or equal approved 0.7mm high pressure laminate finish on both sides, with 230mm stainless steel barrel type handles, Blum hinges and ball bearing drawer runners; 1200mm wide overall "Avonite F1-7711" or equal approved solid counters 12mm thick with 44mm overhang and return on one side and 150mm overhang and return on the other, with 1 No. 470 x 420mm cut-out for transfer tray and including "Avonite F1-7711" or equal approved finish 12mm thick to front and exposed sides of cupboard with cut-outs for 3 component power skirting; 100mm high recessed 16mm BisonBord or equal approved skirting with Formica B13 or equal approved 0.7mm high pressure laminate finish; including all timber blocks, cleats and silicone sealant to close off gaps; all executed complete	No	1		
26	Shelving overall size 550 x 550mm "Avonite F1-7711" or equal approved finish 12mm thick Compact High Pressure Laminate triangular shelf fixed to partitions (partitions elsewhere measured)	No	8		
	Carried to Collection			R	

Section No. 2

Bill No. 7

Carpentry and Joinery

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Item No		Quantity	Rate	Amount R

BILL NO. 8

CEILINGS, PARTITIONS AND ACCESS FLOORING

SUPPLEMENTARY PREAMBLES

NOTE:

Tenderers are advised to study the Model Preambles for Trades before pricing this trade.

Descriptions

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres, and where described as "bolted", the bolts are measured elsewhere

Ceilings

Unless otherwise described ceilings shall be deemed to be horizontal

Bulkheads

Unless otherwise described bulkheads shall be deemed to be horizontal along the length

Steel components

All steel components for ceilings, partitions, etc are to be galvanised in accordance with SANS 121

Carried to Collection R

Proprietary suspended ceilings

Electric light fittings, diffusers, panels, etc generally are "lay in" units of the same dimensions as the suspension grid described and allowance shall be made accordingly for their support, inclusive of any flexibility in setting out that may be required (ceiling panels have not been deducted and pricing shall take cognisance thereof)

"Rhino-Drywall" partition systems

"Rhino-Drywall" partitions shall comprise 63,5mm top and bottom galvanised steel tracks with 63,5mm galvanised steel vertical studs at maximum 600mm centres, friction fitted or pop-riveted to the top and bottom tracks with similar additional vertical studs as necessary at abutments, ends, etc and covered as described with wall board screwed to studding with "Drywall" screws at maximum 220mm centres. Boards shall be butt jointed and finished with "Rhino" tape and "Readymix D" jointing compound all in accordance with the manufacturer's instructions, complete with flat section aluminium skirtings. Intersections and abutments are measured separately and descriptions shall be deemed to include any additional studs, corner beads, jointing compound

"Donn Vanguard" partition systems

Demountable partitions are to be "Donn Vanguard" with an overall thickness of 76mm, comprising 50mm wide galvanised steel tracks and studs with one layer of 12,7mm gypsum plasterboard in 1,20m modules on each side and flat section aluminium skirtings and recessed aluminium cornices. The panels shall be covered with "Donn" paper backed vinyl wall cladding wrapped around edges. Aluminium door frames and glazing sections, skirtings, cornices, etc shall be natural anodised aluminium. The partitions shall be erected in accordance with the manufacturer's instructions

CPAP WORK GROUP

Unless otherwise stated all items in this bill will be Work Group 129

Carried to Collection R

	INSULATION				
	Isotherm Thermal Insulation closely fitted and laid in single over ceilings and between roof timbers				
1	100mm Thick ceiling insulation	m²	2,080		
	NAILED UP CEILINGS				
	6,4mm "Rhino" Gypsum flush plasterboard ceiling system with aluminium plaster edge trim fixed to wall at 300mm centres, consisting of Gypsum Ceiling Board with staggered joints and fixed with 3,5mm diameter x 25mm drywall screws at 150mm centres and perpendicular to steel brandering in one direction only, at maximum 400mm centres, suspended from and perpendicular to tie beam of timber trusses with suspension brackets at maximum 1200mm centres fixed by suitable screws. H-profile jointing strips to be provided at all joints between ceiling board, all in accordance with the Approved Manufacturer's Instructions.				
2	Horizontal ceilings, including 38 x 38mm sawn softwood brandering at 450mm centres	m²	249		
3	Sloping ceilings, including 38 x 38mm sawn softwood brandering at 450mm centres	m²	71		
4	Rectangular bulkhead against wall, 1000mm wide x 985mm high, including standard steel brandering at 450mm centres, joined with joiner sections and hung with suspension brackets installed complete	m	7		
5	Opening for 65mm diameter light fittings / fire detection	No	5		
6	Opening for 150mm diameter light fittings / fire detection	No	15		
7	Opening for 200mm diameter light fittings / fire detection	No	20		
8	Opening for 250 x 250mm HVAC equipment	No	1		
9	Opening for 600 x 600mm HVAC equipment	No	9		
10	Opening for 650 x 650mm HVAC equipment	No	35		
11	Opening for 900 x 900mm HVAC equipment	No	2		
	Carried to Collection			R	

12	Opening for 135mm Diameter HVAC equipment	No	33		
13	Opening for 170mm Diameter HVAC equipment	No	10		
	6,4mm "Rhino" Moisture resistant gypsum plasterboard with staggered joints and fixed with 3,5mm diameter x 25mm drywall screws at 150mm centres and perpendicular to steel brandering in one direction only, at maximum 400mm centres, suspended from and perpendicular to tie beam of timber trusses with suspension brackets at maximum 1200mm centres fixed by suitable screws. H-profile jointing strips to be provided at all joints between ceiling board, with aluminium plaster edge trim fixed to wall at 300mm centres, all in accordance with the Approved Manufacturer's Instructions				
14	Horizontal ceilings, including 38 x 38mm sawn softwood brandering at 450mm centres	m²	30		
	9.5mm "Rhino" Gypsum skimmed flush plasterboard ceiling system with aluminium plaster edge trim fixed to wall at 300mm centres, consisting 9,5mm Gypsum Ceiling Board with staggered joints and fixed with 3,5mm diameter x 25mm drywall screws at 150mm centres and perpendicular to steel brandering in one direction only, at maximum 400mm centres, suspended from and perpendicular to tie beam of timber trusses with suspension brackets at maximum 1200mm centres fixed by suitable screws. Apply Fibreglass skim tape to all joints and plaster ceiling with approved 3-6mm skim plaster and prepare for decoration, all in accordance with the Approved Manufacturer's Instructions.				
15	Horizontal ceilings, including 38 x 38mm sawn softwood brandering at 450mm centres	m²	155		
	12.5mm "GypTone Big Line 6" or equal and approved Flush Acoustic Plasterboard Ceiling fixed to cross tees using 3,5mm diameter x 25mm drywall screws at 150mm centres. Cross tees to be 600mm centres between main tees at 1200mm centres suitably suspended from structural building components with 25 x 25mm galvanised steel angles. Apply Rhinoglide, or equal and approved, at the joints between the ceiling boards, all in accordance with the Approved Manufacturer's Instructions				
16	Horizontal ceilings, including 38 x 38mm sawn softwood brandering at 450mm centres	m²	160		
	Carried to Collection			R	

17	Opening for 65mm diameter light fittings / fire detection	No	5		
18	Opening for 150mm diameter light fittings / fire detection	No	10		
19	Opening for 200mm diameter light fittings / fire detection	No	16		
20	Opening for 200mm diameter light fittings / fire detection	No	16		
21	Opening for 600 x 600mm HVAC equipment	No	4		
22	Opening for 650 x 650mm HVAC equipment	No	15		
23	Opening for 135mm Diameter HVAC equipment	No	14		
24	Opening for 170mm Diameter HVAC equipment	No	4		
	"Rhino" gypsum plasterboard cornices				
25	75mm Coved cornices, nailed	m	347		
	SUSPENDED CEILINGS				
	Proprietary suspended ceilings				
	Note: Electrical light fittings, diffusers, panels, etc generally are "lay in" units of the same dimensions as the suspension grid described and allowance must be made accordingly for their support inclusive of any flexibility in setting out that may be required (ceiling panels have not been deducted and pricing is to take cognisance thereof).				
	595 x 595 x 12,5mm thick Vinyl Faced Gypsum Plaster Ceiling Tiles, laid in a 600 x 600mm suspension grid system of pre-painted cross tees fixed between pre-painted main tees suspended from structural building components at 1200mm centres with 19mm hangar straps including matching shadow line cornices fixed at 300mm centres, and hold down clips in areas susceptible to draught (to be determined by Structural Engineer), all in accordance with the Manufacturer's Instructions				
26	600 x 600mm ceilings suspended not exceeding 1m below timber trusses	m²	1,265		
	Carried to Collection			R	

	Cornices to suspended ceilings				
27	"SM25" Pre-painted pressed metal shadowline cornice trim fixed at 450mm centres with wall anchors	m	1,598		
	PARTITIONS (CPAP WORK GROUP 138)				
	Tenderers are referred to Architect's drawing numbered JD135 - JD136b attached to these bills of quantities for tender purposes				
	"CAPCO" 90 mm drywall partition system or similar approved comprising 65mm "BETA" floor and head tracks and 64 x 32 x 14 x 1.5mm "CAPCO" studs at 600mm centres, friction fitted to floor and head tracks with additional vertical studs as necessary at corners, ends, door frames and glazing. Clad both sides with 12mm "CAPCO" gypsum board and screwed to studs with 25mm drywall screws at 230mm centres. Screws to be stopped with jointing compound to a smooth finish. Boards butt joined and tapered edges fitted with 50mm wide self-adhesive glass fibre tape, flushed with jointing compound and skimmed to finishing level 5. Door frames, termination sections, fair ends and cappings to be finished. Including additional studs, corner beads, jointing compound, tape and skim plaster. Including 100mm aluminium skirtings to both sides. All gaps and apertures must be sealed off with paintable acrylic sealer/waterproof sealant where required. All in accordance with SABISA guidelines and CAPCO installation instructions				
28	Partitioning 2100mm high with bottom and top tracks plugged	m	26		
29	Extra over partition 2100mm high for vertical abutment	No	9		
30	Extra over partition 2100mm high for T-intersection	No	7		
31	Extra over partition 2100mm high for and including viewing panel 338 x 687mm high of 4mm toughened safety glazing	No	8		
32	Extra over partition 2100mm high for and including viewing panel 687 x 687mm high of 4mm toughened safety glazing	No	14		
	Carried to Collection			R	

	Doors				
33	Extra over partition 2100mm high for "Capco" or similar approved aluminium single door approximately 800 x 2100mm high with mid-rails including standard cylinder locks, hinges, door handles and including top viewing panel 580 x 850mm high of 4mm toughened safety glazing and bottom viewing panel 580 x 850mm high of 6.3mm toughened safety glazing	No	8		
	ACCESS FLOORING				
	SUPPLEMENTARY PREAMBLES				
	Descriptions				
	All components of the access floor system are of steel construction, except for : panel-cementitious core, surfacing materials and gaskets between panel and supports.				
	The complete floor system shall be sturdy, rigid and free of overall rocking, rattles, squakes and noises. The access floor void is to be kept clean of all rubble, debris, etc and the necessary precautions must be taken to ensure that the access floor is protected from damage.				
	The finished floor shall be level within 2,5mm and shall be level within 1,5mm in any 3m direction.				
	The construction of the raised access floor system and the materials and components used therein shall comply with all local codes and laws regarding fire, safety and health, and will be installed in strict accordance with the manufacturer's instructions.				
	Carried to Collection			R	

	The Contractor must provide the following in respect of the access floor installation: 1. An unconditional guarantee on the entire installation for a period of 3 years from the date of Practical Completion. 2. Earthing test certificate for the Server Room and Test Room 3. A certificate from the South African Bureau of Standards, or equal approved testing authority showing compliance with the requirements of the specification. 4. A quality assurance document which includes control and management procedures. 5. A manual detailing installation, care and maintenance. 6. A set of shop drawings showing details of the installed access floor system.			
	"Lafarge Type 3" or equal approved raised access floor system with 3mm anti static high-pressure laminate finish (colour to Architects approval & specification) with snap on stringers, all in strict accordance with the manufacturers written specification as described in the Lafarge Access Flooring handbook, supported by and including all necessary understructure components as per the manufacturers specification for a finished floor height of 345mm above concrete sub-floor			
34	600 x 600mm Modular and interchangeable steel panel access floor system including stringers, pedestals and panels, etc. and finished as described above with a finished floor height of 345mm above the concrete sub-floor	m^2	17	
35	Junctions against walls and columns	m	18	
36	Extra over access flooring for access grommet	No	2	
37	Extra over for hole through floor panel for ventilation grille size 150 x 500mm including sealing	No	2	
38	Extra over for forming rectangular holes in floor panel to accommodate HVAC, cables and other services	No	2	
	Carried to Collection			R

	Sundries on "Lafarge Access Flooring"				
39	Double suction type panel lifting device	No	2		
40	Spare floor panels with 3mm anti static high-pressure laminate finish	No	2		
	Carried to Collection			R	

Bill No. 8
Ceilings, Partitions and Access Flooring
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Section No. 2

Bill No. 8

Ceilings, Partitions and Access Flooring

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Item No		Quantity	Rate	Amount R
	BILL NO. 9			
	FLOOR COVERINGS, ETC.			
	NOTE:			
	Tenderers are advised to study the Model Preambles for Trades before pricing this trade.			
	Fixing			
	Floor coverings, wall linings, etc shall, where applicable, be fixed with adhesive as recommended by the manufacturers of the flooring, linings, etc			
	CPAP WORK GROUP			
	Unless otherwise stated all items in this bill will be Work Group 130			
	FLOOR COVERINGS			
	Vinyl Floor Covering			
	2.5mm thick x 2.0m wide "Marmoleum Real" linoleum sheeting with "Top Shield 2" surface treatment, manufactured in accordance with EN 548 and laid in "FloorworX no 71" contact adhesive or Marmo GL acrylic water based adhesive on a previously prepared Class 1 sub-floor in accordance with SANS 10070, using a reliable Self Leveller when required, including all cutting and waste. The sheeting must be rolled in both directions with an articulated 68kg three-sectional roller immediately after it has been laid into the adhesive. Joins must be butted, grooved and heat welded using the manufacturer's welding rod, ensuring that the welding rod bonds to more than 70% of the sheet thickness, all in accordance with the manufacturer's instructions			
1	On floors m²	1,108		
	Carried to Collection		R	

	Wonstep Elements Luxury Vinyl Planks 936 x 150 x 5mm thick x 0.5mm wear layer with unilin patented locking system, on cement screed flooring / existing timber flooring using a reliable self leveller when required, laid in accordance with the Manufacturer's Instructions				
2	On floors	m^2	141		
	SKIRTINGS, NOSINGS, ETC.				
	"Wonstep"				
3	Skirting 80mm high	m	108		
	Carried to Collection			R	

Bill No. 9
Floor Coverings
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Section No. 2

Bill No. 9

Floor Coverings

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Bill No. 9
Floor Coverings
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Item No		Quantity	Rate	Amount R
	BILL NO. 10			
	IRONMONGERY			
	SUPPLEMENTARY PREAMBLES			
	NOTE:			
	Tenderers are advised to study the Model Preambles for Trades before pricing this trade.			
	Finishes to ironmongery			
	Where applicable finishes to ironmongery are indicated by suffixes in accordance with the following list: BS Satin bronze lacquered CH Chromium plated SC Satin chromium plated SE Silver enamelled GE Grey enamelled AS Anodised silver AB Anodised bronze AG Anodised gold ABL Anodised black PB Polished brass PL Polished and lacquered PT Epoxy coated SD Sanded			
	CPAP WORK GROUP			
	Unless otherwise stated all items in this bill will be Work Group 132			
	HINGES, BOLTS, ETC			
	"Euro Brass" or equal approved			
1	"EB5201" 150mm Brass flat sliding bolt with keep fixed to frame No	30		
2	"EB5202" 200mm Brass flat sliding bolt with keep fixed to frame No	30		
	"Union"			
3	"Union 8352-100SB" Two ball bearing butt hinge Pairs	24		
4	"Union CZ 80941 BPR" indicator bolt No	8		
	Carried to Collection		R	

	LOCKS				
	"Union"				
5	"Union 2900 PL" Rebate set	No	31		
6	"Union 2939 PL" Rebate set	No	1		
7	"Union 2077-152 PL" 3 lever horizontal lock	No	10		
8	"Union 2277-78 PL" 3 lever lock only	No	81		
9	"Union 2157-78 PL" 3 lever mortice dead lock	No	20		
	HANDLES, BACKPLATES, ETC.				
	"Euro Brass" or equal approved				
10	"EB1253" Polished brass oval knob handle	Pairs	10		
	"Halcast"				
11	"H1802-PB" Polished brass 210mm pull handle	No	26		
12	"H109-PB" Polished brass 150mm sash handle	No	8		
	"Buchel / Bildware" or equally approved				
13	"B2274PB" Polished brass 300mm pull handle	No	1		
	"Union"				
14	"Union Protea CB612-24 PL" lever handle on 165 x 50mm backplate	Pairs	81		
15	"Union 584-24" Aluminium, brass and stainless steel lever lock escutcheon with concealed fixing	Pairs	30		
	Carried to Collection			R	

	DOOR CLOSERS				
	"Assa Abloy" or equally approved				
16	"SP-DC700-G CAM Action EN3-6 SIL gold" door closer finished to RAL1036	No	18		
	LEGEND PLATE SIGNAGE				
	Approved fire signage				
17	Signage to be in accordance with SABS 1186 - min size 150mm. Fire signage to be photo illuminescent, and laid out as per fire drawings	No	49		
	"Union" or equally approved				
18	"CB5066-06PLE10" Cast brass male indicator sign	No	3		
19	"CB5066-06PLE11" Cast brass female indicator sign	No	2		
20	"CB5066-06PLE14" Cast brass paraplegic indicator sign	No	1		
	Purpose made signs				
	Tenderers are referred to Architect's drawing numbered WD 102 attached to these bills of quantities for tender purposes				
21	2400 x 1200mm Main entrance sign formed of vinyl chromadek sheet with galvanised frame to be fixed on 75 x 75 x 3mm Galvanised Mild Steel posts, painted black to match palisade fencing installed complete as per Architect specification (Type E)	No	2		
	Carried to Collection			R	

Bill No. 10
Ironmongery
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	PHOTOLUMINESCENT SIGNS				
	SUPPLEMENTARY PREAMBLES				
	Signs are to comply with SANS 1186-1 to 5 and to be to the approval of the local authority. Signs are to have anodised aluminium frames				
	Prices are to include for fixing by approved methods. The use of double sided tape will not be permitted. Surface mounted signs are to be concealed fixed and ceiling mounted signs are to be hung with 2mm diameter stainless steel cables				
	Single sided ceiling mounted signs are to have 2mm satin chrome anodised aluminium back panels				
	References at the end of the item descriptions are to the relative items on drawings annexed to these bills of quantities				
	Wall mounted photoluminescent statutory signs				
22	50mm Diameter sign with 20mm high text (Type A)	No	90		
23	290 x 120mm High "Vista" sign with end caps (Type B)	No	71		
24	150 x 150mm Sign with pictogram (Type D)	No	9		
	BATHROOM FITTINGS				
	"Grohe" or equal approved				
25	"Grohe Essentials Cube 40507001" chrome toilet roll holder without cover	No	11		
26	"Grohe Essentials Cube 40756001" chrome soap dispenser with holder	No	13		
	"Franke" or equal approved				
27	"Franke STRX600" stainless steel wall mounted paper towel dispenser	No	12		
28	"Franke STRX605" stainless steel wall mounted waste paper bin	No	12		
	Carried to Collection			R	

	"Vaal" or equal approved				
29	"Vaal 8939Z000" side wall grab rail	No	1		
30	"Vaal 8941Z000" 750 x 90 x 32mm brushed stainless steel wall-hung pan rail	No	1		
	WINDOW BLINDS				
	"Venetian by Windovert" or equal approved 50mm horizontal basswood blinds complete with matching aluminium head rail and brackets fixed to concrete soffit including all control mechanisms				
31	Blinds suitable for window size 520 x 1670mm high	No	2		
32	Blinds suitable for window size 600 x 450mm high	No	1		
33	Blinds suitable for window size 620 x 2077mm high	No	1		
34	Blinds suitable for window size 690 x 850mm high	No	1		
35	Blinds suitable for window size 690 x 1530mm high	No	1		
36	Blinds suitable for window size 750 x 2200mm high	No	4		
37	Blinds suitable for window size 767 x 1774mm high	No	1		
38	Blinds suitable for window size 1042 x 2133mm high	No	5		
39	Blinds suitable for window size 1060 x 2053mm high	No	4		
40	Blinds suitable for window size 1150 x 1615mm high	No	7		
41	Blinds suitable for window size 1176 x 2165mm high	No	6		
42	Blinds suitable for window size 1200 x 763mm high	No	3		
43	Blinds suitable for window size 1200 x 1525mm high	No	6		
44	Blinds suitable for window size 1200 x 2210mm high	No	3		
45	Blinds suitable for window size 1220 x 2270mm high	No	3		
46	Blinds suitable for window size 1225 x 2000mm high	No	1		
	Carried to Collection			R	

Bill No. 10
Ironmongery
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

47	Blinds suitable for window size 1270 x 2350mm high	No	1		
48	Blinds suitable for window size 1500 x 900mm high	No	1		
49	Blinds suitable for window size 1500 x 1940mm high	No	2		
50	Blinds suitable for window size 1500 x 2000mm high	No	1		
51	Blinds suitable for window size 1500 x 2179mm high	No	12		
52	Blinds suitable for window size 1800 x 2000mm high	No	1		
53	Blinds suitable for window size 1820 x 1745mm high	No	1		
54	Blinds suitable for window size 1820 x 2400mm high	No	1		
55	Blinds suitable for window size 1820 x 2485mm high	No	1		
56	Blinds suitable for window size 1832 x 2547mm high	No	2		
57	Blinds suitable for window size 2700 x 2200mm high	No	2		
58	Blinds suitable for window size 2700 x 2265mm high	No	1		
59	Blinds suitable for window size 2738 x 2491mm high	No	3		
60	Blinds suitable for window size 4520 x 2400mm high	No	1		
	SUNDRIES				
	"Grohe" or equal approved				
61	"Grohe Essentials Cube 40511001" chrome robe hook	No	4		
	"Union"				
62	"Union CZ8731" Brass plated door stop	No	113		
	"Grohe" or equal approved				
63	"Grohe Essentials Cube 40366001" 600mm chrome towel holder	No	2		
64	"Grohe Essentials Cube 40624001" chrome double towel bar	No	1		
	Carried to Collection			R	

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Ironmongery
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
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	CASH TRAY				
	"Bulletproof solutions" or equal approved stainless steel cash transfer tray				
65	"CT20A2" 520 x 440 x 115mm Deep cash transfer tray fixed to cashier counters (counters elsewhere measured)	No	8		
	PINNING BOARDS, WRITING BOARDS, PROJECTION SCREENS, ETC				
	"Vitrex" or equal and approved				
66	"Vitrex Execuboard" enamel magnetic whiteboard size 900 x 600mm high, with aluminium chalk rail plugged	No	60		
67	"Vitrex Execuboard" pinning board size 900 x 600mm high plugged with "Flortime" domestic pinning surface	No	60		
	FLOOR MAT				
	"Nuway" or equal and approved				
68	Closed matting in matwell floor mat size 2000 x 800mm with and including 20 x 4mm stainless steel edge strip surround installed complete	No	1		
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Ironmongery

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Ironmongery
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Item No		Quantity	Rate	Amount R

BILL NO. 11

STRUCTURAL STEELWORK

SUPPLEMENTARY PREAMBLES

Descriptions

Descriptions of bolts shall be deemed to include nuts and washers

Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete

NOTE:

Tenderers are advised to study the Model Preambles for Trades before pricing this trade.

Shop Drawings

1 The Sub-Contractor shall, in respect of the sub-contract works, comply with the provisions and requirements relating to the production of shop drawings, as set forth hereunder.

Definition

The term "shop drawings" shall mean drawings, diagrams, illustrations, schedules, performance charts, brochures, operating manuals and other data which are prepared by the Sub-Contractor, manufacturer, supplier or distributor and which illustrate some portion of the works.

Carried to Collection R

Bill No. 11
Structural Steelwork (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

General responsibilities

The Sub-Contractor shall provide a person or persons who shall be available immediately upon commencement of the sub-contract, whose responsibility will be:

(a) To familiarise himself with all drawings produced by the Professional team. This will involve a clear understanding of services and element co-ordination performed by the Architect.

(b) To provide the Contractor with comprehensive lists of shop drawings to be prepared.

(c) To check all shop drawings for sufficiency prior to submission to the Contractor. It is expected that such checking will include all co-ordination and pro-active resolution of any conflicting services and elements.

It is also noted that resolution of co-ordination problems will require attendance at services and element co-ordination meetings, called by the Architect as and when necessary.

Procedures

2 The Sub-Contractor shall, at his own expense, prepare and submit one reproducible print of shop drawings of all fabricated work, working or setting out drawings, shop details and schedules to the Contractor for approval by the Architect, the relative Consulting Engineer, and/or the Employer as is appropriate and such work shall not be performed by the Sub-Contractor until such approval has been given. The Sub-Contractor shall take cognisance of and adhere to the Project Document Numbering System, if any, in use on this Contract.

3 The Sub-Contractor shall present a complete schedule showing the sequence of submission of shop drawings, including submission dates, for all trades and the scheduled dates for approval of all drawings. This schedule shall take into account that the Architect and the relative Consulting Engineer and the Employer reserve a two weeks check period from the date of the receipt of all shop drawings and/or catalogue data.

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All submissions shall be on dates as indicated in the above schedule and sufficiently in advance to permit the Sub-Contractor to meet fabrication deadlines; no claim for extensions to the sub-contract time will be granted to the Sub-Contractor by reason of his failure in this respect.

The Sub-Contractor shall submit four copies of catalogues and data for approval. The Sub-Contractor shall check all submissions for conformity with the sub-contract drawings and specifications and correct any errors, omissions or deviations before their transmission to the Architect.

When the Architect advises the Sub-Contractor that shop drawings have been approved, he shall immediately submit to the Architect the original transparencies of such drawings so that the Architect's stamp of approval may be appended thereto. Thereafter the Sub-Contractor shall furnish to the Architect four prints of the approved shop drawings, setting out drawings and schedules. The Sub-Contractor shall also furnish to the works as many prints of the approved shop drawings and schedules as may be required. No work shall be performed from any shop drawings and/or catalogues not stamped with the Architect's approval.

The Sub-Contractor shall be responsible for ensuring that all dimensions conform to the dimensions of built work.

The Architect's approval of any document or drawing shall not in any way vary his contractual or delictual obligations and liabilities to the Employer or any other party, nor does it vary the contractual or delictual obligations and liabilities of the party submitting such document or drawing for approval.

If the submissions differ from the requirements of the sub-contract, the Sub-Contractor shall make specific mention of each difference in his letter of transmission with a request for substitution, together with his reasons for same, in order that, if acceptable, suitable action may be taken by the Architect. Otherwise the Sub-Contractor will not be relieved of the responsibility for executing the work in accordance with the requirements of the sub-contract.

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Corrections of shop drawings by the Architect shall not change the scope of work. Should any such correction be considered to constitute a change of scope of work, the Sub-Contractor shall notify the Architect in writing within not more than seven calendar days of such change and shall not proceed with the fabrication until so authorised by the Architect. Claims for change of scope made after performance of the work constituting the claimed change of scope will not be considered.

Unless otherwise agreed with the Architect, shop drawings shall be prepared to show all details of installation, including reticulation, fixing, etc. of all components and assemblies, or if the Sub-Contractor desires to deviate from the design and these drawings shall be all in accordance with the above procedures and at the Sub-Contractor's expense.

Descriptions

Descriptions of bolts shall be deemed to include nuts and washers

Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete

CPAP WORK GROUP

Unless otherwise stated all items in this bill will be Work Group 134

STEEL COLUMNS AND BEAMS

Hot dipped galvanised welded beams in single lengths with flat bearer and connection plates, bolted to steel all in accordance with Engineers specification (See drawing No.902 Rev P01)

4	406 x 140mm x 46kg/m I-section beams	t	0.46		

Carried to Collection R

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	Bolts to columns, beams, etc.				
5	High tensile bolts	t	0.10		
	Carried to Collection			R	

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Structural Steelwork (Provisional)

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Item No		Quantity	Rate	Amount R

BILL NO. 12

METALWORK

SUPPLEMENTARY PREAMBLES

NOTE:

Tenderers are advised to study the Model Preambles for Trades before pricing this trade.

Descriptions

Descriptions of bolts shall be deemed to include nuts and washers

Descriptions of bolts shall be deemed to include nuts and washers Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork of concrete

Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

CPAP WORK GROUP

Unless otherwise stated all items in this bill will be Work Group 136

Carried to Collection R

	SUNDRY GALVANIZED STEELWORK				
	Brackets				
	Tenderers are referred to Architect's drawing numbered 1773-JD132 and 1773-JD133 attached to these bills of quantities for tender purposes				
1	32 x 32 x 2mm thick square hollow galvanised mid steel sections overall size 400 x 300mm, with open ends capped, as counter supports	No	5		
	Corner protectors				
2	35 x 35 x 1.6mm thick Angle section corner protectors in varying lengths with 10mm radius corners to top and fixed to plaster with epoxy glue including screw fixings	m	160		
	SUNDRY ALUMINIUM WORK				
	Natural anodised aluminium				
	Tenderers are referred to Architect's drawing numbered JD137 attached to these bills of quantities for tender purposes				
3	50 x 50 x 3mm aluminium U- channel to underside of existing high impact resistant glass cashier cubicle windows	m	6		
	Tenderers are referred to Architect's drawing numbered JD136b attached to these bills of quantities for tender purposes				
4	140 x 50mm aluminium box section fixed to top of half brick wall (wall elsewhere measured)	m	11		
	Carried to Collection			R	

	ALUMINIUM WINDOWS, DOORS AND SHOPFRONTS **WORK GROUP 149** All work shall comply with the recommended performance requirements as set out by AAMSA (Association of Architectural Aluminium Manufacturers of South Africa) in their latest edition of the "Selection Guide" and "Quality Standard Guide for Installed Architectural Windows, Doors and Shopfronts." All anodising to be minimum 25 microns. Epoxy powder coating shall be minimum 50 microns. All 6mm laminated safety glazing to be "PFG Shatterprufe Fadeban" or equal approved. All exposed surfaces of aluminium are to be protected by means of an approved low tack PVC tape. The Contractor shall satisfy the Architect that the tape he proposes to use can be easily stripped after long exposure to sunlight, and rates are to include for the final stripping of the protective tape and cleaning down to approval at completion. Further, all windows and doors are to be covered completely with plastic before delivery to site and prices are to include for same. All work is to be protected during the building operations against deterioration or discolouration by mortar droppings, wax, paint, etc. and all work so damaged is to be replaced at the Contractor's expense to the approval of the Architect. Tenderers are referred to Architect's drawings numbered JD 136a & JD 136b attached to these bills of quantities for tender purposes.				
	Epoxy powder coated aluminium window (Colour to Architects specification) glazed with 5mm monolithic annealed glass in system 36 profiles to SABS 0400 and plugged to brickwork or concrete				
5	Window size 1408 x 1295mm high	No	3		
	Carried to Collection			R	

Bill No. 12
Metalwork
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
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	Epoxy powder coated aluminium window (Colour to Architects specification) glazed with 6mm monolithic annealed glass with one way viewing in system 36 profiles to SABS 0400 and plugged to brickwork or concrete				
6	Window size 1955 x 1295mm high	No	1		
	Carried to Collection			R	

Bill No. 12
Metalwork
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Bill No. 12

Metalwork

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Bill No. 12
Metalwork
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
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Item No			Quantity	Rate	Amount R
	BILL NO. 13				
	PLASTERING				
	SUPPLEMENTARY PREAMBLES				
	NOTE:				
	Tenderers are advised to study the Model Preambles for Trades before pricing this trade.				
	CPAP WORK GROUP				
	Unless otherwise stated all items in this bill will be Work Group 142				
	SCREEDS				
	Screeds wood floated on concrete				
1	30mm Thick on floors and landings	m²	1,718		
2	30mm Thick on treads and risers of stairs	m²	18		
	Screeds wood floated on concrete				
3	Average 50mm thick on roofs to falls	m²	642		
	INTERNAL PLASTER				
	Cement plaster on brickwork and small part on concrete				
	Cement plaster on brickwork				
4	On walls	m²	2,589		
5	On narrow widths	m²	80		
	Cement plaster on concrete				
6	On ceilings	m²	789		
	Carried to Collection			R	

7	On narrow widths	m²	20		
	EXTERNAL PLASTER				
	Cement plaster on brickwork and small part on concrete				
8	On walls	m²	935		
9	On narrow widths	m²	50		
	Carried to Collection			R	

Bill No. 13
Plastering
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Section No. 2

Bill No. 13

Plastering

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Bill No. 13
Plastering
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
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Item No			Quantity	Rate	Amount R
	BILL NO. 14				
	TILING				
	SUPPLEMENTARY PREAMBLES				
	NOTE: Tenderers are advised to study the Model Preambles for Trades before pricing this trade.				
	NOTE : The contractor is to provide a rate breakdown for the rate of each Prime Cost amount under the related items.				
	Descriptions Unless described as "fixed with adhesive to plaster (plaster elsewhere)" descriptions of tiling on brick or concrete walls, columns, etc shall be deemed to include 1:4 cement plaster backing and descriptions of tiling on concrete floors etc shall be deemed to include 1:3 plaster bedding				
	CPAP WORK GROUP				
	Unless otherwise stated all items in this bill will be Work Group 144				
	WALL TILING				
	200 x 200 x 6mm thick Glazed pressed ceramic wall tiles (PC R 250-00/m2 excluding VAT delivered to site) fixed with "Tal Proflex" waterproof adhesive on wall plaster made with "Sikalite" waterproof admixture and flush pointed with "Tal Super White" jointing compound - water content replaced with "Tal Bond"				
1	On walls	m²	356		
2	On narrow widths	m²	36		
	Carried to Collection			R	

	FLOOR TILING				
	300 x 300 x 9mm thick Porcelain floor tiles (PC R400-00/m2 excluding VAT delivered to site) fixed with "Tal Goldstar 6" adhesive to bedding with "Tal Fine Epoxy Grout" pointing laid in strict accordance with manufacturers instructions (To Dry Areas)				
3	On floors and landings	m²	389		
4	On treads 250mm	m	15		
5	On risers 150mm	m	17		
6	Skirting 100mm high	m	505		
7	Skirting 100mm high stepped over treads and risers	m	8		
	300 x 300 x 9mm thick Porcelain floor tiles (PC R400-00/m2 excluding VAT delivered to site) fixed with "Tal Goldstar 6" adhesive to bedding primed with "Tal Floor Primer" and waterproofed with "Tal Sureproof" membrane, with "Tal Fine Epoxy Grout" pointing and replacing the water in the mix with "Tal Bond" laid in strict accordance with manufacturers instructions (To Wet Areas)				
8	On floors	m²	80		
9	Skirting 100mm high	m	103		
	EDGE TRIMS				
10	"M.Trim ASE080" or equal approved aluminium straight edge trim	m	180		
	Carried to Collection			R	

Bill No. 14
Tiling
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Section No. 2

Bill No. 14

Tiling

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Bill No. 14
Tiling
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Item No		Quantity	Rate	Amount R

BILL NO. 15

PLUMBING AND DRAINAGE(PROVISIONAL)

SUPPLEMENTARY PREAMBLES

uPVC pipes and fittings:

Soil, waste and vent pipes and fittings shall be solvent weld jointed

Copper pipes:

Pipes shall be hard drawn and half-hard pipes of the class stated. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), class 2 (half-hard) and class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016. Only compression fittings shall be used in walls or in ground

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all sizes are given and no claim for extra bushes, reducers, etc will be entertained

Exposed concrete surfaces

Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster

Carried to Collection R

Excavations

No claim for rock excavation will be entertained unless the contractor has timeously notified the quantity surveyor thereof prior to backfilling

"Intermediate excavation" and "hard rock excavation" shall be as defined in "Earthworks"

Laying, backfilling, bedding, etc. of pipes

Pipes shall be laid and bedded and trenches shall be carefully backfilled in accordance with manufacturer's instructions

Where no manufacturer's instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following:
SABS 1200 L : Medium-pressure pipelines
LD : Sewers
LE : Stormwater drainage
Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200
DB : Earthworks (Pipe trenches)
Pipes shall be bedded in accordance with clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200
LB : Bedding (Pipes).
Unless otherwise described bedding of rigid pipes shall be class B bedding

Flush pans

Flush pans shall have straight or side outlets and "P" or "S" traps as necessary

Stainless steel basins, sinks, wash troughs, urinals, etc

Units shall have standard aprons on all exposed edges and tiling keys against walls where applicable

Waste unions

Descriptions of waste unions shall be deemed to include rubber or vulcanite plugs and chains fixed to fittings

Carried to Collection R

Bill No. 15
Plumbing and Drainage (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	Sealing around sanitary fittings, etc				
	Joints around sanitary fittings at junction with walls, etc are to be sealed with an approved silicone sealant and prices shall include for this				
	CPAP WORK GROUP				
	Unless otherwise stated all items in this bill will be Work Group 148				
	DRAINAGE				
	WORK GROUP 146				
	STORMWATER DRAINAGE				
	Heavy duty uPVC pipes				
1	110mm Pipes laid in and including trenches not exceeding 1m deep	m	60		
2	160mm Pipes laid in and including trenches not exceeding 1m deep	m	82		
3	200mm Pipes laid in and including trenches not exceeding 1m deep	m	85		
4	250mm Pipes laid in and including trenches not exceeding 1m deep	m	80		
5	355mm Pipes laid in and including trenches not exceeding 1m deep	m	45		
	Extra over heavy duty uPVC pipes for fittings				
6	160 x 110mm Access reducing junction	No	2		
7	200 x 110mm Access reducing junction	No	2		
8	250 x 110mm Access reducing junction	No	1		
	Carried to Collection			R	

	Brick sumps, catchpits and inspection chambers				
9	1370 x 1370mm Brick catchpit not exceeding 500mm deep internally including concrete base, concrete cover and benching complete all in accordance with Engineers detail (See drawing No.400 Rev P02) (cover and frame elsewhere measured)	No	10		
10	1370 x 1370mm Brick catchpit exceeding 500mm and not exceeding 750mm deep internally including concrete base, concrete cover and benching complete all in accordance with Engineers detail (See drawing No.400 Rev P02) (cover and frame elsewhere measured)	No	10		
	Gratings, covers, etc.				
11	450 x 450mm x 27,4kg Cast iron dished grating and frame	No	20		
	The following in Attenuation Tanks:				
12	Excavation in soft material not exceeding 2m deep	m^3	39		
13	Extra over septic tank excavations for excavating soft rock material	m^3	8		
14	Extra over septic tank excavations for excavating hard rock material	m^3	4		
15	Extra over septic tank excavations for carting away surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m^3	39		
16	Risk of collapse to sides of septic tank excavations exceeding 1,5m deep	m^2	36		
17	Keeping excavations free of all water other than subterranean water		Item		
18	Compaction of ground surface under floors, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 98% Mod AASHTO density	m^2	24		
19	Soil poisoning under floors, etc.	m^2	24		
20	30MPa Concrete surface bed	m^3	5		
	Carried to Collection			R	

Bill No. 15
Plumbing and Drainage (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
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21	30MPa Reinforced concrete walls in foundations	m^3	4		
22	30MPa Reinforced concrete cover slabs	m^3	4		
23	Woodfloat finish to top surfaces	m^2	48		
24	Rough formwork to walls in foundations	m^2	55		
25	Rough formwork to soffits of slab	m^2	21		
26	Rough formwork to edges, risers, ends and reveals not exceeding 300mm high or wide	m	20		
27	Rough formwork to form rebated opening exceeding 2m and not exceeding 3m girth overall through 200mm slab	No	3		
28	Steel reinforcement to structural concrete work consisting of bars of various diameters	t	0.96		
29	Type 245 mesh reinforcement in surface beds	m^2	24		
30	Half brick wall in English bond including wire ties	m^2	3		
31	250 Micron green waterproof sheeting under surface beds	m^2	24		
32	Plaster to vertical surfaces	m^2	32		
33	450 x 450mm "Saint Gobain - Product No. 2886 Type F " M/D grey iron cover and frame installed complete as per manufacturers specifications	No	3		
	SOIL DRAINAGE				
	Heavy duty uPVC pipes				
34	110mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep	m	20		
35	160mm Pipes laid in and including trenches exceeding 1m and not exceeding 2m deep	m	100		
	Carried to Collection			R	

Bill No. 15
Plumbing and Drainage (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	Brick sumps, catchpits and inspection chambers (covers, gratings and frames are billed separately)				
36	Brick inspection chamber size 1370 x 1370mm and not exceeding 1m deep internally including concrete base, concrete cover and benching complete all in accordance with Engineers detail (cover and frame elsewhere measured)	No	7		
	Gratings, covers, etc.				
37	550mm Diameter Type 2A cast iron heavy duty vented manhole cover and frame	No	7		
	SUNDRIES TO ALL DRAINAGE				
38	Extra over soft excavation for pipe trenches, chambers, etc. for excavation in soft rock	m^3	98		
39	Extra over soft excavation for pipe trenches, chambers, etc. for excavation in hard rock	m^3	39		
40	Extra over excavation for pipe trenches, chambers, etc. for carting away surplus material to a dumping site to be located by the contractor	m^3	83		
41	Extra over backfilling to drain trenches, chambers, etc. for earth backfilling supplied by the contractor	m^3	248		
42	Take up and remove existing redundant 110mm uPVC pipe not exceeding 1m deep including necessary excavation, backfilling, etc.	m	30		
43	Take up and remove existing redundant 200mm uPVC pipe not exceeding 1m deep including necessary excavation, backfilling, etc.	m	25		
44	Take up and remove existing redundant 355mm uPVC pipe not exceeding 1m deep including necessary excavation, backfilling, etc.	m	20		
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Bill No. 15
Plumbing and Drainage (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

PLUMBING

WORK GROUP 148

RAINWATER DISPOSAL

0,6mm Galvanised mild steel

45	1750mm Girth box gutter prepainted, complete with snow straps including 38x50mm box gutter timber supports at 300mm centres all in accordance with Engineers/Architects specification	m	8		
46	Extra for stopped end	No	2		
47	Extra for outlet for 110mm pipe	No	2		
	"Geberit Pluvia" Series 5 full bore outlets				
48	50mm Vertical outlet including "Penebar SW55" installed around full bore and outlet as per manufacturers specifications	No	8		
	"Ogee" or equal approved aluminium seamless gutters				
49	150mm Half round eaves gutters including heavy duty brackets	m	553		
50	Extra over eaves gutter for stopped end	No	38		
51	Extra over eaves gutter for angle	No	36		
52	Extra over eaves gutter for outlet for 110mm diameter pipe	No	66		
53	110mm Diameter rainwater pipes	m	332		
54	Extra over rainwater pipe for bend	No	66		
55	Extra over rainwater pipe for shoe	No	66		
56	Spreader for 110mm pipe	No	20		

Carried to Collection R

Bill No. 15
Plumbing and Drainage (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	SANITARY FITTINGS				
	"Citimetal" stainless steel Grade 18/10				
57	"Franke Quinline QLX 622" stainless steel double centre bowl drop-in sink size 1500 x 500mm with chromium plated grating, 40mm "Cobra 301" chromium plated waste union, plug chain and stay and fitting in position on top of cupboards (taps, trap and cupboard elsewhere)	No	1		
	Glazed ceramic fittings				
58	"Vaal Midi Weaver (Code 706601WH)" white countertop basin, size 450 x 350mm, with one tap hole and with and including "Cobra 303" chromium plated slotted basin waste with plug, fixed to wall with and including "Vaal Fixations (Code 8448Z000)" (Taps, traps elsewhere)	No	13		
59	"Vaal Orchid BI Pan (Code 439018WH)" back inlet 90 degree wall hung open rim pan and including Jazz thermoset seat, fixed to wall with and including "Vaal Fixations (Code 8084Z000)" (Grohe concealed cistern elsewhere)	No	11		
60	"Vaal Flatback TI (Code 705326WH)" wall hung urinal, size 275 x 315 x 415mm high, including 38mm chromium plated domical grating, chrome plated top inlet spreader and two hanger brackets complete, connected to flush valve (trap, flush valve elsewhere)	No	3		
	"Grohe" or equal approved				
61	"Grohe 38729000" 80mm concealed in-wall uniset element for WC with flushing cistern and including "Grohe Rapid SL4 42242000" black female outlet adaptor and including "Grohe Skate Cosmopolitan 38732000" chrome wall plate, fixed in strict accordance with the manufacturer's instructions	No	10		
62	"Grohe 38729000" 80mm concealed in-wall uniset element for WC with flushing cistern and including "Grohe Rapid SL4 42242000" black female outlet adaptor and including "Grohe Skate Air 38564000" chrome wall plate, fixed in strict accordance with the manufacturer's instructions	No	1		
	Carried to Collection			R	

	TRAPS ETC.				
	uPVC				
63	40mm Deep seal rubber P-trap	No	1		
	Chromium plated				
64	32 x 40mm "Isca 0617CH" bottle trap	No	13		
65	53mm "Cobra 360" bottle trap	No	3		
	TAPS, VALVES, ETC.				
	Brass				
66	28mm Non-return valve	No	2		
67	42mm Non-return valve	No	2		
68	15mm Isolating-ball valve	m	18		
69	22mm Isolating-ball valve	m	2		
70	28mm Isolating-ball valve	m	5		
71	42mm Isolating-ball valve	m	4		
72	76mm Isolating-ball valve	m	4		
	"Cobra Watertech" or equal approved				
73	82mm "832-10" chrome angle valves	No	28		
74	"NM-851" chrome medical single lever, elbow-action basin mixer	No	1		
75	"Focus FC-951G" chrome single lever basin mixer	No	12		
76	"Focus FC-970" chrome single lever sink mixer with swivel outlet	No	1		
77	"FJT5-5" chrome urinal flush pipe 215mm long with inlet adaptor for urinal flush valve (flush valve elsewhere measured)	No	3		
	Carried to Collection			R	

78	"FJT-000" chrome junior flushmaster flush valve 115 x 50mm with Ball-O-Stop control inlet, wall flange, additional toilet piston screw and non-hold open feature	No	3	
	SANITARY PLUMBING			
79	Excavation not exceeding 2m deep for pipe trenches	m³	50	
80	Backfilling to pipe trenches	m³	50	
	Soil, waste & vent uPVC pipes			
81	50mm Pipes to walls, columns, soffits, etc.	m	97	
82	110mm Pipes to walls, columns, soffits, etc.	m	91	
	Extra over uPVC pipes for fittings			
83	50mm Bend	No	21	
84	50mm Access bend	No	13	
85	50mm Junction	No	6	
86	110mm Bend	No	5	
87	110mm Junction	No	11	
88	110mm Pan connector	No	11	
89	Excavation not exceeding 2m deep for pipe trenches	m³	50	
90	Backfilling to pipe trenches	m³	50	
	Carried to Collection			R

Bill No. 15
Plumbing and Drainage (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	Class 10 HDPe type IV pipes				
	Supply and install high density polyethelene piping with sockets laid on a bed of 100mm umgeni sand top and bottom				
91	50mm Pipes laid in and including trenches not exceeding 1m deep	m	101		
	Extra over Class 10 HDPe type IV pipes for fittings				
92	50mm Bend	No	8		
	Class 2 copper pipes				
	Straight Piping - All copper piping chased in wall to be wrapped in kraft paper before plastering				
93	15mm Pipes chased in	m	126		
94	22mm Pipes chased in	m	103		
95	28mm Pipes chased in	m	35		
96	42mm Pipes chased in	m	20		
	Extra over class 2 copper pipes for brass compression fittings				
97	15mm Elbow	No	18		
98	15mm Tee	No	10		
99	22mm Elbow	No	5		
100	22mm Tee	No	2		
101	28mm Elbow	No	8		
102	42mm Elbow	No	8		
103	22 x 15mm Multi-step reducer	No	6		
104	22 x 15 x 15mm Reducing tee	No	1		
105	22 x 22 x 15mm Reducing tee	No	2		
	Carried to Collection			R	

Bill No. 15
Plumbing and Drainage (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

106	28 x 22mm Multi-step reducer	No	6		
107	28 x 22 x 22mm Reducing tee	No	1		
	Sundries				
108	Unreinforced concrete in thrust blocks in trenches at bends, tees, etc. including extra excavation, formwork, etc.	m³	9		
109	Sundries 42mm Diameter water meter including strainer, isolating-ball valve, etc. complete	No	1		
	Domestic water pumps				
110	"KSB ETANORM 040-025-200GG 10 PO CENTRIFUGAL" pump complete with 5.5kw motor and anti-vibration mounts, pumps controlled on VSD'S including mounting on concrete plinths 150mm high	No	2		
	Electrics and control panel				
111	5.5 kW electrical and control panel to for control and operation of pumps on VSD and level control of tank	No	1		
	Probe level controller				
112	Probe level controller in PVC pipe to control the protection of the pump when water level in the tank is low	No	2		
	ELECTRIC WATER HEATERS				
	"Zip" or equal approved				
113	5 Litre "Zip Hydroboil" wall mounted fixed in strict accordance with the manufacturer's instructions	No	2		
	TANKS ETC				
	"Jojo" Rainwater storage tanks				
	Installation of tanks to include connection to water supply, valves, stop cocks, reducers etc. as necessary				
	Carried to Collection			R	

114	2500 Litre rainwater storage tank 1420mm diameter x 1860mm high including installation as per manufacturers instructions with overflow and drain pipe complete, cast onto concrete base (concrete base elsewhere measured)	No	2		
115	5000 Litre rainwater storage tank 1820mm diameter x 2255mm high including installation as per manufacturers instructions with overflow and drain pipe complete, cast onto concrete base (concrete base elsewhere measured)	No	1		
	FIRE APPLIANCES ETC.				
116	"Everyway" hose reel complete with 30m plastic hose, chromium plated stopcock, shut-off nozzle and wall bracket	No	5		
117	4,5kg Dry chemical fire extinguisher complete with wall brackets plugged to wall	No	13		
118	Fire hydrant complete with 76 Dia pedestal and 2 No 76 Dia booster connections and 0-500 pressure gauge. Header pipe to be installed min 500mm below ground and stabilised with concrete at the bottom of header. Header to be mounted @ 1200mm above ground level	No	1		
119	76 Dia Fire Hydrant mounted on concrete pedestal (pedestal elsewhere measured)	No	1		
	Fire pumps				
120	"KSB ETANORM 080-065-315 GB 10 PO CENTRIFUGAL" pump complete with 11kw motor and anti-vibration mounts, pumps controlled on VSD'S including mounting on concrete plinths 150mm high	No	2		
	Water storage tank				
121	1900 Dia x 2240 high "JOJO" 5500 litre water tank chemical heavy capacity 5500L including outlets and controller installed complete	No	2		
	Electrics and control panel				
122	11 Kw electrical and control panel to for control and operation of pumps on VSD and level control of tank	No	1		
	Carried to Collection			R	

Bill No. 15
Plumbing and Drainage (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	Probe level controller				
123	Probe level controller in PVC pipe to control the protection of the pump when water level in the tank is low	No	2		
	Fire hydrant pedestals				
124	Unreinforced concrete hydrant pedestal 900mm high cast around vertical pipe with bottom 300mm below ground, 300 x 300mm square at base and tapering to octagonal shaped top 200 x 200mm overall including necessary excavation, formwork and two coats of paint to exposed surfaces	No	1		
	FIRE APPLIANCES - WATER SUPPLIES				
	Medium black steel straight piping				
125	28mm Pipes to walls, etc.	m	120		
126	76mm Pipes to walls, etc.	m	86		
	Extra over medium black piping for fittings				
127	28mm Elbow	No	14		
128	28mm Tee	No	2		
129	76mm Elbow	No	4		
130	76mm Tee	No	1		
131	76x76x28mm Reducing tee	No	4		
132	76x28mm Multi-step reducer	No	8		
	Class 16 HDPe pipes				
	Supply and install high density polyethelene piping with sockets laid on a bed of 100mm umgeni sand top and bottom				
133	90mm Pipes laid in and including trenches not exceeding 1m deep	m	144		
	Extra over Class 16 HDPe pipes for fittings				
134	90mm Bend	No	6		
	Carried to Collection			R	

	SLEEVES				
	Plastic sleeves for pipes not exceeding 100mm diameter				
135	Sleeve not exceeding 250mm long	No	8		
	HOLES ETC.				
	Core drilling through not exceeding 250mm thick brick walls for passage of new pipes				
136	Pipe not exceeding 50mm diameter	No	14		
137	Pipe not exceeding 110mm diameter	No	11		
	TESTING				
138	Testing the whole of the stormwater drainage, soil drainage, water supply, fire service and sanitary plumbing system, etc. including fittings		Item		
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Section No. 2

Bill No. 15

Plumbing and Drainage (Provisional)

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Bill No. 15
Plumbing and Drainage (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Item No			Quantity	Rate	Amount R
	BILL NO. 16				
	GLAZING				
	NOTE:				
	Tenderers are advised to study the Model Preambles for Trades before pricing this trade.				
	CPAP WORK GROUP				
	Unless otherwise stated all items in this bill will be Work Group 150				
	GLAZING TO WOOD WITH PUTTY				
	4mm Clear toughened safety glass				
1	Panes exceeding 0,1m2 and not exceeding 0,5m2	m²	11		
	5mm Clear toughened safety glass				
2	Panes exceeding 0,5 m2 and not exceeding 2 m2	m²	12		
3	Panes exceeding 0,5 m2 and not exceeding 2 m2 in shapes other than rectangular	m²	2		
	GLAZING TO STEEL WITH PUTTY				
	4mm Clear toughened safety glass				
4	Panes exceeding 0,1m2 and not exceeding 0,5m2	m²	2		
	4mm Clear monolithic annealed glass				
5	Panes exceeding 0,1m2 and not exceeding 0,5m2	m²	13		
	Carried to Collection			R	

	GLAZING TO EXISTING WOOD WITH PUTTY				
	3mm Obscure glass				
6	Panes exceeding 0,1m² and not exceeding 0,5m² as p201/9	m²	2		
	TOPS, SHELVES, DOORS, MIRRORS, ETC.				
	"Havana" or equal approved 6mm Float glass with Dark Mahogany frame fixed to wall with an approved silicon adhesive				
7	Mirror 600 x 750mm high	No	12		
	6mm Silvered float glass lead backed mirrors with polished edges fixed to wall with an approved silicon adhesive				
8	Mirror 410 x 1025mm high	No	1		
	Carried to Collection			R	

Section No. 2

Bill No. 16

Glazing (Provisional)

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Bill No. 16
Glazing (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Item No		Quantity	Rate	Amount R

BILL NO. 17

PAINTWORK

SUPPLEMENTARY PREAMBLES

NOTE:

Tenderers are advised to study the Model Preambles for Trades before pricing this trade.

DESCRIPTIONS

Descriptions of paintwork shall be deemed to include for all cutting in

PREPARATORY WORK TO EXISTING WORK

Previously painted plastered surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth

Previously painted metal surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal

Previously painted wood surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth

PAINT SPECIFICATIONS

All painting shall be done in accordance with "Plascon-Evans" specifications

CPAP WORK GROUP

Unless otherwise stated all items in this bill will be Work Group 152

Carried to Collection R

Bill No. 17
Paintwork (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	PAINTWORK, ETC. TO NEW WORK ON				
	FLOATED PLASTER SURFACES WITH				
	One coat "Dulux Duraseal" alkali resistant primer (full coat) and one coat universal undercoat and two coats solvent based eggshell enamel paint as per "Dulux Trade Pearlglo" or equal and approved				
1	Internal walls	m²	2,034		
2	Ceilings and beams	m²	789		
	PLASTER BOARD SURFACES WITH				
	One coat "Dulux Duraseal" alkali resistant primer (full coat) and two coats "Dulux Dura 65" matt acrylic paint				
3	Ceilings and cornices	m²	235		
4	Partitions	m²	55		
	FIBRE-CEMENT SURFACES WITH				
	Two coats pure acrylic paint on				
	One coat alkali resistant primer and two coats "Dulux Dura 100" silk M370-0300 paint				
5	Fascias and barge boards	m²	334		
	METAL SURFACES WITH				
	Clean with "Dulux Galvkleen", rinse with fresh water, apply one coat galvanised metal primer, one universal undercoat and two coats high gloss enamel paint on galvanised mild steel				
6	Brackets	m²	6		
	One coat acrylic emulsion metal primer and two coats alkyd gloss roof paint on galvanised steel				
7	S profile Corrugated iron roofs (measured on flat)	m²	1,512		
	Carried to Collection			R	

Bill No. 17
Paintwork (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	All exposed piping to be degreased and painted over its entire length with red oxide and one coat approved quality red paint to identify fire pipe work all in accordance with Engineers specifications				
8	Rails, bars, pipes, etc not exceeding 300mm girth	m	236		
	WOOD SURFACES WITH				
	One coat SABS wood primer (Full coat), one coat universal undercoat and two coats solvent based eggshell enamel paint as per "Dulux Trade Pearlglo" or equal and approved				
9	Doors	m²	47		
10	Windows, sash doors and fanlights	m²	29		
11	On door frames, etc.	m²	31		
12	Skirtings, rails, etc. not exceeding 300mm girth	m	1,007		
	Lightly sand with sand paper and apply one coat SABS wood primer (Full coat), one coat universal undercoat and two coats solvent based eggshell enamel paint as per "Dulux Trade Pearlglo" or equal and approved				
13	On balustrades	m²	16		
	Three coats polyurethane suede varnish on				
14	Boarded ceilings	m²	150		
	OFF SITE PAINTING OF STRUCTURAL STEELWORK				
	Wire brush to Grade ST 2 specification in accordance with the Swedish Standard SIS 055900 of 1967 and apply one coat zinc chromate primer on steel				
	Wire brush to Grade ST 2 specification in accordance with the Swedish Standard SIS 055900 of 1967 and apply one coat zinc chromate primer on steel				
15	On columns, beams and trusses	t	0.46		
	Carried to Collection			R	

	ON SITE PAINTING OF STRUCTURAL STEELWORK				
	Spot prime defects in pre-primed surfaces with zinc chromate primer, one coat "Dulux Duragrip" M371-2100 undercoat and two coats "Dulux Duragloss" paint on steel				
	Spot prime defects in pre-primed surfaces with zinc chromate primer, one coat "Dulux Duragrip" M371-2100 undercoat and two coats "Dulux Duragloss" paint on steel				
16	On columns and beams and trusses	t	0.46		
	PAINTWORK, ETC TO PREVIOUSLY PAINTED WORK ON				
	ON QUARRY TILE SURFACES				
	Remove all loose material and surface contamination by sanding or scraping, treat any areas of fungal growth with "Jik", and apply one coat "Super Grip Primer" and two coats exterior quality enamel paint as per "Dulux Trade Pearlglo" or equal and approved				
17	Sills, thresholds, etc	m²	100		
	FLOATED PLASTER SURFACES WITH				
	Remove all loose material and surface contamination by sanding or scraping, treat any areas of fungal growth with "Jik", make good any minor defects using "Mendall 90". allow to dry and ensure that any powder residues are removed and repaired areas sanded smooth, all walls to be clean and dry, and damp problems remedied and apply one coat "Alkali Resistant Primer" (full coat) and one coat universal undercoat and two coats solvent based eggshell enamel paint as per "Dulux Trade Pearlglo" or equal and approved				
18	Internal walls	m²	6,150		
19	Sills, thresholds, etc.	m²	100		
	Carried to Collection			R	

	Remove all loose material and surface contamination by sanding or scraping, treat any areas of fungal growth with "Jik", make good any minor defects using "Mendall 90". allow to dry and ensure that any powder residues are removed and repaired areas sanded smooth, all walls to be clean and dry, and damp problems remedied and apply one coat "Alkali Resistant Primer" (full coat) and two coats SABS 633 low sheen acrylic paint as per" Dulux Trade 100" or equal and approved				
20	External walls	m^2	935		
	PLASTER BOARD SURFACES WITH				
	Strip existing loose and flaking paint and apply one coat "Dulux Durafill" filler coat and two coats "Dulux Dura 70" mid sheen acrlylic M370-0300 paint				
21	Ceilings and cornices	m^2	80		
	METAL SURFACES WITH				
	Strip existing paint to bare metal surface by sanding down rust with a rust remover, wash surfaces with "Aquasolv Degreaser" to remove dirt and other contaminants, rinse thoroughly with fresh water and allow to dry, sand to achieve a smooth surface and primed with two coats component solvent based polyamide and apply one coat "Coastcote Etch" primer (Code SNK) and two coats "Velvaglo" no-drip enamel paint on steel				
22	Recordroom and strongroom doors and frames	m^2	11		
23	On windows with burglar bars	m^2	324		
	One coat acrylic emulsion metal primer and two coats alkyd gloss roof paint on galvanised steel				
24	S profile Corrugated iron roofs (measured on flat)	m^2	300		
	Carried to Collection			R	

	WOOD SURFACES WITH				
	Strip existing paint to bare timber surface and prepare and paint all sides of door after final trimming, apply knotting to all knots and resinous areas and prime all nail or screw heads with steel primer, apply one coat SABS wood primer (Full coat), apply one coat universal undercoat, apply two coats SABS enamel paint as per "Dulux Trade Pearlglo" or equal and approved				
25	On doors	m²	344		
26	On door frames	m²	198		
27	On sash doors and fanlights	m²	342		
	Strip existing paint to bare timber surface and sand smoothly, all indents and crevices are to be filled prior to sanding, apply one coat SABS wood primer (Full coat), apply one coat universal undercoat, apply two coats SABS enamel paint as per "Dulux Trade Pearlglo" or equal and approved				
28	On windows	m²	231		
29	On louvered window shutters	m²	33		
30	On balustrades	m²	33		
31	Skirtings, rails, etc not exceeding 300mm girth	m	200		
	Lightly sand with sand paper and stop all nail holes and clean surface with mineral turpentine soaked rags, apply three coats "Woodguard Timbavarnish" matt finish varnish or equal approved				
32	Doors	m²	8		
33	On door frames	m²	4		
	Lightly sand with sand paper and stop all nail holes or wood crevices with wood filler leaving smooth finishes surfaces and clean surface with mineral turpentine soaked rags, apply three coats "Dulux Woodguard Timbavarnish" gloss finish varnish or equal approved				
34	On timber wall panels	m²	229		
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Section No. 2

Bill No. 17

Paintwork (Provisional)

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Bill No. 17
Paintwork (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Item No			Quantity	Rate	Amount R
	BILL NO. 18				
	BUILDER'S WORK IN CONNECTION WITH SPECIALIST INSTALLATIONS				
	SUPPLEMENTARY PREAMBLES				
	PREAMBLES				
	For Preambles refer to "Standard Preambles to all trades - WB20 - 1986" and SUP 1 to SUP 5.				
	Proprietary items or materials				
	Proprietary items or materials where specified are to be of the brand specified - or other approved - by the Project Manager				
	CPAP WORK GROUP				
	Unless otherwise stated all items in this bill will be Work Group 102				
	ALTERATIONS				
	Form 70mm deep chase in brickwork including making good internal cement plaster				
1	25mm Wide chase	m	400		
2	50mm Wide chase	m	450		
3	150mm Wide x 150mm high x 70mm deep chase for conduit boxes	No	366		
4	150mm Wide x 100mm high x 70mm deep chase for conduit boxes	No	583		
5	600mm Wide x 600mm high x 100mm deep chase	No	5		
6	1200mm Wide x 1200mm high x 100mm deep chase	No	8		
	Carried to Collection			R	

	Cutting through floors			
7	Cutting through not exceeding 75mm deep and 300mm wide concrete surface bed including making good concrete on completion	m	40	
	Cutting through doors			
8	300 x 300mm high Opening in existing door	No	3	
9	400 x 400mm high Opening in existing door	No	2	
	Under cutting of existing doors			
10	Under-cut door by 35mm including removal and re-installation of the door	No	6	
	Breaking out for and forming openings through brick walls including making good plaster both sides for electrical cable ladders to pass though including making good by filling openings with fire retardant filling after cables and cable ladders have been installed			
11	450 x 450 high Opening in one brick wall	No	2	
12	250 x 250 high Opening in one brick wall including 25mm thick timber frame around opening	No	2	
13	300 x 300 high Opening in one brick wall including 25mm thick timber frame around opening	No	9	
14	350 x 350 high Opening in one brick wall including 25mm thick timber frame around opening	No	1	
15	400 x 400 high Opening in one brick wall including 25mm thick timber frame around opening	No	3	
16	500 x 500 high Opening in one brick wall including 25mm thick timber frame around opening	No	1	
17	600 x 100mm high Opening in 345mm thick brick wall at approximately 3600mm above finished floor level	No	96	
18	800 x 300mm high Opening in 345mm thick brick wall	No	10	
19	100 x 400mm high Opening in 345mm thick brick wall at floor level for power skirting to pass through	No	69	
	Carried to Collection			R

20	100 Dia Opening through one brick wall	No	1		
21	120 Dia Opening through one brick wall	No	1		
22	160 Dia Opening through one brick wall	No	1		
	Core drilling vertically of hole for pipe including filling of holes with an easily removable fire retardant filling (prattley perlite or similar approved) after cables have been installed				
23	50mm Diameter through 230mm Brickwall	No	8		
24	100mm Diameter through 230mm Brickwall	No	8		
25	150mm Diameter through 230mm Brickwall	No	8		
26	200mm Diameter through 230mm Brickwall	No	8		
	Core drilling horizontally of hole for pipe including filling of holes with an easily removable fire retardant filling (prattley perlite or similar approved) after cables have been installed				
27	50mm Diameter through 230mm Brickwall	No	2		
28	100mm Diameter through 230mm Brickwall	No	3		
29	150mm Diameter through 230mm Brickwall	No	6		
30	200mm Diameter through 230mm Brickwall	No	3		
	Sundries				
31	50mm Diameter wall box complete with 20mm Diameter conduit terminating 100mm above ceiling (Refer to typical mechanical engineers chasing detail)	No	50		
	Carried to Collection			R	

	METALWORK				
	"Vastrap" plate or equal approved				
32	1000mm x 1200mm wide x 6mm thick steel plate secured onto 40 x 40 x 4mm steel frame to form ramp to existing server room entrance including all cutting, welding, etc. complete	No	1		
	CARPENTRY & JOINERY				
	Ducts				
33	Provide timber/drywall service duct 1000 x 300 x 3000mm high with semi solid timber door and frame cut to size (i.e one and a half doors and frames per duct)	No	3		
	SLEEVES & MANHOLES FOR ELECTRICAL CABLES, ETC.				
	"Kabelflex" uPVC pipes or equal approved				
34	110mm Pipes laid in and including trenches not exceeding 1m deep	m	30		
35	160mm Pipes laid in and including trenches not exceeding 1m deep	m	30		
	Extra over uPVC pipes for fittings				
36	110mm Slow radius bend	No	4		
37	160mm Slow radius bend	No	9		
	Inspection chambers (covers, gratings and frames elsewhere measured)				
38	Brick inspection chamber size 400 x 600mm and not exceeding 1m deep internally	No	4		
39	Brick inspection chamber size 600 x 600mm and not exceeding 1m deep internally	No	1		
	Gratings, covers, etc.				
40	400 x 600mm x 72kg Type 8A cast iron double seal manhole cover and frame	No	4		
	Carried to Collection			R	

41	600 x 600mm x 124kg Type 8B cast iron double seal manhole cover and frame	No	1		
	Carried to Collection			R	

Bill No. 18
Builders Work in connection with Specialist Installations (Provi
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Section No. 2

Bill No. 18

Builders Work in connection with Specialist Installations (Provisional)

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Total Brought Forward from Page No.	117	
Carried Forward to Summary of Section No.		R

Item No		Quantity	Rate	Amount R

BILL NO. 19

PROVISIONAL SUMS ETC.

SUPPLEMENTARY PREAMBLES

Work executed by direct contractors

Work listed under the heading "DIRECT CONTRACTORS WORK" will commence during the execution of this contract and the contractor shall allow free access to the site for these direct contractors. The contractor shall prepare a programme in conjunction with these direct contractors in order to complete the work successfully. The direct contractors will be regarded as nominated sub-contractors but payment will not be made to them via the contractor. The estimated values of these contracts are listed to enable the contractor to determine profit and attendances, if required

General

Unless otherwise described, all prime cost amounts and provisional sums exclude the cash discount of 5% and include for delivery to site of all articles concerned all prime cost amounts and provisional sums are net and include for delivery to site of all articles concerned

Preliminaries

The contractor is referred to the Preliminaries for further amplification of "Prime Cost Amounts and Provisional Sums"

NOTES:

1. The Contractor's attention is drawn specifically to the Principal Building Agreement clause 20.0 (Nominated Sub-Contractors), clause 21.0 (Selected Sub-Contractors) and clause 22 (work by others) and to the related Clauses in Bill No. 1 - Preliminaries.

2. The Contractor's attention is drawn also to the definition of attendance on nominated or selected sub-contractors and of fuel, power and water for commissioning of mechanical and other specialised installations given in the JBCC Preliminaries.

Carried to Collection R

Bill No. 19
Provisional Amounts
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	3. Where special attendance includes the provision of hoisting facilities for a sub-contractor then the Contractor shall :- * Ensure that the capacities of his hoisting equipment are sufficient to deal with the masses and the quantities of the items to be hoisted, * Schedule the times of availability of the hoisting equipment for each sub-contractor, * Provide all necessary personnel to operate the hoisting equipment, all to enable the sub-contractor to execute the hoisting or lowering of his material, etc using the facilities provided by the Contractor. 4. Under no circumstances may any Prime Cost - Provisional Amount, etc be extended at an amount lower than the amount given in this Bill. 5. Provisional amounts may be omitted or reduced at the Employer's sole discretion and the contractor shall not be entitled to claim for any loss by way of reductions or omissions of any discount, or percentage relating to Provisional Amounts or P.C. amounts or any loss of profit related thereto. The following Provisional Amounts are all NET amounts EXCLUSIVE of commission for the Contractor. These amounts are for work to be executed complete by Nominated/Selected Sub-Contractors. Provisional Amounts may be omitted or reduced at the Employer's sole discretion and the contractor shall not be entitled to claim for any loss by way of reductions or omissions of any discount, or percentage relating to Provisional Amounts or P.C. amounts or any loss of profit related thereto.				
	REPAIRS TO WINDOWS AND DOORS				
1	Allow the provisional amount of R 50 000.00 (Fifty Thousand Rand) for Repairing of Windows and Doors	Item			50,000 00
	Carried to Collection		R		

Bill No. 19
Provisional Amounts
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

2	Profit		%	
3	Attendance		%	
	REPAIRS TO EXISTING FINIALS, CHIMNEYS, ETC.			
4	Allow the provisional amount of R 150 000.00 (One Hundred and Fifty Thousand Rand) for Repairing of Roof Finials, Chimneys, etc.	Item		150,000.00
5	Profit		%	
6	Attendance		%	
	TIMBER TRUSSES			
7	Allow the provisional amount of R 2 700 000.00 (Two Million and Seven Hundred Thousand Rand) for Timber Trusses, Accessories, etc.	Item		2,700,000.00
8	Profit		%	
9	Attendance		%	
	RELINING OF EXISTING DRAINAGE PIPES, ETC.			
10	Allow the provisional amount of R 750 000.00 (Seven Hundred and Fifty Thousand Rand) for Relining of existing stormwater and soil drainage pipes	Item		750,000.00
11	Profit		%	
12	Attendance		%	
	Carried to Collection		R	

Bill No. 19
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	FUMIGATION			
13	Allow the provisional amount of R 350 000.00 (Three Hundred and Fifty Thousand Rand) for Fumigation services	Item		350,000 00
14	Profit		%	
15	Attendance		%	
	LANDSCAPING			
16	Allow the provisional amount of R 200 000.00 (Two Hundred Thousand Rand) for landscaping and irrigation	Item		200,000 00
17	Profit		%	
18	Attendance		%	
	BUDGETARY ALLOWANCES			
	BUILDERS WORK IN CONNECTION WITH SPECIALISTS INSTALLATIONS			
19	Allow the Budgetary Amount of R 250 000.00 (Two Hundred and Fifty Thousand Rand) for builders work in connection with Specialists installations	Item		250,000 00
	Carried to Collection		R	

Bill No. 19
Provisional Amounts
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Section No. 2

Bill No. 19

Provisional Amounts

COLLECTION PAGE

	Page No	Amount R
Total Brought Forward from Page No.	119	
Total Brought Forward from Page No.	120	
Total Brought Forward from Page No.	121	
Total Brought Forward from Page No.	122	
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Bill No. 19
Provisional Amounts
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

SECTION SUMMARY - Section No.2: Building Works

Carried to Final Summary R

MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Item No			Quantity	Rate	Amount R
	SECTION NO. 3				
	BILL NO. 1				
	EXTERNAL WORKS				
	NOTE:				
	Tenderers are advised to study the Model Preambles for Trades before pricing this trade.				
	ROADWORKS (Work Group 154)				
	Alterations				
1	Break up and remove premix pavement including removing layerworks, etc.	m²	1,000		
2	Break up and remove brick paving including layerworks (Credit R .....)	m²	91		
	Surface preparation				
3	Compaction of ground surface under pavings, etc including scarifying for a depth of 150 mm, breaking down oversize material, adding suitable material where necessary and compacting to 98 % Mod AASHTO density	m²	1,091		
4	Apply "Weedmaster Turfmaster" weedkiller (at a rate of 40-45 ml to 5 litres of water per 50 m2) to surface of ground	m²	1,091		
	Earth filling supplied by the contractor under pavings, etc.				
5	Over site of G2 material in accordance with SABS 1200 DM compacted to 98% Mod AASHTO density	m³	119		
6	Over site of G5 material in accordance with SABS 1200 DM compacted to 95% Mod AASHTO density	m³	45		
7	Over site of G7 material in accordance with SABS 1200 DM compacted to 93% Mod AASHTO density	m³	164		
	Carried to Collection			R	

	Bituminous premix road surfacing including prime coat and tack coat				
8	40mm Thick premix to parking areas, roadways, etc.	m²	1,000		
	Paving of "Coropave" clay paving bricks with butt joints on and including 25mm thick river sand bed with sand and cement mixture swept into joints and hosed down including preparation of ground or filling				
9	50mm Thick paving in herringbone pattern to falls	m²	91		
	Approved white or yellow non-reflective road marking paint on premix				
10	Line 100mm wide	m	60		
11	Traffic arrow 2500 x 1000mm wide extreme	No	8		
	Carried to Collection			R	

Bill No. 1
External Works (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Section No. 3

Bill No. 1

External Works (Provisional)

COLLECTION PAGE

	Page No		Amount R
Total Brought Forward from Page No.	125		
Total Brought Forward from Page No.	126		
Carried to Final Summary		R	

Bill No. 1
External Works (Provisional)
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Item No		Quantity	Rate	Amount R
	SECTION NO. 4			
	ELECTRICAL INSTALLATION			
	SCHEDULE NO 1 PRELIMINARIES			
	Nett price for site establishment, site administration and compliance with the General conditions of Contract and compliance with the General conditions of Contract and Specifications as laid down in this document where and as applicable.			
1	Site establishment, including the name board (if applicable)as described in this document.		SUM	
2	Site administration (time related)		SUM	
3	Compliance with General Conditions of Contract (time related)		SUM	
4	Identification board on site to display all material to be used in the contract (if applicable)		SUM	
5	Prepare, certify and submit a full set of as built drawings for each part of the Works as described in the document. To be submitted on completion of each section of the contract.		SUM	
6	Any additional item(s) that may be required to complete the Works and the Tenderer wish to detail and price.		SUM	
7	Allow for liaison with Pmb Electricity to ensure that all requirements of the electrical connection including metering, main switch etc is met		SUM	
8	The descriptions in these bills of quantities shall be read in conjunction with the specification.		SUM	
9	The unit rate for each item in the Bills of Quantities shall include for all materials, labour, profit, transport, etc., everything necessary for the execution and complete installation of the work in accordance with the description.		SUM	
	Carried to Collection		R	

Bill No. 1
Electrical Installation
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
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10	The Bills of Quantities shall not be used for ordering purposes. The Specialist shall check the lengths of cables and overhead conductors on site before ordering any of the cables. Any allowance for off-cuts shall be made in the unit rates.		SUM	
11	The rates shall exclude Value Added Tax and VAT shall only be added in the Final summary.		SUM	
12	All material covered by this Specification shall, wherever possible, be of South African manufacture.		SUM	
	A Trade tested and registered installation electrician shall be on site at all times. The Electrician shall be responsible for the entire project and together with this Tender, all details of the proposed electrician shall be provided including current registration and a copy of the installation electrician Licence. The electrician shall keep an accurate daily site diary and shall provide accurate, dimensioned "As Built drawings" in Autocad format of all services installed on this project. Non compliance with this requirement will invalidate the Tender.			
13	ANY / ALL COSTS INCURRED BY THE ELECTRICAL CONSULTING ENGINEER AS A RESULT OF NON COMPLIANCE WITH THIS REQUIREMENT BY WAY OF ADDITIONAL TIME SPENT ON SITE AND TRAVELLING COSTS ETC., WILL BE DEDUCTED FROM THE ELECTRICAL SPECIALIST AT NO COST TO THE CLIENT.		SUM	
	DETAILS OF REGISTERED INSTALLATION ELECTRICIAN THAT WILL BE ON SITE FULL TIME.			
	NAME:…… ……			
	ECB REGISTRATION NUMBER…… …..			
	Carried to Collection		R	

Bill No. 1
Electrical Installation
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	ATTACH A COPY OF THE CURRENT REGISTRATION OF THE INSTALLATION ELECTRICIAN				
14	THE TENDER WILL ONLY BE ACCEPTED IF COMPLETED IN FULL, INCLUDING INFO SCHEDULES AND PRICED BILL OF QUANTITIES. PREFERENCE WILL BE GIVEN TO TENDERS THAT ARE TO SPECIFICATION AND COMPLETELY AND CORRECTLY FILLED IN.			SUM	
	SCHEDULE NO 2 - SITEWORKS & CABLING - WORKGROUP NO 162				
	PVC/SWA/ECC CABLES 600/1000V to SANS 1507				
	Supply and install the following PVC insulated copper Cables, excluding cable trenches, joints and terminations.Installed on cable ladder or tray, pulled into sleeves etc.				
15	95 mm² x 4 core	m	250		
16	35 mm² x 4 core	m	50		
17	25 mm² x 4 core	m	325		
18	16 mm² x 4 core	m	310		
19	10 mm² x 4 core	m	68		
20	6 mm² x 4 core	m	280		
21	4 mm² x 2 core	m	60		
22	70 mm² BEW STRAPPED TO CABLES AT 1m INTERVALS	m	100		
23	16 mm² INSULATED EARTH WIRE STRAPPED TO CABLES AT 1m INTERVALS	m	250		
	Carried to Collection			R	

	MODIFICATIONS TO EXISTING MAIN DISTRIBUTION BOARD IN METER ROOM				
	Allowance shall be made to carry out the required works outside of normal working hours. Tenderers shall include in the following rates for all necessary wiring, busbars, circuit breakers and accessories with mounting cradles, modifications to existing steelwork and any other items that may be considered necessary for the supply and installation of the following equipment to the satisfaction of the Client/ Engineer. All equipment shall be capable of reducing directly the fault levels from 35kA to 5 kA on its outgoing terminals and full compatibility/ integrity of performance shall be maintained with any / all downstream equipment. (all interconnections from busbars shall be done using 3 x 120mm² conductors/breaker of nominal length 2,5m each)				
24	225 A TP Circuit Breaker (CBI F35D) with new cradle	No	1		
25	96 x 96mm MDI ammeter with coloured bezel (250A)	No	3		
26	250/5 Class 1 CLAMP ON 15VA Current Transformers and wiring	No	3		
27	Elster A1700 Meter, complete with Test block, 3 x busbar mounted fuses and all associated wiring	No	1		
	CABLE TERMINATIONS				
	Supply and installation of cable glands, shrouds, lugs and connections for PVC insulated copper cables with earth conductors				
28	95 mm² x 4 core	No	4		
29	35 mm² x 4 core	No	14		
30	25 mm² x 4 core	No	14		
31	16 mm² x 4 core	No	8		
32	10 mm² x 4 core	No	8		
33	6 mm² x 4 core	No	6		
34	4 mm² x 2 core	No	2		
	Carried to Collection			R	

	CABLE JOINTS				
	Supply and installation of SCOTCHCAST or equal approved, ferrules and connections for PVC insulated copper cables with earth conductors				
35	95 mm² x 4 core	No	3		
	TRENCHING				
	Excavation, back filling and compacting of cable trenches to their original state. NOTE : Types of ground shall be defined as indicated in "Detailed Specification" See Clauses "DEFINITIONS" AND "CABLE TRENCHES"				
36	EARTH	m³	50		
37	SOFT ROCK	m³	5		
38	HARD ROCK	m³	5		
39	BEDDING MATERIAL - Supply and install river sand or Approved Sifted ground.	m³	5		
40	Neatly break up existing tarmacadam surface to dig trench, cart away rubble and reinstate same to original condition in existing roadway	m²	5		
	MAINTAINING POWER				
41	Allow for the maintaining of the existing power supply to all areas and the final changeover to the new areas as specified, including all necessary modifications there to and associated wiring from busbars to breakers. Allowance must be made for all necessary labelling & materials required to form an installation to the satisfaction of the Engineer. (3 phases of works)			SUM	
	CABLE MARKERS				
42	Supply and install cable markers to route cables. Final positions of Markers shall be approved by the Engineer.	No	3		
	TESTING AND EARTHING				
43	Allow for the testing of all cables as specified.		Item		
	Carried to Collection			R	

Bill No. 1
Electrical Installation
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
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	DRAW WIRES			
44	Supply and install galvanised steel draw wire in all sleeves. 2 mm dia.	m	60	
	SLEEVES			
	Supply and install the following sleeves including easy bends, installed in ground, chased into brickwork, secured onto concrete slab or brickwork or installed in closed roof space.			
45	100 Dia PVC	m	35	
46	50 Dia PVC	m	60	
	Carried to Collection			R

	SCHEDULE NO 3				
	ELECTRICAL INSTALLATION - WORKGROUP NO 160				
	DISTRIBUTION BOARDS (new)				
	Supply and install the following distribution boards, complete with all specified s/gear and terminations:				
47	NEW IP65 AC DB1	No	1		
48	NEW MAIN DB M (ESS and UPS sections)	No	1		
49	DISTRIBUTION BOARD DB 1 (ESS and UPS Sections)	No	1		
50	DISTRIBUTION BOARD DB 2 (ESS and UPS. Sections)	No	1		
51	DISTRIBUTION BOARD DB 3 (ESS and UPS. Sections)	No	1		
52	DISTRIBUTION BOARD DB 4 (ESS and UPS. Sections)	No	1		
53	DISTRIBUTION BOARD DB 5 (ESS and UPS. Sections)	No	1		
54	DISTRIBUTION BOARD DB 6 (ESS and UPS. Sections)	No	1		
55	DISTRIBUTION BOARD DB 7 (ESS Section)	No	1		
56	DISTRIBUTION BOARD U1	No	1		
57	DISTRIBUTION BOARD U2	No	1		
58	DISTRIBUTION BOARD UB (UPS BYPASS DB)	No	1		
59	DISTRIBUTION BOARD ACDB1	No	1		
	EXISTING DISTRIBUTION BOARDS				
	Supply and install the equipment to the following existing distribution boards all 5kA CBI. Rates to include interconnecting wiring and rearranging of switchgear as may be required				
60	60A TP 5 kA	No	5		
61	20A sp 5 kA	No	8		
	Carried to Collection			R	

62	40A dp 5 ka	No	1		
63	60A dp 5kA E/L unit (Isolator type)	No	5		
	5 AMP SOCKET OUTLETS				
	Allow for the supply and installation including 65mm dia 2 way conduit box.				
64	Suitable for compression gland terminations	No	249		
65	Suitable for mounting onto side of trunking including bush and securing bolt and nut	No	149		
	5 AMP UNSWITCHED SOCKET OUTLET FOR INDOOR AIRCON OUTLETS				
66	In 65mm dia Round box including bushing through into trunking and final connections thereto	No	105		
	MOTION SENSORS				
	Supply and installation of Motion Sensors of not less than 20A inductive load rating				
67	Surface ceiling mounted "Cosine Motion sensor" or other approved	No	12		
	FLEXIBLE CONDUIT				
	"Kopex" pvc covered flexible metallic conduit in 1,5m lengths, including couplings and nuts:				
68	20mm diameter	No	8		
69	25mm diameter	No	2		
70	32mm diameter	No	2		
	TELEPHONE DISTRIBUTION BOARDS				
	Supply and install the following distribution boards complete with wooden back-plate in accordance with Telkom requirements:				
71	600x600x150 deep flush unit with tray	No	4		
	Carried to Collection			R	

	CONDUIT AND ACCESSORIES				
	PVC conduit, including cutting, couplings, loop in boxes, draw boxes and waste. Installed in various lengths in closed roof space, cast into concrete, fixed onto brick/concrete, chased or built into brick walls and/or chased into existing concrete floor slab.				
	IT SHOULD BE NOTED THAT WHERE PVC CONDUIT IS INSTALLED IN ROOF SPACES OVER GAPS EXCEEDING 900 mm THE ELECTRICAL CONTRACTOR SHALL INCLUDE FOR SUPPORTING BRANDERING IN HIS UNIT RATES.				
72	20mm diameter	m	850		
73	25mm diameter	m	1,452		
74	32mm diameter	m	1,800		
75	20mm diameter galvanised	m	3,500		
76	25mm diameter galvanised	m	2,500		
77	32mm diameter galvanised	m	600		
	ELECTRICAL TRUNKING				
	Supply and installation of galvanised electrical trunking with covers as specified, including all accessories and suspensions / fixing to brick or concrete wall including all factory made elbows, tees etc.				
78	OL 2000	m	80		
79	OL 2000 (epoxy powder coated white)	m	10		
80	OL 8000	m	750		
81	OL 9000	m	540		
82	EGA YT4 Trunking	m	30		
83	EGA YT3 Trunking	m	30		
84	EGA YT2 Trunking	m	30		
	Carried to Collection			R	

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85	EGA YT1 Trunking	m	30		
	"SURFIX" CABLE AND ACCESSORIES				
	Surfix cable and accessories, supplied and installed in accordance with manufacturers instructions, in closed roof space, built into dry wall partition, fixed onto brick/concrete, chased or built into brick walls and / or chased into existing concrete floor slab.				
	IT SHOULD BE NOTED THAT WHERE SURFIX IS INSTALLED IN ROOF SPACES, THE ELECTRICAL CONTRACTOR SHALL INCLUDE FOR SUPPORTING BRANDERING IN HIS UNIT RATES.				
86	2 core 4 mm² + earth	m	1,800		
87	2 core 4 mm² + earth terminations	No	60		
88	2 core 2.5 mm² + earth	m	2,200		
89	2 core 2.5 mm² + earth terminations	No	20		
	POWER SKIRTING N8/ P 803 3 EQUAL COMPARTMENT				
	Supply and install power skirting, including end caps, vertical bends, covers and all necessary accessories to form an installation to the satisfaction of the Engineer / Client:				
90	N8/ P 803 3 EQUAL compartment with covers	m	700		
91	Horizontal Internal elbows	No	100		
92	Horizontal external elbows	No	84		
93	vertical bends incl cover	No	41		
	SWITCHED SOCKET OUTLETS (CLIPSAL ONLY)				
	Supply and install switched socket outlets, complete with cover plates and including flush /surface box :				
94	16A RED Dedicated 3 pin switched socket outlet with faceted earth pin for mounting in Power skirting	No	224		
	Carried to Collection			R	

95	16 Amp 3-pin switched socket outlet for mounting in power skirting	No	256		
96	16 Amp 3-pin euro socket outlet for mounting in power skirting	No	256		
97	16 Amp 3-pin switched socket outlet + 1 x euro 3 pin socket outlet for flush mounting in 100 x 100 box	No	20		
98	16 Amp 3-pin switched socket outlet + 2 x euro 3 pin socket outlet for flush mounting in 100 x 100 box	No	40		
99	16 Amp 3-pin Dedicated switched socket outlet for flush mounting in 100 x 100 box	No	20		
100	Double 16 Amp 3-pin Dedicated sso for flush mounting in 100 x 100 box	No	2		
101	16 Amp 3-pin switched socket outlet + 1 x euro sso for surface mounting in 100 x 100 white extension box	No	2		
102	16 Amp 3-pin switched socket outlet + 2 x euro sso for surface mounting in 100 x 100 white extension box	No	2		
103	16 Amp 3-pin switched socket outlet + 1 x euro sso for surface mounting in 100 x 100 Wproof York box	No	1		
	LIGHT SWITCHES (CLIPSAL)				
	Supply and installation, including connection of light switches, complete with cover plate and conduit box:				
104	16A 1 lever 1 way	No	100		
105	16A 1 lever 2 way	No	34		
106	16A 1 lever 1 way DP (extract fans) with Neon indicator	No	16		
107	16A 2 lever 1 2 WAY AND 1 BELL PUSH	No	4		
108	16A 1 lever 1 way dimmer with (1 - 10Volt controller)	No	4		
	ISOLATORS (NWI)				
	Supply and install isolator switch, complete with box, neon indicator lamp, associated materials and connections:				
	Carried to Collection			R	

109	30A DP with gord grip in power skirting with cover	No	14		
110	30A DP in box in wall	No	15		
111	30A DP in box with cord grip mounted flush in wall	No	2		
112	60A DP in suitable weatherproof enclosure mounted on wall	No	2		
113	60A TP in suitable weatherproof enclosure mounted on wall	No	6		
	PHOTOCELL DAYLIGHT SWITCH				
114	Suitable for direct switching of discharge luminaries, mounted in empty bulkhead carcass	No	6		
	LABELLING (40mm x 15mm)				
	Supply and installation of Ivorine engraved labels indicating DB NAME and Circuit breaker No. including pop riveting of same to outlet or light switch etc.				
115	DB NAME and Circuit breaker No in RED	No	152		
116	DB NAME and Circuit breaker No in BLUE	No	150		
117	DB NAME and Circuit breaker No in Black	No	150		
	LUMINARIES (all lamps tri phosphour)				
	Supply and install the following luminaries, including connection and all sundry installation materials and 5A plug tops with cord sets as may be required:				
	LIH = Lihlelight Durban, REC = RECESSED, CI = CLIP IN				
	ALL CONTROL GEAR SHALL BE TO SANS STANDARD HIGH EFFICIENCY ELECTRONIC TYPE ONLY (OSRAM PREFERRED)				
	Tenderers are to note that any alternative offers have to be submitted under separate Tender entitled "Alternative Tender". Any / all costs incurred by the Engineer to evaluate the alternative offer will be borne by the Tenderer				
118	TYPE A - LIH 60w LED Panel 1200x600 or other approved with cordset	No	188		
	Carried to Collection			R	

119	TYPE A(E) LIH 60w LED Panel 1200x600 Emergency or other approved with cordset	No	12		
120	TYPE A1 LIH 60w LED Panel 1200x600 or other approved with cordset	No	35		
121	TYPE B LIH 60w LED Linear Fitting IP20 1500mm or other approved	No	4		
122	TYPE B1 LIH 40w LED Panel 1200 x 300 Surface Panel or other approved	No	9		
123	TYPE C LIH Red light with buzzer in 4x4 box	No	2		
124	TYPE D LIH 25 WATT DIMMABLE LED DOWNLIGHTER WCS (CLOSED) (3YR GUARANTEE) or other approved	No	38		
125	TYPE D (E)LIH 25 WATT LED DOWNLIGHTER WCS (CLOSED) (3YR GUARANTEE) 1hr battery backup	No	5		
126	TYPE D1 LIH 15 WATT DIMMABLE LED DOWNLIGHTER WCS (CLOSED) (3 YR GUARANTEE) or other approved	No	11		
127	TYPE ELIH 60w LED Panel 1200x600 or other approved with cordset	No	25		
128	TYPE E (E)LIH LIH 60w LED Panel 1200x600 Emergency or other approved with cordset	No	16		
129	TYPE F LIH 31218 18Watt LED IP65 ECG BULKHEAD BLACK TRIM or other approved	No	51		
130	TYPE K LIH LIH 60w LED Vapour proof IP65 1500mm or other approved	No	12		
131	LIH "COSINE' 30A C/OVER CONTACT OCCUPANCY SENSOR	No	90		
132	TYPE G TYPE LIH 100WATT LED 6000K FLOODLIGHT WITH 3 YR GUARANTEE	No	10		
	Carried to Collection			R	

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	O=LINE ALUMINIUM POWERPOLES OR OTHER APPROVED			
	Supply and install power poles, including base and ceiling collar adjustable securing pin, pm loose divider, covers and all necessary accessories to form an installation to the satisfaction of the Engineer / Client, and suitable fixings and closures to close gaps at ceiling and at floor level			
133	4metre Aluminium Power pole complete with 4 x PVC 3.5metre covers, Ceiling Flange, Floor location pad and Jack assembly. Allowance must be included in the installation rate for securing top of pole to trunkIng at 4000mm AFFL and to secure the base to the Floor.	No	8	
134	Clipsal S2000 16A sso + 1 x euro 3 pin (white) complete with LS2002 accessory box with cover plate	No	10	
135	Clipsal S2000 16A sso + 1 euro 3 pin (red) complete with LS2013 accessory box with cover plate	No	20	
136	Clipsal blank outlet plate for Tel and Computer outlet including RJ45 + RJ11 outlets installed in LS 1005 accessory box with aluminium cover plate	No	5	
	SCREED MOUNTED FLOOR DUCTING - CABSTRUT or other approved			
	Supply and Installation of FLUSH floor ducting incl splices bends, ends, tees etc, including all coordination with Main Contractor during casting in operation			
137	CABSTRUT 3F Floor Duct	m	9	
138	Power skirting connectors	No	6	
139	Termination into conduit boxes including boxes	No	3	
140	FD 2 Conduit box AND FD2 outlet kit- Complete	No	3	
141	11451 and 11901 red 16A outlet and switch + 1 x euro SSO	No	3	
142	11915 and 11901 white 16A outlet and switch + 1 x euro SSO	No	3	
	Carried to Collection			R

	WIRING			
	Supply and install PVC insulated copper conductors drawn into conduit and wireways in random lengths of various colours:			
143	2,5mm² LIGHTING	m	12,000	
144	2,5mm² POWER CCTS	m	8,000	
145	4mm²	m	8,000	
146	6 mm²	m	150	
	INSULATED COPPER EARTH WIRE			
	Draw into conduit and wireways in various lengths and with cables:			
147	2,5mm²	m	14,000	
148	4mm²	m	75	
149	1mm² 2core 600Volt insulated twisted pair screened mylar cable	m	300	
150	Terminate including tufnol pratley compression gland	No	60	
	Carried to Collection			R

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	SINGLE CORE FLEXIBLE SILICONE INSULATED CABLE = SANS 1574 LATEST EDITION				
	Supply and install SILICONE insulated stranded tinned copper conductors drawn into conduit and wireways in random lengths of various colours:				
151	10mm²	m	100		
	TESTING AND COMMISSIONING				
152	Allow for the testing and commissioning of the entire electrical installation to the complex including the issue of the Certificate of Compliance (NOTE 1 COC Required per DB)			SUM	
	AS BUILT DRAWINGS				
153	Allowance shall be made for issuing to the Engineer a Set of dimensioned as built drawings indicating the positions and depths of all conduits, sso's etc installed under this Contract. The drawings shall be to the satisfaction of the Engineer and final payment for the building will not be made until received.			SUM	
	EARTHING AND BONDING				
154	Allow for the earthing and bonding of the installation all as specified			SUM	
	ESTABLISHING NEW SERVICES ROUTES				
155	Allow for establishing and marking up of all proposed cable ladders and cable trays / trunking for approval by Engineer, including the marking up of penetrations required.			SUM	
	IDENTIFYING EXISTING INFRASTRUCTURE				
156	Allow for the after hours investigation into and the reporting on the existing cable reticulation system to and from the building and marking up the feeder source points on the site plan. All this work will be carried out at a time by mutual agreement with the Client and Engineer and will involve switching.			SUM	
	Carried to Collection			R	

	REMOVAL OF EXISTING INSTALLATION				
	Allow for the disconnection, making safe and removal of existing electrical installation to the Entire existing building where required. All items shall be carefully removed and the Client / Engineer given the opportunity to decide which items will be reused. The Electrical Specialist shall allow for the disposal of all removed items in His rates.				
157	remove existing switched socket outlet (all configurations) + point	No	150		
158	remove existing light switch + associated conduit	No	81		
159	remove existIng ceiling mounted light fitting + point	No	185		
160	remove existing up to 54way Distribution board	No	12		
161	remove existing wall mounted light fitting + point	No	25		
162	remove existing power skirting, wiring, socket outlets and IT points	m	145		
163	remove existing It cabling (approx 8000m of CAT 5 cable, wireway infrastructure + approx 200 points		Item		
164	remove existing access control card reader	No	10		
165	remove existing access control magnetic lock and door brackets	No	10		
166	remove existing access control Green Break glass unit	No	10		
167	remove existing access control controller unit	No	1		
168	remove existing access control cabling and wiring		Item		
169	remove existing Fire Detection panel	No	1		
170	remove existing fire detector + base and conduit	No	36		
171	remove existing fire detection cabling and wiring.		Item		
172	remove existing CCTV camera + conduit	No	12		
173	remove existing CCTV controller	No	1		
	Carried to Collection			R	

174	remove existing CCTV cabling and wiring		Item		
175	remove existing electrical cable up to and including 95mm sq x 4 core	m	350		
176	disconnect existing 4 core cable up to 95mm sq x 4 core	No	8		
	IT CONDUIT AND ACCESSORIES				
	Conduit, including cutting, reaming, couplings loop in boxes, draw boxes and waste. Installed in various lengths in closed roof space, cast into concrete, fixed onto brick/concrete, chased or built into brick walls and /or chased into existing concrete slab floor.				
177	32mm diameter - PVC	m	800		
178	25mm diameter - PVC	m	200		
179	20mm diameter - PVC	m	40		
180	1,2mm diameter galvanised draw wire	m	640		
	IT OUTLETS				
181	Supply and install flush mounted 100 x 50 x 100mm deep box with blank cover labelled " IT"	No	35		
182	IT OUTLET ON POWER SKIRTING (BLANK CRADLE and COVER only)	No	329		
	CONDUIT BOXES (For A/c requirements)				
	Supply & install galvanised conduit boxes, in brickwork, or in ceiling, including conduit terminations, but excluding cover plates				
183	60mm round, 25mm deep, for 20mm diameter conduit, 1-,2-,3- or 4-way or back entry as required	No	81		
184	60mm round, 60mm deep for 20 or 25mm dia 1-, 2-, 3-, or 4-way or back entry as required.	No	8		
185	100 x 50 x 50mm Deep	No	120		
186	100 x 100 x 50mm Deep	No	140		
	Carried to Collection			R	

187	300 x 300 x 75mm deep galvanised pressed steel boxes, with covers, flush mounted	No	10		
188	Cover for 60mm round conduit box	No	100		
189	Cover for 100 x 50mm conduit box	No	120		
190	Cover for 100 x 100mm conduit box	No	140		
	FIRE DETECTION CONDUIT AND ACCESSORIES				
	Conduit, including cutting, reaming, couplings loop in boxes, draw boxes and waste. Installed in various lengths in closed roof space, cast into concrete, fixed onto brick/concrete, chased or built into brick walls and /or chased into existing				
191	32mm diameter - PVC	m	50		
192	25mm diameter FLEXIBLE PVC	m	270		
193	25mm diameter Galvanised	m	1,450		
	CONDUIT BOXES				
	Supply & install galvanised conduit boxes, in brickwork, or in ceiling, including conduit terminations, but excluding cover plates				
194	60mm round, 25mm deep, for 20mm diameter conduit, 1-,2-,3- or 4-way or back entry as required	No	136		
195	60mm round, 60mm deep for 20 or 25mm dia 1-, 2-, 3-, or 4-way or back entry as required.	No	136		
196	100 x 50 x 50mm Deep	No	4		
197	100 x 100 x 50mm Deep	No	30		
198	300 x 300 x 75mm deep galvanised pressed steel boxes, with covers, flush mounted	No	8		
199	Cover for 60mm round conduit box	No	18		
200	Cover for 100 x 50mm conduit box	No	4		
201	Cover for 100 x 100mm conduit box	No	2		
	Carried to Collection			R	

202	100 x 100 x 50mm Deep epc white steel extension box with cover all secured to concrete or brick.	No	1		
203	100 x 50 x 50mm Deep epc white steel extension box with cover all secured to concrete or brick.	No	1		
204	150 x 150 x 60mm Deep weatherproof extension box with cover all secured to concrete or brick.	No	1		
205	100 x 100 x 50mm Deep weatherproof extension box with cover all secured to concrete or brick.	No	1		
206	100 x 50 x 50mm Deep weatherproof extension box with cover all secured to concrete or brick.	No	1		
	INTRUDER DETECTION CONDUIT AND ACCESSORIES				
	Conduit, including cutting, reaming, couplings loop in boxes, draw boxes and waste. Installed in various lengths in closed roof space, cast into concrete, fixed onto brick/concrete, chased or built into brick walls and /or chased into existing concrete slab floor, saddled to timber structure.				
207	32mm diameter PVC	m	60		
208	25mm diameter galvanised	m	300		
209	20mm diameter PVC	m	120		
210	1,2mm diameter galvanised draw wire	m	160		
	CONDUIT BOXES				
	Supply & install galvanised conduit boxes, in brickwork, or in ceiling, including conduit terminations, but excluding cover plates				
211	60mm round, 25mm deep, for 20mm diameter conduit, 1-,2-,3- or 4-way or back entry as required	No	20		
212	60mm round, 60mm deep for 20 or 25mm dia 1-, 2-, 3-, or 4-way or back entry as required.	No	10		
213	100 x 50 x 50mm Deep	No	65		
214	100 x 100 x 50mm Deep	No	80		
	Carried to Collection			R	

215	300 x 300 x 75mm deep galvanised pressed steel boxes, with covers, flush mounted	No	10		
216	Cover for 60mm round conduit box	No	30		
217	Cover for 100 x 50mm conduit box	No	3		
218	Cover for 100 x 100mm conduit box	No	3		
219	100 x 100 x 50mm Deep epc white steel extension box with cover all secured to concrete or brick.	No	1		
220	100 x 50 x 50mm Deep epc white steel extension box with cover all secured to concrete or brick.	No	1		
221	150 x 150 x 60mm Deep weatherproof extension box with cover all secured to concrete or brick.	No	1		
222	100 x 100 x 50mm Deep weatherproof extension box with cover all secured to concrete or brick.	No	1		
223	100 x 50 x 50mm Deep weatherproof extension box with cover all secured to concrete or brick.	No	1		
	CAMERA CONDUIT AND ACCESSORIES				
	Conduit, including cutting, reaming, couplings loop in boxes, draw boxes and waste. Installed in various lengths in closed roof space, cast into concrete, fixed onto brick/concrete, chased or built into brick walls and /or chased into existing concrete slab floor.				
224	32mm diameter - PVC	m	250		
225	25mm diameter - PVC	m	90		
226	20mm diameter - PVC	m	50		
227	1,2mm diameter galvanised draw wire	m	250		
	CONDUIT BOXES				
	Supply & install galvanised conduit boxes, in brickwork, or in ceiling, including conduit terminations, but excluding cover plates				
	Carried to Collection			R	

228	60mm round, 25mm deep, for 20mm diameter conduit, 1-,2-,3- or 4-way or back entry as required	No	8		
229	60mm round, 60mm deep for 20 or 25mm dia 1-, 2-, 3-, or 4-way or back entry as required.	No	8		
230	100 x 50 x 50mm Deep	No	5		
231	100 x 100 x 50mm Deep	No	5		
232	200 x 200 x 75mm deep galvanised pressed steel boxes, with covers, flush mounted	No	8		
233	Cover for 60mm round conduit box	No	16		
234	Cover for 100 x 50mm conduit box	No	5		
235	Cover for 100 x 100mm conduit box	No	5		
236	100 x 100 x 50mm Deep epc white steel extension box with cover all secured to concrete or brick.	No	2		
237	100 x 50 x 50mm Deep epc white steel extension box with cover all secured to concrete or brick.	No	5		
238	150 x 150 x 60mm Deep weatherproof extension box with cover all secured to concrete or brick.	No	4		
239	100 x 100 x 50mm Deep weatherproof extension box with cover all secured to concrete or brick.	No	1		
240	100 x 50 x 50mm Deep weatherproof extension box with cover all secured to concrete or brick.	No	1		
	TELEPHONE CONDUIT AND ACCESSORIES				
	Conduit, including cutting, reaming, couplings loop in boxes, draw boxes and waste. Installed in various lengths in closed roof space, cast into concrete, fixed onto brick/concrete, chased or built into brick walls and /or chased into existing concrete slab floor.				
241	50mm diameter - PVC	m	60		
242	32mm diameter - PVC	m	250		
	Carried to Collection			R	

243	25mm diameter - PVC	m	20		
244	1,2mm diameter galvanised draw wire	m	60		
	TELEPHONE OUTLETS				
245	Supply and install flush mounted 100 x 100 x 100mm deep box with blank cover labelled "TELEPHONE"	No	3		
	TELEPHONE & DATA OUTLET ON POWER SKIRTING				
246	Made up of prepunched blank cover plate, Cradle with tel and Data outlets. Suitable for RJ11 & RJ45 outlets RJ11 & RJ45 outlets supplied by others.	No	210		
	IT / TELEPHONE DISTRIBUTION BOARDS				
247	Supply and install the following distribution boards complete with wooden back-plate in accordance with Clients requirements: (600x600x150 deep flush unit with tray)	No	3		
	GALVANISED CABLE TRAY : HEAVY DUTY				
	Supply and install Heavy duty Cabstrut or other approved RFMD cable tray, including all bends, Tee pieces, Hangers and fixing to roof structure and wall or concrete :				
	The rates shall include Supply and Installation at any height including Scaffolding etc. as may be required				
	(L) - Straight section inclusive of splices, nuts bolts etc				
	(V) - Vertical 90 deg bend inclusive of splices, nuts, bolts etc				
	(H)-Horizontal 90 deg bend inclusive of splices, nuts, bolts etc				
	(X)-Horizontal 4-way cross inclusive of splices, nuts, bolts etc				
	(T) - T-section inclusive of splices, nuts, bolts etc.				
	(R) - Reducer section inclusive of splices, nuts, bolts etc.				
	(D) - Divider secured to tray at 350mm intervals				
	(C) - Galvanised epoxy powder coated cover				
	Carried to Collection			R	

	(G) - Gripple Hanger (Diameter and length) rate includes 50 x 5 mm wood screw into timber structure and epc white UM -44 - AM 6T Bracket with anchor adaptor gripple rope to have M6 stud end and 1 x Anchor Adaptor.				
248	600 x 50mm (L) (Hot dipped Galvanised)	m	51		
249	(C)	m	51		
250	(D)	m	51		
251	(V) with cover	No	4		
252	(T) with cover	No	2		
253	(X) with cover	No	1		
254	(G) 2 x 2m	No	30		
255	450 x 50mm (L) (Hot dipped Galvanised)	m	337		
256	(C)	m	337		
257	(D)	m	337		
258	(V) with cover	No	2		
259	(T) with cover	No	1		
260	(X) with cover	No	1		
261	(G) 2 x 2m	No	180		
262	300 x 50mm (L) (Plain Hot dipped Galvanised)	m	24		
263	(C)	m	24		
264	(D)	m	24		
265	(V) with cover	No	2		
266	(T) with cover	No	1		
	Carried to Collection			R	

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267	(X) with cover	No	2		
268	(G) 3 x 2m	No	12		
269	225 x 50mm (L) (Plain Hot dipped Galvanised)	m	57		
270	(C)	m	57		
271	(D)	m	57		
272	(V) with cover	No	2		
273	(T) with cover	No	1		
274	(X) with cover	No	2		
275	(G) 3 x 2m	No	30		

GALVANISED CABLE LADDER : MEDIUM DUTY

Supply and install Cabstrut CL or other approved cable ladders, including all bends, Tee pieces, Hangers and fixing to roof structure and wall or concrete :

The rates shall include Supply and Installation at any height including Scaffolding etc. as may be required

(L) - Straight section inclusive of splices, nuts bolts etc

(V) - Vertical 90 deg bend inclusive of splices, nuts, bolts etc

(H)-Horizontal 90 deg bend inclusive of splices, nuts, bolts etc

(X)-Horizontal 4-way cross inclusive of splices, nuts, bolts etc

(T) - T-section inclusive of splices, nuts, bolts etc.

(R) - Reducer section inclusive of splices, nuts, bolts etc.

(D) - Divider secured to tray at 350mm intervals

(C) - Galvanised epoxy powder coated cover

(G) - Gripple Hanger (Diameter and length) rate includes

50 x 5 mm wood screw into timber structure and

Carried to Collection R

	epc white UM -44 - AM 6T Bracket with anchor adaptor			
	gripple rope to have M6 stud end and 1 x Anchor Adaptor.			
276	400 x 76mm (L) (Hot dipped Galvanised)	m	40	
277	(V)	No	4	
278	(T)	No	2	
279	(G) 4 x 2m	No	30	
280	300 x 76mm (L) (Hot dipped Galvanised)	m	45	
281	(V)	No	2	
282	(T)	No	1	
283	(G) 3 x 2m	No	35	
284	150 x 76mm (L) (Plain Hot dipped Galvanised)	m	115	
285	(V)	No	2	
286	(T)	No	1	
287	(G) 3 x 2m	No	60	
288	600 x 76mm (L) (Plain Hot dipped Galvanised)	m	15	
289	(V)	No	2	
290	(T)	No	1	
291	(G) 4 x 2m	No	10	

Carried to Collection R

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SCHEDULE NO 4 - PROVISIONAL SUMS

ACCESS CONTROL SYSTEMS

The Provisional Sum shall allow for a Specialist Contractor to supply and install the above systems including special wiring and commissioning. "Profit and attendance" on the Provisional Sum as indicated by the Tenderer shall be deemed to include the following: Timeous placing of orders and ensuring delivery of same (Procurement) Management and Co-ordination of the Specialist Contractor. Co-ordination with all other services.

PROVISIONAL SUM

292	Allow the provisional amount of R 350 000.00 (Three Hundred and Fifty Thousand Rand) for Access Control systems. See note above (16 DOORS)		SUM	
293	Profit and attendance on the above Indicate percentage_____%		SUM	

INTERCOM SYSTEM INSTALLATION

The Provisional Sum shall allow for a Specialist Contractor to supply and install the above systems including special wiring and commissioning. "Profit and attendance" on the Provisional Sum as indicated by the Tenderer shall be deemed to include the following: Timeous placing of orders and ensuring delivery of same (Procurement) Management and Co-ordination of the Specialist Contractor. Co-ordination with all other services.

PROVISIONAL SUM

294	Allow the provisional amount of R 15 000.00 (Fifteen Thousand Rand) for Intercom system. See note above		SUM	
295	Profit and attendance on the above Indicate percentage___%		SUM	

Carried to Collection R

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	FIRE DETECTION SYSTEMS The Provisional Sum shall allow for a Specialist Contractor to supply and install the above systems including special wiring and commissioning. "Profit and attendance" on the Provisional Sum as indicated by the Tenderer shall be deemed to include the following: Timeous placing of orders and ensuring delivery of same (Procurement) Management and Co-ordination of the Specialist Contractor. Co-ordination with all other services.			
	PROVISIONAL SUM			
296	Allow the provisional amount of R 460 000.00 (Four Hundred and Sixty Thousand Rand) for Fire Detection system. See note above		SUM	
297	Profit and attendance on the above Indicate percentage_____%		SUM	
	SECURITY SYSTEM The Provisional Sum shall allow for a Specialist Contractor to supply and install the Security System Alterations including special wiring and commissioning. "Profit and attendance" on the Provisional Sum as indicated by the Tenderer shall be deemed to include the following: Timeous placing of orders and ensuring delivery of same (Procurement) Management and Co-ordination of the Specialist Contractor. Co-ordination with all other services.			
	PROVISIONAL SUM			
298	Allow the provisional amount of R 120 000.00 (One Hundred and Twenty Thousand Rand) for Security Systems. See note above		SUM	
299	Profit and attendance on the above Indicate percentage_____%		SUM	
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	STRUCTURAL LIGHTNING PROTECTION The Provisional Sum shall allow for a Specialist Contractor to supply the structural lightning protection "Profit and attendance" on the Provisional Sum as indicated by the Tenderer shall be deemed to include the following: Timeous placing of orders and ensuring delivery of same (Procurement) Management and Co-ordination of the Specialist Contractor. Co-ordination with all other services.			
	PROVISIONAL SUM			
300	Allow the provisional amount of R 130 000.00 (One Hundred and Thirty Thousand Rand) for lightning protection. See note above		SUM	
301	Profit and attendance on the above Indicate percentage_____%		SUM	
	SPECIALISED EARTHING SYSTEMS The Provisional Sum shall allow for a Specialist Contractor to supply the specialised earthing systems "Profit and attendance" on the Provisional Sum as indicated by the Tenderer shall be deemed to include the following: Timeous placing of orders and ensuring delivery of same (Procurement) Management and Co-ordination of the Specialist Contractor. Co-ordination with all other services.			
	PROVISIONAL SUM			
302	Allow the provisional amount of R 52 000.00 (Fifty Two Thousand Rand) for specialised earthing. See note above		SUM	
303	Profit and attendance on the above Indicate percentage_____%		SUM	
	CCTV SYSTEMS The Provisional Sum shall allow for a Specialist Contractor to supply the CCTV systems "Profit and attendance" on the Provisional Sum as indicated by the Tenderer shall be deemed to include the following: Timeous placing of orders and ensuring delivery of same (Procurement) Management and Co-ordination of the Specialist Contractor. Co-ordination with all other services.			
	Carried to Collection		R	

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	PROVISIONAL SUM			
304	Allow the provisional amount of R330 000.00 (Three Hundred and Thirty Thousand Rand) for CCTV systems. See note above		SUM	
305	Profit and attendance on the above Indicate percentage_____%		SUM	
	UPS BATTERIES AND REPAIRS			
	The Provisional Sum shall allow for a Specialist Contractor to supply the UPS batteries and repairs. "Profit and attendance" on the Provisional Sum as indicated by the Tenderer shall be deemed to include the following: Timeous placing of orders and ensuring delivery of same (Procurement) Management and Co-ordination of the Specialist Contractor. Co-ordination with all other services.			
	PROVISIONAL SUM			
306	Allow the provisional amount of R260 000.00 (Two Hundred and Sixty Thousand Rand) for UPS and Batteries. See note above		SUM	
307	Profit and attendance on the above Indicate percentage_____%		SUM	
	PA AND EVACUATION SYSTEM			
	The Provisional Sum shall allow for a Specialist Contractor to supply the PA and Evacuation system. "Profit and attendance" on the Provisional Sum as indicated by the Tenderer shall be deemed to include the following: Timeous placing of orders and ensuring delivery of same (Procurement) Management and Co-ordination of the Specialist Contractor. Co-ordination with all other services.			
	PROVISIONAL SUM			
308	Allow the provisional amount of R 95 000.00 (Ninety Five Thousand Rand) for PA and Evacuation system. See note above		SUM	
309	Profit and attendance on the above Indicate percentage_____%		SUM	
	Carried to Collection		R	

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	CHANGEOVER SYSTEM FOR GENERATOR			
	The Provisional Sum shall allow for a Specialist Contractor to supply the generator changeover system. "Profit and attendance" on the Provisional Sum as indicated by the Tenderer shall be deemed to include the following: Timeous placing of orders and ensuring delivery of same (Procurement) Management and Co-ordination of the Specialist Contractor. Co-ordination with all other services.			
	PROVISIONAL SUM			
310	Allow the provisional amount of R 170 000.00 (One Hundred and Seventy Thousand Rand) for changeover system in the generator to be replaced. See note Above		SUM	
311	Profit and attendance on the above Indicate percentage_____%		SUM	
	Carried to Collection		R	

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Section No. 4

Bill No. 1

Electrical Installation

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Section No. 4

Bill No. 1

Electrical Installation

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Item No		Quantity	Rate	Amount R

SECTION NO. 5

SCHEDULE OF QUANTITIES - MECHANICAL INSTALLATION

CPAP WORK GROUP

Unless otherwise stated all items in this bill will be Work Group 170

1. All prices for equipment shall be for supply and final fixing in place.

2. This bill must be priced in conjunction with the drawing and specifications documents

SUPPLEMENTARY PREAMBLES

Specifications, drawings, etc

Tenderers are referred to the specifications, for the full descriptions of the following items which are to be read and priced in conjunction with the said specification and drawings

Ductwork

Descriptions of ducts shall be deemed to include stiffeners, jointing materials, sealants, couplers in the running length, access/inspection panels and supports / brackets in accordance with the specification

Dampers

Descriptions of smoke and fire dampers shall be deemed to include fusible links, sleeves, frames, supports and access openings in ducts

Air diffusion

Descriptions of air terminals, grilles, louvres and the like shall be deemed to include necks, frames, supports and flexible connections

Carried to Collection R

	Fans Descriptions of fan assemblies shall be deemed to include supports from the structure, flexible or other connections to ductwork, vibration isolation mountings and airtight inspection doors Descriptions of fan coil units, fan air terminals and fan heaters shall be deemed to include connection points for water, air and electrical supply, for air grilles, dust trays, condensate trays and vibration isolation mountings. Flexible ducts, flexible hose and connecting cables for connecting these units to each other or to water pipe, and electrical supply are separately measured **Major equipment** Descriptions of major equipment such as water cooled package units, air handling units & the like shall be deemed to include connections to water, air & electrical supply &/or discharge points, supports, bearers, vibration insulation mountings, filters, insulation, inspection ladders & gangways, access doors , panels & painting etc as specified **Ducting Measurement** All sheetmetal ducting is measured in meter square of surface area of sheetmetal Fittings such as transformations, bends, trouser pieces, setoffs, etc., are measured both as square meterage of sheetmetal as well as over and above price per fitting Fittings such as stop ends, spiggots, and shoes are measured as individual items and are not included in the square meterage rates				
	VENTILATION INSTALLATION				
	FAN SCHEDULE-All fans should be priced complete with ;fittings, cabling ,conduit , timer switches and isolators and sound attenuators				
1	EAF01-Donkin Lineo Inline 200 VO or equal appr.c/w Controller, Timer switch and sound attenuators, Supply 220/50/1- 0.64A	No	4		
	Carried to Collection			R	

2	EAF02 -Donkin Lineo Inline 315 VO or equal appr.c/w Controller, Timer switch and sound attenuators, Supply 220/50/1- 1.32A	No	2		
3	EAF03 - Donkin Lineo Inline 150 VO or equal appr.c/w Controller and sound attenuators, Supply 220/50/1- 0.26A	No	2		
4	FAF01-Donkin Lineo Inline 200 VO or equal appr.c/w Controller, Timer switch and sound attenuators, Supply 220/50/1- 0.64A	No	8		
5	FAF02-Donkin Lineo Inline 200 VO or equal appr.c/w Controller, Timer switch and sound attenuators, Supply 220/50/1- 0.78A	No	2		
6	FAF03-Donkin Lineo Inline 125 VO or equal appr.c/w Controller, Timer switch and sound attenuators, Supply 220/50/1- 0.15A	No	2		
7	FAF04 - Donkin Vortice Vario wall fan 230/9P c/w grille and timer. Supply 220/50/1- 0.1A	No	6		
8	FAF05 -Donkin Punto Filo Wall Fan MF120LL c/w grille and timer switch, Supply 220/50/1- 0.12A	No	1		
9	FAF06 -Donkin Punto Filo Wall Fan MF150 c/w grille and timer switch, Supply 220/50/1- 0.12A	No	1		
	AIR CONDITIONING EQUIPMENT				
	VRF SYSTEM-INDOOR UNITS				
10	IAC-1- LG ARNU07GTRB4 or Equal approved , SUPPLY:220/50/1 - 5A, COOLING CAPACITY: AS PER SPECIFICATION	No	1		
11	IAC-2 - LG ARNU09GTRB4 or Equal approved , SUPPLY:220/50/1 - 5A, COOLING CAPACITY: AS PER SPECIFICATION	No	5		
12	IAC-3 - LG ARNU09GTRB4 or Equal approved , SUPPLY:220/50/1 - 5A, COOLING CAPACITY: AS PER SPECIFICATION	No	5		
13	IAC-4 - LG ARNU12GTRB4 or Equal approved , SUPPLY:220/50/1 - 5A, COOLING CAPACITY: AS PER SPECIFICATION	No	20		
	Carried to Collection			R	

Bill No. 1
Mechanical Installation
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
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14	IAC-5 - LG ARNU15GTQB4 or Equal approved , SUPPLY:220/50/1 - 5A, COOLING CAPACITY: AS PER SPECIFICATION	No	10		
15	IAC-6 - LG ARNU15GTQB4 or Equal approved , SUPPLY:220/50/1 - 5A, COOLING CAPACITY: AS PER SPECIFICATION	No	2		
16	IAC-7 - LG ARNU18GTQB4 or Equal approved , SUPPLY:220/50/1 - 5A, COOLING CAPACITY: AS PER SPECIFICATION	No	6		
17	IAC-8 - LG ARNU21GTQB4 or Equal approved , SUPPLY:220/50/1 - 5A, COOLING CAPACITY: AS PER SPECIFICATION	No	1		
18	IAC-9 - LG ARNU24GTPC4 or Equal approved , SUPPLY:220/50/1 - 5A, COOLING CAPACITY: AS PER SPECIFICATION	No	2		
19	IAC-10 - LG ARNU24GL3G4 or Equal approved , SUPPLY:220/50/1 - 5A, COOLING CAPACITY: AS PER SPECIFICATION	No	2		
20	IAC-11 - LG ARNU42GM2A4 or Equal approved , SUPPLY:220/50/1 - 5A, COOLING CAPACITY: AS PER SPECIFICATION	No	1		
21	IAC-12 - LG ARNU18GSKN4 or Equal approved , SUPPLY:220/50/1 - 5A, COOLING CAPACITY: AS PER SPECIFICATION	No	1		
22	IAC-13 - LG M19AKH.NK2 or Equal approved , SUPPLY:220/50/1 - 5A, COOLING CAPACITY: AS PER SPECIFICATION	No	1		
	VRF SYSTEM-OUTDOOR UNITS				
23	OAC-1, LG ARUM180 LTE5 or Equal Approved ,	No	1		
24	OAC-2, LG ARUM220 LTE5 or Equal Approved ,	No	1		
25	OAC-3, LG ARUM240 LTE5 or Equal Approved ,	No	2		
26	OAC-4, LG M19AKH.UK2 or Equal Approved ,	No	1		
	Carried to Collection			R	

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FOR KZN DEPARTMENT OF TRANSPORT

	Y BRANCH KIT			
27	ARBLB01621 Y Branch kit	No	4	
28	ARBLB03321 Y Branch kit	No	6	
29	ARBLB07121 Y Branch kit	No	7	
30	Outdoor unit multi connection piping kit ARCNB21	No	2	
	HEAT RECOVERY BOXES			
31	PRHR022- 2 Port Heat Recovery Box. Max 58 kW	No	10	
32	PRHR033- 3 Port Heat Recovery Box. Max 58 kW	No	7	
33	PRHR043- 4 Port Heat Recovery Box. Max 58 kW	No	4	
34	Remote Controller (Model PQRCHCA0QW)	No	55	
35	Ceiling Cassette Panels ,PT-MCHW0	No	2	
36	Ceiling Cassette Panels ,PT-QAGW0	No	50	
	VRF PIPING			
37	Piping Liquid 6.35 (1/4)	m	356.30	
38	Piping Liquid 9.52 (3/8)	m	189.70	
39	Piping Liquid 12.7 (1/2)	m	23.00	
40	Piping Liquid 15.88 (5/8)	m	73.90	
41	Piping Gas 12.7 (1/2)	m	345.30	
42	Piping Gas 15.88 (5/8)	m	61.00	
43	Piping Gas 9.52: 12.7	m	11.00	
44	Piping Gas 12.7 : 15.88	m	69.30	
45	Piping Gas 15.88 : 19.05	m	39.70	
46	Piping Gas 19.05 : 22.2	m	19.70	
	Carried to Collection			R

Bill No. 1
Mechanical Installation
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FOR KZN DEPARTMENT OF TRANSPORT

47	Piping Gas 22.2 : 28.58	m	45.30		
48	Piping Gas 28.58	m	12.50		
49	Piping Gas 28.58 : 34.9	m	39.10		
	RECTANGULAR DUCTING				
	Rectangular galvanised mild steel sheetmetal ductwork installed as per specification complete with fittings including hangers, clamps, brackets, etc. (excluding insulation)				
	Square meterage of ducting is inclusive of area over fittings.				
	Category One: 0.6mm				
	Category Two: 0.6mm				
	Category Three: 0.8mm				
	Category Four: 1.0mm				
	Category Five: 1.2mm				
	CPAP WORK GROUP				
	Unless otherwise stated all items in this bill will be Work Group 171				
	CATEGORY ONE				
50	Width or height not exceeding 750mm and the sum of the two adjacent sides not exceeding 1150mm	m^2	320.00		
	Extra over for low pressure galvanised fittings (reducers, radius bends, transformations, spigots, tees and square-to-rounds)				
51	Category one fittings other than stopends	No	154		
	Stop ends				
52	Category one Stop End fittings	No	20		
	Carried to Collection			R	

	Shoes			
53	Category one shoes	No	150	
	ROUND DUCTING			
	Complete with fittings including hangers, clamps, brackets, nuts and bolts, etc.(including 15mm thermoflex internal insulation)			
	up to 300mm dia. :0.5mm			
	301dia to 800dia : 0.6mm			
	801dia to 1000dia. : 0.8mm			
	1001 to 1200dia : 1.0mm			
	Jointing shall be beaded			
	STRAIGHT SECTIONS			
54	250mm diameter ducting	m	10.00	
55	200mm diameter ducting	m	20.00	
56	160mm diameter ducting	m	40.00	
57	125mm diameter ducting	m	94.00	
	FLEXIBLE DUCTING(foil faced 50mm mineral wool			
58	250mm diameter ducting	m	10.00	
59	200mm diameter ducting	m	20.00	
60	160mm diameter ducting	m	35.00	
61	125mm diameter ducting	m	80.00	
	EXTERNAL INSULATION			
62	50mm foil faced mineral wool insulation	m²	40.00	
	Carried to Collection			R

	CPAP WORK GROUP				
	Unless otherwise stated all items in this bill will be Work Group 170				
	WEATHER LOUVRE SCHEDULE				
	Aluminium anodised weather louvre with plastic vermin screen				
63	WL01-TROX AWG, or equal approved ,Size -350x350	No	1		
64	WL02-TROX AWG, or equal approved ,Size -400x400	No	3		
65	WL03-TROX AWG, or equal approved ,Size -300x300	No	3		
66	WL04-TROX AWG, or equal approved ,Size -250x250	No	2		
67	WL05-TROX AWG, or equal approved ,Size -500x500	No	1		
	FILTER SCHEDULE-Pleated filter complete with filter cupboard				
68	F1 - TROX, SIZE: 350x350	No	1		
69	F2 - TROX, SIZE: 400x400	No	1		
70	F3 - TROX, SIZE: 300x300	No	3		
	DISK VALVES/DIFFUSERS/GRILLES				
71	DV01 - (diameter 160mm), TROX LVS	No	14		
72	SAD01 - (diameter 200mm), TROX TDF-C-Q	No	6		
73	SAD02 - (diameter 250mm), TROX TDF-C-Q	No	4		
74	SAD03 - (diameter 125mm), TROX ZLVS	No	43		
75	EAG01- TROX 250X250 Extract Grille	No	1		
76	RAFF01- Return air filter frame- TROX - 600X600	No	3		
77	DG01- TROX AGS-T Door Grille-300x300	No	3		
78	DG02- TROX AGS-T Door Grille- 400x400	No	2		
	Carried to Collection			R	

Bill No. 1
Mechanical Installation
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

	DAMPERS				
79	D1 - TROX, SIZE:150X150	No	3		
80	D2 - TROX, SIZE:(DIAMETER 125)	No	43		
	DRAIN PIPING- To be installed complete with saddles, brackets and insulation.				
81	25mm diameter PVC	m	365.00		
82	32mm diameter PVC	m	83.00		
83	40mm diameter PVC	m	17.50		
84	50mm diameter PVC	m	40.00		
	GENERAL				
85	Allowance for associated costs to comply with conditions of contract (HVAC, Fire & Plumbing)			SUM	
86	Production of shop drawings (HVAC, Fire & Plumbing)			SUM	
87	Labelling of equipment as specified (HVAC, Fire & Plumbing)			SUM	
88	Provision of operating and maintenance manuals including training of user client			SUM	
89	Provision of additional copies of approved O&M manuals(HVAC, Fire & Plumbing)	No	9		
90	Commissioning (HVAC, Fire & Plumbing)			SUM	
91	Compliance with OHASA 1993 and Construction regulations 4(1) (a)			SUM	
92	Provision of electrical compliance certificate (HVAC, Fire & Plumbing)			SUM	
93	Fully comprehensive maintenance and guarantee (HVAC, Fire & Plumbing) 12 months for each service	No	12		
94	Other (any item not priced above but required for completion of installation) (HVAC, Fire & Plumbing)			SUM	
	Carried to Collection			R	

Bill No. 1
Mechanical Installation
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

95	Removal of redundant equipment (HVAC, Fire & Plumbing)			SUM	
96	Original 'Bluechem Treatment' to all condenser units	No	4		
	Carried to Collection			R	

Bill No. 1
Mechanical Installation
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Section No. 5

Bill No. 1

Mechanical Installation

COLLECTION PAGE

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Total Brought Forward from Page No.	161	
Total Brought Forward from Page No.	162	
Total Brought Forward from Page No.	163	
Total Brought Forward from Page No.	164	
Total Brought Forward from Page No.	165	
Total Brought Forward from Page No.	166	
Total Brought Forward from Page No.	167	
Total Brought Forward from Page No.	168	
Total Brought Forward from Page No.	169	
Total Brought Forward from Page No.	170	
Carried to Final Summary		R

Item No			Quantity	Rate	Amount R
	SECTION NO. 6				
	BILL NO. 1				
	CREDIT FOR OLD MATERIALS				
	The Contractor is to allow herein for credit for all old materials from the alterations/demolitions described to become the property of the Contractor				
	The items herein refer to the items of Bill No.1, Alterations in Section 2 and 3 and Bill No.2, Earthworks in Section 3 and are to exclude Value Added Tax				
1	Timber door frame only	m	14		
2	Timber window not exceeding 2,5m2	No	1		
3	Steel window not exceeding 2,5m2	No	2		
4	Timber single door only from one brick wall	No	1		
5	Timber double door, fixed fanlight and frame overall size 1700 x 3000mm from one brick wall	No	1		
6	Pitched roof including Metal Roof Sheeting, eaves soffit covering, fascias, barge boards, gutters, rain water pipes and timber supports	m²	2,155		
7	Pitched roof including "Broseley" roof tiles, eaves soffit covering, fascias, barge boards, gutters, rain water pipes and timber supports ("Broseley" roof tiles to be set aside for re-use) (cleaning and refixing of roof tiles elsewhere measured)	m²	722		
8	Pitched roof including timber trusses, purlins, battens, etc.	m²	2,877		
9	Timber suspended floors including existing floor finish, skirtings, joists, bearers, steel support beams, etc.	m²	158		
10	Plasterboard ceilings including cornices, timber brandering, etc including preparing to receive new	m²	1,631		
	Carried to Collection			R	

11	Timber T&G ceilings including cornices, timber brandering, etc including preparing to receive new	m^2	102		
12	Acoustic tile suspended ceilings, including suspension grid, hangers, cornices, etc. including preparing to receive new	m^2	347		
13	Drywall partitioning including doors, ironmongery, glazed borrowed lights, etc.	m^2	88		
14	Glazed aluminium partitioning 2.4m high including doors, ironmongery, glazed borrowed lights, etc.	m	39		
15	Cashier cubicle window overall size 800 x 900mm high with high impact resistant glass including aluminium u-channel surround to top and sides	No	4		
16	520 x 440 x 115mm Deep cash transfer tray	No	12		
17	100mm High Timber skirting from brickwork	m	1,168		
18	Timber floor cupboard, size overall 2800 x 600 x 1100mm high	No	2		
19	Timber wall cupboard, size overall 900 x 500 x 800mm high	No	2		
20	Stainless steel bowl sink and drainer on timber cupboard (Timber cupboard elsewhere removed)	No	1		
21	Vitreous china wash hand basin including brackets	No	14		
22	Vitreous china WC pan with cistern	No	14		
23	Vitreous china bowl urinal	No	2		
24	150 Litre Geyser including fittings, brackets and associated plumbing, piping, etc.	No	1		
	Carried to Collection			R	

Bill No. 1
Credit for Old Materials
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

Section No. 6

Bill No. 1

Credit for Old Materials

COLLECTION PAGE

	Page No		Amount R
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Total Brought Forward from Page No.	173		
Carried to Final Summary		R	

Bill No. 1
Credit for Old Materials
MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

FINAL SUMMARY

Section No		Page No		Amount R
1	Section No.1: Preliminaries	0		
2	Section No.2: Building Works	124		
3	Section No.3 - External Works	127		
4	Section No.4 - Electrical Installation	160		
5	Section No.5 - Mechanical Installation	171		
6	Section No.6 - Credit for Old Materials	174		
	NET TOTAL: EXCLUDING VALUE-ADDED TAX		R	
	TOTAL CARRIED TO FORM OF TENDER		R	

MOTOR TRANSPORT SERVICES (MTS) B BLOCK
FOR KZN DEPARTMENT OF TRANSPORT

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

PART C3. SCOPE OF WORKS

C3.1 SCOPE OF WORKS
GCC FOR CONSTRUCTION WORKS (Edition 2 of 2010)

Scope of Works complied in accordance with SANS 10403 where reference is made to this part of SANS 1921-1:2004

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender no:	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

SECTION 1

1 EXTENT OF THE WORKS

1.1 EMPLOYERS OBJECTIVES

Upgrade existing building structures by replacing degraded and defective components with new components, where detailed as per AMAFA permit.

1.2 OVERVIEW OF THE WORKS

The removal of all existing old building components and replacing with new, where detailed as per AMAFA permit.

1.3 EXTENT OF THE WORKS

The contract comprises alterations works, earthworks, wet works, removal and replacement of the; roof structure, carpentry and joinery, internal finishes, plumbing and drainage, external works, etc.

1.4 LOCATION OF THE WORKS

The site is situated at 230 Prince Alfred Street, LOT 120 Pietermaritzburg.

1.5 TEMPORARY WORKS

All temporary work to comply with the Occupational Health and safety Act (Act 85 of 1993)

2 ENGINEERING

2.1 EMPLOYER'S DESIGN

Not applicable

2.2 DESIGN BRIEF

Not applicable

2.3 DRAWINGS

See list of drawings/Annexure's attached to this document.

2.4 DESIGN PROCEDURES

Not applicable

3 PROCUREMENT

3.1 PREFERENTIAL PROCUREMENT PROCEDURES

This tender will be subject to the implementation of the Preferential Procurement Regulations, 2022, pertaining to the Preferential Procurement Policy Framework Act, Act Number 5 of 2000 and the relevant Supply Chain Management Legislation and the KwaZulu-Natal Supply Chain Management Policy Framework published by the KwaZulu-Natal Provincial Treasury. Tenderders are referred to www.kzntreasury.gov.za for access to the relevant documents.
Tenderders are advised to familiarize themselves with the contents of the KwaZulu-Natal Supply Chain Management Policy Framework regarding Preference Point Systems, evaluation of tenders appeals and other matters.

3.2 RESOURCE STANDARD PERTAINING TO TARGETED PROCUREMENT

NOTE : This project will be adjudicated as not exceeding R 50,000 000,00

3.3 SCOPE OF MANDATORY SUBCONTRACT WORK

Not applicable

3.4 PREFERRED SUBCONTRACTORS/SUPPLIERS

Not applicable

3.5 SUBCONTRACTING PROCEDURES

Not applicable

4 CONSTRUCTION

4.1 APPLICABLE SANS 2001 STANDARDS FOR CONSTRUCTION WORKS

The Contractor is referred to the "Model Preambles to Trades - 2008", any "Supplementary Preambles", the Electrical Specifications and Mechanical Specification for full descriptions of materials and methods referred to in these Bills of Quantities/Lump Sum documents, insofar as they apply. The Contractor is advised to study the "Standard Preambles to all Trades", any "Supplementary Preambles", the Electrical Specifications and Mechanical Specification, before pricing Bills of Quantities/Lump Sum documents.

Where the description in the Bills of Quantities/Lump Sum documents differ from those in the Standard Electrical Specifications, the descriptions in the Bills of Quantities/Lump Sum documents are to apply. No claim whatsoever will be allowed in respect of errors in pricing due to brevity of description of items in the Bills of Quantities/Lump Sum documents which are fully described when read in conjunction with the relevant Preambles and/or Specifications. Suppliers of materials and the like, whose quality systems apply with one or more of the SABS/SANS ISO 9000 Series should be used whenever possible in the absence of a particular SABS/SANS Specification Standard Mark.

Wherever the words "shall be deemed to be included in the description", "shall be stated" or other words having the same effect, appear in the Standard System, it shall be deemed that all descriptions in these Bills of Quantities/Lump Sum documents incorporated such inclusions and statements whether specifically stated or not.

The Contractor is hereby informed that where SABS/SANS Specifications are referred to in these Bills of Quantities/Lump Sums documents and Specifications thereto, then ONLY the Specification of Work Clauses will apply. The method of measurement and payment clauses will NOT apply to this Contract.

The Contractor is hereby informed that risk of collapse and keeping excavations free from water (excluding subterranean water) generally are deemed to be included in the descriptions unless accommodated in the system of measurement. Please refer to the Geotechnical Investigation report when included at the end of these tender documents.
Whenever reference is made to "Sub-Contractor", "Nominated Sub-Contractor" or the like in the specifications included or referred to in these Bills of Quantities/Lump Sums documents, it shall be deemed to mean "Contractor" as defined.

4.2 APPLICABLE NATIONAL AND INTERNATIONAL STANDARDS

See above 4.1

4.3 PARTICULAR / GENERIC SPECIFICATIONS

The Contractor is referred to the following documents whether attached to this document or not:

SPECIFICATION	PAGES
Specification for HIV/AIDS Awareness (CIDB)	HIV1 TO HIV3
Specific Construction, Safety, Health and Environmental Plan	
Model Preambles for Trades 2008	1 to 49
General Electrical Specification	16
Lightning Protection Installation	103

4.4 CERTIFICATION BY RECOGNIZED BODIES

Only contractors registered with the Electrical Contracting Board of South Africa in accordance with the Regulations of the Occupational Health and Safety Act will be accepted and permitted to do work under this contract.

4.5 AGRÉMENT CERTIFICATES

Not applicable

4.6 PLANT AND MATERIAL PROVIDED BY THE EMPLOYER

Not applicable

4.7 SERVICES AND FACILITIES PROVIDED BY THE EMPLOYER

Not applicable

4.8 OTHER SERVICES AND FACILITIES

The Contractor shall provide any artificial lighting which may be necessary or required for the proper execution of the works, and provide electric power and water required by all Sub-Contractors, Nominated Sub-Contractors and Sub-Contractors appointed directly by the Administration.
The Contractor shall give all notices and pay all fees in connection with temporary electrical and water connections and shall connect temporary Electrical and Water meters for and pay for all current and water consumed.
The Contractor is advised that the permanent light fittings and water points of any kind installed in the Works are not to be used to provide temporary lighting and supplement water requirements for construction purposes.

5 MANAGEMENT

5.1 APPLICABLE SANS 1921 STANDARDS

Tenderders are referred to
SECTION 2 : SPECIFICATION DATA ASSOCIATED WITH SANS 1921-1:2004 IN THIS DOCUMENT

5.2 RECORDING OF WEATHER

The Contractor shall keep record of abnormal climatic conditions to facilitate the adjudication of claims for extension of the contract period.

The Contractor shall allow in his programme for the following number of days for rain days (rain > 10mm per day) as per the table below:

CURRENT YEAR			YEAR + 1	YEAR + 2
January	*w/days*		3	3
February	*w/days*		3	3
March	*w/days*		3	3
April	*w/days*		3	0
May	*w/days*		3	0
June	*w/days*		3	0
July	*w/days*		3	
August	*w/days*	3	3	
September	*w/days*	3	3	
October	*w/days*	3	3	
November	*w/days*	3	3	
December	*w/days*	3	3	

5.3 MANAGEMENT MEETINGS

In order to facilitate the smooth functioning of the Works and to ensure the closest co-operation between all the parties concerned, the Employer will call for regular meetings to be held on the site, at which a senior member of the Contracting firm and the General Foreman of the Works will always be required to be present.
In addition to the above, other persons will be required to attend these meetings as and when their presence is necessary, e.g., Consultants in all disciplines, representatives of the various Sub-Contractors, etc.
Proper minutes of these meetings will be kept by the Employer\Principal Agent and copies will be circulated to all persons attending the meetings and to others who need to be kept informed.

5.4 FORMS FOR CONTRACT ADMINISTRATION

The Employer shall provide all necessary forms.

5.5 ELECTRONIC PAYMENTS

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

5.6 DAILY RECORDS

The Contractor shall keep daily records of people and equipment employed as well as a site diary in respect of work performed on the site.
At the end of each week the Contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number and description of tradesmen and labourers employed by him and all Sub-Contractors on the works each day.
At the end of each week the Contractor shall provide the Principal Agent with a written record, in schedule form, reflecting the number, type and capacity of all plant, excluding hand tools, currently used on the works.

5.7 BONDS AND GUARANTEES

The Contractor shall within 10 calendar days after receiving notice from the Engineer and prior to 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.

5.8	**PAYMENT CERTIFICATES** Requirements will be in accordance with the Employers prescriptions.
5.9	**PERMITS** The Contractor is advised that, in the case of an existing building or institution, all security measures in force will remain in operation and he must acquaint himself and his Employees with them as he and his Employees will at all times be subject to these measures. The Contractor will on no account extend his operations beyond the confines of the building site as indicated by the Employer and must ensure that all his Employees are made aware of these limits. Any Employee disregarding this instruction and found outside the limit of the building site without authority, shall be redeployed immediately and shall not again be employed on this Contract. The Contractor will be responsible for ensuring that this instruction is strictly enforced and must provide and remove upon completion or when directed, such other necessary temporary barriers, fences, etc., as may be required and is to allow opposite this item for any charges he may wish to make in this connection. The Employer will accept no responsibility whatsoever for damage to or the loss of plant, materials, etc., from the site.
5.10	**PROOF OF COMPLIANCE WITH THE LAW** The following certificates must be provided before first delivery is taken: - HIV/STI Report (Bound into this document) - Electrical Compliance Certificate - Plumbing Compliance Certificate - Lightning Certificate - Soil Protection Certificate - Concrete test and cube certificates - Waterproofing Guarantee certificates - TR1 and TR2 prefabricated roof truss certificates - Soil compaction certificates - Electrical and Mechanical test certificates - Plumbing and drainage pressure test certificates - Fire Compliance Certificate - Entomology Certificate - SANS 10400-A:2010 compliance certificates - Latest National Building Regulation
5.11	**INSURANCE PROVIDED BY THE EMPLOYER** Not Applicable

SECTION 2

SPECIFICATION DATA ASSOCIATED WITH SANS 1921-2004

Clause Numbers	
4.1.7	**The requirements for drawings, information and calculations for which the Contractor is responsible are:**
	Prefabricated roof trusses design must be submitted for approval 30 days prior to erections.
4.2.1	**The responsibility strategy assigned to the Contractor for the works is:**
	Strategy A
4.2.2	**The structural engineer is:**
	Young + Satharia Consulting Engineers
4.2.3	**Drawings & other info are to be submitted in accordance with the contractors programme**
	N/A

4.3	**The planning, programme and method statement are to comply with the following:**
	N/A
4.12.1	**Samples of materials**
	The work is to be executed with materials of the best specified and in the most substantial and workmanlike manner under the inspection of the Employer and to his satisfaction. The Contractor shall furnish, without delay, such samples as called for or may be called for by the Employer, who may reject all materials or workmanship not corresponding with the approved sample. The samples of materials, workmanship and finishes that the Contractor is to provide and deliver to the employer are: - Tile sample. - Brick sample. - Light fitting sample. - Screed panel 2m x 2m impact test. - Tested trial mix to be approved by the Engineer.
4.12.2	**Fabrication drawings that the contractor is to provide to the employer are:**
	None
4.12.3	**Office accommodation, equipment, accommodation for site meetings and other facilities for use by the employer and his agents are:**
	OFFICE FOR FOREMAN
	Provide, erect, maintain and remove at completion a suitable temporary office for the Contractor or his Foreman, perfectly secured, lighted and ventilated and having a desk with drawers.
	TELEPHONE
	The Contractor shall provide a telephone on the site for the use of the Contractor and all Sub-Contractors for the duration of the Contract, and must make the necessary application for connection, give all notices and pay all fees, rentals and charges for the service and also for all calls.
	OFFICE FOR INSPECTOR OF WORKS
	Provide, erect, maintain and remove at completion a well constructed temporary office for the Inspector of Works not less than 4 x 3 m on plan and 3 m high to eaves to the approval of the Employer. The office shall be constructed of wood framing covered externally with corrugated iron or corrugated asbestos and with a lean-to roof covered with the same material as the external wall covering. The office shall be lined internally with soft board or other approved material and a ceiling shall be provided of the same material as the internal lining. A suspended wood floor shall be provided and is to finish not less than 300 mm above the ground level. A lockable door and a window, which provides adequate light and ventilation, shall be fitted. An office constructed of 115 mm thick brick-work and provided with a screeded concrete floor and roofed and ceiled as above described may be accepted as an alterative but prior permission of the Employer will be necessary before construction of such an office is commenced and his requirements shall be stated and fulfilled by the Contractor. The office shall be fitted in an approved manner with a sloping topped desk of height and length suitable for the laying out and studying of drawings, a desk or table with not less than two lock-up drawers, shelves, seating and wash-stand, and the Contractor shall provide all necessary attendance.
	TELEPHONE IN OFFICE FOR INSPECTOR OF WORKS
	The Contractor shall arrange for the installation of a lockable telephone in the Office for the Inspector of Works for the duration of the Contract. The Contractor will be required to make the necessary application for connection and give all notices on behalf of the Employer. The Employer will, however, be responsible for the direct payment of all fees, rentals and other charges by Telkom for the service for the Inspector of Works and for all calls made from this telephone.

	SHED
	Provide, erect, maintain and remove at completion, ample temporary sheds for the proper storage of materials and for the use of the workmen, and remove when no longer required.
4.14.6	**The requirement for provision and erection of signboards are:**
	Supply, erect, maintain and remove at completion a painted notice board, size overall 2800 x 2345 mm high sign written to detail as Drawing No. T9506 which drawing is available from offices of the Department of Public Works. Only the official notice board is to be displayed on the site and no Sub-Contractor's boards will be permitted. The Contractor, at his own cost, may provide a board on which all sub-contract firms' names may be sign written. The notice board is to be to the approval of the Employer and is to be maintained in first class condition and placed where directed at the entrance to the site and remain there for the duration of the Contract.
4.17.1	**Requirement for the termination, diversion or maintenance of existing services:**
	Should the Contractor come in contact with any underground cables or pipes during excavations, immediate notification must be made to the Employer and all work in the vicinity of such cables, pipes, etc., shall cease until authority to proceed has been obtained from the Employer. Should the Contractor damage underground cables or pipes resulting in a disruption of services to an existing institution such damage shall be repaired immediately.
4.17.3	**Services which are known to exist on the site:**
	Investigate and provide detail drawings.
4.17.4	**Requirement for detection apparatus**
	None
4.18	**ADDITIONAL HEALTH AND SAFETY REQUIREMENTS ARE:**
	By the submission of a tender, any Tenderder will, if awarded the contract to which this tender document relates, be deemed to be the mandatory as envisaged by Section 37 (2) of the Act. As a mandatory the successful Tenderder will be deemed to be the "principal contractor" and an employer in his/her/their own right with duties as prescribed in the Act and accordingly will be deemed to have agreed to be solely responsible for ensuring that in connection with the service to which this tender document relates, all work will be performed and machinery and plant used in accordance with the Act. Should the Contractor, for whatever reason be unable to perform as required by the Act, the Contractor undertakes to inform the Employer accordingly. Tenderders are advised that it is a Condition of this Tender that a 'Construction Phase Safety, Health and Environmental Plan' specifically relates to the project for which tenders are being submitted and must be prepared by the Tenderder and submitted with the other tender documents at the time of tender. Failure to do so Tenderders are therefore advised to study the 'Construction Safety, Health and Environmental Specification' which is issued as part of this tender document, the Model Preambles to Trades - 2008, any project Specification included in this tender document and any and all drawings which are referred to and issued as part of this tender document before preparing their own project specific 'Construction Phase Safety, Health and Environmental Plan' . Tenderders are also advised that such a plan which is submitted with a tender but is incomplete or considered inadequate by the Employer or his Representative will invalidate the tender. The Contractor will be deemed to have satisfied himself with his obligations in terms of the Act and to have allowed for all costs arising from compliance with the Act as no claim for extra costs arising from compliance with, and obligations in terms of the Act will be entertained.
4.22	**WORK BY NOMINATED AND SELECTED SUBCONTRACTORS COMPRISE:**
	[Provide list of applicable contractors]

C3.2 - SPECIFICATION FOR HIV/AIDS AWARENESS

1 Scope

This generic specification contains requirements applicable to the reduction of the risk of transfer of the HIV virus between and among construction workers and the local community through the following four strategies:

a) raising awareness about HIV/AIDS;

b) providing construction workers with access to condoms;

c) HIV counselling, testing and referral services; and

d) Sexually Transmitted Infection diagnosis and treatment.

2 Normative references:

The following standard contains provisions that, through reference in this text, constitute provisions of this standard:

SANS 4074 ISO 4074, *Condom Rubbers*

3 Definitions and Abbreviations

3.1 Definitions

Construction Worker: all persons in the employ of the contractor or in the employ of any of the subcontractors contracted by the contractor.

Local Community: the communities local to the site which are most likely to have contact with the construction worker and, in particular, sex workers in those communities.

Service provider: the natural or juristic person recognised by the South African Department of Health as specialist in conducting Aids Awareness Programmes.

3.2 Abbreviations

STI: Sexually transmitted infection

HIV: Human Immunodeficiency Virus

AIDS: Acquired Immune Deficiency Syndrome

4 Objectives

The objectives are to:

a) reduce the risk of transfer of the HIV virus between and among construction workers and the local community;

b) raise awareness amongst construction workers and the local community of the risk of infection with the HIV virus;

c) promote early diagnosis; and

d) assist affected individuals to access care and counselling.

5 Requirements

5.1 General requirement

The contractor shall, in order to satisfy the objectives stated in 4:

a) make condoms complying with the requirements of SABS ISO 4074 available to all construction workers at readily accessible points on the site, suitably protected from the elements, for the duration of the contract;

b) either place and maintain HIV/AIDS awareness posters of size of not less than A1 in areas which are highly trafficked by construction workers, or provide construction workers with a pamphlet, in languages largely understood by construction workers, which

c) encourage voluntary HIV/STI testing;

d) provide information concerning counselling, support and care of those that are infected services; and

e) comply with the requirements of 5.2.

***The* provisions *of* 5.1 c) *and d) do not apply to* this contract.**

5.2 HIV awareness programme

5.2.1 The contractor shall:

a) engage a qualified service provider as described in the scope of works to conduct an HIV Awareness Programme which is structured to achieve the outcomes stated in 5.2.3 for contract workers as soon as a construction workers camp is established and populated or, where no such camp is established, within two weeks of the commencement of a significant portion of the works and at subsequent intervals, if any, provided for in the scope of works; and

b) arrange for, provide a suitable venue, and instruct all construction workers to attend the HIV Awareness Programme and notify the Employer's Representative of the date, time and venue whenever a session with construction workers is conducted.

Note: The National Department of Public Works maintains a list of qualified service providers.

5.2.2 The contractor shall do nothing to dissuade construction workers from attending such an HIV Awareness Programme and shall take all reasonable steps to ensure that a minimum of 90% of construction workers engaged in the works attend such a programme, when it is conducted.

5.2.3 The outcomes of the HIV Awareness Programme shall as a minimum, result in contract workers exposed to such a programme being able to:

a) communicate the existence of problems of HIV and be able to outline the consequences of transmission of HIV to or from the local community;

b) recall and communicate the mode of HIV transmission and preventative measures including the proper use of the condom.

The HIV/ Aids awareness programme described in 5.2 is to be repeated at four month intervals throughout the duration of the contract. (Four times in total, including the initial one at the start of the contract)

5.3 Reporting

5.3.1 The contractor shall prepare and attach to his claims for payment a brief report which outlines how the actions taken by the contractor in the period for which payment is claimed satisfy the requirements and a schedule which lists the names, identity numbers, trade / occupation and name of employer of all construction workers exposed to the programme (see **HIV/STI Compliance Report**).

5.3.2 The employer's representative shall certify the report and schedule described in 5.3.1 whenever a claim for payment is issued to the employer.

Note: In the event that the contractor fails to satisfy the requirements of this specification, the employer (Head: Public Works) may apply any of the sanctions provided for in the contract. Sanctions may include the application of a financial penalty of .04% of the Contract Sum.

The *HIV /Aids* awareness programme *described* in 5.2 shall in addition *be conducted* for the benefit *of* the local community on two occasions in the community centre nearest to the building site. The contractor shall be *responsible* for inviting identifiable community-based *institutions and organisations, churches, and schools to participate in the* programme.

C3.3 - HIV/STI COMPLIANCE REPORT

Pro-forma reporting format in terms of the SPECIFICATION FOR HIV/AIDS AWARENESS

Project Code:	WIMS 062326		
Payment Claim number:		Period covered by payment claim:	

1. Distribution of condoms (briefly describe where and how condoms are distributed).

2. Posters / pamphlets (briefly describe where posters were placed / how pamphlets were distributed).

3. Voluntary testing (briefly describe the actions taken / information provided to promote testing).

4. Counselling, support and care (summarise information provided).

5. HIV awareness programme (briefly describe action).

6. Schedule of construction workers exposed to the HIV awareness programme.

Name	Identity number	Trade / occupation	Name of employer

I hereby declare the above to be a true reflection of actions taken to ensure compliance with the specification.

For Contractor:

Name: _____

Signature: _____

Date: _____

Employer's representative:

Name: _____

Signature: _____

Date: _____

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

PART C4. SITE INFORMATION

C4.1 SITE INFORMATION
GCC FOR CONSTRUCTION WORKS (2 Edition of 2010)

Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Tender No.	**ZNTM 01192 W**	**Project Code:**	**WIMS 062326**

C4.1 Site Information

C4.1 GENERAL

(a) The nature of ground is 0.00m-0.06m: Gravelly Clay, Colluvium. Founding depth for 120kPa approximately 1.5m below N.G.L. No groundwater seepage encountered in 0.6m deep test pits. Possibility of groundwater seepage at depth greater than 1.0m deep.

(b) Two (2) x Large containers to be provided for storage of the Client's furniture. The furniture movement is to be arranged by the Client. The containers will be positioned on the driveway at the back end of Parking to Block C.

(c) This project will not entail phased work as the building will be vacated prior to work commencing. Some Environmental considerations are waste management, no dumping of waste water into storm water drains, traffic management, identify aspects and impacts and compile a register.

C4.2 GEOTECHNICAL INVESTIGATION REPORT

(a) Not applicable

KWAZULU-NATAL PROVINCE
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PART C5 - DRAWINGS / ANNEXURES

C5.1 - LIST OF DRAWINGS/ANNEXURES

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

Tender No.:	ZNTM 01192 W	Project Code:	WIMS 062326

(Where drawings/annexure's are issued, document compilers must insert the following paragraph and list the applicable drawings/annexure's below.)

The following drawings/annexure's shall be issued during the Tender period to form part of the tender documentation. Where applicable, drawings/annexure's could be re-issued to the Contractor at commencement of the construction phase.

DRAWING NO	DESCRIPTION
WD101	SITE PLAN
WD102	EXISTING FLOOR PLAN LAYOUT
WD103	ELEVATIONS
WD104	SECTIONS A-A; B-B
WD105	SECTIONS C-C; D-D; E-E; F-F; G-G
WD106a	PROPOSED CEILING LAYOUT PLAN
WD107a	PROPOSED ROOF LAYOUT PLAN
WD120 - WD125	DOOR SCHEDULES
JD132 - JD133	JOINERY DETAILS - KITCHEN
JD134	JOINERY DETAILS - EXISTING REGISTRY RM 43
JD135, JD136a, JD136b	JOINERY DETAILS - CUBICLES
JD137	CASHIER CUBICLES - WORKTOP COUNTERS,ETC
WD140	HOARDING LAYOUT PLAN
WD180	SIGNAGE PLAN
3064-300	FOUNDATION LAYOUT - UNDERPINNING DETAILS
3064-400	SITE LAYOUT - STORMWATER MANAGEMENT PLAN
3064-500	PROPOSED NEW ROOF - CONCRETE LAYOUT
3064-501	SURFACE BED DETAILS
3064-900	TYPICAL BRICKWORK STITCHING DETAIL
3064-901	TYPICAL BRICKWORK CORNER STITCHING DETAIL
3064-902	CONCRETE PAD SUPPORT FOR STEEL BEAM
PMB 048.11_1S	SITE PLAN POWER & TEL SLEEVE LAYOUT
PMB 048.11_2F	GROUND FIRE DETECTION LAYOUT
PMB 048.11_2L	GROUND FLOOR LIGHTING LAYOUT
PMB 048.11_2P	GROUND FLOOR POWER LAYOUT
PMB 048.11_3 DBM	MAIN DB
PMB 048.11_4 DB1	DB1
PMB 048.11_5 DB2	DB2
PMB 048.11_6 DB3	DB3
PMB 048.11_7 DB4	DB4
PMB 048.11_7 DB5	DB5
PMB 048.11_7 DB6	DB6
PMB 048.11_7 DB7	DB7
PMB 048.11_11 DBU1	DBU1
PMB 048.11_12 DBU2	DBU2
PMB 048.11_13 DBUB	DBUB
PMB 048.11_14 AC DB1	AC DB1

3374/MB/P1/01	FIRE SERVICES
3374/ML/P1/04	FRESH AIR AND EXTRACTION LAYOUT
3374/ML/P1/01	AIR-CONDITIONING AND VENTILATION
3374/ML/P1/06	REFRIGERATION PIPING LAYOUT
3374/ML/P1/05	ROOF LAYOUT
3374/ML/P1/02	VRF SCHEMATICS
3374/ML/P1/03	VRF SCHEMATICS
3374/MW/P1/01	FIRE AND COLD WATER LAYOUT

ANNEXURES	
Annexure 1	Model Preambles for Trades 2008
Annexure 2	General Electrical Specifications
Annexure 3	General Mechanical Specifications
Annexure 4	Map of Tender submission location
Annexure 5	Joint Venture Agreement
Annexure 6	Builders Lien Agreement
Annexure 7	OHSE Plan Structure
Annexure 8	Client's specific requirements for the Contractor's detailed OHSE Plan
Annexure 9	OHS Baseline Risk Assessment
Annexure 10	Health and Safety Bill of Quantities
Annexure 11	EPWP Employment Contract
Annexure 12	Scope of Works in Respect of Work Relating to EPWP
Annexure 13	Additional Specifications - EPWP
Annexure 14	EPWP BOQ
Annexure 15	Attendance Register - Infrastructure and Other projects

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

DRAWINGS

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

ANNEXURES

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SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

ANNEXURE 1

The Association of South African Quantity Surveyors
Die Vereniging van Suid-Afrikaanse Bourekenaars

MODEL PREAMBLES FOR TRADES 2008

forming part of the bills of quantities

Project: KZN DEPARTMENT OF TRANSPORT - MOTOR

TRANSPORT SERVICES: RENOVATIONS TO BLOCK B

230 PRINCE ALFRED STREET, PIETERMARITZBURG

Contract Reference Number:

Effective date November 2008

ISBN 978-0-620-1663-4

EXPLANATORY NOTES AND INSTRUCTIONS ON THE USE OF THESE MODEL PREAMBLES

1. The document

1.1 This document is published by and is available from the Association of South African Quantity Surveyors, P.O. Box 3527, Halfway House, 1685. Telephone (011) 315 4140. E-mail: administration@asaqs.co.za

1.2 The contents of this document are intended to cover workmanship and materials encountered in a significant majority of projects. If a material is not encountered in a significant majority of projects, its preamble will in all likelihood not be included in this document

1.3 By its very nature, this document is a "Model" document and one that is designed to act as a basis upon which to build. It is anticipated that it will be supplemented by a "Supplementary Preambles" document included in the text of the bills of quantities that will include, *inter alia*, the following:

1.3.1 supplementary clauses of a general nature that practitioners may deem necessary to cover their own individual requirements,

1.3.2 additional clauses pertaining to specific materials incorporated in a project and not covered by the Model Preambles,

1.3.3 amendments to anything contained in the Model Preambles. A clause has been incorporated in the "General" section of the document stipulating that anything contained in the "Supplementary Preambles" which is at variance to that which is contained in the Model Preambles, will take precedence over the Model Preambles and apply to the works in hand

1.4 It is intended that this document will be used by reference only in the text of the bills of quantities and will NOT be bound or reproduced therein

2. The basic philosophy

2.1 Wherever possible, reference has been made throughout the preambles to South African National Standards (SANS) to describe materials and methods respectively. It is therefore incumbent on the users of these preambles to have ready access to the relevant Specifications and Codes. Where such Specifications or Codes do not exist, suitable preambles have been compiled

2.2 These preambles have been designed to assist in abbreviating descriptions in the text of the bills of quantities and practitioners are encouraged to make use of this facility. e.g. The description of a stormwater catchpit would read:

"Brick stormwater catchpit size internally 600 x 400 x 1 200mm deep to invert fitted with and including a 450 x 300mm x 59kg cast iron grating and frame"

2.3 Wherever alternatives exist in respect of materials or workmanship, specific choices have been made in these preambles. Should users require different choices to specific items, these should be referred to in the Supplementary Preambles as outlined in clause 1.3

3. Additional notes in the use of these Model Preambles

3.1 **Concrete, Formwork and Reinforcement**

The Project Specification embodied in these preambles was compiled in collaboration with the Authors of SANS 1200G, which forms the basis for the Concrete, Formwork and Reinforcement model preambles

Users of these preambles are advised to submit a copy of the Model Preambles to the Engineers involved in a project for their scrutiny. Any amplifications, amendments, etc required by individual Engineers would then be incorporated in the Supplementary Preambles referred to in item 1.3

3.2 **Roof Coverings**

The roof coverings included in these Model Preambles are limited in their content and therefore any roofing material not included in these Preambles will need to have its full preamble included in the Supplementary Preambles

3.3 **Structural Steelwork**

The comments made under item 3.1 apply equally to Structural Steelwork

Note that the protective treatment of the structural steel covers only the treatment up to and including the primer (and patching after erection). The finishing coats of paint must be fully described and included either in the "Structural Steelwork" or in the "Paintwork" trade, as the practitioner wishes

MODEL PREAMBLES FOR TRADES

CONTENTS

A. GENERAL

A.1 APPLICATION OF CLAUSES

These Model Preambles for Trades, and any Supplementary Preambles, shall be read in conjunction with and shall form part of the descriptions of items in the bills of quantities

Where descriptions or Supplementary Preambles in the bills of quantities differ from these Model Preambles for Trades, the descriptions or Supplementary Preambles in the bills of quantities shall take precedence. Where supplementary preambles differ from descriptions in the bills of quantities, the descriptions in the bills of quantities shall take precedence

Except where otherwise stated, all preambles contained in any individual Trade Preamble shall apply equally to any work of a similar nature in all other trades

A.2 ABBREVIATIONS

The following abbreviations shall apply:

AASHTO	–	American Association of State Highway and Transportation Officials
AISI	–	American Institute of Steel Industries
BS	–	British Standard
CKS	–	Coordinating Specifications issued by the Central Coordinating Committee under the auspices of the South African Bureau of Standards
CSIR	–	Council for Scientific and Industrial Research
SANS	–	South African National Standards and the number following shall refer to the relevant specification or code of practice as the case may be

A.3 MATERIALS AND WORKMANSHIP

Materials and workmanship shall be the best of their respective kinds. Only new and undamaged materials shall be used in the Works. Materials to be permanently installed into the works shall not be used for any temporary purposes on site. Work shall be to the approval of the Principal Agent and shall be executed in accordance with the relevant manufacturer's written recommendations and instructions where applicable

A.4 PROPRIETARY PRODUCTS

For the purposes of submission of tenders, rates for items described in the bills of quantities by trade names, catalogue references, etc shall be for the particular type and manufacture specified

The approval of the Principal Agent shall be obtained prior to any substitution and where products or materials etc other than those specified are used, adjustments in the rates will be made if necessary

A.5 ASSEMBLING

Rates for manufactured items shall include assembling complete and handing over in proper working order

A.6 REFERENCES IN DESCRIPTIONS

Any references given in brackets at the end of certain descriptions shall refer to the relevant references on the drawings or schedules

A.7 WATER

Water shall be clean and free from injurious amounts of acids, alkalis, organic matter and other substances and shall be suitable for its intended use

A.8 APPLICATION OF THE NATIONAL BUILDING REGULATIONS

All work shall be executed in accordance with the requirements of SANS 10400

A.9 ACCURACY IN BUILDINGS

The dimensional and positional accuracy of the buildings and their component parts shall comply with Grade II requirements of SANS 10155 unless otherwise stated

A.10 REFERENCES TO OTHER DOCUMENTS

References in these "Model Preambles for Trades" to other documents, including SANS, CKS and BS, shall pertain to the latest edition thereof including all amendments thereto at the date for submission of the tender

B. ALTERATIONS

B.1 ALTERATIONS

In taking down and removing existing work the utmost care shall be observed to prevent any structural or other damage to remaining portions of the building. The Contractor shall ensure the stability of all structures during alteration work

Special care shall be exercised during the progress of the work to ensure that any electrical installations, water supply pipes, telephone and other services which may be encountered are not interfered with and notice shall be given to the Principal Agent if any disconnection or alterations become necessary

The Contractor shall take all precautions necessary to prevent any nuisance from dust whilst carrying out the work

B.2 MATERIALS FROM THE ALTERATIONS, CREDIT, ETC

Materials recovered from the alterations (except where described as to be re-used or to be handed over to the Employer) will become the property of the Contractor, who may allow credit in respect thereof where provided for in the bills of quantities. Such materials shall not be re-used in new work without written permission from the Principal Agent

Materials described as "removed" shall be removed from the site immediately.

Materials described as "handed over to the Employer" shall be carefully dismantled where necessary, neatly stored under cover on the site where directed and protected from damage, until required

Materials described as "set aside for re-use" shall be carefully dismantled where necessary, cleaned, neatly stored under cover and protected from damage until required for re-use. Any damage caused to such materials during removal, storage or refixing shall be made good at the Contractor's expense

B.3 DISPOSAL OF DEBRIS ETC

The Contractor shall be responsible for the removal from the site of all materials, debris and rubbish resulting from the alterations

B.4 MAKING GOOD DAMAGED WORK

The Contractor shall make good in all trades to existing work where damaged or disturbed through the alterations with all necessary new materials to match the existing

B.5 FORMING NEW OPENINGS OR ALTERING OPENINGS IN EXISTING WALLS

Where new openings are formed or openings altered in existing walls, the wall above the opening shall be broken out and a new brick, in situ concrete or prestressed concrete lintel inserted, complete with all necessary reinforcement, formwork, turning piece, etc, the jambs and portions of openings as described shall be built up with new brickwork or blockwork properly toothed and bonded to existing, cavities of hollow walls shall be closed where necessary and finishes shall be made good all round and into reveals

B.6 BUILDING UP OPENINGS

Where existing openings are given in number as built up, the existing surfaces all round shall be prepared as necessary, brickwork or blockwork properly toothed and bonded to existing, wedged up to underside of existing lintel and finishes shall be made good on both sides

C. EARTHWORKS

C.1 DEMOLITIONS

C.1.1 Nature and extent

Descriptions of demolitions give a rough guide only as to the scope of the work. Tenderers are therefore advised to visit the site before submitting a tender and to acquaint themselves with the nature and extent of the work to be done and the value of recoverable materials which are not to be re-used or handed over to the Employer. Unless otherwise stated, loose furniture, kitchen and other equipment, apparatus, machinery, etc shall remain the property of the Employer and the removal thereof does not fall within the scope of this Contract

The Contractor shall completely demolish the buildings etc in a careful, skilful, practical and safe manner down to 150mm below ground level

Demolitions shall include breaking up and removing:

all floors and surface beds;

all external screen walls, steps, ramps, aprons, surface water channels, rainwater sumps, gulleys, etc attached to the building to be demolished;

all services, manholes, etc in ground to a point not less than 1m beyond the perimeter of the building including plugging off ends of all remaining pipes, drains, etc, filling in holes where necessary and ramming and levelling to ground level

Where only a portion of a building is to be demolished, it shall be done without damage to the remaining portion of the building. Any such damage shall be made good by the Contractor at his own expense

C.1.2 Notices etc

The Contractor shall, before commencing work, obtain all necessary authorisation for carrying out the work, by whatever means including the use of pneumatic equipment or blasting, give all necessary notices and pay all charges and fees in connection therewith. He shall also comply with all regulations pertaining to rodent extermination and he shall obtain the requisite Rodent Extermination Clearance Certificate and pay all necessary fees. All receipts and certificates shall be left in the safekeeping of the Principal Agent. All the abovementioned charges and fees shall be paid by the Contractor and included in his prices

The Contractor shall give ample notice to the Principal Agent and Local Authorities regarding any disconnections necessary prior to the removal or interruption of electrical or telephone cables, water and sanitary services etc

C.1.3 Loss

After the handing over of the site to the Contractor, the full risk of any loss or damage to buildings to be demolished shall be the responsibility of the Contractor and he shall take such precautions as he deems necessary against such loss or damage

C.1.4 Materials from the demolitions, credit, etc

Materials recovered from the demolitions will become the property of the Contractor, who may allow credit in respect thereof where provided for in the bills of quantities. Such materials shall not be re-used in any new work without written permission from the Principal Agent

C.1.5 Disposal of debris etc

The Contractor shall be responsible for the removal from the site of all materials, rubble, debris and rubbish resulting from the demolitions

C.2 SOIL INSECTICIDES

The application of soil insecticides shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" - SANS 10124

C.3 FILLING ETC

C.3.1 Filling generally

Filling over site shall be spread, levelled, watered and consolidated in layers not exceeding 300mm

Filling under floors and backfilling to excavations shall be suitable inert material, free from clay, vegetable matter, large stones, etc, having a maximum plasticity index of 10, spread, levelled and compacted to a density of at least 90% Mod. AASHTO

C.3.2 Hardcore

Hardcore shall be broken stone or other approved hard material graded from 25mm to 75mm with the finer material on top and shall be spread, levelled and consolidated

C.4 EXCAVATIONS

C.4.1 Classification of excavated material

"Hard rock" shall mean granite, quartzitic sandstone or other rock of similar hardness, the removal of which requires drilling, wedging and splitting or the use of explosives

"Soft rock" shall mean hard material the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact ouklip and material of similar hardness

"Earth" shall mean all ground other than that classified as "hard rock" or "soft rock" and shall include made-up ground and any loose stones or pieces of concrete not exceeding 0,03m^3 in volume

D. CONCRETE, FORMWORK AND REINFORCEMENT

D.1 SPECIFICATION FOR CONCRETE WORK GENERALLY

All in situ concrete work (plain and reinforced) shall comply with SANS 1200G supplemented by the following Project Specification. Where SANS 1200G and the Project Specification are in conflict, the Project Specification shall take precedence

Wherever the term "Engineer" appears in SANS 1200G or in the following Project Specification this shall be deemed to mean the Principal Agent's representative responsible for this section of the Works

PROJECT SPECIFICATION

The following amplifications, additions and amendments to SANS 1200G shall constitute the Project Specification. Clause numbers refer to either the existing clauses in SANS 1200G or to new clauses, which are related to the existing clauses

1. **SCOPE**
This clause is amended to include:

1.1 This specification does not cover the methods by which the finished structure is to be measured for the purpose of payment and the "Standard System of Measuring Building Work" shall apply

2. **INTERPRETATIONS**

2.1 **SUPPORTING SPECIFICATIONS**
Clause 2.1(b) shall not apply

2.2 **APPLICATION**
This clause shall not apply

4. **PLANT**

4.5 FORMWORK

4.5.2 **Finish**
Unless otherwise stated the quality of all formwork shall be such that the finished surface of the concrete is "Rough" in terms of clause 5.2.1(a)

5. **CONSTRUCTON**

5.2 FORMWORK

5.2.1 **Classification of Finishes**

(a) **Rough**. No treatment of the surface of the concrete will be required after the striking of the formwork. The finish of the concrete need not be more accurate than Degree of Accuracy III

(b) **Smooth**. Imperfections such as small fins, bulges, irregularities, surface honeycombing and surface discolorations shall be made good and repaired by approved methods. The finish of the concrete shall be accurate to Degree of Accuracy II

(c) **Special**

(i) **Smooth and fair**

This class of finish requires the highest standard of concrete work, formwork, accuracy and technique

Concrete placed in any one structure to give this finish shall be made from cement and aggregates from the same source. The grading of the aggregate shall be kept constant

Formwork shall be metal, wrot timber or other approved material in new condition designed and constructed to suit the particular job in hand and with shutter bolts and joints between panels in a regular pattern approved by the Principal Agent. Joints between panels shall be watertight, but the use of sealing tape which will mark the concrete shall not be permitted

Designated joints shall be in the position and of the details shown upon the working drawings. Should the Contractor wish to incorporate further construction joints or amend the position of those shown to suit his own requirements or technique, this may be allowed provided that all design considerations are met, that the prior approval of the Engineer is obtained and that any extra costs are borne by the Contractor

In the case of horizontal construction joints, the top edge of the concrete on the smooth and fair finished side shall be struck true and level with a trowel

Special care shall be taken to ensure that forms are clean and free of all pieces of tying wire, nails and other debris at the time of concreting

The standard of finish shall be such that upon removal of the formwork, no further treatment, other than treatment of bolt holes if required, shall be found necessary to provide a straight, smooth and uniform finish of good quality and consistent colour and texture, free of all honeycombing etc. Any defect shall be made good by either removing and replacing the defective concrete or, in certain instances only, by patching

5.5 CONCRETE

5.5.1.6 **Prescribed mix concrete**

Where prescribed mix concrete is specified the proportions of constituents, the maximum size of coarse aggregate and the estimated minimum compressive strength shall be as specified in the following table:

Class of Concrete	Estimated minimum compressive strength in MPa at 28 days	Maximum nominal size of coarse aggregate in mm	Proportions of Constituents		
			Cement (Parts)	Fine aggregate (Parts)	Coarse aggregate (Parts)
A	7	37,5	1	4	8
B	15	19	1	3	5
C	20	19	1	2,5	3,5

Cement shall comply with SANS 50917-1 of strength 32,5N or higher

Should cement and aggregates be mixed by volume, the contents of a 50kg sack of cement shall be taken to be 0,033m^3

Notwithstanding the requirements contained in SANS 1200G, the Principal Agent may permit certain items of non-structural concrete to be mixed by hand

If the concrete is mixed by hand, it shall first be mixed in a dry state on a clean non-absorbent surface until it is of uniform colour and consistency. Just enough water shall then be added to permit mixing and working, at which stage the concrete shall continue to be mixed until it is of uniform colour and consistency

5.5.1.7 **Strength concrete**

Where strength concrete is specified it shall be designated by its specified strength followed by the size of stone used in its manufacture, eg 30 MPa/19mm

The water/cement ratio shall be as Table 5 of clause 5.5.1.5 for moderate exposure conditions

5.5.1.8 **"No-Fines" concrete**

"No-fines" concrete shall consist of one part cement to eight parts aggregate graded from minimum 6mm to maximum 13mm size

The quantity of water used shall be just sufficient to form a smooth grout which shall completely coat every particle of aggregate and also to ensure that the grout is just wet enough to form a small fillet at each point of contact between the stones. "No-fines" concrete mixed with excessive water, which results in a thin grout, which drops off the aggregate, will be rejected

"No-fines" concrete shall be placed in its final position within 20 minutes of mixing and shall be placed in continuous horizontal layers. Concrete shall be spade worked sufficiently to ensure that it fills the forms but vibrating, tamping or ramming will not be permitted

5.5.3.2 **Ready-mixed concrete**

The use of ready-mixed concrete and the acceptability of test results from a central concrete production facility shall be subject to the written approval of the Engineer

6. **TOLERANCES**

Degree of Accuracy II shall apply for all work unless otherwise stated

7. **TESTS**

7.1 FACILITIES AND FREQUENCY OF SAMPLING

7.1.2 **Frequency of sampling**

7.1.2.5 The frequency of sampling shall be as directed by the Engineer, but not less than one set of cubes from every 50m³ cast

8. **MEASUREMENT AND PAYMENT**

This clause shall not apply

D.2 AGGREGATES OF LOW DENSITY

Aggregates of low density shall comply with SANS 794

D.3 HOLLOW BLOCKS, PREFABRICATED BLOCK BEAMS AND PLANKS, ETC

Blocks, block beams, planks, etc shall be fixed and supported in such a manner that no movement can take place before or during the casting of concrete. No broken components shall be used

D.4 SUPERVISION

A competent and experienced foreman shall superintend personally the whole of the concrete construction and pay special attention to:

(a) The quality, testing and mixing of materials,
(b) The placing and compaction of concrete,
(c) The construction and removal of formwork and
(d) The sizes and position of reinforcement

The Contractor shall obtain the permission of the Principal Agent before commencing concreting of foundations or reinforced structure

No inspection, approval, authorisation to proceed, comment or instructions following from such an inspection, or failure of the Principal Agent to comment on any particular aspect of the work, shall be deemed to relieve the Contractor in any way from his obligation to ensure through his own supervision that the work is constructed in every way in accordance with the Drawings, Specification and Conditions of Contract, nor relieve him from his obligations to make good any fault or defect, nor shall it be deemed that there is any obligation on the Principal Agent to inspect all or any part of the Works or that such inspection is necessarily complete in every respect

D.5 GENERAL

Concrete

Rates for concrete work shall include all "construction joints" other than "designated joints" as defined in SANS 1200G clause 2.4.3 which are measured separately, and for the design of strength concrete mixes and all testing of concrete and materials other than compressive strength testing of concrete samples taken from concrete being placed in the Works. The Contractor shall only be entitled to payment for those samples and compressive strength tests called for by the Engineer and which pass the test requirements

Surface beds cast in panels shall be cast in panels approximately $9m^2$

Formwork

Formwork to slabs and beams shall be cambered where required
Rates for formwork to soffits shall include propping not exceeding 3,5m high unless otherwise described. Formwork to walls and columns is not exceeding 3,5m high above bearing level unless otherwise described

Reinforcement

Standard welded steel fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps.

The mass of binding wire is not included in the mass of the reinforcement and the cost thereof shall be included in the rates for the reinforcement

E. PRECAST CONCRETE

E.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Precast concrete paving slabs SANS 541

Cement, water, aggregates and reinforcement shall be as described under D. CONCRETE, FORMWORK AND REINFORCEMENT

E.2 CONCRETE

Concrete shall be as described under D. CONCRETE, FORMWORK AND REINFORCEMENT and unless otherwise stated shall be prescribed mix concrete Class C but with coarse aggregate of an appropriate size

E.3 MOULDS

Before each casting, moulds shall be coated with a suitable release agent which will not in any way discolour the surface of the finished product or impair its strength. Where items are described as "finished smooth from the mould" or as "precast terrazzo", moulds shall be made to a high degree of accuracy and shall be such as to leave even and smooth surfaces

E.4 FINISHES TO BLOCKS

Where described as "precast terrazzo", such surfaces shall have a facing of terrazzo described under O. PLASTERING. The facing shall be poured into the moulds in a wet state (not dry pressed) and thoroughly worked up against finished faces to ensure that it finishes smooth from the mould

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

E.5 CASTING ETC

Items shall be suitably cured, shall not be handled whilst still green and shall not be built in within 21 days of casting

E.6 REINFORCEMENT

Unspecified reinforcement required for manufacturing, handling and erection purposes and for reinforcing projecting and other unwieldy portions of blocks shall be provided by the Contractor at his discretion

E.7 BEDDING, JOINTING AND POINTING

Blocks shall be bedded and jointed solidly in Class I mortar as described under F. MASONRY and shall be pointed with slightly keyed joints

Blocks finished with "precast terrazzo" shall have joints raked out and pointed with slightly keyed joints in tinted waterproofed mortar composed of one part cement and three parts sand to match terrazzo facing

E.8 GENERAL

Precast concrete work shall include reinforcement required for manufacturing, handling and erection purposes, steel rod or wire hooks and/or mortices for lewis bolts required for handling and transporting, any necessary temporary propping and strutting and bedding, jointing and pointing

F. MASONRY

F.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Burnt clay masonry units	SANS 227
Limes for use in building	SANS 523 {Slaked (hydrated) limes}
Aggregates from natural sources – fine aggregates for plaster and mortar	SANS 1090
Concrete masonry units	SANS 1215
Prestressed concrete lintels	SANS 1504
Burnt clay paving units	SANS 1575
Metal ties for cavity walls	SANS 28
Common cement	SANS 50197-1 (Class 32,5N)
Masonry cement	SANS 50413-1 (Class 22,5X)
Concrete masonry construction	SANS 10145
The structural use of masonry	SANS 10164-1
Masonry walling	SANS 10249
Concrete floors	SANS 10109-1&2

F.2 SAND

Sand shall be washed where necessary and screened through a 2,4mm mesh sieve

F.3 BURNT CLAY BRICKS

Burnt clay bricks shall be of nominal size 222 x 106 x 73mm unless otherwise stated

Common bricks shall be General Purpose bricks

Extra hard burnt bricks shall be General Purpose (Special) bricks

Facing bricks shall exhibit a liability to efflorescence not in excess of "Slight" and water absorption when tested in conformity with the requirements of SANS 227 shall not exceed 14%

Particular care shall be taken to preserve arrisses and faces of facing and paving bricks during transit and handling

F.4 CONCRETE BRICKS

Concrete bricks shall have a nominal compressive strength of 8 MPa

F.5 QUARRY TILES ETC

Quarry, cement and similar tiles shall be of approved manufacture, even in shape and size, free from cracks, twists or blemishes and uniform in colour

F.6 WIRE TIES

Wire ties shall be of galvanized steel of the single wire type for solid walls and either the "Butterfly" or Modified PWD type for hollow walls. Ties shall be of sufficient length to allow not less than 75mm of each end to be built into brickwork or embedded in concrete

F.7 BRICKWORK REINFORCEMENT

Brickwork reinforcement shall be manufactured from hard drawn steel wire conforming to BS 785 and shall consist of two 2,8mm diameter main wires with 2,5mm diameter cross wires at 300mm centres welded at intersections

Brickwork reinforcement shall be lapped not less than 300mm at end joints and for a length equal to the width of the widest reinforcement at intersections

F.8 MORTAR

Mortar shall comply with the following table:

1	2	3	4
Mortar Class	Minimum compresive strength MPa	Cement:sand (common cement)	Cement:sand (masonry cement)
I	10	1:4 or 50kg to 130 litres	1:3 or 50kg to 100 litres
II	5	1:6 or 50kg to 200 litres	1:5 or 50kg to 170 litres
III	1,5	1:9 or 50kg to 300 litres	1:6 or 50kg to 200 litres

Mortar shall be Class II unless otherwise specified

Mortar plasticizers may only be used with the approval of the Principal Agent

The materials shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated

Mortar shall be produced in such quantities as can be used before commencement of set and no mortar that has set shall be used .

F.9 COMPO MORTAR

Compo mortar shall be Class III mortar in accordance with clause F.8 but with a lime content of 80 litres

The lime and sand shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated. Immediately before use, the cement shall be mixed in and the requisite amount of water added. Compo mortar shall be produced in such quantities as can be used before commencement of set and no compo mortar that has set shall be used

F.10 BRICKWORK

Wherever practicable, brickwork shall be built in stretcher bond. Unless legitimately required to form bond, no false headers shall be used. English bond shall only be used where specifically so indicated or where stretcher bond is not practicable

Brickwork, unless otherwise described, shall be built in Class II mortar

Bricks shall be laid on a solid bed of mortar and all joints shall be grouted up solid

The brickwork shall be carried up in a uniform manner, no part being raised more than 1,2m above adjoining work

Where necessary, bricks shall be wetted before being laid and the course of bricks last laid shall be well wetted before laying a fresh course upon it

Walls in thicknesses of more than one skin shall have at least five wire ties per square metre. Linings to concrete, unless otherwise specified, shall be tied to the concrete with at least five wire ties per square metre

Hollow walls, unless otherwise specified, shall be built of two half brick skins with cavity between, tied together with at least five wire ties per square metre. The cavities shall be kept free of all rubbish, mortar droppings and projecting mortar. Mortar joints to brickwork shall be not less than 8mm or more than 12mm thick

F.11 BLOCKWORK

Unless otherwise described, all blockwork shall be built in stretcher bond. Whole blocks shall be used except where bats or closers are required to form bond. Blockwork, unless otherwise described, shall be built in Class II mortar

Solid blocks shall be laid on a solid bed of mortar and all joints shall be grouted up solid

Hollow blocks shall be laid in shell bedding, ie only the inner and outer shells of the blocks shall be covered with mortar. Vertical joints shall be similarly formed

The blockwork shall be carried up in a uniform manner, no part being raised more than 1,2m above adjoining work

Clay blocks shall be wetted before being laid and the course of blocks last laid shall be well wetted before laying a fresh course upon it

F.12 CENTRES AND TURNING PIECES

Centres and turning pieces to soffits of arches and lintels shall be left in position for not less than 14 days

F.13 FACE BRICKWORK

Face brickwork shall be built in stretcher bond, unless otherwise specified, to a true and fair face. Perpends shall be vertically aligned

Facing bricks shall be mixed to ensure that the proper blending of bricks within the colour range of each facing brick being used is obtained

F.14 PAVINGS, SILLS, COPINGS, ETC

Clay bricks and tiles shall be wetted before fixing and shall be solidly bedded and jointed in Class I mortar and pointed with slightly keyed joints

G. WATERPROOFING

G.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Bituminous damp-proof courses	SANS 248 (Type FV)
Polyolefin film for damp- and waterproofing in buildings (walls, sills, etc)	SANS 952 (Type B)
Polyolefin film for damp- and waterproofing in buildings (floors and basements)	SANS 952 (Type C)
Mastic asphalt for roofing	SANS 297
Mastic asphalt for damp-proof courses and tanking	SANS 298
Bituminous roofing felt	SANS 92 (Type 60)
Polyolefin film for damp- and waterproofing in buildings (flat roofs)	SANS 952 (Type A)
Chloroprene rubber sheet (for waterproofing)	SANS 580
Sealing compounds for the building industry, two-component, polysulphide base	SANS 110 (Type 2 - Gun Grade)
Sealing compounds for the building and construction industry, two- component, polyurethane base	SANS 1077
The waterproofing of buildings (including damp-proofing and vapour barrier installation)	SANS 10021

G.2 WATERPROOFING TO ROOFS, BASEMENTS, ETC

Waterproofing to roofs, basements, etc shall be carried out by workmen who are experienced in this type of work

G.3 DAMP-PROOF COURSE TO WALLS

All joints in damp-proof course to walls shall be lapped a minimum of 150mm except at junctions and corners where the lap shall equal the full thickness of the wall

H. ROOF COVERINGS ETC

H.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Concrete roofing tiles	SANS 542
Clay roofing tiles	SANS 632
Sawn softwood timber battens	SANS 1783-4
Fibre-cement sheets (flat and profiled)	SANS 685
Aluminium alloy corrugated and troughed sheets	SANS 903
Continuous hot-dip zinc-coated carbon steel sheet of commercial, lock-forming and drawing qualities	SANS 3575
Continuous hot-dip zinc-coated carbon steel sheet of structural quality	SANS 4998
Polyolefin film for damp- and waterproofing in buildings	SANS 952
Metal roofing tiles	SANS 1022
Glass-reinforced polyester (GRP) laminated sheets (profiled or flat)	SANS 1150
Fasteners for roof and wall coverings in the form of sheeting	SANS 1273
Materials for thermal insulation of buildings	SANS 1381-1&4
Expanded polystyrene thermal insulation boards	SANS 1508
Fixing of concrete interlocking roofing tiles	SANS 10062
Roof and side cladding	SANS 10237
Sheet zinc	BS 849
Sheet lead	BS 1178
Sheet aluminium	BS 1470
Sheet copper	BS 2870

H.2 GALVANIZED STEEL PROFILED SHEETS ETC

Galvanized steel profiled sheets, ridge and hip coverings, etc shall be coated with a minimum of 275 g zinc per m^2 and shall be free of white rust

H.3 GALVANIZED SHEET IRON

Galvanized sheet iron shall be rolled steel sheet coated on both sides with a minimum of 275 g of zinc per m^2 and shall be free from white rust

H.4 NAILING AND SCREWING

Where nailing and screwing is required:

- galvanized iron nails and screws shall be used for galvanized sheet iron and sheet zinc
- copper or copper alloy nails and screws for sheet copper and sheet lead
- aluminium alloy or stainless steel nails and screws for sheet aluminium

H.5 LAPS

Sheet metal flashings shall have minimum 100mm laps and linings to valleys, secret gutters, etc minimum 225mm laps

H.6 GENERAL

Rates for profiled sheet roofing and rolled edges, ridge and hip coverings, flashing pieces, etc of metal, fibre-cement, plastic, etc shall include fixing accessories

I. CARPENTRY AND JOINERY

I.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Sawn softwood timber : General requirements	SANS 1783-1
Sawn softwood timber : Stress-graded structural timber and timber for frame wall construction	SANS 1783-2
Sawn softwood timber : Brandering and battens	SANS 1783-4
Softwood flooring boards	SANS 629
Hardwood furniture timber	SANS 1099
Hardwood block and strip flooring	SANS 281
Wooden ceiling and panelling boards	SANS 1039
Laminated timber (glulam)	SANS 1460
Gypsum plasterboard	SANS 266
Fibreboard products	SANS 540
Wood-wool panels (cement bonded)	SANS 637
Fibre-cement sheets (flat and profiled)	SANS 685
Fibre-cement boards	SANS 803
Plywood and composite board	SANS 929
Wooden ceiling and panelling boards	SANS 1039
Particle boards	SANS 50312-1to7
Decorative laminates	SANS 4586
Wooden doors	SANS 545
Fire doors	SANS 1253
Materials for thermal insulation of buildings	SANS 1381-1,2,4&6
Expanded polystyrene thermal insulation boards	SANS 1508
Mild steel nails	SANS 820
Metal screws for wood	SANS 1171
Wood-preserving creosote	SANS 539

Softwood shall bear the relevant SABS mark and shall be ordered in the sizes in which it will be used as no scantlings of marked timber will be allowed. Should SABS marked timber be unavailable, the Principal Agent's prior permission shall be obtained before using unmarked timber

I.2 HARDWOODS

All hardwoods shall be specially selected, well seasoned, free from sapwood and well kiln dried. Meranti shall be Red or Medium Brown Meranti, even in grain and colour, selected from "Standard and Better" quality from Malaysia

I.3 INFECTION AND PRE-TREATMENT OF TIMBER

All timber used on the site, whether for permanent or temporary work, shall be free of borer or other beetle and termite infection. If the work under this contract falls within an area designated under Government Notice R2577 of 197812-29, permanent softwood fixed in the building shall be treated against borer etc in accordance with Government Notice R451 of 1969-03-28 using Class B or C preservative

When treated timbers are cut, the cut surfaces shall be effectively brushed with at least two coats of preservative solution

I.4 CONSTRUCTION IN GENERAL

Where applicable, construction methods shall comply with SANS 10082. Wood and laminate flooring shall be installed in accordance with SANS 10043. Roof trusses shall be manufactured, erected and braced in accordance with SANS 10243

I.5 STRUCTURAL TIMBER

Timbers generally shall be in single lengths and jointing of timbers will only be permitted when the required length is unobtainable. Only the absolute minimum of joints to obtain a particular length will be permitted and such joints are to be evenly spaced along the length of the timber

Finger-jointing of structural timber will be permitted, in which case it shall be manufactured in accordance with SANS 10096

I.6 PLATE NAILED TIMBER ROOF TRUSSES

Plate nailed timber roof trusses shall be of approved design and manufacture and constructed with softwood structural timber by a truss Fabricator holding a current Certificate of Competence awarded by the Institute of Timber Construction

Each roof truss shall have all its members accurately cut and closely butted together and rigidly fixed by CSIR approved patented galvanized metal spiked connectors, precision pressed on both sides of each intersection by an approved method, all in accordance with the manufacturer's instructions

The design, manufacture and transportation of the roof trusses, bracing, etc shall be under the control of a registered Structural Engineer in accordance with SANS 1900, SANS 10160 and SANS 10163, who shall, after erection, provide a certificate confirming that the design, manufacture, transportation, erection and bracing has been carried out in accordance with this specification

The design shall include for all live loads, wind loads and for dead loads imposed by roof covering, purlins, ceilings, etc

Fully detailed shop drawings of all trusses etc, indicating sizes, bracing, loading, etc, shall be submitted to the Principal Agent for approval prior to fabrication

Unless specific erection instructions are given, erection shall be carried out in accordance with the procedures and recommendations of the manual "The Erection and Bracing of Timber Roof Trusses" published by the Institute for Timber Construction and the Council for Scientific and Industrial Research or as detailed by the designer

Roof trusses and bracing shall include design and preparation of shop drawings

I.7 TONGUED AND GROOVED BOARDING

Tongued and grooved boards for floors, panelling, etc shall be in long varying lengths with joints tightly cramped up and secret nailed. Flooring boarding shall be flush jointed with staggered heading joints and machine sanded after fixing

I.8 JOINERY

Skirtings, cornices, rails, etc shall be in single lengths wherever practicable and shall have splayed heading joints where
necessary. Skirtings shall be trenched at back

All horns of door frames shall be checked and splayed back where frames are fixed projecting or flush with surface and built in

Heads of screws in exposed faces of hardwood joinery shall be sunk and match pelleted

Joinery shall have arris rounded angles and shall be blocked and planted on

I.9 VENEERS

All face veneers shall be of kiln dried timber, free from knots, cracks, patchwork, sapwood and other defects, selected and glued, dried and machine-sanded to a smooth finish. All veneers shall be applied under hydraulic pressure

I.10 DOORS

Flush doors shall have solid timber edge strips with concealed edges. Where doors are to be finished with a transparent finish, the veneer and the edge strips shall be timber of the same species and as far as possible of matching colour. Unless otherwise described all flush doors shall be of interior quality, but where exterior quality doors are specified the glue used shall be of the WBP type

Framed and ledged batten doors described as filled in with V-jointed boarding shall be filled in flush on one side with tongued and grooved vertical boarding, V-jointed on one or both sides and of the thickness stated. The boarding shall be in narrow widths, closely cramped up, rebated or tongued on outer edges and housed to grooves in stiles and rails and twice countersunk brass screwed at each intersection with ledges and braces and the inner edges of the abutting stiles and rails shall be chamfered to form a V-joint at junction with the board

Unless otherwise described double doors shall have rebated meeting stiles

I.11 FIXING

All nails and screws shall be of the size, length and type appropriate to their respective uses. All screws for hardwood joinery work shall be brass

Items described as "plugged" shall be screwed to fibre, plastic or metal plugs at not exceeding 600mm centres. Where items are described as "bolted", the bolts have been given separately

I.12 ADHESIVES

Adhesives shall comply with BS 1204 and 4071 where applicable. Adhesives used in the manufacture of external joinery exposed to excessive moisture (eg kitchen and laboratory worktops) shall be of the WBP type

J. CEILINGS, PARTITIONS AND ACCESS FLOORING

J.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Gypsum plasterboard	SANS 266
Fibreboard products	SANS 540
Gypsum cove cornice	SANS 622
Wood-wool panels (cement-bonded)	SANS 637
Sawn softwood timber : Brandering and battens	SANS 1783-4
Sawn softwood timber : Timber for frame wall Construction	SANS 1783-2
Fibre-cement boards	SANS 803
Plywood and composite board	SANS 929
Wooden ceiling and panelling boards	SANS 1039
Materials for thermal insulation of buildings	SANS 1381-1&4
Expanded polystyrene thermal insulation boards	SANS 1508
Raised access flooring	SANS 1549

J.2 TONGUED AND GROOVED BOARDING

Tongued and grooved boarding for ceilings shall be in long varying lengths, V-jointed one side and with joints tightly cramped up and secret nailed

J.3 CEILINGS ETC

J.3.1 Brandering

Brandering for ceilings and eaves soffit coverings shall be symmetrically arranged with necessary smaller panels. Main branders shall be at right angles to roof timbers, with cross branders cut in between and branders shall be fixed with galvanized wire nails driven in on skew alternately in opposite directions

J.3.2 Ceiling boards

Ceiling boards shall be in long lengths symmetrically arranged with necessary smaller panels, closely butted and secured at 150mm centres to brandering with galvanized or cadmium-plated clout-headed nails

J.4 GYPSUM SKIM PLASTER

Gypsum skim plaster shall be pure gypsum plaster finished with a steel trowel

J.5 EXPOSED TEE-SYSTEM SUSPENDED CEILINGS

The ceiling panels shall be as described in the items and the panels shall be stiffened at back as recommended by the manufacturer to prevent bowing or sagging

The exposed surfaces of all ceiling panels and supporting members shall be uniform in colour and free from surface blemishes

The suspension grid system shall be an approved patent suspension system comprising 38mm galvanized steel main and cross tee bearers spaced in both directions at centres to suit sizes of ceiling panels used, with the cross bearers fitted between and notched to form flush fit with main bearers. The exposed flange of the tees shall be 25mm wide, covered with a rolled aluminium cap painted a low sheen satin white. Cornices etc shall be as described in the items and shall be finished to match the exposed tees

The main tee bearers shall have holes for cross tees at 300mm centres and holes for hangers at 50mm centres. In addition, main and cross tee bearers shall be holed as necessary for and provided with timber wedges or steel clips where recommended by the manufacturer to prevent ceiling panels from lifting

The web of the exposed cross tee bearers shall extend to form a positive interlock with the main tee bearers and the lower flange shall be cut back to provide a joint free appearance

All hangers shall be galvanized and shall be at centres to meet the requirements of the specification with one end fixed to the suspension grid main bearers and the other end fitted with suitable galvanized fixing cleat securely fixed to the structure. Fixing points shall be agreed to by the Principal Agent before any power shot fixings are made. Hangers shall not be suspended from air-conditioning ducts. Where recommended by the manufacturer, hangers shall be of the rigid type

Component parts and fixings shall be non-corrosive and able to withstand atmospheric pollution. Surfaces of aluminium which are in contact with other materials when fixed, particularly metals, shall be suitably insulated to prevent electrolytic corrosion

Ceilings shall comprise hangers, suspension grid system and ceiling panels, shall be constructed in a manner suitable for carrying air-conditioning diffusers and light fittings in the positions required, shall be set out to layouts approved by the Principal Agent and shall have the standard suspension systems modified as necessary to work around any pipes or light fittings

J.6 FLUSH PLASTERED SUSPENDED CEILINGS

Gypsum plasterboard panels of the specified thickness generally in 1200mm widths and in long lengths shall be fixed grey side down with self-tapping screws to the suspension system with the joints between boards loosely butt jointed and covered with 50mm wide strips of self-adhesive fibre tape

The plasterboard panels shall be finished with gypsum skim plaster trowelled to a smooth polished surface to the thickness etc recommended by the manufacturer

The suspension system shall be an approved patent concealed suspension system consisting of galvanized mild steel bearers suspended on approved non-rusting metal hangers spaced generally at 1200mm centres or to suit layout of air-conditioning ducts and other services etc above ceiling with one end bolted to the bearer and the other end fitted with a galvanized fixing cleat securely fixed to the structure as required

Fixing points shall be agreed to by the Principal Agent before any power shot fixings are made. Hangers shall not be suspended from air-conditioning ducting

Ceilings shall comprise hangers, suspension system, ceiling panels and plaster finish, shall be constructed in a manner suitable for carrying air-conditioning diffusers and light fittings in the positions required, shall be set out to layouts approved by the Principal Agent and shall have the standard suspension system modified as necessary to work around any pipes or light fittings

K. FLOOR COVERINGS, WALL LININGS, ETC

K.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Semi-flexible vinyl floor tiles	SANS 581
Resin modified vinyl floor tiles	SANS 586
Flexible vinyl flooring	SANS 786
Hardwood block and strip flooring	SANS 281
Wood mosaic flooring	SANS 978
Textile floor coverings (pile construction)	SANS 1375
Textile floor coverings (needle-punched construction)	SANS 141
Carpet underlays	SANS 1419
The installation of wood and laminate flooring	SANS 10043
The installation of resilient thermoplastic and similar flexible floor covering materials	SANS 10070
The installation of textile floor coverings	SANS 10186
Sheet linoleum (calendered types), cork, carpet and linoleum tiles	BS 810
Solid rubber flooring	BS 1711
Felt backed linoleum	BS 1863

K.2 LAYING OF MATERIAL

Floor tiles shall be laid with continuous joints in both directions

Patterned floor coverings shall be matched at joints

K.3 GENERAL

Floor coverings, wall linings, skirtings, nosings, etc shall include all preparatory work to screeded or plastered surfaces etc, priming coats and adhesives

Floor coverings and wall linings shall be dressed around and into corners. Wood block and wood mosaic flooring shall be sanded with a sanding machine and sealed with a coat of approved penetrating sealer

Plastic handrails shall have welded and polished butt joints

L. IRONMONGERY

L.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Locks, latches and associated furniture for doors. (Domestic type)	SANS 4
Kitchen cupboards: Built-in and free-standing	SANS 1385
Single action closers	SANS 1510
Padlocks	SANS 1533
Fasteners	SANS 1700
Chalk writing boards for schools	CKS 36

L.2 KEYS

Locks shall have the minimum possible number of interchangeable keys. Cylinder locks and locks described as "en suite" shall be clearly marked with consecutive numbers and each key shall be punched with the corresponding number of the relative lock

L.3 FIXING

Unless otherwise described, ironmongery is to be fixed to wood

Items described as "plugged" shall be screwed to fibre, plastic or metal plugs

Screws, bolts, etc for fixing of ironmongery shall be of matching metal and finish, except for aluminium ironmongery or ironmongery fixed to aluminium in which cases stainless steel screws may be used

All necessary preparation of pressed steel door frames for the fixing of ironmongery to the frames has been included with the pressed steel door frames

L.4 KITCHEN CUPBOARDS

Steel cupboards shall be finished with baked enamel. Tops of floor cupboards shall have laminated plastic covering

Cupboards shall be fitted with all necessary hinges, handles, catches, etc. Cupboards shall be securely fixed with all necessary screws and fibre, plastic or metal plugs

Where cupboards are described as a "series", tops shall be continuous and cupboards shall be bolted or screwed together, including bolts, screws, holes, etc

M. STRUCTURAL STEELWORK

M.1 SPECIFICATION

All structural steelwork shall comply with SANS 1200H or 1200HA as applicable. Structural fasteners shall comply with
SANS 1700

Whenever the term "Engineer" appears in SANS 1200H or 1200HA or in the following Project Specification this shall be deemed to mean the Principal Agent's representative responsible for this section of the Works

M.2 PROJECT SPECIFICATION INCORPORATING AMPLIFICATIONS, ADDITIONS AND AMENDMENTS TO SANS 1200H AND 1200HA

The following amplifications, additions and amendments to SANS 1200H and SANS 1200HA shall apply and clause numbers refer to either the existing clauses in the relevant SANS or to new clauses which are related to the clauses therein

SANS 1200H

3.1.1 **Weldable structural steel**

Weldable structural steel shall comply with SANS 1431

5.1.2 **Contractor provides shop details**

The Contractor shall be responsible for the preparation of all shop detail drawings

5.1.3 **Engineer provides shop details**

This clause shall not apply

5.3.9 **Protective treatment**

Structural steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be primed as specified to a minimum dry film thickness of 30 micrometres before leaving the workshop. Upon delivery to the site and again after erection all bared surfaces shall be made good with similar primer

8. **Measurement and payment**

This clause shall not apply

SANS 1200HA

5.2.10 **Protective treatment**

Structural steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and all surfaces shall be primed as specified to a minimum dry film thickness of 30 micrometres before leaving the workshop. Upon delivery to the site and again after erection all bared surfaces shall be made good with similar primer

5.3.7 **Repairs to paint and site painting**
This clause shall not apply

8. **Measurement and payment**

This clause shall not apply

N. METALWORK

N.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Fasteners	SANS 1700
Expanded metal	SANS 190-1&2
Windows and doors made of rolled mild steel sections	SANS 727
Hot-dip galvanized zinc coatings on fabricated iron and steel articles	SANS 121
Strongroom and vault doors	SANS 949
Anodized coatings on aluminium (for architectural applications)	SANS 999
Steel door frames	SANS 1129
Mushroom- and countersunk-head bolts and nuts	SANS 1143
Welding of metalwork	SANS 1044
Adjustable glass-louvred windows	CKS 413
Aluminium sheet and strips	BS 1470
Aluminium extruded tube and hollow sections	BS 1474
Aluminium bars and sections	BS 1476

N.2 STEEL

Steel shall be mild steel of approved commercial quality. Steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 10064 and given one coat of primer as specified before leaving the workshop

N.2.1 Galvanizing of steel

Steelwork described as "galvanized" shall be galvanized by means of the hot-dip process after fabrication. Where welding on site is unavoidable, such welded joints shall be cleaned down and cold galvanized to approval

N.3 STAINLESS STEEL

Stainless steel shall be AISI Type 304 stainless steel and shall be buffed to an even satin finish. Stainless steel screws shall be used for fixing stainless steel

N.4 ALUMINIUM

Aluminium extrusions shall be of 6063-T6 alloy and temper. Aluminium sheet and strips shall be of 1200-H4 alloy and temper.
Joints in all aluminium members shall be formed in an approved manner so that the joints are practically invisible. Screw heads, pins, rivets, etc shall be concealed as far as possible. 300 Series stainless steel screws and bolts shall be used for jointing and fixing aluminium work

The surfaces of all aluminium which are in contact with other materials when fixed shall be suitably insulated with a non-absorbent insulating material to prevent corrosion. All aluminium work shall be suitably protected against damage, deterioration or discolouration caused by mortar droppings, paint, etc by taping with removable tape, covering with temporary casings or by covering with motor oil

N.4.1 Anodizing of aluminium

Aluminium described as "anodized" shall be treated with Grade 25 coating thickness for exterior use or Grade 15 for interior use as specified, to the required finish. All alloys to be anodized shall be suited to anodizing

N.5 BOLTS AND NUTS

Nuts shall be of at least the strength grade appropriate to the grade of bolt or other threaded element with which they are used

N.6 SCREWING OF METALWORK TO STEEL, WOOD, CONCRETE, ETC

Metalwork described as "screwed" to steel, wood, etc or "plugged" to brickwork, concrete, etc shall be fixed at not exceeding 500mm centres, with necessary holes, countersinking, threading, screws, set screws, self-tapping screws and fibre, plastic or metal plugs

N.7 BOLTING OF METALWORK

Where metalwork is described as "bolted" to steel, wood, brickwork, concrete, etc the bolts are measured elsewhere

N.8 WELDING OF METALWORK

All welds shall be cleaned and filed or ground off smooth to approval. All welded joints shall be continuous

N.9 METALWORK GENERALLY

Metalwork shall have all sharp edges ground smooth. Tubular and pipe work shall include running joints. Rails etc described as "continuous" shall be in long lengths with welded joints

N.10 PRESSED STEEL DOORS, FRAMES, ETC

N.10.1 Door frames

Frames shall project not less than 20mm into floor finish. Except where described as galvanized, frames shall be primed as specified before leaving the factory. Frames are to jambs and heads of openings. Frames for single doors shall be provided with two 100mm steel butt hinges and an adjustable striking plate for a mortice lock and frames for double doors shall be provided with four 100mm steel butt hinges. Butt hinges shall be steel butts with loose pins, welded to frames. Where necessary mortar caps shall be welded to frames and back plates shall be welded on behind tappings for screws

N.10.2 Cupboard door frames

Cupboard door frames shall be as described in N.10.1, but with thresholds of unequal channel section, two 100mm steel butt hinges to hanging stiles, two 75mm steel butt hinges to hanging stiles above transoms, necessary striking plates for mortice locks and keeps for barrel bolts

N.10.3 Combination doors and frames

Combination doors and frames shall be manufactured of 1,6mm thick steel plate. Frames shall be as described in N.10.1. Doors shall be standard design and required profile, with a 44mm wide edge all round, vertical reinforcing ribs pressed in and with two reinforcing rails welded on. The door shall be provided with two lever mortice lock with lock box welded to inside. Doors shall be welded to steel butts

N.10.4 Transformer room doors and frames

Transformer room doors and frames shall be manufactured of 1,6mm thick steel plate. Frames shall be as described in N.10.1. Doors shall be of standard design with a 44mm wide edge all round, vertical reinforcing ribs pressed in and with three reinforcing rails welded on. Single doors shall be fitted with a padlock cleat and two 100mm brass pintle hinges and double doors shall be fitted with a padlock cleat, two 150mm bolts and four 100mm brass pintle hinges. Each leaf shall be fitted with a louvered ventilation panel of standard design backed with 6mm mesh galvanized wire vermin proof screen

N.10.5 Sizes

The frame widths given refer to unfinished wall thicknesses

N.10.6 Glazing beads

Where specified, glazing beads shall be 12 x 12mm standard metal glazing beads mitred at angles and countersunk screwed on at not exceeding 300mm centres with self-tapping screws

N.11 STEEL WINDOWS, DOORS, ETC

N.11.1 Windows, doors, etc

All fittings to windows, doors, etc shall be chromium plated. Fixed lights and opening sashes shall be in single squares. Windows etc of single unit construction shall have weather bars at transoms above opening sashes

Composite windows not of single piece construction shall be coupled with standard coupling mullions and transoms that correspond with the window section used

Kicking plates and panels shall be 1,6mm metal plate fixed with standard metal glazing beads mitred at angles and countersunk screwed on at not exceeding 300mm centres with self-tapping screws

Except where described as galvanized, windows, doors, burglar bars, etc shall be primed as specified before leaving the factory

N.11.2 Burglar bars and flyscreens

Where windows are described as fitted with burglar bars or flyscreens, these shall be standard type fitted over opening sashes

N.12 ADJUSTABLE LOUVRE UNITS

Adjustable louvre units shall be suitable for hand or longarm operation

Louvre units shall include glass louvres with polished edges and installation, including holes, screws, rivets, preparation of openings, etc

N.13 ALUMINIUM WINDOWS AND DOORS

The foregoing preambles "N.4 – ALUMINIUM" shall apply to aluminium windows, doors, etc in all respects in so far as they are applicable. Aluminium windows and doors shall be manufactured from extruded aluminium members of 6063T6, 6261-T6 or 6082-T6 alloy and temper

Ancillary members such as sills, flashings, infill panels and the like formed from flat sheet material shall be of an appropriate alloy selected from 1200, 3004 or 5251 complying with BS 1470 of a temper suitable for the method of forming and a composition suitable for anodizing or painting as required

Windows, doors, etc shall be of an approved standard system, manufactured by an approved firm experienced in this type of work, and shall meet with the minimum recommended performance requirements as set out by the Association of Architectural Aluminium Manufacturers of South Africa (AAAMSA) in the latest edition of the Selection Guide

The fittings for all opening sashes shall be substantial and, unless otherwise described, shall be of high quality aluminium alloy finished to match the windows, doors, etc on which they occur. Samples of all fittings shall be supplied to the Principal Agent for approval

Top, side and bottom hung opening sashes shall be hung on two aluminium hinges with 300 Series stainless steel pins, nylon bushes and stainless steel washers. Side hung sashes shall have fasteners and sliding stays, top hung sashes shall have peg stays and bottom hung sashes shall have spring catches and concealed arms

Projected out sashes shall have aluminium fasteners and concealed arms of a non-corrosive material compatible with aluminium

The frames which are to be built into openings in brickwork shall be fitted with the manufacturer's standard type fixing lugs, not less than 20 x 3 x 150mm long, screwed to frame and placed one near each corner and intermediately not more than 450mm apart to sides, top and bottom and where fixed to concrete reveals, wood sub-frames or to preformed openings in brickwork shall have countersunk holes for screws, one near each corner and intermediately not more than 450mm apart to sides, top and bottom

N.13.1 Glazing beads

Where so described, openings and sashes of windows and doors shall be fitted with approved channel section aluminium glazing beads sufficient in size and profile to suit the method of glazing employed, finished to match the windows, doors, etc and neatly mitred. Screws where necessary shall be of aluminium or 300 Series stainless steel and have pan or raised heads finished to match the beads

N.13.2 **Finishes**

Windows, doors, etc described as "anodized" shall be treated with Grade 25 coating thickness. Windows, doors, etc described as "factory painted" shall have an electrostatically applied oven baked polyester paint coating not less than 25 micrometres thick

N.13.3 **General**

Aluminium windows, doors, etc shall include glass as described, fixing in position, sealing and protection against damage, deterioration or discolouration by taping with removable tape or covering with temporary casings or motor oil and removing same on completion

N.14 STRONGROOM AND RECORD ROOM DOORS

Strongroom and record room doors shall not be built in as the work proceeds, but shall be fixed later in the openings provided. The Contractor shall ensure that the lock or other important parts of the door are not tampered with. Should any such tampering occur, the Contractor will be held responsible and at the Principal Agent's discretion shall provide a new door or lock and keys at his own expense. The keys shall not be delivered together with the doors to the building site. The Contractor shall arrange for the manufacturer to send the keys direct to the Principal Agent per registered post. If these instructions are not complied with, a new lock and keys shall be provided by the Contractor at his own expense

N.15 STEEL ROLLER SHUTTERS

Roller shutters shall be of approved manufacture comprising curtain, vertical channel guides and top mechanism. The curtain shall be constructed of 1mm thick machine-rolled galvanized interlocking slats with mild steel end locks spot welded to alternate strips. The bottom shall be provided with a galvanized rail riveted on and vertical edges shall slide in galvanized channel guides formed of steel not less than 2,5mm thick bolted to sides of openings

The mechanism shall be covered in a galvanized sheet iron box. The ungalvanized sections shall be primed as specified before leaving the factory

O. PLASTERING

O.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Common cement	SANS 50197-1(Class 32,5N)
Masonry cement	SANS 50413-1(Class 225X)
Limes for use in building	SANS 523 {Slaked (hydrated) limes}
Aggregates from natural sources – Fine aggregates for plaster and mortar	SANS 1090

O.2 PREPARATORY WORK

Surfaces shall be clean and free of oil and thoroughly wetted directly before any plastering or other in situ finishes are commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key. Preparatory coats shall be thoroughly scored and roughened to form a proper key

O.3 FINISH

All coats of paving and plastering shall be executed in one operation without any blemishes

O.4 SCREEDS

Screeds shall be composed of one part cement and four parts sand

O.5 CEMENT RENDER

Cement render shall be composed of one part cement and three parts sand finished with a steel trowel to a smooth polished surface and cured for at least seven days after laying

Cement render finish shall be divided into panels not exceeding $6m^2$ with V-joints and deep trowel cuts

O.6 GRANOLITHIC

Granolithic shall be composed of one part cement, one part fine sand, two parts coarse sand and one part granite or other approved stone aggregate that will pass through a 5mm sieve, finished with a steel trowel to a smooth polished surface and cured for at least seven days after laying

Coloured granolithic shall be carried out in two coats in one operation and shall be tinted to the required colour with approved colouring pigment mixed into the finishing coat. Under no circumstances is the pigment to be sprinkled on and trowelled in after the granolithic is laid

Granolithic shall be divided into panels not exceeding $6m^2$ with V-joints and deep trowel cuts

O.7 TERRAZZO

Terrazzo shall be applied in two coats. The undercoat shall be composed of one part cement and three parts sand and shall be finished with a wooden float. The finishing coat shall be composed of one part cement and two parts marble or stone aggregate of a colour and size to obtain the required colour and texture and shall be at least 12mm thick, and applied before the undercoat has dried out. The finishing coat shall be compacted by tamping or rolling until superfluous water has been expelled, finished with a steel trowel and cured for at least seven days after laying. The finished surface shall show at least 80% of the aggregate

Surfaces described as "polished" shall be polished by machine using various grades of abrasive and grouting with tinted cement as necessary between polishings

Surfaces described as "polished" shall be polished by machine using various grades of abrasive and grouting with tinted cement as necessary between polishings

Surfaces described as "brushed" shall be brushed with a steel wire brush on the day the terrazzo has been laid to expose the aggregate as required

Where required, brass or other dividing strips shall be embedded in the undercoat to finish flush with the finished surface

Three sample blocks, each size 300 x 300mm, as separately measured shall be prepared for approval by the Principal Agent and kept in an accessible place on the site until the completion of the contract

O.8 SKIRTINGS

Skirtings shall not exceed 25mm thick and shall have a fair edge with arris or rounded external angle at top edge or V-joint to finish flush with plaster and coved or square junction with floor finish

O.9 THICKNESS OF PLASTER

All plaster, other than skim plaster, shall be not less than 10mm and not more than 20mm thick

O.10 CEMENT PLASTER

Cement plaster shall comply with the following table:

1	2	3
Plaster Class	Cement:sand (common cement)	Cement:sand (masonry cement)
I	1:4 or 50kg to 130 litres	1:3 or 50kg to 100 litres
II	1:6 or 50kg to 200 litres	1:5 or 50kg to 170 litres
III	1:9 or 50kg to 300 litres	1:6 or 50kg to 200 litres

O.11 COMPO PLASTER

Compo plaster shall be composed of one part cement, two parts lime and nine parts sand

O.12 GYPSUM SKIM PLASTER

Gypsum skim plaster shall be pure gypsum plaster finished with a steel trowel

O.13 TWO COAT PLASTER WITH GYPSUM FINISH

Two coat plaster with gypsum finish shall comprise an undercoat of Class II cement plaster finished with a wooden float and a finishing coat of gypsum skim plaster

O.14 ROUGH-CAST PLASTER

Rough-cast plaster shall be applied in two coats. The undercoat shall be composed of one part cement and five parts sand finished with a wooden float. The finishing coat shall be composed of one part cement and three parts stone aggregate that will pass through a 4mm sieve. The finishing coat shall be flicked on with a machine before the undercoat has set to obtain an even texture

O.15 FINE ROUGH-CAST PLASTER

Fine rough-cast plaster shall be as for rough-cast plaster but the finishing coat shall be composed of one part cement and three parts coarse sand

0.16 GENERAL

Rates for plastering described as being on vertical surfaces of brickwork or blockwork shall include concrete columns, beams and lintels flush with the face of the wall

P. TILING

P.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Glazed ceramic wall tiles and fittings	SANS 22
Ceramic wall and floor tiles	SANS 1449
Common cement	SANS 50197-1(Class 32,5N)
Masonry cement	SANS 50413-1(Class 22,5X)
Aggregates from natural sources – Fine aggregates for plaster and mortar	SANS 1090
The design and installation of ceramic tiling	SANS 10107

P.2 TILES, MOSAICS, ETC

Tiles, mosaics, etc shall be even in shape and size, free from cracks, twists or blemishes and uniform in colour

P.3 PREPARATORY WORK

Surfaces shall be clean and free of oil and thoroughly wetted directly before any tiling is commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key

P.4 CERAMIC WALL AND FLOOR TILING

Where tiles are fixed to plaster or screeds with an adhesive, the adhesive shall be as recommended by the manufacturer of the tiles. Joints shall be straight, continuous and flush pointed with an approved grouting compound

P.5 GENERAL

Tiling described as "on walls" is on brick walls or block walls unless otherwise stated and shall include concrete columns, beams and lintels flush with the face of the wall

Q. PLUMBING AND DRAINAGE

Q.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Sheet metal

Sheet zinc	BS 849
Sheet aluminium	BS 1470
Sheet copper	BS 2870

Rainwater systems

Unplasticized poly(vinyl chloride) (PVC-U) components for external rainwater systems	SANS 11

Pipes and fittings

Steel pipes : Pipes suitable for threading and of nominal size not exceeding 150mm	SANS 62
Plain-ended solid drawn copper tubes for Potable water	SANS 460
Malleable cast iron fittings threaded to ISO 7-1	SANS 4
Polyethylene (PE) pipes for water supply – Specifications	SANS 4427
Cast iron fittings for asbestos cement pressure pipes	SANS 546
Vitrified clay sewer pipes and fittings	SANS 559
Reinforced concrete pressure pipes	SANS 676
Concrete non-pressure pipes	SANS 677
Cast iron pipes and pipe fittings for use above ground in drainage installations	SANS 746
Unplasticized poly(vinyl chloride) (PVC-U) sewer and drain pipes and pipe fittings	SANS 791
Fibre-cement pipes, couplings and fittings for sewerage, drainage and low-pressure irrigation	SANS 819
Pitch-impregnated fibre pipes and fittings and jointing	SANS 921
Unplasticized poly (vinyl chloride) (PVC-U) pressure pipe systems	SANS 966-1
Unplasticized poly(vinyl chloride) (PVC-U) soil, waste and vent pipes and pipe fittings	SANS 967
Rubber joint rings (non-cellular)	SANS 974-1
Copper-based fittings for copper tubes	SANS 1067-1&2
Fibre-cement pressure pipes and couplings	SANS 1223
Polypropylene pressure pipes	SANS 1315
Non-metallic waste traps	SANS 1321-1&2
Vent valves for drainage installations	SANS 1532
Heavy duty cast iron pipe fittings for drainage and gas and water supplies	BS 78

Lead pipes	BS 602
Cast iron pressure pipes for use in drainage and gas and water supplies	BS 1211
Stainless steel pipes for use with compression fittings	BS 4127
Sanitary fittings etc	
Stainless steel sinks with draining boards (for domestic use)	SANS 242
Stainless steel wash-hand basins and wash troughs	SANS 906
Stainless steel sinks for institutional use	SANS 907
Stainless steel stall urinals	SANS 924
Acrylic sanitary ware : Baths	SANS 1402-1
Glazed ceramic sanitary ware	SANS 497
WC flushing cisterns	SANS 821
Flush valves for WC flushing cisterns	SANS 1509
Taps, valves etc	
Water taps (metallic bodies)	SANS 226
Water taps (plastic bodies)	SANS 1021
Single control mixer taps	SANS 1480
Float valves	SANS 752
Plastic floats for ball valves	SANS 1006
Functional control valves and safety valves for Domestic hot and cold water supply systems	SANS 198
Cast iron gate valves for waterworks	SANS 664
Automatic shut-off flush valves for water closets and urinals	SANS 1240
Check valves (flanged and wafer types)	SANS 1551-1&2
Fire extinguishers	
Portable refillable fire extinguishers	SANS 1910
Portable rechargeble fire extinguishers : Halogenated hydrocarbon type extinguishers	SANS 1151
Water heaters and fire hose reels	
Fixed electric storage water heaters	SANS 151
Fire hose reels (with semi-rigid hose)	SANS 543
Drainage covers, gratings, etc	
Cast iron surface boxes and manhole and inspection covers and frames	SANS 558
Cast iron gratings for gullies and stormwater drains	SANS 1115
The installation of polyethylene and poly (vinyl chloride) (PVC-U and PVC-M) pipes	SANS 10112
Water supply and drainage for buildings	SANS 10252-1&2

Cast iron step irons	BS 1247

Q.2 GENERAL

Q.2.1 Excavations

Excavations shall be deemed to be in "earth". Backfilling to excavations shall be executed in 300mm thick layers, watered and compacted. Surplus excavated material shall be spread and levelled over site as directed

Q.2.2 Concrete

Unreinforced concrete shall be Class B prescribed mix concrete and reinforced and precast concrete shall be Class C prescribed mix concrete

Q.2.3 Brickwork

Brickwork shall be of extra hard burnt bricks built in Class I mortar

Q.2.4 Plaster

Plaster shall be 1:3 cement plaster finished smooth with a steel trowel. All angles shall be rounded

Q.2.5 Diameters of pipes etc

Diameters stated for pipes, traps, valves, etc are internal diameters except PVC, polyethylene, stainless steel and copper pipes and traps for which external diameters are stated

Q.3 SHEET METAL WORK

Q.3.1 Galvanized sheet iron

Galvanized sheet iron shall be rolled steel sheet coated on both sides with Class Z275, unless otherwise specified, zinc coating complying with SANS 3575/4998. Sheets shall be free from white rust

Q.4 EAVES GUTTERS

Q.4.1 Galvanized sheet iron gutters

Galvanized sheet iron gutters shall have beaded edges and all joints shall be riveted and soldered. Angles shall be strengthened with 50 x 0,6mm galvanized sheet iron strips soldered on over the internal faces of mitres

Gutters shall be fixed with falls to outlets on 30 x 3mm galvanized mild steel brackets, bent to the shape of gutters, with front ends taken up to the underside of beaded edge of gutter and each screwed to roof timbers or bolted to fibre-cement fascias with 6mm galvanized gutter bolts. Gutters shall be bolted to brackets at front with 6mm galvanized gutter bolts, one to each bracket

Brackets shall be positioned at joints of gutters and intermediately at not exceeding 1,25m centres

Q.4.2 Fibre-cement gutters

Fibre-cement gutters shall have spigot and socket joints. Gutters shall be fixed with falls to outlets on standard aluminium alloy brackets, screwed or bolted to roof timbers or fascias

Q.4.3 Unplasticized polyvinyl chloride (UPVC) gutters

Gutters shall be fixed with falls to outlets on brackets as supplied by the manufacturer, screwed or bolted to roof timbers or fascias

Q.4.4 Aluminium gutters

Aluminium gutters shall be roll formed on site to required lengths and profiles from 3003H14-3SH4 alloy strip not less than 0,7mm thick factory coated on both sides with baked enamel and two coats of silicone modified polyester to a total minimum thickness of 20 micrometres. Angles, stopped ends, etc shall be prefabricated units pop riveted to gutters with joints sealed with mastic. The guttering shall be in continuous lengths between angles, stopped ends, etc

Q.5 RAINWATER PIPES

Q.5.1 Galvanized sheet iron pipes

Galvanized sheet iron pipes shall have seams at the back and shall be jointed with soldered slip joints. Pipes shall be fixed to walls etc with galvanized mild steel holderbats spaced at not exceeding 2m centres with tails driven in or cut and pinned in 1:3 cement mortar

Q.5.2 Fibre-cement pipes

Fibre-cement pipes shall have spigot and socket joints. Pipes shall be fixed to walls etc with standard aluminium alloy holderbats with tails driven in or cut and pinned in 1:3 cement mortar

Q.5.3 Unplasticized polyvinyl chloride (UPVC) pipes

Pipes shall be fixed to walls etc with patented UPVC or aluminium clips and holderbats as supplied by the manufacturer of the pipe

Q.5.4 Aluminium pipes

Aluminium pipes and fixing straps shall be formed from 3003H14-3SH4 alloy strip not less than 0,7mm thick factory coated on both sides as described for aluminium gutters. Pipes shall be in continuous lengths with formed angles, offsets, shoes, etc. Pipes shall be fixed to walls etc with 20 x 0,6mm straps at not exceeding 1,5m centres screwed to 25 x 75 x 100mm hardwood chamfered and oiled blocks plugged to walls

Q.6 STORMWATER CHANNELS

In-situ concrete stormwater channels shall be constructed of unreinforced concrete with segmental channel formed in top. Channels shall be laid to falls on a well rammed earth bottom and finished smooth on exposed surfaces

Precast concrete channels shall be of 25 MPa concrete, generally in 1m lengths, finished smooth from the mould on exposed surfaces, laid to falls on a well rammed earth bottom, jointed in 1:3 cement mortar and pointed with keyed joints

Q.7 JOINTS

Joints of pipes not covered by SANS shall be as follows:

Pipes	Joints
Fibre-cement, concrete, pitch-impregnated fibre and vitrified clay pipes for use under ground in non-pressure pipe lines	Flexible joints in accordance with the manufacturer's instructions
Cast iron for use above ground	Spigot and socket joints with tarred rope yarn and caulking compound or Plain ended joints with stainless steel couplings with neoprene rubber sleeves
Cast iron for use below ground	Spigot and socket joints with tarred rope yarn and caulking compound
Galvanized mild steel	Joints of screwed galvanized steel sockets or bolted galvanized iron flanges Screwed joints with plastic jointing tape or hemp Flanged joints which shall be bolted and provided with rubber gaskets and with flanges screwed to pipes
Joints between pipes of different materials shall be as follows:	
Between cast iron and mild steel	Spigot and socket joints with tarred rope yarn and caulking compound
Between cast iron and clay	Spigot and socket joint with semi-dry cement caulking and 1:2 cement mortar fillet
Between mild steel or copper and clay	Spigot and socket joint with either bitumen or semi-dry cement caulking and 1:2 cement mortar fillet

Q.8 FIXING OF PIPES

Pipes shall be fixed as follows:

Q.8.1	Galvanized mild steel (except those stated in Q.8.3)	To walls with galvanized mild steel brackets for pipes not exceeding 80mm diameter and with galvanized cast iron hinged holderbats with brass pins or bolts for pipes exceeding 80mm diameter; both types with tails cut and pinned in 1:3 cement mortar To woodwork with screw-on type galvanized mild steel holderbats
Q.8.2	Copper and stainless steel	To walls with brass holderbats or screw-on type two- piece spacing clips for pipes not exceeding 75mm diameter and with purpose made holderbats for pipes exceeding 75mm diameter; both types with tails cut and pinned in 1:3 cement mortar To woodwork with screw-on type brass holderbats
Q.8.3	Cast iron and galvanized mild steel for soil, waste and vent pipes	To walls with hinged cast iron holderbats with brass bolts and with tails cut and pinned in 1:3 cement mortar To woodwork with screw-on type galvanized mild steel holderbats
Q.8.4	Polyethylene, polypropylene and patented UPVC or unplasticized polyvinyl chloride	To walls, woodwork, etc with aluminium clips and holderbats as supplied by the manufacturer of the pipes
Q.8.5	Fibre-cement	To walls with aluminium alloy holderbats with tails cut and pinned in 1:3 cement mortar

Q.8.6	Pipes fixed to ceilings	Fixed with holderbats and standard or purpose made hangers, with extended hangers for pipes to falls

Q.9 PIPES LAID IN GROUND

Q.9.1 **Water pipes etc**

Water pipes, gas pipes, etc laid in ground shall be at least 400mm deep from the crown of the pipe to the finished surface

Q92 **Drain pipes**

Excavations taken out too deep shall be filled in with selected soil and compacted. Backfilling to sides and up to 300mm above plastic pipes shall be free from stone or hard substances which will not pass a 10mm mesh

Q.10 CLEANING EYE LIDS

Cleaning eye lids for drain pipe fittings shall be fixed and sealed as follows:

Pipe fittings	**Method of sealing and fixing**
Fibre-cement	Sealed with synthetic rubber or bituminous mastic packing and fixed with screws
Vitrified clay	Polypropylene lid sealed with synthetic rubber packing and pressed into position
Polypropylene and unplasticized polyvinyl chloride	Sealed with synthetic rubber packing and screwed on or pressed into position
Cast iron	Sealed with tallow or putty and fixed with non-ferrous metal screws
Galvanized malleable cast iron and cast brass	Sealed with synthetic rubber packing and screwed in

Q.11 CLEANING EYES

Cleaning eyes shall consist of cast iron frames and lids with letters "CE" (or "SO") cast in lids. The lids shall be secured with non-ferrous metal screws. Frames shall be jointed to vertical drain pipes. Cleaning eyes shall be encased in unreinforced concrete taken up to ground level and plastered on exposed surfaces

Q.12 INSPECTION EYE MARKER SLABS

Inspection eye marker slabs shall be 350 x 350 x 50mm thick precast concrete finished smooth from the mould, with letters "IE" (or "IO") formed in top and placed flush in ground or paving

Q.13 GULLEYS

Gulleys shall be built up of traps, vertical piping and gulley heads with loose gratings, all encased in unreinforced concrete to finish flush with gulley head top and taken up to at least 50mm above surrounding finished surfaces. The outer top edge of the concrete encasing shall be splayed and the exposed surfaces plastered

Q.14 DISHED GULLEYS

Dished gulleys shall be built up of traps, vertical piping and gulley heads with loose gratings, all encased in unreinforced concrete and with dished unreinforced concrete hopper size 450 x 450mm overall around gulley head with rounded kerb 50mm wide to front and sides and 25mm wide at back, 100mm high above top of dishing and the hopper plastered on exposed surfaces. Top of hopper shall be taken up to at least 50mm above surrounding finished surfaces

Q.15 SUMPS, CATCHPITS, INSPECTION CHAMBERS, ETC

Q.15.1 Rainwater sumps

Rainwater sumps shall be built with half-brick sides on 100mm thick unreinforced concrete bottom, plastered internally on walls and with 80mm high unreinforced concrete kerb at top rebated for grating or cover and plastered on exposed surfaces

Q.15.2 Stormwater catchpits and inspection chambers

Brick catchpits and inspection chambers shall be built with one-brick sides on 150mm thick unreinforced concrete bottom projecting 100mm beyond walls all round, plastered internally on walls and with 100mm thick reinforced concrete cover slab with opening rebated for frame of grating or cover and plastered on exposed surfaces

Precast concrete catchpits and inspection chambers shall be constructed in accordance with the applicable details shown on Drawing LE-1 of SANS 1200LE. Precast concrete manhole sections and slabs shall comply with SANS 1294 and pipes shall be SC type and in accordance with SANS 677

Q.15.3 Sewer inspection chambers

Brick inspection chambers shall be built as for brick stormwater inspection chambers and with the bottom of the chamber well benched around half round channels, bends, junctions, etc up to sides of chamber in unreinforced concrete finished smooth

Precast concrete inspection chambers shall be constructed in accordance with the applicable details shown on Drawing LD-5 of SANS 1200LD. Precast concrete manhole sections and slabs shall comply with SANS 1294 and the pipes shall be SC type in accordance with SANS 677

Q.15.4 Stormwater drain junction boxes

Junction boxes shall be formed of 150mm thick unreinforced concrete bottom and sides to suit the various sizes of the drain pipes and built after the pipes have been laid, with the sides taken up slightly higher than the highest pipe and finished level on top for and covered with a 75mm thick loose precast concrete slab

Q.15.5 Step irons

Where inspection chambers exceed 1,2m deep, cast iron step irons shall be provided, built into the wall at 300mm centres and staggered regularly in vertical rows spaced at 200mm centres horizontally

Q.16 STOPCOCK AND METER BOXES

Stopcock and meter boxes shall be built with half-brick sides with a cast iron box and lid complying with SANS 558 set in 75mm wide unreinforced concrete kerb for the full depth of the cast iron box and plastered on exposed surfaces

Q.17 VALVE CHAMBERS

Valve chambers shall be built with half-brick sides with 100mm thick unreinforced concrete kerb to top with rebate for cover and frame to finish flush with adjacent paving or finished ground level and plastered on exposed surfaces

Q.18 CAST IRON COVERS, GRATINGS, ETC

All cast iron covers, gratings, frames and surface boxes shall be coated with preservative solution. Frames shall be cast into concrete. Covers, except covers to stormwater drainage or electrical cable inspection chambers, shall be set in grease

Q.19 CONCRETE ENCASING

Concrete encasing for pipes, bends, traps, gulleys, grease traps, etc shall be unreinforced concrete not less than 100mm thick all round

Q.20 SANITARY FITTINGS

Q.20.1 General

Glazed ceramic, acrylic and porcelain enamelled sanitary fittings and component parts shall be white. Accessories for sanitary fittings shall be chromium plated brass

Waste outlets for baths, basins, etc shall comprise chromium plated brass waste union with grating, rubber washers and locknut, fitted with rubber or vulcanite plug on a chromium plated brass chain and stay

Q.20.2 Stainless steel sanitary fittings

Stainless steel sinks and draining boards, basins, wash troughs and urinals shall be AISI Type 304 satin finished stainless steel. All stainless steel fittings shall be treated on the back with a vermin proof sound deadening coating. Sinks, basins and wash troughs shall be provided with 40mm diameter screwed waste outlets

Q.20.3 Precast concrete wash troughs

Reinforced precast concrete wash troughs shall have a sloping front with ribbed rubbing surface and shall be finished smooth on exposed faces with top edges and inner angles rounded. Each compartment shall be fitted with a 40mm diameter waste outlet. Wash troughs shall each be supported on two reinforced precast concrete pedestals finished smooth on exposed faces

Q.20.4 Steel baths

Steel baths shall be porcelain enamelled internally and painted externally and fitted with waste outlet and overflow grating with coupling

Q.20.5 Acrylic resinous baths

Acrylic resinous baths shall be fitted with waste outlet and overflow grating with coupling

Q.20.6 Acrylic resinous wash hand basins

Acrylic resinous wash hand basins and vanity units shall have a smooth high gloss finish, with outlet openings, soap recesses, tap-holes and integral overflow and shall be fitted with waste outlet and overflow grating with coupling

Q.20.7 Glazed ceramic sanitary fittings

Sinks shall be provided with integral weir overflows

Washdown closet pans shall have washdown action and be provided with smooth finished injection moulded polypropylene heavy duty double flap seats fixed with non-ferrous bolts. Urinal channels shall be provided with outlet gratings fitted in bitumen

Q.20.8 Flush and sparge pipes

Flush pipes for high level cisterns shall be of plastic or drawn galvanized steel

Flushpipes for low level cisterns shall be of plastic

Flush and sparge pipes for urinals with high level cisterns shall be of chromium plated copper piping and of the sizes recommended by the manufacturer of the urinal

Q.21 INSTALLATION OF SANITARY FITTINGS

Sanitary fittings shall be installed as follows:

Q.21.1 Precast concrete wash troughs

Precast concrete wash troughs shall be bedded on top of pedestals which shall be bedded on floors in 1:3 cement mortar

Q.21.2 Stainless steel wash troughs and wash hand basins

Stainless steel wash troughs and wash hand basins shall be fixed to walls on a pair of galvanized mild steel gallows brackets bolted to wall with 6mm diameter expanding bolts

Q.21.3 **Acrylic resinous wash hand basins**

Acrylic resinous wash hand basins shall be fixed to walls on a pair of standard painted cast iron brackets screwed to underside of basin and bolted to wall with 6mm diameter expanding bolts

Q.21.4 **Ceramic wash hand basins**

Ceramic wash hand basins shall be fixed to walls on a pair of standard painted steel or cast iron brackets bolted to wall with 6mm diameter expanding bolts

Q.21.5 **Acrylic resinous baths**

Acrylic resinous baths shall be bedded in 1:5 cement mortar on three cross rows of bricks or bedded solid on a layer of dry river sand and fixed to wall with galvanized steel brackets under edges (in the middle of the sides against walls) bolted to wall with 6mm diameter expanding bolts and sealed along top against wall finishes with patent mildew resistant silicone rubber

Q.21.6 **Washdown closet pans and cisterns**

Washdown closet pans shall be bedded on floors in 1:3 cement mortar. Cisterns shall be fixed to walls with 6mm diameter expanding bolts

Q.21.7 **Ceramic urinals**

Ceramic stall and slab urinals shall be bedded on floors and against walls in 1:3 cement mortar. Slabs, channels, treads, etc shall be jointed in 1:3 cement mortar and pointed in white cement

Ceramic bowl urinals shall be fixed to walls on standard steel brackets bolted to wall with 6mm diameter expanding bolts. Cisterns shall be fixed to walls on standard brackets bolted to wall with 6mm diameter expanding bolts

Q.21.8 **Stainless steel urinals**

Stainless steel stall and slab urinals shall be bedded on floors in 1:3 cement mortar and with backs and sides against walls filled in with fine unreinforced concrete. Cisterns shall be fixed as cisterns for ceramic urinals

Q.22 FIRE HOSE REELS

Fire hose reels shall each be fitted with a 30m long hose of internal diameter not less than 19mm with a 4,8mm internal diameter chromium plated brass nozzle

Q.23 FIRE EXTINGUISHERS

All fire extinguishers shall be fully charged

Q.24 TESTS

Sewerage pipe lines, sanitary plumbing including fittings and hot and cold water supply and fire service shall be tested to the approval of the Principal Agent and Local Authority

The Contractor shall provide all testing apparatus, material and labour required for the tests and inspections

R. GLAZING

R.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Glass in building	SANS 50572-1 to 5
Glazing putty for wooden and metal window frames	SANS 680
Silvered glass mirrors for general use	SANS 1236
Safety and security glazing materials for buildings	SANS 1263-1 to 3
Sealing compounds for the building industry, one Component, silicone-rubber based	SANS 1305
The installation of glazing materials in buildings	SANS 10137
Work on glass for glazing	SANS 1817

R.2 PUTTY ETC

Glazing putty shall be Type I for wooden sashes and Type II for steel sashes. Putty for glazing to unpainted hardwood shall be tinted to match the colour of the wood

Back putty shall not exceed 3mm thick. Putty shall not be painted until it has formed a surface crust, and if the putty does not form a surface crust it shall be replaced

Butyl putty shall be used where glass is to be fixed in aluminium sashes with glazing beads

Non-setting compounds shall be used where laminated glass is fixed in sashes with glazing beads

S. PAINTWORK

S.1 MATERIALS AND WORKMANSHIP

Materials and workmanship shall comply with the following standards:

Decorative paint for interior use	SANS 515
Decorative high gloss enamel paints	SANS 630
Primers for wood (for external work)	SANS 678
Primers for wood (for internal work)	SANS 678
Zinc phosphate primer for steel	SANS 1319
Undercoats for paints (except emulsion paint)	SANS 681
Aluminium paint	SANS 682
Varnish for interior use	SANS 887
Emulsion paints	SANS 1586

Materials for paintwork shall be delivered to the site in unopened containers and applied in accordance with the manufacturer's instructions. Materials shall be suitable for application to the surfaces concerned. Undercoats shall be as
recommended by the manufacturer of the finishing coats

S.2 PREPARATORY WORK

S.2.1 **Plastered surfaces etc**

Plastered surfaces shall be thoroughly inspected and, if necessary, washed down and brushed in order to remove any traces of efflorescence and allowed to dry completely before any paint finish is applied. Before any paint is applied, holes, cracks and irregularities in plaster and other surfaces shall be filled with a suitable filler and finished smooth. Unfinished concrete surfaces shall have all projections rubbed off and shall be thoroughly cleaned with a spirits-of-salts solution (1 part concentrated spirits-of-salts to 4 parts water)

S.2.2 **Metal surfaces**

Metal surfaces shall be sanded, where necessary, washed with a suitable cleaning agent and left smooth

Protective coatings applied by manufacturers to galvanized metal surfaces shall be removed with a suitable agent and the surfaces washed down

Rust, grease and defective factory primers on metal surfaces, as well as pitch on cast iron pipes, shall be removed

S.2.3 **Wood surfaces**

Knots in woodwork shall be treated with knotting. Minor blemishes shall be filled with a suitable filler. Wood surfaces shall be sanded smooth

S.3 APPLICATION OF PAINT

Primers to wood surfaces shall be applied by brush. Primers to other surfaces may be applied by roller with the approval of the Principal Agent. Undercoats and finishing coats may be applied by brush or roller

Paint shall not be sprayed on except in the case of cellulose and other special paints where spray painting is the accepted method of application

Before subsequent coats of paint are applied the previous coat shall be properly dry and shall be sanded down where necessary

S.4 COLOUR SCHEME

A colour scheme comprising colours and the blending of colours approved by the Principal Agent shall be used for the paintwork. The tints of the undercoats shall closely match the finishing coat but nevertheless differ sufficiently to indicate the number of undercoats. Colour samples of the finishing coats shall be provided in all cases

S.5 GENERAL

Paintwork shall include the preparation of surfaces, filling, stopping, sanding and priming of nail heads and screws. Where windows, sashes, etc are to be painted, the rebates of the openings to be glazed shall be primed

T. PAPERHANGING

T.1 PREPARATORY WORK

Plaster surfaces to be papered shall be dry, thoroughly cleaned down, filled with a suitable filler as necessary to obtain a smooth surface and painted thereafter with a single coat of emulsion paint

Wood surfaces to be papered shall be knotted, stopped and sanded

T.2 PAPERHANGING

Wallpaper shall be hung in vertical long lengths. Vertical joints shall be close-fitted and plumb and the paper shall be tightly fitted to skirtings, ceilings, door frames, windows, etc. Horizontal joints will not be allowed

U. EXTERNAL WORKS

U.1 GENERAL

U.1.1 Excavations

Excavations shall be deemed to be in "earth"

U.2 LANDSCAPING

U.2.1 Topsoil

Topsoil shall vary between sandy loamy soil and sandy clayey soil with an ideal composition of 15% to 25% clay, 10% silt/sludge and 65% to 75% sand, with a minimum ratio of organic material of 2%. All material shall be free of harmful deposits as well as unwanted seeds

U.2.2 Compost

Compost shall be composed of properly decayed organic material, free from harmful deposits, salts, seeds and other waste material and shall have a pH of more than 4 and less than 7

U.2.3 Mulch

Mulch shall be approved organic material free from small particles of bark residue, fungus, disease, etc

U.2.4 Lime

Lime shall be agricultural lime of an approved manufacture

U.2.5 Fertilizer

Fertilizer shall be of the type specified, mixed thoroughly into the soil as prescribed. No fertilizer shall be added more than two weeks prior to planting

U.2.6 Backfilling

Backfilling in plant and tree holes shall be composed of two parts topsoil to one part compost mixed thoroughly together and compacted by foot in 100mm layers. Fertilizer shall only be added if prescribed

U.2.7 Pebbles

Pebbles shall be smooth with a uniform colour and form and ranging in size from 50mm to 75mm diameter. Removal of pebbles from river beds shall be done selectively to avoid any major disruption to the ecology of the river and environment

U.2.8 Plant material

U.2.8.1 General

All plant material (plants, shrubs, trees, etc) shall be obtained from a registered nursery and shall be free from damaged parts, parasites, fungus, other plant diseases or insects. No container-bound plants will be acceptable

U.2.8.2 Trees

The height of trees described in the bills of quantities shall be measured from the top of the root ball to the top of the tree. Where trees are pruned, such prune wounds shall not be more than 25mm in diameter and be sealed with an approved sealing compound

U.2.8.3 Shrubs and small plants

Shrubs and small plants shall meet the requirements for height and spread as specified. Thin or sparsely branched plants shall not be accepted. Branches shall be well spread with ample young branches and the plant as a whole shall be growing well

U.2.8.4 Groundcover

Groundcover shall be dense and healthy and shall comply with the minimum requirements for leaf density as specified

Formal grass shall be planted as runners in 50mm deep drills at 150mm centres unless otherwise described

U.2.9 **Cultivation and preparation of planting areas etc**

All surface rocks and stones larger than 50mm shall be removed before commencing cultivation and preparation. The entire area shall be ripped and rotavated using approved machinery by breaking up the earth to a depth of 300mm at 600mm centres in both directions, unless otherwise described, and then levelled. Where fertilizer or compost is specified, it shall be worked into the topsoil after ripping and rotavation to a depth of 300mm and finished to final levels

All fertilizer to areas to be grassed shall be strewn on the final layer before final finishing is commenced and worked mechanically into the top 150mm soil

U.2.10 **Planting procedure**

Holes for shrubs and groundcover shall be as follows:

Shrubs – 500 x 500 x 500mm deep

Groundcover – 300 x 300 x 300mm deep (if not planted in drills)

Holes for trees shall be square, of adequate size to accommodate the root system and suitable for the height of the tree

All plant material shall be watered thoroughly before careful removal from the container and planted in the prescribed planting medium with the top of the soil in the container finishing level with the surrounding area. Water dams size 800mm diameter x 150mm deep and 500mm diameter x 150mm deep shall be formed around trees and shrubs respectively and all planting material shall be watered immediately after planting. Trees, shrubs, etc shall be properly staked or stayed, depending on their size, on the prevailing windy side with patent tree ties

U.2.11 **Maintenance**

All planted areas shall be maintained for a period of three months after practical completion as defined in the contract with the exception of hydroseeded areas which shall be maintained for 12 months after an acceptable cover has been obtained

This maintenance shall consist of keeping clear of weeds and litter, loosening soil where necessary every two weeks, replacing damaged, diseased or dead plants, pruning, cutting and mowing as necessary and watering so as to keep the plant material in a healthy growing condition

U.3 ROADWORK

U.3.1 **Filling**

Filling under roads etc shall be of inert material having a maximum plasticity index of 10, free from large stones etc spread, levelled, watered and compacted in layers not exceeding 200mm thick to a density of 98% Mod AASHTO

U.3.2 **Preparation of sub-grade**

The sub-grade shall be prepared by scarifying for a depth of 150mm and compacting to a density of 98% Mod. AASHTO, including trimming to the correct levels and grades

U.3.3 **Base course**

The base course shall consist of crusher run stone compacted to a density of 98% Mod. AASHTO and finished to the correct levels and grades

U.3.4 **Weed killer**

The completed sub-grade shall be treated with an approved total weed killer

U.3.5 **Bituminous premix road surfacing**

Before spreading the premix material, the base course shall be swept clean and free from all dust, dirt and loose particles, lightly wetted and sprayed with a prime coat of cutback bitumen complying with SANS 308 at the rate of 1 litre/m^2

The material shall consist of semi-gap graded crushed stone aggregate having the following grading:

Sieve size (mm)	% By mass passing sieve
13,2	100
4,75	45-60
2,36	42-55
1,18	40-52
0,3	25-45
0,075	5-12

The aggregate shall be mixed with bituminous road tar binder complying with SANS 748 at the rate of 1m3 of stone to 120 litre of emulsion at atmospheric temperature

The binder shall be added to the stone and mixed until the stone is uniformly coated. Thereafter 5% of clean, dry quartzitic sand shall be added and mixed until evenly distributed through the mixture

The premix shall be applied only after the primer has dried out completely and shall be spread immediately after mixing and rolled on the same day

Spreading shall be done evenly over the prepared base course to a loose depth sufficient to ensure the consolidated thickness specified

Rolling shall commence as soon as the binder has set sufficiently, followed after three days by a final rolling

U.3.6 **Precast concrete block road surfacing**

Paving blocks shall be precast concrete blocks complying with SANS 1058

Blocks shall be laid to true levels and grades on and including a 25mm thick layer of river sand with joints exceeding 2mm and not exceeding 6mm wide

After laying, the paving shall be compacted by means of a vibrating plate compactor, with joints between the blocks filled in, after compaction, by sweeping in fine sand

Infill areas at edges of paving constituting less than 25% of a full block unit and of 25mm minimum dimension shall be filled with Class C prescribed mix unreinforced concrete with top surface trowelled smooth to match blocks. Smaller areas shall be filled with 1:4 cement mortar

U.3.7 **Precast concrete kerbs and channels**

Precast concrete kerbs and channels shall comply with SANS 927, generally in 1m lengths and finished smooth from the mould on exposed surfaces. Kerbs and channels shall be bedded on and jointed in 1:3 cement mortar and pointed with keyed joints. Bases to kerbs shall be Class B prescribed mix unreinforced concrete

U.3.8 **Process control tests**

The Contractor shall be responsible for carrying out all necessary process control tests on the density and moisture content of the compacted sub-grade, base course, etc to ensure that the required compaction is being attained

U.4 FENCING ETC

U.4.1 **Materials**

Materials and workmanship shall comply with the following specifications and requirements :

Wooden poles, droppers, guardrail posts and spacer blocks	SANS 457-2&3
Zinc-coated fencing wire	SANS 675
Prefabricated concrete components for fencing	SANS 1372
Chain-link fencing and its wire accessories	SANS 1373

Fasteners	SANS 1700
Anti-intruder fences	CKS 451
Metal droppers and standards	CKS 451

U.4.2 **Galvanized wire**

All galvanized wire shall be zinc coated wire with Class B zinc coating. Straining wire shall be 4mm diameter galvanized mild steel wire. Tie wire shall be 1,6mm diameter galvanized mild steel wire

U.4.3 **Plastic coated wire**

Plastic coated straining wire shall be 3,15mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 3,95mm

Plastic coated tie wire shall be 1,8mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 2,5mm

U.4.4 **Galvanized barbed wire**

Galvanized barbed wire shall be 2,5mm diameter mild steel double strand reverse twist zinc coated barbed wire with Class A zinc coating

U.4.5 **Galvanized wire mesh**

Galvanized wire mesh shall be 50mm mesh chain link netting of 2,5mm diameter Class C galvanized mild steel wire

U.4.6 **Plastic coated wire mesh**

Plastic coated wire mesh shall be 50mm mesh chain link netting of 2,5mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 3,25mm

U.4.7 **Galvanized welded wire mesh**

Galvanized welded wire mesh shall be fabricated from pre-galvanized wires to rectangular pattern welded together at each intersection using a welding method which forms a zinc oxide protective coating at each intersection

U.4.8 **Razor wire**

Razor wire shall be fabricated from 2,5mm diameter galvanized high tensile steel wire fitted with razor barbs formed of 0,5mm galvanized steel strip clipped on at 37,5mm centres

U.4.9 **Metal droppers and standards**

Droppers shall be of ridged T-section mild steel with a mass of not less than 0,55kg/m. Standards shall be of I- section mild steel with a mass of not less than 3kg/m or of ridged edge Y-section mild steel with a mass of not less than 2,5kg/m, and shall be driven 600mm deep into the ground

Droppers and standards shall have either galvanized, sprayed metal or painted finish as described in the items and in accordance with CKS 451. In addition, those surfaces of standards embedded in the ground shall be coated with bitumen

U.4.10 **Metal posts and stays**

Posts and stays shall comply with CKS 451 and shall be of black galvanized mild steel tubing as specified

Straining posts shall be of 108mm outside diameter x 3mm wall thickness tubing, each with a 300 x 300 x 5mm thick mild steel sole plate and a steel cap welded on

Intermediate posts shall be of 50mm outside diameter x 2,5mm wall thickness tubing, each with a 230 x 230 x 5mm thick mild steel sole plate and a steel cap welded on
Stays for straining posts shall be of 50mm outside diameter x 2,5mm wall thickness tubing, each with a 230 x 230 x 5mm thick mild steel sole plate welded on and fixed raking with top end flattened, bent, holed and bolted to straining post with and including a 5mm diameter galvanized mild steel bolt with nut and washer

Posts and stays shall have either galvanized or painted finish as described in the items and in accordance with CKS 451. In addition, sole plates and portions of posts and stays embedded in ground shall be coated with bitumen

U.4.11 **Timber posts, stays and droppers**

Timber posts shall be 125mm diameter, timber stays shall be 100mm diameter and timber droppers shall be 30mm diameter

U.4.12 **Prestressed concrete posts and stays**

Prestressed concrete posts and stays shall be finished smooth from the mould and uniformly stressed by means of high tensile longitudinal prestressing wires with concrete cover to wires of not less than 20mm

Corner and straining posts shall be 100 x 100mm and intermediate posts and stays shall be 75 x 75mm. Stays shall be fixed raking with top end splayed and glued to posts with a suitable epoxy compound

U.4.13 **Bolts, nuts and washers**

Straining eye bolts, hinge bolts, bolts, nuts and washers shall be galvanized

U.4.14 **Precast concrete fencing**

Precast concrete fencing over sloping terrain shall be stepped to suit terrain, including the use of increased lengths of posts as necessary, excavation, etc

U.4.15 **Concrete bases**

Bases in ground for posts, stays, etc shall be of Class B prescribed mix concrete with tops 100mm below surface of ground

Sizes of concrete bases for posts, stays, etc shall be as follows:

Straining and gate posts	–	450 x 450 x 700mm deep
Intermediate posts	–	300 x 300 x 600mm deep
Stays	–	600 x 300 x 500mm deep

U.4.16 **Security overhangs**

Where fencing is described as having a security overhang, the posts and standards shall have angular (single arm) extension arms

Extension arms shall be attached to the posts and standards by welding in the case of steel and by spiking in the case of timber

Concrete extension arms shall be cast integrally with the post or standard

Barbed wire to security overhangs shall be tightly strained and wired at each intersection with extension arms and shall have barbed wire braces at 450mm centres between standards, posts, etc wired onto the barbed wire and the top straining wire

U.4.17 **Gates**

Gates shall be formed of 40mm outside diameter x 2,5mm wall thickness mild steel tubular framework with welded joints, strongly braced as necessary and filled in with wire mesh as described above, properly strained and securely bound to framework with tie wire

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

ANNEXURE 2

DEPARTMENT OF TRANSPORT

ROOF REPLACEMENT CONTRACT

PIETERMARITZBURG

ELECTRICAL INSTALLATION

GENERAL TECHNICAL SPECIFICATION

1.1 SCOPE OF WORK

This includes the electrical installation to the Existing Block C of the Department of Transport Complex, Prince Alfred Street : Pietermaritzburg, the whole of the electrical work being indicated in the specifications and drawings supplied and shall be carried out by the Electrical Specialist. Specifications and drawings (where they form part of the Tender) are to be read in conjunction with each other.

Should any part of the specification or drawings not be clear, the Engineer should be contacted for clarification. "Engineer" shall be deemed to mean the authorised representative of the Client.

The successful Tenderer will be appointed as a Domestic Sub-Contractor under the direction of the Principal Contractor.

1.2 STANDARD OF WORKMANSHIP

All work covered by this specification shall be carried out by a registered electrical Specialist, in accordance with the conditions in clauses set out in the preamble. Where any aspect of the work is not specifically mentioned in these clauses, the "Code of Practice for the Wiring of Premises" (S.A.N.S. 10142-latest amendment) as published by the Council of the South African Bureau of Standards, shall apply.

Workmanship shall be of a high standard and all tubing and wiring shall be carried out by the Licensed Electrical Wireman assisted by competent employees. The Engineer may, at any time during the course of construction reject any work which is not carried out to his satisfaction and it shall be brought up to standard at the expense of the Electrical Specialist. For the purpose of this condition, tubing shall mean bending, placing, assembling and fixing of all conduit and accessories used in the electrical installation.

On completion of each sub-section of the contract, the Engineer shall be contacted in order that a detailed inspection may be made, to determine whether the quality of workmanship has been satisfactorily carried out.

The Electrical Specialist shall at all times be responsible for the quality of materials and workmanship in his contract.

1.3 MATERIALS

All materials and fittings used shall be approved and conform to those specified in the schedules of this specification. Any variance from these standards will not be allowed except, with written consent of the Engineer.

In all cases, reference shall be made to the relevant S.A.B.S. specifications (latest edition) where such specifications apply and are available for general application.

The Electrical Specialist shall place orders for specified materials and equipment promptly upon being awarded the contract. No excuse or proposed substitution will be considered for materials and equipment due to unavailability unless proof is submitted that firm orders were placed within 14 days of the contract being awarded.

Delay in the works owing to non-delivery of materials will be considered as a cause for delay in completing the contract works.

The Electrical Specialist, shall if called upon to do so, submit samples of materials, equipment or individual components for examination or testing to the Engineer and/or other parties as instructed.

1.4 SUPERVISION OF CONTRACT

The Electrical Specialist shall employ on the building at all times a competent foreman or chargehand and any instruction given him by the Engineer shall be deemed to have been given to the Electrical Specialist, except where such instructions or information herein mentioned or inferred as having to be given in writing.

A Trade tested and registered installation electrician shall be on site at all times. The Electrician shall be responsible for the entire project and together with this Tender, all details of the proposed electrician shall be provided including current registration and a copy of the installation electrician Licence. The electrician shall keep an accurate daily site diary and shall provide accurate, dimensioned "As Built drawings" in Autocad format of all services installed on this project.

ANY / ALL COSTS INCURRED BY THE ELECTRICAL CONSULTING ENGINEER AS A RESULT OF NON COMPLIANCE WITH THIS REQUIREMENT BY WAY OF ADDITIONAL TIME SPENT ON SITE AND TRAVELLING COSTS ETC., WILL BE DEDUCTED FORM THE ELECTRICAL SPECIALIST AT NO COST TO THE CLIENT.

The Electrical Specialist shall assume full responsibility for coordinating with all the other Specialist Trade electrical and wireway requirements.

1.5 PROGRESS OF WORK

On acceptance of a tender the work shall be put in hand immediately and a sufficient number of workmen and assistants employed to ensure such progress is commensurate with the general progress of the undertaking.

Work shall at all times be commensurate with the general progress of the building and the Electrical Sub-Specialist shall fully acquaint himself with the Principal Specialist's construction programme with which he shall comply. If, in the opinion of the Engineer the work is being unduly delayed the Electrical Specialist shall, upon being called upon to do so, increase the number of men employed to promote that rate of progress to the required extent.

Where partial occupation of the building is required during building operations, the Electrical Specialist shall arrange his work programme accordingly.

1.6 COMPLIANCE WITH LAWS AND REGULATIONS

The whole of the work shall be carried out in strict accordance with the current edition of the "Code of Practice of the Wiring of Premises" (S.A.N.S. 10142-latest edition) the "Occupational Health and Safety Act 85 of 1993" and the local Municipal Regulations and Bylaws.

1.7 DISCREPANCIES

All drawings shall be regarded as diagrammatic and all positions and dimensions shown on drawings are approximate and shall be verified on site. No extra will be allowed for alterations, which result from lack of verification of positions and/or dimensions.

Should there appear to be any discrepancy, or lack of agreement in respect of description, dimensions or quantities between various documents, the matter shall be referred by the Electrical Specialist to the Engineer for decision.

1.8 S.A.N.S. AND B.S. REGULATIONS AND SPECIFICATIONS

The Electrical Specialist shall acquaint himself with the current S.A.N.S. and B.S. regulations/specifications and any other regulation/ specification that may apply to this contract.

No breaches will be accepted on account of lack of knowledge of such specifications or regulations.

1.9 SITE MEETINGS

Site meetings may be held during the course of the contract. Such meetings shall be convened by the Engineer at a time to be determined after the awarding of the main contract. The Electrical Specialist, or his representative, may be required to attend all such meetings, in addition to normal visits to the site as arranged with the Engineer.

1.10 INSPECTING AND TESTING

Before submission of a completion notice, the Electrical Specialist shall carry out his own testing to ensure that the installation complies with the "Code of Practice for the Wiring of Premises" (S.A.N.S. 10142-latest edition) read in conjunction with "Electricity supply Bylaws" and the detailed requirements as set out in this specification.

On completion, the whole installation will be required to be tested by the Electrical Specialist in the presence of our representative (Installations Supervisor). A compliance certificate shall be completed by the Electrical Specialist and submitted to the Engineer.

1.11 VARIATION

The Electrical Specialist shall be responsible for seeing that he is issued with variation orders during the progress of the work, as claims for extras will not be recognised after completion of the contract unless the corresponding variation orders have been issued during the course of the works. Such variation orders shall be priced by the Electrical Specialist within seven (7) days of the date of issue and forwarded to the Engineer.

At the time of the award of the contract for the electrical installation, the successful Electrical Specialist shall supply a list of rates for materials and labour for the calculation of additions and omissions.

Unless otherwise stated by the Electrical Specialist, the schedule of minimum rates for additions and/or omissions as laid down by the "Electrical Specialists Association (Natal Branch)" shall apply.

1.12 HANDING OVER OF WORKS

No portion of the installation will be accepted until it has satisfactorily passed tests to the satisfaction of the Engineer or his representative.

1.13 GUARANTEE

The whole of the installation and fittings carried out and supplied under the electrical contract, shall be handed over in full working order and the best of their respective kinds, and shall be guaranteed for a period of 12 months from the date of completion of the main contract and any faults or defects in materials or workmanship shall be made good free or charge during such period.

1.14 SLEEVES AND DRAWINGS

Where sleeves are laid across roads etc., the back filling will conform to the requirements of the Engineer and positions will be marked up on the "as built" drawings. Accurate dimensioned drawings of these services in relation to buildings will be submitted together with the "as built" drawings on completion of the contract.

1.15 "AS BUILT " DRAWINGS

The Electrical Specialist must submit 2 copies of approved marked up drawings of the whole electrical installation, showing details and positions of all services actually installed in the works. All cable joints, markers, etc., must be accurately dimensioned on the drawings. One copy shall be affixed to the internal surface of the main distribution board door by means of a clear plastic type pocket.

1.16 CABLE SLEEVES

The Electrical Specialist shall supply/install all sleeves up to and including 160mm diameter PVC required in this Contract and will be responsible for the correct setting out and location of the sleeves by others to suit the Electrical Equipment on site including the installation of1.5mmsq mild steel draw wires in all sleeves provided for other services e.g. telephone, intercom, main supply cable etc.

The Engineer prior to installation on site will issue dimensioned or marked up drawings to the Electrical Specialist.

1.17 ADDITIONAL TERMS OF ACCEPTANCE OF TENDER

1.17.1 Tenderers are cautioned that previous Projects/Electrical Reticulation undertaken by the aforesaid parties under Contract to any Employer which have proved to be either unreliable and/or unserviceable and/or unsupported by the suppliers in terms of spares, technical documentation, service etc., shall render Tenders liable to disqualification where applicable.

Furthermore, Specialists who have failed to provide adequate service levels or have failed to give timeous response to product/technical enquires, or have frequently defaulted on repair turn-around times, or ignored or refused to meet Contractual Obligations under previous tender Enquires, or have been unable/unwilling to stock product, recommended spares, will also not be considered under this enquire.

THE TENDER WILL ONLY BE ACCEPTED IF COMPLETED IN FULL, INCLUDING INFO SCHEDULES AND PRICED BILL OF QUANTITIES. PREFERENCE WILL BE GIVEN TO TENDERS THAT ARE TO SPECIFICATION AND COMPLETELY AND CORRECTLY FILLED IN.

2.0 THE ELECTRICAL SPECIALIST SHALL NOTE WHICH CLAUSES ARE RELEVANT TO THIS CONTRACT:

2.1	Wiring
2.2	PVCI Conductors
2.3	Conduit
2.3.1	PVC Conduit
2.3.2	Galvanised Conduit
2.3.3	General
2.4	Chasing of Concrete
2.5	Earthing
2.5.1	Additional Notes for Earthing
2.6	Distribution Boards
2.7	Earth Leakage Relays
2.8	220 V Socket Outlets
2.9	Light Switches
2.10	Light Fittings
2.11	Photo-Electric Cell
2.12	Water Heaters
2.13	Cooker Unit

2.0 ELECTRICAL INSTALLATION: TECHNICAL AND DETAILED REQUIREMENTS

2.1 Wiring

All wiring shall be carried out in the "loop in" system and looping shall be done only at switches, ceiling roses, certain fittings and similar devices.

Joints in the wiring will not be permitted. The lead and return conductors of each circuit shall be drawn into the same conduit.

The cutting away of wire strands from the individual cores will not be allowed.

2.2 PVCI Conductors

All conductors used shall be PVC insulated and conform to S.A.B.S. 150.

All sub-circuit earth wires shall be PVC insulated and coloured green. Phase wires shall be coloured red, white or blue and the neutral conductor black. In

the case of lighting circuits, the switch wire may be coloured in any other distinctive colour other than green, yellow or black.

Circuit wire sizes are included in the "Schedule of Circuits" detailed herein.

The end strands of all circuit wires are to be tightly twisted together on termination into switches, socket outlets, distribution boards, etc. If the end is to be made off into a lug, the correct lug-crimping tool shall be employed for the corresponding conductor size used.

2.3 Conduit

All conduits and accessories shall conform to the relevant S.A.B.S. specifications. All conduiting shall be carried out in the "loop in" system and shall be flush mounted unless otherwise specified.

NO SURFACE CONDUIT WILL BE ALLOWED, UNLESS APPROVED IN WRITING.

2.3.1 PVC Conduit

The Electrical Specialist shall allow for a separate green PVC insulated earth wire to be drawn into all conduits in order to earth all light fittings, socket outlets, distribution boards, water heaters, cookers, etc. Earthing shall be in accordance with clause 2.5 of the specification.

All conduit joints shall be securely bonded by means of approved PVC adhesive.

PVC conduit terminations into distribution boards, socket outlet boxes, switch boxes, etc. shall be made by means of threaded PVC conduit adapters bonded to the conduit end, and PVC locking nuts. Conduits merely pushed into the above box knockout holes will not be permitted under any circumstances.

(a) Back entry boxes shall not be used in reinforced concrete structures.

(b) Galvanised extension rings shall be used for light points when PVC boxes are used.

(c) All conduit-coupling joints in concrete slabs shall be reinforced by placing and binding a short section of conduit across the coupling joint.

(d) All light switch boxes, socket outlet boxes and telephone outlet boxes shall be galvanised boxes.

(e) Galvanised conduit shall be used in columns, concrete walls and beams.

2.3.2 Galvanised Conduit

Galvanised conduit shall be smooth inside and shall not flake when the conduit is bent.

Before use, conduit shall be carefully scrutinised to ensure smoothness of bore and that it is not damaged in any way. Any conduit from which the galvanising has flaked during bending or which has been split, flattened or damaged in any way, shall be rejected.

All conduit ends are to be cleaned of all sharp edges, neatly rounded off and reamed.

Conduit ends shall be finished off by means of galvanised locknuts and brass bushes. Alternatively, conduits may be terminated by using couplings and male brass bushes.

Joints shall be tightly screwed up and where embedded in concrete or where running joints with long threads are used, a coating of red lead shall be applied.

2.3.3 General

Where conduit is to be surface mounted, only galvanised saddles may be employed. Hooks, crampets or tungsten pins will not be permitted. Walls shall be drilled with a tungsten tipped bit and either grouted bolts, rawl bolts or plastic plugs may be used for the fixing of saddles or other accessories.

Where switches, socket outlets, etc., occur in brickwork, a masonry cutting machine shall be employed to provide the necessary chase.

The Electrical Specialist shall make allowance in his tender for all chasing and making good of brickwork, plaster, etc., as no extras will be granted for the omission thereof.

Conduit installed in reinforced concrete slabs shall be placed above the bottom reinforcement bars to allow full concrete cover as indicated on the Structural Engineer's drawings.

The Electrical Specialist shall make every effort to avoid the crossing of conduits in reinforced concrete slabs. Where such crossings are unavoidable, the crossing shall be made in ribs or beams, the lower conduit being set into the rib or beam.

The Electrical Specialist shall notify the Engineer in good time, minimum 24 hours, as to his completion of a conduit installation, in order that the work may be inspected and checked in his presence and corrected, if necessary, before concrete is cast.

2.4 Chasing of Concrete

Where it becomes necessary to chase structural concrete, permission from the Structural Engineer shall first be obtained. If the structure is chased prior to permission being obtained, the Electrical Specialist will be held liable for any damage that may be caused.

2.5 Earthing

The whole of the electrical installation shall be earthed in accordance with the "Code of practice for the Wiring of Premises" (S.A.B.S.0142-1993) and any other local regulation or By law that may apply.

All cold water and metal pipes shall be effectively bonded together by using copper tape (not wire), brass nuts and bolts and earthed.

All metal roofs. gutters, down pipes, wash-had basins, urinals, etc., shall be effectively bonded together and earthed.

All earth wires in sub-circuits, other than E.C.C. cables shall be insulated and coloured green.

All earth conductors shall be continuous throughout their length. Where an earth wire is to be terminated onto a device such as a socket outlet, light switch, light fitting etc, the earth conductors shall be crimped using a suitably sized ferrule and a single earth wire taken to the device earth terminal. Removal of the device shall not cause the earth conductor continuity to be broken. This requirement will be strictly adhered to. Any Earthing that is not to this requirement will be remedied at the Electrical Specialists Expense.

2.5.1 Additional Notes for Earthing

The Electrical Specialist shall ensure that all urinals, wash hand basins etc, shall have solid copper earthing straps connected and laid visibly between the water inlet and any metal portion of the urinals.

The Electrical Specialist shall ensure that a separate earth conductor is provided and connected to the metal pipe of the water main and the earth bar on the meter frame/meter box/meter cubicle.

2.6 Distribution Boards

The distribution boards detailed in these schedules shall conform to S.A.N.S. 10142-1 and contain approved miniature circuit breakers unless otherwise specified. In the case of triple pole and neutral boards, the m.c.c.b.'s shall be flush mounted in vertical position and arranged in horizontal rows. A neutral bar with provision for connecting each neutral conductor into a separate position, corresponding to the line conductor, shall be provided.

The main isolator shall be housed in a panel on the right or left hand side of the distribution board and shall be accessible at all times, i.e. not enclosed by the front door(s) of the distribution board.

In the case of three phase loads the distribution boards shall consist of triple pole m.c.c.b.'s or three single pole m.c.c.b.'s arranged so that tripping is simultaneous. All m.c.c.b.'s shall bear the S.A.N.S. mark. The distribution boards shall be complete with switch disconnectors, the current capacities of which are detailed in the schedules, and where necessary an approved cable entry gland shall be provided. The m.c.c.b.'s, busbars and switch disconnector shall be contained in an approved flush type metal box of 1,5mm thick galvanised sheet steel. A suitable earth bar shall be securely fixed to the inside of the box. The box shall be of sufficient size to allow for easy access for leading in and connecting cables or wires. The front door(s) shall be fitted with a padlockable door catch (Barker Nelson No. 24102 or equal approved).

In all cases the distribution boards and their metal component parts shall be treated with an approved metal cleaner. A protecting coat of anti-rust paint shall then be applied. The distribution board shall be finished with two full coats of highest quality synthetic stoving enamel and stoved in a controlled

temperature oven. The colour finish of all distribution boards shall be obtained from the Engineer or as specified in the distribution board specification.

Provisions for conduit entry holes or knockouts, spare ways and cable glands shall be provided as indicated in the distribution board specification. All components and equipment shall be supplied and wired in accordance with the abovementioned schedules.

Circuits in three phase distribution boards shall be balanced over three phases and this shall in all instances be strictly adhered to.

Each distribution board and each item thereon shall be clearly labelled to indicate supply voltage, board and circuit designation, etc., and the location of the various outlets associated with each circuit. The labels shall be engraved from a suitable material and securely fixed to or adjacent to the item which it represents. Labelling and fixing thereof shall be approved by the Engineer prior to manufacture.

2.7 Earth leakage Relays to SANS 767-1

All single phase and three phase earth leakage relays shall be of 30 milli-ampere sensitivity and in all cases bear the S.A.N.S. mark of approval.

2.8 220 V Socket Outlets to SANS 164 – 1 up to and including SANS 164 - 5

Where these outlets occur, they shall be flush mounted unless otherwise specified, and shall comply with the relevant S.A.N.S. specifications.

Minimum size of outlet boxes shall not be less than 100 mm x 100 mm x 50 mm, and the socket outlets shall be of the Crabtree Diamond range complete with white PVC cover plates and screws.

Mounting heights of socket outlets shall be 300 mm or 1 400 mm above finish floor level or as stated in the schedules.
All dedicated socket outlets shall be supplied complete with plug tops, which Shall be handed to engineer in charge. All dedicated SSO shall be protected By separate earth leakage relay.

2.9 Light Switches to SANS

All light switches shall be flush or surface mounted as scheduled and installed 1 400 mm above finished floor level unless otherwise specified, and shall conform to the relevant S.A.B.S. specifications.

Switches shall be of the Crabtree Diamond Range rocker type complete with white PVC cover plates.

The current ratings and switching details are included in the distribution board circuit schedules and shall be strictly adhered to.

Weatherproof switches (if necessary) shall be supplied and installed in the positions as indicated on the drawings and/or as detailed in the specification.

2.10 Light Fittings

All light fittings and lamps supplied under this contract shall be from new stock and unused. Any fitting that may be damaged or is not as specified shall be rejected and replaced by the Electrical Specialist at this own expense.

All light fittings shall be complete with lamps. All light fittings shall be supplied with high performance electronic ballasts that maximise lamp life and run at higher than 0.95 power factor. Fluorescent tubes shall have a colour temperature of approximately 4 200 K. All light fittings complete with lamps shall be guaranteed for a period of twelve months from the date of handing over of the main contract. This guarantee applies to defects in materials or manufacture and electrical breakdown in any of the components.
The Electrical Specialist will not be held liable if such fittings are damaged due to negligence during the guarantee period. All recessed light fittings shall be supplied complete with 3m cordset and 5A plug top.

N.B. Any alternative light fittings must be submitted to the Engineer for approval. The expenses incurred by the Engineer to evaluate such alternatives shall be for the cost of the Electrical Specialist.

2.11 Photocells

All Photocells supplied under this Contract shall be suitable for direct switching of discharge type luminaries. The photocell shall be housed in a rectangular carcass of a light fitting with a clear polycarbonate diffuser. The photocell shall be installed at an accessible position facing the north east.

2.12 Water Heaters

The water Heaters shall be supplied and installed by others but the Electrical Specialist shall be responsible for the provision of an isolator in close proximity to the water heater element. The final connection to the water heater shall be included in the unit rate for the isolator. The flexible connection from the isolator to the water heater shall be in "Kopex" flexible PVC coated metallic conduit.

2.13 Cookers

The cookers will not be supplied and installed under this Contract but the Electrical Specialist shall allow for the kick pipe from the isolator to a point approx 200mm above finished floor level. The kicker pipe shall be terminated in such a fashion to facilitate the connection of the "Kopex" flexible PVC coated metallic conduit.-

DEPARTMENT OF TRANSPORT

ROOF REPLACEMENT CONTRACT

PIETERMARITZBURG

SECTION 1 : ELECTRICAL INSTALLATION

DETAILED TECHNICAL SPECIFICATION

1. EXTENT OF WORKS

The works covered by this contract comprises the complete electrical installation to the Existing Department of Transport Building in Prince Alfred Street, Pietermaritzburg and includes:

- Removal of the entire existing electrical and IT installations.
- Supply, delivery, installation and commissioning of the new electrical installations to all areas of the complex.
- Supply, delivery, installation and commissioning of the new lightning protection system and server room earthing.
- Supply, delivery, rigging, installation and commissioning of the new batteries to the existing UPS units, including the recommissioning and guarantee of the UPS for a period of 1 year from handover.
- Supply and installation of new metering equipment to the existing Main DB in the existing Substation.
- Supply, delivery, installation and commissioning of the Fire Detection system, including all associated cabling.
- Supply, delivery, installation and commissioning of the Access Control system, including all associated cabling.
- Supply, delivery, installation and commissioning of the CCTV system, including all associated cabling.
- Temporary supplies for the Building as may be required
- External lighting and small power
- Internal Lighting and small power
- IT, Intercom, CCTV, Fire Detection, access control and intruder alarm conduits and wireways
- Attendance on other Specialist Installers
- Preparation and Issuing of as built drawings for all systems installed as per above

The Electrical Specialist and all other services will be required to work within the Principal Contract programme.

2. TEMPORARY SUPPLIES

The temporary supplies in the form of an earth leakage protected weatherproof Distribution board and adequate temporary lighting as required in terms of ensuring adequate levels of safety on the site at all times shall be included in the pricing of this contract.

3. POWER SUPPLY

The electrical supply available is a 3-phase 4-wire system with a nominal voltage of 400 Volts ±10% at 50Hz. All supplied equipment shall be suitable for use at the stated voltage.

4. DISTRIBUTION BOARDS

All distribution boards shall be new, manufactured units from a reputable manufacturer, as detailed in the schedule of Quantities and equipped as detailed in the schedule of distribution boards.

5. SWITCHES AND SOCKET OUTLETS

All new switches and socket outlets shall be flush mounted fed via conduit chased into the walls from the ceiling. Socket outlets and isolators shall be installed in 100x100x50mm boxes while light switches shall be installed in 100x50x50mm boxes. Socket outlets in power skirting shall be of the type as specified in the schedule of Quantities.

The light switches and socket outlets shall be Crabtree Diamond range only with a minimum rating of 16A.
The socket outlets shall be installed at varying heights to suit specific equipment.

6. CONDUIT INSTALLATION.

The conduit installation shall be carried out using PVC Conduit and accessories unless otherwise specified. Only Galvanised steel conduit and accessories shall be used in roof spaces.

7. SECURITY, FIRE DETECTION, CCTV AND ACCESS CONTROL SYSTEMS

All the above systems conduits shall be installed by the Electrical Specialist as required by the Specialist responsible for installation of the electronic devices. All conduits down walls for security purposes shall be built-in or chased-in.

All Security and Access Control System conduit shall be equipped with galvanised mild-steel draw wire.

The Specialist will be responsible for the provision of power supplies and all wireways to the electronic equipment in the positions indicated on site or on layout drawings issued by the responsible Specialist, and shall make allowance in his unit rates for full coordination with the Specialist Installer.

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8. TELEPHONE AND DATA SYSTEMS

Telephone and Data System conduit and wireways shall be installed by the electrical Specialist as required by the Specialist responsible for installation of the electronic devices.

All Telephone and Data System conduit shall be equipped with galvanised mild-steel draw wire.

The Specialist will be responsible for the installation of P9000 trunking down walls in the server area. Trunking runs are to be approved and signed-off by the responsible Specialists prior to the installation thereof, and shall make allowance in his unit rates for full coordination with the Specialist Installer.

12. LIGHTNING PROTECTION AND EARTHING

A provisional allowance has been made for the engagement of a specialist lightning protection and earthing sub subSpecialist. The Specialist shall allow for attendance on the specialist subSpecialist and shall be responsible for the timeous completion of the subcontract works. The electrical Specialist shall ensure that all devices supplied under all subcontracts in this Tender are adequately protected against lightning strike.

13. DRAWINGS

The following drawings form Part of this Contract and are required for pricing same.

PMB 048.11 / 1 SITE PLAN
PMB 048.11 / 2L LIGHTING LAYOUT
PMB 048.11 / 2P POWER LAYOUT
PMB 048.11 / 2F FIRE DETECTION AND ACCESS CONTROL
PMB 048.11 / 3 DBM DISTRIBUTION BOARD DB M SCHEMATIC
PMB 048.11 / 4 DB U1 DISTRIBUTION BOARD DB U1 SCHEMATIC
PMB 048.11 / 5 DB U2 DISTRIBUTION BOARD DB U2 SCHEMATIC
PMB 048.11 / 6 DB BP DISTRIBUTION BOARD DB UPS BYPASS SCHEMATIC
PMB 048.11 / 7 DB 1 DISTRIBUTION BOARD DB 1 SCHEMATIC
PMB 048.11 / 8 DB 2 DISTRIBUTION BOARD DB 2 SCHEMATIC
PMB 048.11 / 9 DB 3 DISTRIBUTION BOARD DB 3 SCHEMATIC
PMB 048.11 / 10 DB 4 DISTRIBUTION BOARD DB 4 SCHEMATIC
PMB 048.11 / 11 DB 5 DISTRIBUTION BOARD DB 5 SCHEMATIC
PMB 048.11 / 12 DB 6 DISTRIBUTION BOARD DB 6 SCHEMATIC
PMB 048.11 / 13 DB 7 DISTRIBUTION BOARD DB 7 SCHEMATIC
PMB 048.11 / 14 DB AC1 DISTRIBUTION BOARD DB AC1 SCHEMATIC

14. EXCAVATIONS

Classification of excavated material

"Hard rock" shall mean granite, quartzitic sandstone or other rock of similar hardness, the removal of which requires drilling, wedging and splitting or the use of explosives

"Soft rock" shall mean hard material the removal of which warrants the use of pneumatic tools and includes hard shale, ferricite, compact ouklip and material of similar hardness

"Earth" shall mean all ground other than that classified as "hard rock" or "soft rock" and shall include made-up ground and any loose stones or pieces of concrete not exceeding $0{,}03m^3$ in volume

DEPARTMENT OF TRANSPORT

ROOF REPLACEMENT CONTRACT

PIETERMARITZBURG

SCHEDULE OF EQUIPMENT OFFERED

(NOTE: THIS PAGE MUST ACCOMPANY HARD COPY TENDER AT CLOSING TIME)

If the Tender is successful, the following materials will be used: Tenderers are to note that any alternative offers have to be submitted under separate Tender entitled "Alternative Tender". Any / all costs incurred by the Engineer to evaluate the alternative offer will be borne by the Tenderer.

ITEM	DESCRIPTION	PREFERRED SUPPLIER	MAKE OR COMPANY OFFERED
1.	Wiring channel/Cable tray	Cabstrut or O -line	.....
2.	Galvanised conduit		.....
3.	PVC conduit		.....
4.	Socket outlets & Light switches	Crabtree or Clipsal	.....
5.	600/1000V PVC/SWA/ECC/PVC cable	Aberdare	.....
6.	Light fitting Type A	Lihlelight	.....
7.	Light fitting Type A(E)	Lihlelight	.....
8.	Light fitting Type A1	Lihlelight	.....
9.	Light fitting Type B	Lihlelight	.....
10.	Light fitting Type B1	Lihlelight	.....
11.	Light fitting Type C	Lihlelight	.....
12.	Light fitting Type D	Lihlelight	.....
13.	Light fitting Type D(E)	Lihlelight	.....
14.	Light fitting Type D1	Lihlelight	.....
15.	Light fitting Type E	Lihlelight	.....
16.	Light fitting Type E(E)	Lihlelight	

17.	Light Fitting Type F	Lihlelight	.....
18.	Light Fitting Type K	Lihlelight	.....
19.	Light Fitting Type G	Lihlelight	.....
20.	30A changeover contact Microwave motion sensor	Cosine	.....
21.	Aluminium Power poles	Cabstrut or O-line	.....
22.	Power skirting	Cabstrut or O-line	.....
23.	Distribution Boards	Switchboard Manufacturers - Durban	.....

(NOTE: THIS PAGE MUST ACCOMPANY HARD COPY TENDER AT CLOSING TIME)

NOTES TO TENDERERS:

FURTHER INFORMATION REQUIRED / STATEMENT OF COMPLIANCE WITH TENDER SPECIFICATION AND MATERIALS

THE TENDER WILL ONLY BE ACCEPTED IF COMPLETED IN FULL, INCLUDING INFO SCHEDULES AND PRICED BILL OF QUANTITIES. PREFERENCE WILL BE GIVEN TO TENDERS THAT ARE FULLY TO SPECIFICATION AND COMPLETELY AND CORRECTLY FILLED IN.

TENDERERS ARE TO NOTE THAT ANY ALTERNATIVE OFFERS SHALL BE SUBMITTED UNDER SEPERATE TENDER ENTITLED "ALTERNATIVE TENDER". ANY/ ALL COSTS INCURRED BY THE ENGINEER TO EVALUATE THE ALTERNATIVE OFFER SHALL BE BORNE BY THE TENDERER.

ANY / ALL COSTS INCURRED BY THE ELECTRICAL CONSULTING ENGINEER AS A RESULT OF NON COMPLIANCE WITH THIS REQUIREMENT BY WAY OF ADDITIONAL TIME SPENT ON SITE AND TRAVELLING COSTS ETC., WILL BE DEDUCTED FROM THE ELECTRICAL SPECIALIST AT NO COST TO THE CLIENT.

DETAILS OF REGISTERED INSTALLATION ELECTRICIAN THAT WILL BE ON SITE FULL TIME (SEE BILL OF QUANTITIES)

NAME OF INSTALLATION ELECTRICIAN.....

D.O.L REGISTRATION NUMBER.....

COPY OF CURRENT REGISTRATION ATTACHED.....

WE CONFIRM THAT THE TENDER IS FULLY COMPLIANT IN ALL ASPECTS WITH THE SPECIFICATIONS AND SCHEDULES OF EQUIPMENT:

YES/NO (DELETE WHICHEVER IS NOT APPLICABLE)

NAME OF TENDERER : .....

SIGNATURE OF TENDERER : .....

DATE : .....

(NOTE: THIS PAGE MUST ACCOMPANY HARD COPY TENDER AT CLOSING TIME)

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

ANNEXURE 3

SPECIFICATION

transport

Department:
Transport
PROVINCIAL OF KWAZULU-NATAL

PROPOSED ALTERATIONS TO DEPARTMENT OF TRANSPORT BUILDING

MECHANICAL SPECIFICATION

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ALTERATIONS TO THE DEPARTMENT OF TRANSPORT BUILDING

MECHANICAL INSTALLATION

PART 1: STANDARD SPECIFICATION

C O N T E N T S

ALTERATIONS TO THE DEPARTMENT OF TRANSPORT BUILDING

MECHANICAL INSTALLATION

PART 1: STANDARD SPECIFICATION

1. PART OF THE SPECIFICATION

The Standard Mechanical Specification covers the general technical requirements of the mechanical installation. These specifications shall be read in conjunction with the document in its entirety. If the conditions and/or specifications contained herein are at variance with anything contained in the detail specification, the latter shall take precedence, otherwise these Standard Mechanical Specifications shall apply as if duly included.

2. MINIMUM REQUIREMENT

The conditions and/or specifications in this section shall be regarded as the absolute minimum requirement. More stringent similar conditions and/or specifications stated in the detail specification shall take preference to those in these Standard Mechanical Specifications.

3. PROPRIETARY MATERIALS

The Tenderer's attention is drawn to the Detail Specification and Bills of Quantities generally which forms an integral part of the specification, specifically to the following clauses:

Where the term "or other approved" is used in connection with proprietary materials or articles, it is to be understood that approval shall be at the discretion of the Principal Agent.

Where brand or trade names are referred to in the Detailed Specification and Bills of Quantities, these shall indicate the quality and type of material or fitting required and no substitution of materials so specified will be permitted unless the authority of the Principal Agent has been obtained in writing before tenders close.

4. STANDARD TYPE AND MAKE OF EQUIPMENT

Once installation has commenced with the appropriate approvals for using any type and make of article or equipment, the same type and make of article or equipment shall be used throughout the project for that specific application unless otherwise specified.

5. STANDARD OF WORKMANSHIP

The workmanship under this contract shall be of a high standard and to the satisfaction of the Principal Agent.

6. STANDARD OF MATERIALS

All materials and equipment supplied and/or installed under this contract shall be new and the best of their respective kinds and shall comply with the requirements laid down in the latest editions of the relevant SANS or BS and their amendments and with the requirements of this specification.

7. VARIATIONS

The Principal Agent reserves the right to instruct the Contractor to carry out variations to the contract in accordance with the conditions of contract.

8. CONSTRUCTION, PLANT, ETC.

Tenderers shall include in their prices for the supply of all scaffolding, hoisting, ladders, trestles, dust sheets and everything necessary for the proper performance of the contract, for clearing and removal of all rubbish due to the work, for the protection of the work from damage due to the building operations, other contracts and the weather. In existing buildings Contractors shall in particular take adequate precautions to the satisfaction of the Principal Agent to prevent damage to existing apparatus during erection operation.

9. MATERIAL, OFF-LOADING AND STORAGE

Tenderers must make due allowance in their tenders for the off-loading of materials and the storage and safe custody thereof according to manufacturer's specifications on or off site until such can be accommodated or is required on site.

10. ACCESS TO BUILDING

Workmen are to be identified to security and issued with access/identity cards. Identifiable uniforms must be worn by workmen and supervisors on site.

11. INSPECTION OF LOCALLY MANUFACTURED SUPPLIES

Where locally manufactured plant or materials are offered, the Principal Agent reserves the right to inspect such plant or goods during manufacture and to reject items that do not conform to the Employer's requirements. Where a number of units are ordered, the Contractor shall notify the Principal Agent when one unit has been completed so that the Principal Agent may inspect and approve it.

12. ORDERING MATERIALS

The Contractor is warned to place all orders for materials or special articles as early as possible as he will be held solely responsible for any delay in the delivery of such goods.

13. PACKING

The Contractor will be held responsible for packing all plant and other goods in such a manner as to ensure freedom from any loss or damage in transit. Unless otherwise specifically agreed upon, receptacles will not be returned or paid for and no additional charges will be allowed for packing or packing materials.

14. SAMPLES FOR TEST

The Contractor shall furnish, without delay, such samples for testing, or other purposes, as called for, or may be called for, by the Engineer, who may reject all materials or workmanship not corresponding with the approved sample.

Notwithstanding that samples and approved brands of materials, etc. are exhibited or included in classified lists at the offices of the Principal Agent, the Engineer may retest any samples, brands of materials, etc. included in the contract and reject articles and materials, etc. that do not strictly comply with the specification.

15. DAMAGE TO BUILDINGS AND THE MISUSE OF FACILITIES

Any damage done to the buildings, roads and landscaped areas by the Contractor, or his men, shall be made good by the Contractor. Should the Contractor, or his personnel, be granted leave by the Principal Agent to utilise on-site facilities and such facilities be misused or damaged, the facilities shall be cleaned and/or repaired to the satisfaction of the Principal Agent (It should be understood however, that the provision of facilities (toilets, etc.) in terms of the Preliminaries costs called for in the tender document, are the responsibility of the Contractor).

16. PROTECTION OF EMPLOYER'S EQUIPMENT

The Contractor shall ensure that any computers or other valuable equipment of the Employer is sufficiently protected against work or dust by means of temporary coverings or sealed-off partitions.

17. INSPECTIONS, TESTING, COMMISSIONING AND HANDING OVER

17.1. The Contractor shall provide all tools and instruments required for inspections, testing and commissioning of the works as detailed in the detail Technical Specification.

17.2. First Offer for Acceptance (First Inspection)

Once the Contractor has completed the total installation, written notice shall be given to the Principal Agent in order that a mutually acceptable date may be arranged for a joint inspection. During the course of the inspection the Engineer, in collaboration with the Principal Agent, will compile a list of items (if any) requiring further attention. These items shall be identified by checking each and every clause in the contract (all specifications and drawings) in relation to the offered installation.

A copy of this list of outstanding items will be provided to the following:

(a) Principal Contractor – for action

(b) Contractor – for action.

(c) Principal Agent – for information

17.3. Subsequent and/or final offer for Acceptance (Subsequent and/or final Inspection)

The Contractor shall similarly provide written notice that he is ready for an inspection of the remedial work done on the offending items. If the installation is accepted as complete at this stage, by both the Engineer and Principal Agent, the Principal Agent may certify the works as completed. If at this stage there are still outstanding items requiring attention, irrespective of whether those items were identified during prior inspections or not, the procedure will continue until the entire installation has been correctly completed to the satisfaction of the Principal Agent.

17.4. Tests

In addition to the above, the Contractor shall have the complete installation tested and the correct operation of all plant demonstrated to:

(a) Engineer, and/or

(b) The Principal Agent.

Subsequent to the above testing and approval, the Contractor, in the presence of the Engineer, shall test the works as per the Detail Technical Specification.

17.5. First Delivery

First delivery (See conditions of contract) may only be proceeded with after final acceptance and testing have been completed successfully.

18. CONTRACTOR'S LIABILITY IN RESPECT OF DEFECTS (Maintenance Period)

The Contractor shall make all adjustments necessary for the correct operation of the plant for a period of 12 (twelve) months after the date of first delivery of the Principal Building Contract. The Contractor shall make good any defects due to inferior materials or workmanship that may arise during this period. If, during this period, the plant is not in working order for any reason for which the Contractor can be held responsible or if the plant develops defects, the Contractor will be notified and immediate steps shall be taken by him to remedy the defects or to make any adjustments required.

Should such defects occur so frequently as to become objectionable or should the equipment otherwise prove unsatisfactory during the abovementioned period, the Contractor, if called upon by the Engineer, shall replace at his own expense the whole, or such parts thereof, as the Engineer may deem necessary, with apparatus to be specified by the Engineer.

The contractor shall within 8 hours of callout report to site, investigate and carry out the necessary minor repairs. Major repairs shall be done within 24 hours.

19. ARRANGEMENTS WITH SUPPLY AUTHORITIES

The Contractor shall apply for and complete all the formalities necessary for compliance with any statutory requirements as necessary. He shall also make himself available for all statutory authority inspections in order to complete all the formalities and tests. Inspection fees shall be allowed for in the tender.

20. COMPLIANCE WITH REGULATIONS

The entire installation shall be carried out in accordance with the latest revision and amendments of the following:

(a) The Code of Practice for the Wiring of Premises issued by the South African Bureau of Standards, SANS 10142-2003.

(b) The Occupational Health and Safety Act.

(c) The municipal by-laws and any special requirements of the supply authorities of the area and district concerned.

(d) The local fire-brigade regulations.

(e) The applicable SABS specifications, or the BS specifications where no SABS specifications exist

No claims for extras in respect of failure by the Contractor to comply with any of the above regulations will be considered.

Where conflict exists between any of the above regulations and the specification, the said conflict must be referred to the Principal Agent in writing for his ruling.

The Contractor shall be responsible for serving all notices and paying all fees due in terms of the laws and regulations mentioned.

21. TAKING RESPONSIBILITY FOR THE INSTALLATION (For normal electrical or electrical within mechanical installations)

21.1. Before any inspection or hand over of the electrical installation or part thereof takes place, the Electrical Contractor (employed by the Mechanical Sub-contractor) will present a Certificate of Compliance of the electrical installation or part of the installation to be handed over as defined in the regulations of the OSH Act of 1993, as amended.

21.2. With first delivery, the Contractor shall accept in writing the responsibility for the total installation as installed by him by certifying the correctness of the installation in accordance with and on the certificates of compliance of the work as per the Specification.

22. ELECTRICAL INSTALLATION

22.1. SUPPLY

A single and three phase, 50 Hertz electrical supply will be provided by others at the points shown on the drawings. This tender shall include for the supply points and all other cabling, conduits, cable racks, trays, switchgear, panels, distribution boards, etc., necessary for the satisfactory operation of every part of the installation as well as for the connection of the supply cable into control panels, etc.

22.2. CONTROL PANEL

A motor control and switchgear board shall be supplied and installed in each plantroom at the position indicated.

Each board shall be fitted with the following:

(i) A main isolator.

(ii) A set of copper busbars of adequate size, if the peak current on the board exceeds 50 amperes per phase.

(iii) Individual motors shall be supplied through a circuit breaker and suitable D.O.L., automatic Star-Delta, or slip ring starter.

(iv) All other equipment shall be supplied through a circuit breaker

(v) In the case where the rupturing capacity of a circuit breaker is lower than the rupturing capacity of the electric feed system at the specific point, the circuit breaker shall be protected by H.R.C. fuses of adequate size.

(vi) Phase rotation protection

(v) Over/under current protection.

All starters shall be equipped with auxiliary contacts, which shall be brought to an easily accessible terminal block for the purpose of remote control (if specified). An ammeter with suitable scale shall be fitted to each motor above 7.5 kW output on at least one phase, and shall be installed in the panel next to the relevant switchgear.

Switchgear panels and boards shall be factory pre-wired so that the only "on site" connections to be made will be the main connection, the supply to each motor, and the control system connections to the terminal block.

Each item on the board, switches, instrument control, etc., shall be clearly labelled in white print on black, hard plastic labels, which shall be neatly glued onto the back panel of the Board.

All switchgear and distribution boards shall be of the metal clad surface type, with a framework, which is electrically continuous and properly bonded to earth.

The boards shall be equipped with hinged steel doors adequately braced each with a flush lock and two keys.

All boards shall be treated with two layers of rust inhibiting paint.
Switches, push-buttons, and indication lamps and gauges shall be so installed that they remain fastened to the doors when doors are opened.

The layout of each board as well as the wiring diagrams and details of the switchgear provided shall be approved by the Consulting Engineer before any manufacture is commenced.

All wiring in distribution boards shall be labelled to ease the later tracing of circuits; these shall correspond to drawing labelling.

22.3. WIRING

All boards which are to be mounted outdoors shall be weather proof and guaranteed by the manufacturers for such outdoor operation.

The wiring of the plant shall be carried out by the contractor in surface work in the plantrooms and concealed work in all finished spaces. Wiring shall be done by means of solid drawn or lap-welded screwed tubing and PVC insulated copper conductors, or in multicore PVC/SWA/PVC cable. The main runs of conduit or cable shall preferably be carried out at high level (if possible in false ceiling spaces). Distribution shall be vertically down to the required points. All electric conduit and conduit fittings must be thoroughly inspected for defects before installation, and all sharp edges and burrs removed. Bushes and locknuts are to be used where conduit enters switch boxes.

The proposed location of tubing and cables shall be approved by the Consulting Engineer before commencement of work.

Conduit to be installed under plaster finish shall be installed in good time so as not to delay the Building Contractor or cause finished plaster to be chased.

All electrical cables shall be fastened to cable racks or shall be laid in cable ducts. Cables carried in racks shall as far as possible be laid parallel and shall be neatly installed. Descents shall be firmly secured with provision for the swinging of flexible tubing or cables where attached to moving machines and electrical motors.

Sizes of conduit, conductors and cables shall be at least equal to those laid down in the relevant tables of the Code of Practice.

Flexible conduit and cables shall be provided wherever it is necessary to avoid transmission of vibration. No joints in cables or wires will be permitted in a conduit. The ends of cables shall be properly made off. Terminal lugs shall be used wherever special clamp-washers or sleeve terminals are not provided on equipment. Conductor strands may not be cut away or reduced in size, and care must be taken to select switchgear, etc., with terminals of adequate size for looping, etc., where necessary.

No open wiring will be permitted at any point in the system, with the exception of the copper bus-bars in the switchgear boards. These shall be taped up with PVC tape with the relevant phase colours.

22.4. BOXES

Where boxes are used in concrete or masonry, approved removable cover plates shall be supplied. For 100 mm x 100 mm boxes, standard blank metal switch-type cover plates may used, but for larger boxes, removable cover plates of metal or other approved material must be supplied with bevelled edges and must be neatly painted.

Cover plates shall be large enough to overlap and cover any gaps between the draw box and the masonry or concrete, and must be finished off to match the surroundings so as not to mar the architectural appearance of the building.

22.5. WIRING IN CONDUIT

No joints shall be allowed and all looping must be done through approved connectors at fitting points.

The live phase shall be connected at the switching point. All wiring in conduit shall conform to the requirements of SANS 10142 (Table 4 of SABS 0142-1981 as amended). Not more than one circuit shall be accommodated in one circuit unless special permission is obtained from the Engineer. Before any wires are drawn into the conduit, a swab is to be drawn through to clear any water, dirt etc.

22.6. PVC INSULATED CABLES

LT cables with PVC insulation must conform to the requirements of SANS 1574 (SABS 150 of 1970 as amended), and must be laid according to the requirements as set out in the Electrical Specification of this document.

22.7. SOLID CONDUIT

All conduits shall be of heavy gauge steel, screwed and conform to SANS 61386 (SABS 162 of 1987 as amended). No conduit shall be less than 20 mm in diameter.

All joints shall be screwed and all outlets fitted with rustproof iron boxes. Conduit must be either screwed or lock-nutted on both sides and bushed on the inside of the box or board to which it is attached.

The whole conduit system shall be electrically and mechanically continuous over all joints by means of screwed couplings, well bonded and efficiently earthed by means of earthing terminals and earth continuity conductors. The contractor must keep in touch with the builder and install all conduits so as not to delay his work and to ensure the closest co-operation. Every effort must be made to avoid running conduit in "U"-form, but where this is unavoidable; provision should be made, if possible, to drain the conduit.

All chasing of brickwork, etc., for conduit shall be carried out under this contract.

22.8. MINIATURE CIRCUIT BREAKERS

All miniature circuit breakers of the single and double pole type shall be 250 volt grade, and triple pole breakers shall be 600 volt grade. Circuit breakers shall be of the Heinemann, F.W. or other approved make. MCBs may be secured directly to the front panel in which case this panel shall be hinged and wiring taped together to allow for easy movement of the panel. Preferably the MCBs shall be mounted on a metal frame attached to the board casing, access being given to the MCBs and connections by a removable or hinged panel, suitably slotted for toggles, etc.

22.9. FUSES

Where circuits are scheduled to be fed through fuses, these shall be mounted directly on the panel. All rewireable fuses shall be of the porcelain bridge type, of approved manufacture, connected through bushed insulated holes in the panel. An I.C. fuseboard unit may be used instead of separate fuses. Connections shall be made through the back of the panel so that no surface wiring results. Tinned copper fuse wire shall be fitted to suit the loading indicated in the schedules, where rewireable fuses are used, and cartridge fuses shall be fitted with the appropriate cartridges.

22.10. CHASING OF CONCRETE COLUMNS, BEAMS AND SLABS

The Contractor must take particular care that all pipes, boxes etc., in columns, beams or slabs are fitted before the concrete is cast. Where, however, through unforeseen circumstances it becomes necessary to chase columns, beams, or slabs, the permission of the Engineer must first be obtained. Where this is not done, the Contractor will be held responsible for any damage to the structure which may result.

22.11. EARTHING

The whole installation shall be efficiently earthed to the satisfaction of the Engineer, the Inspector of Factories, the Supply Authority, and strictly in accordance with the Code of Practice for the Wiring of premises. Any points proposed as earthing points by the Contractor shall first be approved by the Engineer before connection.

22.12. FLEXIBLE CONNECTIONS

Flexible connections shall be of "Kopex" manufacture or approved type. All flexible connections shall be properly earthed to ensure earth continuity.

22.13. CABLE TRAYS AND LADDERS

22.13.1. The contractor shall supply and install all cable trays or ladders as specified or as required by the cable routes including the necessary supports, clamps, hangers, fixing materials, bends, angles, junctions, reducers, T-pieces, etc.

22.13.2. Metal cable trays shall be manufactured from perforated rolled steel. Only the following metal cable tray types may be used:

(a) Less than 250mm wide 1,6mm minimum thickness with 12mm minimum return.

(b) 250mm and Wider equivalent to trays supplied by "PERFORATION AND CONDIDURE", or other approved, manufactured from 2mm thick steel with folded over returns and a minimum up stand of 50mm.

(c) 250mm and Wider 2,4mm minimum thickness with 76mm minimum return as alternative to (b) above.

The return of trays shall not be perforated and the top of the return shall be smooth. The same cable tray type shall be used in long parallel tray runs.

22.13.3. Metal cable ladders shall consist of a 76mm high side rail of 2mm minimum thickness. Cross pieces consisting of P3300 "SANKEYSTRUT", or other approved, channel sections shall be spaced at maximum intervals of 250mm. Where cables of 10mm^2 or cross pieces shall be 125mm. Cables shall be clamped in position by means of purpose made cable clamps that fit into the cross pieces. Cross pieces consisting of slotted metal rails which accommodate plastic or metal cable binding bands, may be used in vertical cable runs against walls, etc. Where the prior approval of the Engineer has been obtained. These cross pieces are not acceptable in horizontal cable runs.

22.13.4. Rigid unplasticised PVC trays are acceptable. Only the following tray types may be used:

(a) Less than 50mm 3,0mm minimum wide and 40mm minimum return.

(b) 250mm and wider 4,0mm minimum thickness and 60mm minimum return.

22.13.5. Metal cable trays and ladders shall be finished as follows:

(a) In coastal areas (for all applications): Hot-dipped galvanised to SANS 121 and SANS 32 or epoxy powder coating.

(b) False ceiling voids: Electro-galvanised or epoxy powder coating.

(c) Vertical building ducts: Hot-dipped galvanised to SANS 121 and SANS 32.

(d) Plant Rooms, Substations, service tunnels or basements: Electro-galvanised or epoxy powder coating.

(e) Damp areas, exposed to weather: Hot-dipped galvanised to SANS 121 and SANS 32 or epoxy powder coating.

(f) Undercover industrial applications: Hot-dipped galvanised to SANS 121 and SANS 32 or epoxy powder coating.

The abovementioned finishes shall apply unless specified to the contrary. Hot-dipped galvanised or electro-galvanised trays and ladders shall be cold galvanised at all joints, sections that have been cut and at places where the galvanizing has been damaged. Powder coated trays and ladders shall likewise be touched up at joints, cuts and damaged portions using spray canisters recommended by the manufacturer of the trays and ladders.

22.13.6. Trays shall be supported at the following maximum intervals:

(a)	1,6mm thick metal trays with 12mm return	1,22m maximum spacing
(b)	Metal trays with folded over return and 50mm up stand	1,22m spacing
(c)	2,4mm thick metal trays and 75mm return	1,5m spacing

(d)	Metal cable ladders	1,5m spacing
(e)	3,0mm thick PVC trays with 40mm return	1,0m max. Spacing
(f)	4,0mm thick PVC trays with 60mm return	1,5m max. spacing

In addition, trays and ladders shall be supported at each bend, off-set and T-junction.

22.13.7. Joints shall be smooth without projections or rough edges that may damage the cables. The Specialist Controls Contractor will be required to cover joints with rubber cement or other hardening rubberised or plastic compounds if in the opinion of the Engineer, joints may damage cables. Joints shall as far as possible be arranged to fall on supports. Where joints do not coincide with supports, joints shall in the case of trays with single returns be made by means of wrap-around splices of the same thickness as the tray ends shall butt tightly at the centre of the splice and the splice shall be bolted to each cable tray by means of at least 8 round head bolts, nuts and washers. Splices shall have the same finish as the rest of the tray. Where joints which do not coincide with supports occur in trays with folded over returns, tight fitting metal guide pieces, at least 450mm long, shall be inserted in the folded returns to provide the necessary support to the two cable tray ends. Splices as described above shall be provided if trays sag.

22.13.8. Trays shall be bolted to supports by at least two round head bolts per support. Bolts shall be securely tightened to avoid cables being damaged during installation.

22.13.9. The supports for cable trays and ladders shall in all cases be securely fixed to the structure by means of heavy duty, expansion type anchor bolts. It is the responsibility of the Specialist Controls Contractor to ensure that adequate fixing is provided since cable trays and ladders that work loose shall be rectified at his expense.

22.13.10. Horizontal and vertical bends, T-junctions and cross connections, shall be supplied by the Specialist Controls Contractor. The dimensions of these connections shall correspond to the dimensions of the linear sections of which they are connected.

The radius of all bends shall be 1000mm minimum. The inside dimensions of all horizontal angles or connections shall be large enough to ensure that the allowable bending radius of the cables is not exceeded. Sharp angles shall have 45° cornices.

22.13.11. Cables shall be installed adjacent and parallel to teach other on the trays with spacings as determined by the current ratings. Horizontal trays and ladders shall in general be installed 450mm below slabs, ceilings, etc. to facilitate access during installation.

22.13.12. All metal trays and ladders shall be bonded to the earth bar of the switchboard to which the cables are connected. Additional bare copper stranded conductors or copper tape shall be bolted to the tray or ladder where the electrical continuity cannot be guaranteed.

23. ELECTRIC MOTORS

23.1. STANDARD SPECIFICATION

All electric motors shall comply fully with the relevant standard specifications:

- SANS 1804: "Standard Specification for Three Phase Induction Motors".
- BS 2613: "The Electrical Performance of Rotating Electrical Machinery".
- BS 170: "The Electrical Performance of Fractional Horsepower Electric Motors and Generators".

23.2. MOTOR SPECIFICATIONS

(a) Standard Squirrel Cage Motors shall be three phase (or single phase up to THREE kW), continuously rated, screen-protected drip-proof, suitable for direct-on-line or star-delta starting.

(b) High-starting-torque squirrel-cage motors shall be three-phase, continuously rated, screen-protected drip-proof, with a special arrangement of rotor conductors giving high starting torque and moderate starting current and suitable for direct-on-line or star-delta starting.

(c) Slip-ring motors shall be three-phase, continuously rated, screen-protected drip-proof, with continuously rated slip rings and brushers and brushgear suitable for automatic starting.

(d) Fractions kW motors shall be continuously rated, totally enclosed single phase, capacitor-start induction run type, shaded pole of three-phase squirrel-cage where required.

(e) Motors suitable for part-wound starting shall be three phase, continuously rated, screen-protected drip-proof with wound rotor circuits suitably rated to provide continuous full load power when fully switched and to provide starting in graded steps sufficient to overcome the starting load torque without exceeding the specified starting current.

(f) Hermetically sealed motors shall be three phase squirrel cage motors, totally enclosed with suitable internal cooling medium and suitable insulation to provide continuous full load power under the specified ambient conditions.

(g) Pole-changing motors shall be three-phase, continuously rated, screen-protected drip-proof with cage rotor and separate stator windings providing several numbers of poles with various interconnections of the windings. The use of pole-changing motors to alleviate starting conditions shall be limited to 2:1 speed ratios. Additional speed ratios shall only be used where the driven load specifically so requires. Pole-changing rotor circuits are not recommended and shall only be used in exceptional circumstances with the proper approval of the Engineer. Dahlander connections providing a 2:1 speed ratio with variable torque and variable power characteristics of the motor may be used to drive centrifugal fans and centrifugal pumps. Dahlander connections providing constant torque characteristics may be used for high friction loads and connections providing constant power characteristics may be used for constant power loads viz. machine tools.

Motors with a speed in excess of 1500 r/min except in the case of centrifugal compressors, will not be accepted unless agreed to by the Engineer.

23.3. MOTOR RATINGS

When determining motor rating, the following shall be taken into account:

(a) All motors shall be rated for continuous full load duty.

(b) The Continuous Maximum Rating (C.M.R.) of the motor shall be 20% in excess of the full load running duty of the load in order to withstand the tolerance of 105% - 120% in the tripping characteristics of over-load protection devices allowed in BS 4941 Part 1.

(c) All starting times, irrespective of the load characteristics or the method of starting **shall be limited to 20 seconds** unless prior approval to the contrary is obtained from the Engineer. The safe locked rotor time shall be well in excess of the run-up time to allow protection discrimination.

(d) All motors shall be capable of a **minimum** of three **consecutive** starts per hour with the load connected and employing the method of starting to be installed without exceeding the allowed temperature limits of the insulation. In addition, the motor shall be capable of the numbers of starts per hour for the particular load as may be specified or as may be experienced under normal operating condition.

(e) Unduly over-rated motors resulting in a low power factor and efficiency are not acceptable.

(f) The motor starting torque and speed/torque characteristics shall be carefully matched to that of the load to ensure that the motor does not stall at a low speed. A safety margin shall be allowed to overcome voltage drops and load fluctuations. The maximum torque developed by the motor in its final running condition (i.e. when the motor is switched to it's final running configuration in the case of pole-changing motors and all starting devices have been switched out of circuit in the case of assisted starting) shall be 1.6 times the rated full load torque to overcome temporary overloads and voltage fluctuations.

(g) The actual ambient temperature in which the motor will be operating (and not the prevailing outside ambient temperature only) shall be considered.

It is a requirement that the above information and any other requirements that will affect the type of motor to be used be submitted to the motor manufacturer when ordering the motor. The Contractor may at the discretion of the Engineer be required to submit written proof that the **motor manufacturing** will guarantee the performance of the motor for the expected duty and load.

Special attention shall be paid to the starting requirements of motors. It is essential that the starting torque produced by motors under the starting conditions specified, will be sufficient to accelerate the load within the time period allowed by the manufacturer of the motor with a maximum starting time of 20 seconds (refer above). The contractor may be required to submit

calculations showing accelerating torque available, load torque characteristics and run-up time. The following formula may be used to calculate the run-up time:

Te = equivalent accelerating torque in N-m
T1 = Maximum accelerating torque in N-m
T2 = Minimum accelerating torque in N-m
GD^2 = Moment of inertia of the rotating parts of the load and motor in kg-m^2
N = Final speed in r/min.
t = Run-up time in seconds

Accelerating torque is the difference between motor torque and load torque at any given speed on the torque/speed characteristic curve.

Where inching operations occur or where motors are controlled by pressure or level switches where frequent cycling duty may occur, motors shall be capable of 40 starts per hour.

23.4. MOTOR WINDINGS

All motor windings shall have Class E or better insulation. The following maximum temperatures as determined by the resistance method may not be exceeded:

Class of Insulation	23.4.1. Altitude					
	0 – 1000m	**1200m**	**1400m**	**1600m**	**1800m**	**2000m**
E.....	150°C	112.6	111.2	109.8	108.4	107
B.....	120°C	118.4	116.8	115.2	113.6	112
F.....	140°C	138	136	134	132	130
H.....	165°C	163.7	162.5	161	160	158.7

The above figures comply with BS 2613 and SANS 1804 (SABS 948 as amended) for a maximum cooling air temperature of 40°C. Where higher ambient temperatures occur (particularly in cases where heaters are installed), the above temperatures shall be reduced in accordance with BS or SANS specifications.

All windings shall be varnished and baked. The insulation shall provide protection against dust, oil and high humidity as well as aggressive vapours and gases where these are specified.

End-windings shall be carefully wrapped and supported to prevent movement and prevent mechanical damage due to vibrational stresses.

23.5. MOTOR PROTECTION

23.5.1. Motor protection shall be provided as follows:

Type of Protection **Application**

Thermal overload	All motors.
Magnetic overload	Only for short circuit protection when acting on circuit breakers with sufficient rupturing capacity.
Thermistor over-temperature	All motors of 25 kW and more.
Single phasing	All 3-phase motors without thermistor over-temperature protection.
Earth fault	Only when condensation in motors can take place, e.g. standby close coupled pumps on chilled water system.
Phase reversal	All centrifugal compressor circuits and large reciprocal compressors or other circuits where phase reversal can cause damage.
Under voltage	As specified.
Over-temperature	Auto-transformer starters, liquid starters and resistor starters.

23.5.2. All the protection specified in the detailed Technical Specification shall be supplied.

23.5.3. Motor overload (O/L) protection shall be provided in accordance with BS 587. O/L protection shall be provided by means of thermal trips or relays actuating contactors, manual motor starters or circuit breakers. **HRC fuses are not acceptable for this purpose.**

23.5.4. On motor starters on which the overload protection forms an integral part of the starter the protection shall be by means of temperature compensated bimetal thermal O/L trips indirectly heated by separate heating elements in each phase and connected in series with the load. The O/L trips shall be adjustable within the range of approximately 75% to 120% of the rated current of the motor.

23.5.5. Where motors are used frequent repetitive cycles or for inching operations, magnetic overload protection with time delays may be used provided the motor is suitably rated for the duty.

23.5.6. Single phasing protection where provided shall be inherent in the overload protection unit in the case of integral motor starters. Protection schemes depending solely on the excess current drawn by the motor during the single phasing are not acceptable.

23.5.7. Magnetic over current trips or relays for short circuit protection may never be allowed to actuate contactor starters and may only operated on suitably circuit breakers.

23.5.8. Short circuit protection shall be provided by means of HRC fuses or suitably rated circuit breakers.

23.5.9. Thermistor over-temperature protection shall be installed. The thermistor control units shall where possible be integrated with the motor starter. Care shall be taken to select units with sufficient current rating to operate the contactor coil.

23.5.10. Thermistor protection may not be provided in lieu of over current protection.

23.5.11. Motor protection shall be "ENGLISH ELECTRIC" type "CMM" OR "P & B GOLDS" type "M", or other approved, for all motors where preferred. Thermal (or magnetic if required) overload, single phasing (or phase unbalance) and earth fault protection relays as well as auxiliary relays where required, shall be included. The relays shall be housed in a panel mounted unit in a withdrawable case.

23.5.12. Motor protection relays shall not be allowed to operate on metering current transformers, but shall be connected to separate protection class current transformers matched to the motor full load current and the relay power consumption.

23.5.13. In all cases where protection relays are used, "CHAMBERLAIN AND HOOKHAM", or other approved, test blocks type shall be provided to facilitate remote testing or relay operation, current transformers, etc.

23.5.14. Proven electronic protection relays are acceptable.

23.5.15. Where motors which are not described in BS specifications, e.g. semi-hermetic compressor motors, etc. are used, protection shall comply with the manufacturer's requirements.

23.5.16. Special attention shall be paid to motors driving high inertia loads to ensure that motors are adequately protected against sustained over currents but do not trip unnecessarily during starting.

(a) Shorting of the over current protection during starting is not acceptable.
(b) Increased overload settings on protection units are not acceptable.
(c) Connecting the overload relay in the delta loop in star-delta starting applications thus providing no protection during starting, is not acceptable.

Saturable core current transformers providing a normal over current characteristic up to 120% of full load current may be used provided they are properly matched. Alternatively, separate starting and running over current protection units shall be used. For star-delta starting methods, the latter can be achieved by connecting the starting over current unit in the main supply line to the motor and the running over current unit in the delta loop. For other starting methods, a change-over arrangement is required to switch from the starting to the running after the starting time has lapsed. For motors larger than 50 kW electronic integrating type relays with individually adjustable time/current characteristics shall preferably be used. Whichever protection method is used, a safe discrimination between "safe locked rotor time" and "starting time" shall be maintained.

23.6. MOTOR PROTECTION - THERMISTORS

All motors with ratings of 25 kW and higher and all motors with a rating of 15 kW and more that are subjected to run-up times in excess of 15 seconds shall have thermistors for over-temperature protection installed in the stator windings. Three thermistors, one per phase, shall be installed in single wound motors and 6 thermistors shall be installed in double wound motors.

Where thermistors are installed in the end-winding, the "Curie Point" shall be 5°C above the temperature. Where thermistors are installed in the winding "hot spot", the Curie Point shall be 15°C above the temperature values stated.

The thermistors shall comply with the following:

(a) Only Positive Temperature Co-efficient (PTC) thermistors shall be used.

(b) Thermistors installed in motors connected to supply voltages up to 600 V shall be flash tested at 2 kV r.m.s. Additional insulation shall be provided on higher voltage machines.

(c) A varnished Terylene or glass fibre sleeve shall be fitted around those parts of the thermistor leads, which are embedded in the winding for mechanical protection of the leads. Care shall be taken that the sleeve does not cover the thermistor bead.

(d) The thermistor shall be inserted in the winding in such a way to ensure best thermal contact with the adjacent conductors of the winding.

(e) All leads from thermistors to the protection control units shall be twisted pairs to minimise stray voltage pick-up. Screened cables shall be used where the control units are far from the motor.

(f) All the thermistors acting on one control unit shall be connected in series.

Where thermistors are installed it is essential that relay panels be safeguarded against high voltages in case of a short circuit between sensor and motor windings. Isolation transformers are recommended for this purpose.

23.7. MOTOR CONSTRUCTION

The housing, end-shields and feet of totally enclosed surface-cooled motors shall be of cast iron to BS 1452. Standard protected, internally cooled motors may be of welded steel construction. A condensation hole shall be provided at the lowest point in the motor frame.

It is essential that the correct mounting type is selected for each application.

Motor terminals shall be clearly marked, U, V, W or U1, V1, W1 and U2, V2, W2. An earth terminal shall be provided at a convenient position on the motor frame. Vulcanised rubber insulation shall not be used for the connection from windings to the terminals.

When viewed from the drive shaft end, the motor rotor shall rotate in a clockwise direction when the R-W-B supply leads are connected to the U-V-W motor terminals.

All terminals shall be totally enclosed in a waterproof box sealed with gaskets and shall be complete with nuts, locknuts, lugs, etc. Cable boxes for PILCA cables shall be complete with tinned brass wiping gland and armour clamps. PVC cables shall be terminated using compression glands with shroud. Cables shall be provided with a means of support to remove the weight of the cable from the gland. All terminal boxes shall be large enough to ensure proper termination of the cables and connection of cores without exceeding the allowable bending radius. All terminal boxes shall be capable of being rotated through 360°. Where condensation may form on motor terminals, e.g. certain centrifugal refrigeration compressors, terminal boxes shall be hermetically sealed and filled with silica gel.

Motors shall as far as possible have pre-lubricated and sealed ball or roller bearings. Unsealed bearings shall be loaded conservatively in order that the grease need not be renewed at intervals of less than one year. Bearings shall be suitable for flat or V-belts drives where these are indicated without the use of outrider support bearings. Belt pulleys and couplings shall be balanced.

Bearings shall be protected against possible shaft eddy current and shall be suitable to withstand vibrations caused by reciprocating or unbalanced loads.

Anti-condensation heating elements shall be provided in the motor windings for the following motor applications:

(a) Close-couples motors and pumps in chilled water systems.

(b) Standby motors in refrigeration installations where the ambient air surrounding the motor may drop below the dew point.

(c) Pumps installed in damp areas where the pumps will not run continuously.

The heating elements shall be arranged to prevent terminals and exposed connections becoming damp. As an alternative to heating elements, a low voltage transformer (approx. 50V) can be switched into the circuit when the motor is stationary to provide a continuous circulating current in the motor windings.

Where requested copies of type test certificates for routine and performance tests in accordance with SANS 1804, BS 2613 or BS 170 shall be submitted before delivery of the motors. In additions the Manufacturer's guarantee that the motor will comply with the duty as described in this specification, shall be submitted. Curves of Torque/Speed and Current/Speed shall be provided on request.

The client reserves the right to witness all routine or performance tests and shall be notified in writing 14 days before the commencement of such tests.

Motors that have become damp shall be dried out before connection to the supply. Damaged motors resulting from non-compliance with this requirement, shall be rectified by the Contractor at his cost.

23.8. STAR-DELTA STARTERS

(a) All star-delta starters including resistors where applicable shall be rated for 15 starts per hour unless automatic time delays are incorporated which will prevent more frequent starts than the starter rating allows. In no case however, shall ratings be less than 3 consecutive starts per hour. Starters for plugging duty shall be rated at 40 starts per hour.

(b) The timers for open transition star-delta starters, shall be a break-before-make, snap acting type with a distinct time delay before make, of sufficient length to quench the arc on the star contactor but short enough to prevent magnetic flux decay in the motor with consequent high transients.

(c) All star-delta starters shall be electrically interlocked via N/C contacts on the contactors.

(d) The timing and control circuit for closed transition star-delta starters, shall be designed to employ only one timer to initiate the star-to-delta changeover. The closed transition switching shall be inherent in the arrangement of the auxiliary contact operation. A "policeman" timer to protect the transition resistance may be added.

(e) An overall "policeman" timer shall be provided on all closed transition star-delta starters in addition to the star-delta changeover timer to disconnect the load if the total allowable starting time is exceeded. The make and principle of operation, e.g. electronic vs. electro-mechanical, shall be different from the star-delta timer. On 2-wire control systems the "policeman" timer must lock out and shall be manually reset in order to prevent recycling.

24. CONTROL EQUIPMENT

24.1. GENERAL

The equipment offered must meet the following minimum specified standards. The Trade names only mention the name of a product, which will be acceptable if it is installed. Tenderers can offer another product to the product mentioned in the specification, if it is of similar or improved type and quality and if it has been accepted by the Engineer in writing.

All equipment shall operate from a 24 V supply.

24.2. CONTROLLERS

24.2.1. The controllers shall be of the microprocessor based programmable controllers with a fixed operating system.

24.2.2. Each controller shall be composed of the following:

a) Analog input ports

b) Digital input ports

c) Control modules for P, PI, PID and digital control

d) Numerical calculation modules

e) Logic calculation modules

f) Analog output ports

g) Digital (on/off) output ports

h) Dedicated service module socket

i) Updating of readings twice per second

24.2.3. Configuration of the controller shall be carried out in the following ways:

(a) Using a hand held service module.

(b) Using a personal computer with graphic configuration software.

(c) Down loading of a previous up-loaded configuration from a PC or service module.
24.2.4 Each controller shall display the following on an alpha numeric panel with keypads:-

(a) Temperature in °C.

(b) Relative humidity in % RH.

(c) Pressure in Pa.

24.2.4. The controllers shall be used to read temperature, pressure and relative humidity and to adjust valve and damper actuators proportionally. It shall also be used to reset supply air temperature set points in relation to outside air temperature.

The controller shall be designed to be DIN rail mounted into a standard electrical panel with the face of the controller protruding through the panel front cover. The controller housing shall be manufactured from polycarbonate, blended with ABS.

The controller offered shall be engineered to be used as a stand-alone controller, but must incorporate technology to be connected and to communicate to a supervisory control system through a high speed (RS 485) serial communication bus.

24.3. PRESSURE DIFFERENTIAL SWITCHES

Pressure differential switches shall be used as digital inputs to the control system to give dirty filter alarms and fan run stop indication. The switches shall be used to interlock the control system with fan operation, thus ensuring that humidifiers and steam heaters are not activated if the fan is not in operation. The switch point shall be adjustable to suit the specific requirement. In general the following shall apply:

(a)	Pressure differential over roll filter	:	150 Pa
(b)	Pressure differential over bag filter	:	250 Pa

(c) Pressure differential over hepa filter : 300 Pa

(d) Pressure differential in supply air and return air ducts : 100 Pa

The pressure differential switches must be designed to operate in an environment where the duct pressure can increase to 1500 Pa. The pressure differential switches shall be connected with appropriated PVC tubes, which will be connected on a static pressure probe, which will be mounted on the duct. The pressure probe shall consist of a 50 x 50mm galvanised plate, with a copper tube protruding through it. The plate shall be pop riveted to the duct with the probe protruding into the duct. All piping shall be neatly attached to the duct.

24.4. PRESSURE TRANSMITTERS

Pressure transmitters shall accurately measure low differential pressures and shall convert the measurement into a standard proportional 0-10 Volt signal.

The transmitters shall have the following features:

(a) Low zero drift time.
(b) Low sensitivity to ambient temperature change.

(c) Low hystresis.

(d) Good over rangeability.

(e) High accuracy.

(f) Splash proof dust type case.

The pressure transmitters shall be required to measure duct static pressure in low pressure duct systems and shall have a measuring range from 0-600 Pa. It shall be designed to operate in an environment where the duct pressure can increase to 500 Pa.

24.5. TEMPERATURE TRANSMITTERS

24.5.1. General

24.5.1.1. Accuracy

(a) Duct, emersion, strap-on and outdoor sensors : 1% accuracy

(b) Return air sensors : 1,2% from +10 to + 30°C
and 3,5% from to +10°C and from 30°C to +40°C

24.5.1.2. Protection

Minimum protection to be IP 54

24.5.1.3. Ambient Operating Limits

Temperature	:	0 to +50°C
Humidity	:	10 to 90% rh

24.5.2. Emersion or Duct Mounted Type

24.5.3. The temperature transmitters shall provide active sensing of air or water temperature and shall produce a 0-10 Volt DC signal, directly proportional to the sensed temperature. The transmitters shall be used to provide an analogue input to the plant controllers. The temperature transmitters shall use a positive temperature compensation, silicon sensor and shall be available in the following modules:

(a) Emersion/duct mounting.

(b) Return air mounting.

(c) Outdoor mounting.

(d) Strap-on mounting.

24.5.4. The temperature ranges of the various transmitters shall be as follows:

(a)	Chilled water	:	0° to + 40°C
(b)	Cold duct supply	:	0° to 40°C
(c)	Hot duct supply	:	20° to +120°C
(d)	Outdoor air	:	-20° to +40°C
(e)	All other applications	:	0° to +40°C

24.5.3. **Room Type**

The room type temperature transmitter shall be to the type described for the duct mounted type, with the exception that the control components shall be accommodated in a neatly designed and attractive housing with sufficient openings for room air circulation over the temperature sensing element. The room sensors shall not be equipped with an adjustment facility, or with temperature indication. Room sensors shall be designed for installation on a 50 x 50mm existing electrical box. The temperature range shall be 0°C to +40°C.

25. WELDING

Welding shall be carried out in accordance with the current edition of SANS 10044 Parts I to VII where applicable.

All welded filler of butt joints shall be free from porosity, cavities and entrapped slag. Joints shall be ground smooth, if required for aesthetic reasons only, without effecting weld strength.

The joints in the weld run, where welding has been recommended, shall be as smooth as possible and shall show no pronounced hump or crater in the weld surface.

The profile of the weld shall be uniform, of approximately equal leg length and free from overlap at the toe of the weld. Unless otherwise specified the surface shall be either flat or slightly convex in the case of filler welds and with reinforcement of not more than 3mm in the case of butt welds.

The weld face shall be uniform in appearance throughout its length.

Filler metal electrodes shall be of an approved type for the material being used and shall be kept in a dry condition. All electrodes shall conform to SANS 455.

Only welders in possession of a valid approved competence certificate shall be employed.

All welds must show proper fusion. Unless otherwise specified in the technical specification, the contractor shall allow for the removal and testing by an approved body of 5% of the welded joints in the system. These will be removed at random as indicated by the Engineer and tested. Should faulty welding be discovered, all other joints shall be X-ray tested by the SANS or an approved body, all at the expense of the Contractor. The expenses involved in the testing of joints shall be included in the tender form.

ALTERATIONS TO THE DEPARTMENT OF TRANSPORT BUILDING

MECHANICAL INSTALLATION

PART 2: PROJECT SPECIFICATION

C O N T E N T S

ALTERATIONS TO THE DEPARTMENT OF TRANSPORT BUILDING

MECHANICAL INSTALLATION

PART 2: PROJECT SPECIFICATION

1. GENERAL REQUIREMENTS

This installation shall be suitable in all respects for operation under the atmospheric conditions and electricity supply as outlined in the schedules. The onus is on the tenderer to ascertain any other local conditions or peculiarities which might affect the working of the plant, and no allowance in price or standards of materials or workmanship will be made for any ignorance on the part of the tenderer in this respect. This applies to the nature and construction of the building, details of which can be obtained from the Architects.

All materials and workmanship supplied under this contract shall be of the highest quality. Installation work shall be done in accordance with the best modern engineering practice, and where installations are required for medical and/or advanced research proposes, reliability and accuracy in operation are the major requirements. The Engineer shall have the right to reject and demand satisfactory replacement at the Contractor's cost, or any part of it, which is his opinion, does not conform to the highest standards of material and workmanship. The installation shall be required to run for long continuous periods, and it is essential that all installations shall be capable of operating continuously and satisfactorily over such periods.

2. VISIT TO SITE

Tenderers must acquaint themselves with local site conditions such as access area available on site, type of ground, space available for on-site fabrication, storage, transport, loading and unloading facilities, scaffolding, tackles and tools needed, as no claims by the Contractor, which may arise from ignorance of the site conditions, will not be considered.

3. SCOPE OF THE WORKS

This contract shall cover the supply, delivery, installation, commissioning, testing and handover of a new air-conditioning and ventilation plant at University of Kwa-Zulu Natal, Durban.

a) The entire Ground story Offices shall be equipped with a heat recovery variable refrigerant flow air-conditioning system with remote condensers, associated inter-connecting piping and indoor units.
b) Heat recovery ventilation system to offices and store, with ducting, terminals and ventilation unit(s).
c) Extraction system to the toilets and kitchen.

4. PROGRAMMING AND GUARANTEE

Programming

After the contract has been awarded, the Contractor will immediately produce a programme of execution and will be held to that programme until the plant is completed.

Guarantee

The 12 months guarantee period will only commence after the entire plant is completed and first delivery/ practical completion has been taken.

5. MATERIAL AND WORKMANSHIP

5.1. The contract works shall be executed in accordance with the specified standards and level of workmanship, to the satisfaction of the Engineer.

5.2. All materials shall be of the quality specified and the Contractor shall, upon request of the Engineer, furnish him with proof to his satisfaction that the materials are of the specified quality.

5.3. All materials and equipment used for the installations shall be new and undamaged.

5.4. The Contractor shall, if requested by the engineer, provide samples of material and equipment for approval. If judged necessary by the Engineer, such samples, may only be returned after the completion of the installation, in order to ensure that the quality of the installed product is the same as that of the approved sample.

6. REFERENCE SPECIFICATIONS AND STANDARDS

6.1. The latest revision of any Specification referred to in this specification, will be applicable.

6.2. Where a specification or standard is not specifically referred to, it will be assumed that the relevant SABS, ISO, BSS, DIN or equivalent American standard, listed in order of preference will apply.

6.3. The SI ("Le Systeme International d' Unites") – Metric System of Units will apply. Refer to SANS – M33A: The International Metric System: Guide to the use of the SI in South Africa.

6.4. The entire new installation shall be carried out in accordance with:

6.4.1. The Application of the National Building Regulations SANS 10400 (including all SANS addenda).

6.4.2. The South African Bureau of Standards Code of Practice fo wiring of Premises SANS 10142.

6.4.3. The Occupational Health and Safety Act No 85 of 1993.

6.4.4. The Standard Specification for the Air-conditioning and Ventilation Services for the Provincial Administration of the Republic of South Africa, as amended, issued by the Chief Director: Work of KwaZulu Natal Provincial Administration.

6.4.5. Refrigeration Systems including Plants associated with Air-conditioning Systems SANS 10147.

6.4.6. The installation testing and balancing of Air-Conditioning Ductwork SANS 10173.

6.4.7. Air-conditioning Ductwork SANS 1238.

6.4.8. Filters for use in Air-conditioning and General Ventilation SANS 1424.

6.4.9. The General Electrical Specification for the Provincial Administration of the Republic of South Africa Part 2E.

6.4.10. The Municipal by laws and any special requirements of the Supply Activities of the area or district concerned.

6.4.11. The Municipal Fire Regulations.

6.4.12. Room air-conditioners and heat pump SANS 1125.

6.4.13. Non-ducted air conditioners heat pumps testing and rating performance SANS 5151.

7. DRAWINGS

7.1. ENGINEER'S DRAWINGS

7.1.1. Unless otherwise specified, the Engineer's Tender drawings are not manufacturing drawings and the dimensions given are only sufficient for tendering purposes or to enable the contractor to complete manufacturing drawings. It is the responsibility of the contractor to verify all dimensions.

7.1.2. The Engineer shall make available to and at the request of the contractor any available record drawings of the present installation.

7.2. CONTRACTOR'S DRAWINGS

7.2.1. The contractor will be furnished, on request, with the Engineer's drawings and a complete set of "as built" drawings identified as available in this document.

7.2.2. The contractor shall supply two (2) copies of each detail design drawing for approval. The contractor shall allow the Engineer one (1) week for drawing approval. After a marked-up copy with all the Engineer's comments has been returned, the contractor shall update the original, which shall then be submitted to the Engineer for signature. This will ensure that all prints used for construction will be certified as approved.

7.2.3. Two (2) copies of the certified drawing shall be issued to the Engineer for distribution.

7.2.4. The contractor will be required to produce the following detail design drawings:

(a) Builder's Work Drawings.

(b) Mechanical Drawings

These are all Workshop and Equipment Layout Drawings required for the manufacture and erection of the installations.

(c) Instrumentation Drawings, such as:

Schematic Control Diagrams.
General Arrangement Drawing of Control Board.

(d) Electrical Power Drawings, such as:

General Arrangement Drawing of Switchboard.

Circuit Diagrams and interconnecting diagram giving cable schedules with numbers and sizes corresponding with the circuit diagrams and interconnection diagram.

7.2.5. Unless otherwise specified, cable routes shall be superimposed on the Mechanical Layout Drawings, showing the runs and fixing details.

7.2.6. Any work done by the contractor without an approved signed drawing, will be at the risk of the contractor.

7.2.7. The Contractor shall update all drawings ("record drawings") once the installation has been completed. One (1) set of paper prints and one (1) set of sepia copies shall be supplied to the Engineer as part of the O & M Manual.

7.3. EQUIPMENT DRAWINGS

7.3.1. The contractor shall provide the Engineer with working drawings of all items of equipment, with a detail technical specification of the equipment, for approval, before placing an order for the equipment.

8. OPERATING AND MAINTENANCE MANUAL

8.1. The contractor shall, at his cost, prepare and supply manuals for the successful operation and maintenance of the installation.

8.2. Six weeks prior to the commencement of commissioning, the contractor shall supply a draft of the manual to the Engineer for approval. Two weeks after commissioning, the Contractor shall supply three (3) additional manuals, which have been updated and included all commissioning data and "record" drawings.

8.3. These manuals shall contain the following information:

INDEX OF CONTENTS

SECTION 1: SYSTEM DESCRIPTION

A comprehensive description of the installation.

SECTION 2: OPERATING INSTRUCTIONS

2.1 Starting and stopping instructions.

2.2 Pre-start checks.

2.3 Equipment running checks.

SECTION 3: MECHANICAL EQUIPMENT

The following information shall be provided in full for each item of equipment:

3.1 General information

Description, Make, Model Number, Name and Address of Supplier, Manufacturer, etc.

3.2 Design information

Design Data Sheet containing all design and selection parameters, calculations, selection curves, etc.

3.3 Settings and values recorded during commissioning.

3.4 Manufacturer's Brochures and Pamphlets.

3.5 Maintenance Data and Schedules

The lapse of time between services and the description of the service required of each part, lubrication requirements, etc.

3.6 Schedule of Spares.

9. INSPECTIONS AND TESTING

9.1. INSPECTIONS (PART III, SAACE – 1978)

The Engineer shall have general supervision and direction of the Contract Works. Supervision shall comprise such periodic visits as the Engineer may consider necessary to inspect the Contract Works for conformity with the Contract documentation and to provide clarification and further information as necessary.

The Engineer shall have the power at any time to inspect and examine any part of the Contract Works or any materials intended for use in or on the Contract Works, either on the site or at any factory, workshop or other place where such parts or materials are being constructed or manufactured or at any place where same are lying or from where they are being obtained and the Contractor shall give all such facilities as the Engineer may reasonable require to be given for such inspection and examination.

The Contractor shall not be liable for the cost of inspecting materials at the place of manufacture, construction or storage nor be responsible for any travelling or accommodation costs arising out of the execution of such inspection, etc.

9.2. TESTING

9.2.1. The Contractor shall supply all test equipment, test facilities and everything necessary, at his cost, to perform these tests. The minimum testing and commissioning equipment that is required, is as follows:

1. Pitot tube and manometer.
2. Hot wire anemometer.
3. Crane type manometer for balancing valves.
4. Thermometer for insertion into pipe and duct pockets alongside temperature detectors.
5. Sling psychrometer.
6. Revolution counter suitable for measuring fan and motor shaft rotation.
7. Megger equipment.
8. Clamp on ammeter.
9. Voltmeter.
10. Power factor meter.
11. Ohmmeter suitable for continuity testing.

12. Neon type ON/OFF test lamp.

13. Maximum indicating ammeter suitable for measuring peak motor starting currents.

14. Vacuum pump.

15. Thermo couple – electronic or calibrated micrometer gauge.

9.2.2. The contractor shall record all measurements taken during testing and shall do the necessary adjustments until the Engineer is satisfied with the results.

9.2.3. The Engineer shall be notified one (1) week in advance of any tests so that he may witness such tests.

9.2.4. Unless otherwise specified, the contractor will be required to perform the following tests:

Electrical Switchboards

(a) A simulated functional test in the factory to ensure the correct operation of equipment, controls, interlocks and measuring circuits.

(b) A 2,5 kV pressure test in the factory

Ducting

Pressure test medium and high pressure ducting in terms of SANS 10173: Code of Practice for the Installation, Testing and Balancing of the Air Conditioning Ductwork.

Water Piping

Pressure test of all piping at a test pressure of 1,5 times the maximum working pressure at the lowest point in the system, but not less than 700 kPa. All instrumentation or other equipment, which could be damaged during the pressure test, shall be removed from the pipe system. The relevant system shall be filled with water and all high points shall be vented at least 24 hours before the test. The duration of the pressure test shall be 24 hours, after which no water leaks shall be visible and no pressure drop shall occur after corrections have been made for changes in ambient temperature during the test period.

Pressure tests shall be completed in sections, which adhere to the schedule as specified in this specification, prior to insulating or covering piping.

If leaks are found, welded connections shall be cut out and rewelded and screwed joints shall be dismantled, cleaned and reconnected. Rectified piping shall be retested.

Pressure Vessels

Refer to the requirements set out in the Occupational Health and Safety Act of 1993.

Refrigerant Piping

Refrigerant pipes and equipment shall be tested in terms of SANS 10147: Code of Practice for Refrigeration and Air Conditioning Installations.

Prior to the pressure test, equipment which has been factory tested and refrigerant charged, as well as any other equipment which could be damaged or cause personal injury by imposed

pressure test, shall either be isolated or removed from the system. Safety relief valves and rupture discs where not part of factory sealed systems shall also be removed and openings plugged.

Pressure control and excess pressure protection shall also be provided. The pressure test shall be applied in two stages, before any joints are insulated or piping covered. The test gas shall be dry nitrogen.

The first stage shall be at 69 kPa with every joint checked with a thick soap or colour indication solution. The test pressure and ambient temperature is to be recorded to which the system is exposed.

The second stage shall be tested at pressure not less than the lower of the system design operating pressure or the protecting pressure relief device with 10% increments above 690 kPa. The final pressure shall be maintained for 24 hours with the system pressure and ambient temperature recorded. Should any leaks be found, then the joints shall be removed, thoroughly cleaned and re-installed as a new joint. Joints repaired by calking, remelting or back welding shall not be acceptable. After the necessary repairs, the system shall be re-tested.

Following a successful pressure test, each system shall be relieved and evacuated to an absolute pressure 300 micrometers. The ambient temperature is to be higher than 2˚C during a vacuum test. Once the desired vacuum is reached, the vacuum shall be closed and stand for 1 hour. Should the pressure rise over 500 micrometers after 1 hour, the system shall be evacuated down to 300 micrometers and left for 1 hour. The system shall not be charged until a vacuum of at least 500 micrometers is maintained for 1 hour without a vacuum line. Should any leaks occur, they are to be repaired with vacuum procedure redone.

10. COMMISSIONING AND HANDING OVER

10.1. PROCEDURE

10.1.1. Physical Completion

After physical completion of the erection phase of the installations, the Engineer will issue a Defects List certifying that commissioning can proceed. Items which would not influence the commissioning process could, at the discretion of the Engineer, be attended to during commissioning stage.

10.1.2. Commissioning Stage

After commissioning the Engineer will issue a second Defects List (the Commissioning Defects List). Any outstanding work will be recorded on this list.

10.1.3. Engineer's Certificate

After completion of all outstanding items and receipt of all manuals and drawings as recorded on the Commissioning Defects List the Engineer will issue a First Delivery Certificate. This certificate will accompany a certificate of acceptance by the Client's representative.

The one year maintenance and guarantee period will commence on the date of the First Delivery Certificate.

10.2. COMMISSIONING

The Commissioning of the entire installation shall be carried out timeously. The workshop drawings, to be produced by the Contractor, are to be perused and approved, in principal, by the

Contractor's Commissioning Engineer who is to confirm that the installation as indicated can be commissioned.

The commissioning of the installation shall be in terms of the following codes, or any other code approved by the Engineer:

(a) Air Distribution Systems:

SANS 10173: Code of Practice for the Installation, Testing and Balancing of Air Conditioning Ductwork.

(b) Refrigeration Systems:

CIBS: Commissioning Code: Series R: Refrigeration Systems.

(c) Control System:

CIBS: Commissioning Code: Series C: Automatic Controls.

(d) Water Distribution Systems:

CIBS: Commissioning Code: Series W: Water Distribution Systems.

The Contractor shall submit the Commissioning program to the Engineer, at least four (4) weeks prior to the commencement of commissioning.

The power connections to the various installed equipment must be energized to facilitate commissioning of the installation.

To enable this switch-on to take place the installation must be substantially complete.

The Contractor shall inform the Engineer within (4) weeks of his appointment, what time allocation has been allowed for commissioning purposes. This must be reflected on the Critical Path Schedule to be submitted by the Contractor.

10.3. TRAINING AND MAINTENANCE

The Contractor shall provide a suitably qualified and trained person to train the Employer's staff in the correct operation and maintenance of the installation. The Contractor shall allow for this person to be full time on site as called for in the maintenance contract conditions.

11. MAINTENANCE DURING THE GUARANTEE PERIOD

During the contract and guarantee period, the Contractor shall be fully responsible for complete maintenance of the installation as specified in the included maintenance contract. Whilst the guarantee period on material, equipment and labour performed commences on the date when the Engineers Certificate and the Clients Certificate of Acceptance is issued and expires one calender year later.

Maintenance of the installation shall mean the regular servicing, lubrication, repairing, cleaning and adjustment of the installation as per the included specification, as well as the free of charge replacement of any defective components of the new installed equipment during the guarantee period.

12. STATUTORY AND REGULATORY REQUIREMENTS

The installations shall be designed, erected, commissioned and maintained in compliance with the following appropriate regulations as specified in the Standard Technical Specification.

In addition, the contractor shall exempt the Employer from all losses, costs or expenditures which may arise as a result of the Contractor's negligence to comply with the requirements of the regulations enumerated in this Clause.

It shall be assumed that the Contractor is conversant with the abovementioned requirements. Should any requirement, by-law or regulation, which contradicts the requirements of this Document, apply or become applicable during erection of the installation, such requirements, bye-law or regulation shall overrule this document and the contractor shall immediately inform the Engineer of such a contradiction.

Under the circumstances shall the Contractor carry out any variations to the installations in terms of such contradictions without obtaining the written permission to do so from the Engineer.

13. ARRANGEMENTS WITH THE SUPPLY AUTHORITY

It shall be the responsibility of the Contractor to make the necessary arrangements at his own cost with any Statutory Authority and to supply the labour, equipment and means to inspect, test, commission and to hand over the installation.

The Contractor shall supply and install all notices and warning signs that are required by the appropriate laws or regulations and/or by these documents.

14. DESIGN PARAMETERS

The following design parameters shall apply:

Ambient Conditions

Altitude		:	792m
Barometric Pressure		:	101.3 kPa
Summer	DB	:	35°C
	WB	:	23,6°C
Winter	DB	:	5°C
	WB	:	4°C
Ambient Condensing Temperature		:	35°C

Indoor Conditions

14.1.

Summer Inside	DB	:	22.5°C ± 1°C
Winter Inside	DB	:	20.0°C ± 1°C

15. AVAILABLE SERVICES

Details of available services on site:

Electrical Supply

400 V/230 V	:	± 5%
Steam Supply	:	N/A

Municipal Water Supply

Available pressure	:	600 kPa, ± 200 kPa

16. NOISE AND VIBRATION CONTROL

The Contractor shall be responsible for maintaining noise and vibration transmission from his equipment to the building structure and adjacent rooms within the limits suggested in the SANS "Code of Practice for the Rating of Noise for Speech Communication and with the respect to Annoyance, Code Number 10103 - 1994.

In order to attain the noise levels specified below, the Contractor shall provide the necessary spring type vibration mountings under all rotating equipment, flexible pump piping connections, etc.

All noise and vibration control equipment must be clearly shown on the Contractor's drawings which are to be submitted for approval.

Noise levels specified below may be amended in the supplementary specification if a specific part of the contract works so requires. This shall not however relieve the Contractor of the responsibility of meeting the requirements of the above clauses as far as the remainder of the contract work is concerned.

The following table is an excerpt from the abovementioned SANS code.

Type of indoor space	Intruding noise level dB(A), max
Hospital ward, theatre, church, cinema, concert hall, small office, reading room, conference room, lecture room	25 - 35
Large office, business store, department store, meeting room, small quiet restaurant	35
Large restaurant, secretarial office (with typewriter), gymnasium	45
Large typing halls	55
Workshop (according to intended use)	45 - 75

Noise generating equipment such as fans, compressors, pumps, motors etc. shall be selected to operate as close to the point of maximum efficiency as possible. It is the responsibility of the Tenderer to check operating noise levels of the equipment before tendering. Tenderers offering equipment with low noise ratings may receive preference.

Tenderers are advised to calculate sound levels on the system offered before tendering. Where it is not possible to meet the specified sound levels due to the noise generated by the equipment, or due to inadequacies in the building structure, or the design of the plant, such deficiencies shall be stated in the tender together with the Tenderer's recommendations and cost implications.

The Contractor shall submit noise estimating sheets for all systems as well the insertion loss ratings of sound attenuators for approval before ordering. Failure to do so may result in additional costs to the Contractor if noise levels in any area should exceed the specified limits.

If the noise levels exceed the values specified above, the Contractor shall be responsible to carry out all the necessary rectifications at his own expense.

17. CODING, LABELLING AND NOTICES

17.1. GENERAL

The Contractor shall supply and install all coding, labelling and notices as required under this Clause.

The wording shall be in English.

To reduce the possibility of incorrect labels and/or notices, the Contractor shall submit a schedule of labels and notices to the principal agent for approval. Costs to rectify inscriptions, resulting from the failure by the Contractor to obtain approval, will be for his account.

17.2. CODING

17.2.1. General

Codes and numbers for wiring shall be CRITCHLEY IZ-type, or other approved, Cable Marker interlocking endless expanding markers, as supplied by CABLE ACCESSORIES (PTY) LTD. CRITCHLEY C-type, or other approved, Cable Markers shall only be used with the approval of the Engineer where wires and piping have already been terminated.

Lettering shall be marked in black on a white background.

17.2.2. Electrical

Provide and install the following coding:

(a) Numbering of both ends of power and control conductors in switchboards.

(b) Numbering of both ends of field cables.

(c) Numbering of both ends of individual field conductors within cables of control circuits only, where such conductors are not uniquely identified by means of insulation colour codes.

17.3. LABELLING

17.3.1. General

Labelling shall be CRITCHLEY UNILABEL, or other approved, Cable Marker, as supplied by CABLE ACCESSORIES, or engraved "IVORENE" or "TRAFOLITE" labels.

Black letters on a white background shall be used.

Labels shall be fixed with screws or acceptably glued to all equipment.

17.3.2. Equipment

All mechanical, electrical and instrumentation equipment shall be identified by means of an equipment code.

Minimum height of letters: 10mm.

17.4. NOTICES

17.4.1. Supply and install all notices required in terms of Statutory Regulations.
17.4.2. In terms of the Occupational Health and Safety Act, Act 85 of 1993, the following notices are required:

(C.52)
At the entrance to each plantroom, the following notice shall be provided:

(a) Prohibiting unauthorized persons from entering.

(b) Prohibiting unauthorized persons from handling or interfering with electrical apparatus.

(c) Directions as to procedure in case of fire.

(d) Directions as to restoration of persons suffering from the effects of electrical shock.

(C.73)
Manufacturer's Plate on Pressure Vessels:

(a) Manufacturer's name.

(b) Country of Origin.

(c) Maker's Number.

(d) Year of Construction.

(e) Maximum permissible working pressure in Pascal.

(f) Capacity in cubic metres

(g) Name and Number of Code of Manufacture.

18. PAINTING AND MARKING

18.1. GENERAL

All steelwork, piping, lagging, etc. supplied under this contract shall be painted as required under this clause:

Exposed portions of boilers, calorifiers, cylinders, etc. in the plant room shall be properly cleaned, primed and painted two coats of heat resistant paint.

All other exposed metal parts such as pumps, belt guards, all piping, pipe lagging, fittings, dampers, fans, coils, motors, pumps, packaged units, control panels, steelwork, exposed ducts and lagging, expansion tanks, make-up tanks, cooling tower, unit shelters, etc. shall be cleaned, primed, undercoated and finished in a high quality gloss paint of approved colour.

All external equipment exposed to the weather must be cleaned, primed and painted with two coats of epoxy paint.

The lagged surface of calorifier, headers and pipes shall be primed, undercoated and finished in a high quality gross of approved colour. Unlagged steam piping shall be painted with heat resistant paint.

All plants shall be generally painted in accordance with SANS 10140 as indicated below.

Machinery, Structural steelwork etc

1.	All exposed metal parts Checker plates, Pipe supports Handrails, Base plates	:	Black
2.	Body portions of machines	:	Olive Green
3.	All machinery external to the building (except piping and valves and fittings)	:	Dove Grey
4.	All moving parts which are visible when operating. In-side surfaces of all machine guards, belt guards etc.	:	Orange
5.	All handles, levers, handwheel		

	centres adjustment knobs, etc.	:	Yellow
6.	All lagging on boilers, calo-rifiers, tanks, cylinders etc. except on piping and pump sets and ducting)	:	Aluminium
7.	Electrical distribution boards (except where transparent covers are used)	:	Light Grey
	Control panels Indicator panels		
8.	Water treatment plant (except on piping.		
	Air Conditioning plant (except on piping.	:	Light Blue
9.	All points which constitute a physical hazard, e.g. (stay-wires, low pipes, access doorways, etc.)	:	Yellow and Black Cross Hatch
10.	Drainage piping	:	Black

18.2. PIPING, PUMPS, VALVES, FITTINGS ETC.

18.2.1. The colour code for pipelines and machines is based on the following:

(1)	SANS, 10140-3	:	Identification colour marking; Contents of Pipelines
(2)	BS 1710-1975	:	Identification of pipelines

18.2.2. All unlagged black piping, holderbolts, supports anchors fittings, etc. shall be painted in accordance with British Standard Specification No. BS 1710.

18.2.3. In enclosed horizontal or vertical ducts, surfaces, mezzanine spaces and basements where pipelines are already painted or galvanised or are lagged, painting may be restricted to 150 mm long lengths at a maximum spacing of 4 m, and at all branches, tees, valves, and at the entry from such ducts, spaces, etc.

18.2.4. Except where otherwise specified all piping on surfaces shall be painted with a primer, an undercoat and a finishing coat in an approved high quality gloss paint. to the colour indicated in the schedule. This also applies to all holderbolts, supports, anchors, fittings and valves. Where only 150 mm lengths of the pipe are painted the colour and specification of the painting shall be in terms of this clause.

18.2.5. Pump sets, valves, fittings, etc. shall be painted the same basic colour as the pipelines, except those of fire fighting services, which shall be painted red.

18.2.6. **Bands**

The length of the band shall be same as the final pipe diameter, but not less than 100 mm. Where three strips are required per band, each strip shall be one third of the final pipe

diameter but not less than 35 mm. Where 150 mm lengths alone are colour painted, the 50 mm band shall be centrally placed on the 150 mm length.

18.3. ARROWS

The direction of flow shall be indicated with a 25 x 100 mm long black arrow at intervals of approximately 4 m and at valves and junctions. Flow lines shall be marked with an F and return lines with an R at each arrow.

18.4. SERVICE OUTLETS

Where outlets require identification the colour identification shall take the form of coloured centre pieces on handwheels or cocks, and/or other suitable approved marking on the neck of the outlet fittings as specified. The colour shall primarily be that of the pipe colour and where banding is used, the colour shall be that of the band and stroke.

18.5. RADIATORS AND PIPES IN FINISHED AREAS

All radiators, pipes, fittings etc. in finished areas such as wards, offices, passages, etc. shall be cleaned, primed, undercoated and finished in a high gloss paint to match the existing finish.

18.6. IDENTIFICATION COLOURS

Basic Pipe Colour	Banding Colour	
Cold water supply (drinking water)	Brilliant green	Cornflower
Condenser water	Brilliant green	White
Boiler feed water	Brilliant green	Crimson/white/Crimson
Boiler condensate lines	Brilliant green	Crimson/Emerald Green/ Crimson
Chilled water lines	Brilliant green	White/Emerald Green/ White
Domestic hot water	Brilliant green	Crimson/Cornflower
Fire fighting mains	Signal red	
Central heating hot water	Brilliant green	White/Yellow/White
Steam	Pastel grey	
Gas (except air and medical gas)	Light stone	
18.6.1. Compressed air		Artic blue
Ducts and conduits for electric services	Light orange	

Diesel	Golden brown	White
Acids and alkalis	Jacaranda	

18.7. IDENTIFICATION COLOUR CODES

Colour name	Colour classification no.
Artic blue	F28
Brilliant green	D10
Cornflower	F29
Crimson	A03
Emerald green	A14
Golden Brown	B13
Jacaranda	F18
Light stone	C37
Light orange	B26
Pastel grey	G54
Signal red	A11

18.8. COLOUR CODING FOR DUCTWORK

All ducting in plantrooms is to be colour coded according to the schedule below. If the duct is internally lined, then the whole duct surface shall be painted in accordance with the schedule blow. If the duct is externally lined with insulation, then the ducting must be painted with a symbol to the relevant colours. The form of these symbols are to be as follows:

(a) In order to make the colour clearly visible it may be necessary to paint the symbol colour onto a neutral colour background. This background colour is to be agreed upon by the Consulting Engineer.

(b) The colour symbols are to be 150 mm wide band, running around the duct. The background colour is to extend 300 mm on either side of the colour symbol strip.

(c) In the case of conditioned air where the colour symbol is both red and blue, one colour strip is to be used (150 mm wide) but the two colours shall alternate each being 200 mm long.

Duct/Air type	Colour	Colour No.
Ventilation Air Supply	Blue with Yellow Band	F11 and C61
Exhaust Air	Brown	B07

Reticulated air	Grey	G25
Outside air	Green	P14
Hot deck (on dual duct)	Blue with Red Band	F11 and A14
Cold deck (on dual duct)	Blue with Dark Blue Band	F11 and F02

The colours as defined as above are according to SANS 10173-1980

19. VRF AIR CONDITIONING SYSTEM

19.1. DESCRIPTION

Supply, deliver, install, commission, test and handover one variable refrigerant volume (VRF) multi-split air conditioning plants of the LG Multi V Heat Recovery or any other **equal** approved type. The plant shall be of the heat recovery type and utilize a three pipe system.

19.2. VRF COMPRESSOR CONDENSING UNITS

19.2.1. General

Each unit shall be able to service as the lead/main unit, but normally the largest unit shall be set as the primary lead unit. Each unit shall contain variable compressor drive scroll compressors and condenser sections.

The unit shall be a factory assembled unit housed in a sturdy weatherproof casing constructed from rust-proofed mild steel panels coated with a baked enamel finish.

The compressor shall be equipped with inverter controller capable of changing the rotating speed to follow variations in cooling and heating load.
The noise level of the outdoor unit shall not be more than 63 dB(A) at normal operation measured horizontally 1m away and 1m above ground.

The unit shall be modular in design, where applicable.

The contractor shall further install a 20 x 15 mm industrial wire mesh screen over the condenser coils to protect the coils from hail damage.

19.2.2. Compressors

Compressors shall be of the hermetic scroll type equipped with inverter control capable of changing the speed in accordance to the cooling or heating load requirements.

(a) The inverter shall be of the IGBT (Insulated Gate Bipoler Transistor) type.

(b) The outdoor units shall have at least 20 steps of capacity control to meet load fluctuation and ensure individual control for the indoor units.

(c) The compressors shall be equipped with crankcase heaters.

(d) Should the unit be equipped with more than one compressor then only one of the compressors shall be fitted with an inverter motor.

19.2.3. Heat Exchanger

The heat exchanger shall be constructed with copper tubes mechanically bonded to aluminium fins to form a cross fin coil.

The aluminium fins shall be covered by anti-corrosion resin film.

19.2.4. Refrigerant Circuit

The refrigerant circuit shall include an accumulator, E-bridge heat exchanger to control the liquid level in the receiver, liquid and gas shut-off valves, solenoid valves, filter drier and oil separator. The refrigerant shall be R410A.

All necessary safety devices shall be provided to ensure the safety operation of the system.

19.2.5. **Safety Devices**

The following safety devices shall be part of the outdoor unit:

High pressure switch, fuse, crankcase heater, fusible plug, over current protection for the inverter, thermal overload protection on the compressors and condensing fans, a timer to prevent short-circuiting of the compressor and anti-freeze-up protection.

19.2.6. **Oil Recovery System**

The unit shall be equipped with an oil recovery system to ensure stable operation and maximum oil separation.

Oil equalizing piping shall be installed between the condensing units to equalize oil levels every six (6) minutes and so ensure equal refrigerant distribution.

19.2.7. **Installation**

The condensing units are to be installed on a steel footprint on a concrete plinth in the positions shown on the drawing. If the moving parts of the unit is free of vibration, the units may be placed directly onto the concrete plinths. If however, vibration is transmitted, the units will have to be installed on anti-vibration mountings.

19.2.8. **Capacity**

The cooling capacity of each outdoor unit shall meet the sum of the total cooling capacities of the indoor units of a single zone or the capacity stipulated in the Schedule of Information, whichever is the highest.

* Conditions

Indoor entering wet bulb temperature	:	16°C
Outdoor dry bulb air temperature	:	35°C (Summer); 5°C (Winter)
Altitude	:	0m above MSL
Electrical supply	:	400 V; 50 Hz

19.3. INDOOR UNITS

Indoor units shall be of the concealed ceiling type installed in the positions and according to the capacities shown on the drawings.

Each unit shall have an electronic expansion valve which controls refrigerant flow rate in response to load variations of the room.

The fan shall be of the dual suction multi-blade type and will be statically and dynamically balanced to ensure low noise and vibration free operation.

The address of the indoor unit shall be set automatically in case of individual and group control.

19.3.1. Cassette Units

The cassette units heating shall be by reverse cycle only. The cassette unit shall consist of an evaporator coil, mildew-proof polystyrene condensate drip compartments, supply air fan, fan scroll, fan motor, controls and efficient filter all mounted in an attractive compact casing with a hinged decorative bottom panel.

The unit shall be suspended through an opening in the ceiling from and including four (4) correctly sized hanger rods securely bolted to the unit's hanger brackets. Where specified, the unit shall be fitted with a condensate drain pump capable of raising the condensate 550mm above the level of the drain connection.

The unit shall be fitted with a single, silent running, diffuser type turbo fan. The fan blades shall be of dynamically balanced aluminium or other non-ferrous metal manufacture, mounted on a central shaft and driven by a continuously rated two-speed electric motor, resiliently mounted on a suitable cradle. The fan motor is to be fitted with self-aligning sealed bearings.

The fan motor shall be of the single phase, permanent split capacitor type with built-in re-settable overload protection. The motor shall have multi speed windings and shall be factory connected to a terminal box. All wiring is to be marked to correspond with labeled terminals matching the motor wiring diagram.

The supply air louvres shall be of the auto-swing type with remote pre-set and automated vertical airflow direction control.

Air shall be supplied from the bottom of the unit and returned through a bottom mounted hinged grille. The unit shall be adjustable for four-way, three-way and two-way air discharge. Provision shall be made for one or two branch ducts to be connected to the unit as standard accessories. Provision shall also be made for a fresh air duct to be connected to the unit as a standard accessory.

The evaporator coil shall consist of a multi-pass coil of heavy gauge, solid drawn copper tubing mechanically expanded into aluminium cooling fins. The coil shall be provided with an automatic defrost thermostat to prevent excessive frosting.

The evaporator coil shall be completely sealed off to ensure that maximum supply air flows over the coil.

The air filter shall be of the easily accessible and removable mould resistant resin net type, washable with mild detergent. The filter media shall be arranged so that no air bypasses the filter at the edges.

The unit shall be efficient and extremely quiet in operation and the noise level shall not exceed 36 dB's on the "A" scale at a distance of three meters from the unit.

The units shall be self contained and set to deliver air that is filtered and cooled, or filtered and heated as may be required. The units shall be suitable for a single phase, 220V, 50 Hz, AC power supply.

19.3.2. Heat Recovery Boxes

The units shall be installed in the ceiling space in the positions shown on the drawings and suspended from the roof/ ceiling slab structure above. Each unit shall be able to supply cooling or heating to indoor units in a group or zone as indicated on the drawings. Each unit shall be factory assembled in sturdy galvanized sheet metal panels and insulated with a flame and heat resistant foamed polyethalene sound absorbing material.

Each unit shall be equipped with a filter, solenoid valves, check valves, three way valves, capillary tubes, including flared pipe connections and all safety devices and accessories for the sufficient operation of the VRF air conditioning system.

19.4. PIPING INSTALLATION

The pipe routes shown on the drawings are generally diagrammatic. The runs and arrangements of piping shall be as indicated, subject to modifications as required to suit conditions at the building, to avoid interference with work of other services and for proper convenient and accessible location of all parts of the piping system. All required offsets, fittings, valves, traps, drains, etc. may not be indicated but allowance must be made in tenders for all such necessary items to be furnished.

Piping shall be installed as straight and direct as possible, neatly spaced and in general forming right angles with, or parallel to walls or other piping.

The pipe sizes shall be installed by the contractor for the sizes of units offered in accordance with the manufacturer's specifications. Any discrepancy between this specification and the manufacturer's specification is to be brought under the attention of the Engineer.

The piping network shall be connected using "Y Branch" joints complete with the necessary reducers with the matching insulation as supplied by "LG" or other approved.

Suction and liquid pipes are to be insulated separately and not grouped together as for a single line. "Thermoflex" or other approved pipe insulation as per Clause 20.7 shall be used.

All piping shall be run so to avoid passing through ductwork, recessed light fixtures or interference with electric light outlets.

Where piping protrudes through building structures, pipe sleeves are to be installed, as part of the contract, to ensure easy removal thereof. No pipes may be built or plastered directly into the structure.

The contractor shall be responsible for the drilling of the holes and making good on the outside of the building to the plaster and paint.

Pipe sleeves must be of similar material as the pipe and must be large enough to allow enough free space for movement.

Where specified and where the opening between the sleeve and pipe is large and unsightly, blank cover plates must be installed.

Sleeves through outside walls, slabs and piping through roofs and windows must be sealed off watertight.

All sleeves must be installed neatly and made watertight. The opening between the pipe and sleeve must be sealed off by means of silicon rubber or any other approved product.

Where piping is installed through ceilings approved blank cover plates must be used to ensure a neat finish.

Where pipes run in areas exposed to sunlight (between outdoor units and the building), they will be installed inside suitably sized galvanized mild steel trunking.

Inside the building (ceiling voids) piping shall be installed on galvanized cable baskets wide enough to accommodate both pipes and the drain piping. Piping may be strapped to cable trays with cable ties.

Piping shall be installed strictly in accordance with the manufacturer's requirements. Pipe sizes are indicated on the drawings.

20. Piping Diagrams

Pipes marked with * in the diagrams must be connected to the device with a reducing joint.

20.1. REFRIGERANT PIPING

All piping and fittings shall be of the best quality seamless, dehydrated, de-oxidised refrigeration class copper tubing, suitably sized for the unit installed and in accordance with SANS 460 as amended.

All refrigerant piping shall be "Maksal" Type RL hard drawn refrigeration copper tubing in accordance with ASTM B280-88.

Only jointing by means of capillary fittings will be allowed except in cases where equipment needs to be removed from the piping system for regular maintenance or replacement. In such cases joints between the equipment and piping shall be with DZR brass compression fittings.

Capillary type fittings shall comply with SANS 1067 - Part 2 or any of the related ISO 2016, DIN 2856 and BSS 864 - Part 2 specifications.

Soldering flux shall be used to remove residual traces of oxides, to promote wetting and to protect the surface to be soldered from oxidation during heating.

The flux shall be applied to clean surfaces and only enough should be used to lightly coat the areas to be joined and should be applied as soon as possible after cleaning.

21. Only the following solders shall be allowed to be used on capillary joints:-

Composition	Specification
97/3 (97% tin and 3% copper)	SANS 24 – DIN 1707
96/4 (96% tin and 4% silver)	SANS 24 – DIN 1707
75/25 (75% tin and 25% zinc)	

Resin core and acid core solder **shall not be used at all.**

No welding of refrigeration systems will be allowed unless the pipe system is continuously filled and under pressure using nitrous gas.
All soldered joints, on factory supplied equipment, shall be carefully checked before commissioning and remade if found damaged in transit.

Refrigerant piping shall be arranged so that normal inspection and servicing of the compressor and other equipment is not hindered. Locations where copper tubing will be exposed to mechanical damage shall be avoided.

A refrigerant charging connection shall be provided in the liquid line. Before charging the system with refrigerant the circuit shall be leak tested and dehydrated.

All pipes, vessels, etc. operating below ambient dew point shall be insulated and a vapour barrier provided.

An isolating valve shall be installed in both the liquid and gas lines where connected to the evaporator unit. Valves shall be of the bronze body, ball type.

When completed, the installation shall maintain a complete vapour barrier and any signs of sweating or dripping shall cause the installation to be rejected.

All piping shall be rigidly supported, both vertically and horizontally.

Inside the building (ceiling voids) piping shall be installed **on** "Cabstrut" or other approved medium-duty galvanised welded wire mesh cable tray wide enough to accommodate both refrigerant pipes and the drain piping. The mesh pitch shall not exceed 100x50mm with longitudinal side-wall wires spaced at intervals of not more than 25mm.

Outside the building piping shall be installed **on** "Cabstrut PW100" or other approved heavy-duty welded galvanised cable ladder wide enough to accommodate both refrigerant pipes and the drain piping, including galvanised sheet metal covers painted to colour match the walls. Rung spacing shall be at 300mm intervals.

All wire mesh cable trays shall be supported on "Unistrut P2000" or other approved 41x41x1.5mm galvanised channels including galvanised hold down saddles, bolts, nuts, washers and screws. The channel shall be supported from 8mm diameter hanger rods including washers and nuts. Channels to be spaced at intervals not exceeding 1500mm.

All cable ladders shall be supported on "Unistrut P1000" or other approved 41x41x2.5mm galvanised channels including galvanised hold down cup, bolts, nuts, washers and screws. The channel shall be "Rawl" bolted directly to external walls or slabs. Channels to be spaced at intervals not exceeding 1500mm.

All piping shall be secured to cable trays and ladders with "Cabstrut Q-series" or other approved adjustable type galvanised cross rung clamps **only**. Care shall be taken not to pinch, compress or damage the pipe insulation when securing piping to cable trays and ladders. Any damaged insulation shall be completely removed and replaced to the satisfaction of the Engineer.

Strappings and cable ties will not be permitted.

Hangers and supports where piping penetrates through walls shall be designed to prevent transmission of vibration to the building.

Supports must be installed near to joints and fittings. Pipe clamps shall be installed at the following centre to centre distances.

Nominal Pipe Size	Centre to Centre Spacing	
Copper	Horizontal Pipe	Vertical Pipe
12 mm	1.0 m	1.2 m
15 mm	1.2 m	1.5 m
22 mm	1.5 m	1.8 m
28 mm	1.9 m	2.1 m
35 mm	2.1 m	2.4 m
42 mm	2.4 m	2.7 m
54 mm	2.4 m	3.0 m
66 mm	2.4 m	3.0 m
76 mm	2.5 m	3.0 m

Extra support must be supplied at T-offs, valves and other heavy fittings.

21.1. DRAIN PIPING

Provision shall be made for condensate drainage from the inside of the building to the outside of the building by means of uPVC piping of not less than 20mm inside diameter.

Piping shall run above ceilings and vertical down in the positions indicated on the drawings. All piping shall terminate at ground level where it shall be routed to the nearest drain point.

Drain piping shall be installed without any loops in the piping where condensate can accumulate. The pipes shall have a uniform slope (1:100) from the unit to the outside and show be tested in the presence of the Engineer.

All drain piping in ceiling voids **shall be insulated as per Clause 20.7 Drain piping** on external walls shall be copper class O and shall be un-insulated and painted to match the colour of the walls.

21.2. PIPE INSULATION (SANS 1445 & SANS 1508 AS APPLICABLE)

The copper piping installed inside the building shall all be insulated with "Thermaflex" or other approved insulation. Vapour barrier integrity will be critical to prevent dripping. No zip type insulation will be allowed. Liquid and gas lines shall be insulated separately.

The insulation material shall meet the following minimum requirements:

Temperature range	:	-80°C + 120°C
Thermal conductivity	:	0,038 W/m K at 0°C
Thickness	:	15 mm
Density	:	35kg/m^3
Odour Properties	**:**	**Neutral**
Cellular Structure	:	Totally closed
Fire Properties	:	Self-extinguishing

The insulation shall be applied to form a continuous and homogenous vapour barrier over bends, supports, etc. All joints and seams shall be glued. **Non-drip tape shall not be used for assembling seams and joints**.

All fittings and valves shall be wrapped with black non-drip tape.

When completed, the installation shall ensure a complete vapour barrier and any signs of sweating or dripping shall cause the installation to be rejected.

21.3. CONTROLS

21.3.1. **Individual control unit**

The contractor shall supply and install hard-wired remote controllers in the positions indicated on the drawings. All control wiring shall be to the manufacturer's recommendation.

The controller shall perform the following functions:

a) Start/Stop.

b) Temperature setting.

c) Airflow setting.

The controller shall display the following:

a) Operation display.

b) Filter sign.

c) Temperature setting display.

d) Timer display.

e) Airflow display.

f) Abnormal operation display.

The controller shall control all indoor units of one room simultaneously.

22. AIR TERMINALS

The air conditioning Contractor shall supply and install all air terminals in the positions shown and of the capacities and sizes shown on the drawings, or of capacities and sizes to suit the application.

The type and finish of the air terminals must be approved by the Engineer in consultation with the Principal Agent prior to an order being placed.

All grilles shall be manufactured of aluminium with a white powder coat finish unless otherwise specified. Where specified or shown on the drawing, grilles shall be connected to the main duct by way of a flexible duct. The Tenderer shall make provision in his tender for a plenum box to which the flexible duct and grille is to be fitted. The Contractor shall be responsible for the balancing and setting of all dampers so that the specified air quantities are obtained at each air terminal.

22.1. RETURN AIR GRILLES

Return air grilles installed to ceilings shall be of the fixed horizontal blade type. Each grille shall have a double frame, consisting of an outer frame being the ceiling mounted sub-frame and an inner frame that is hinged and clipped to the outer frame. The grille shall also be equipped with a removable washable filter media. The outer frame shall have a flange that is projected 32mm beyond the inner edge of the mounting frame.

Fixing holes shall be done by the manufacturer at each end to receive oval headed or Phillips screws for attachment to the ceiling. The heads of the screws shall have a similar finish to the grilles.

Return air grilles installed to exposed ducting are of the same type as the supply air grilles where specified.

22.2. SUPPLY AIR DIFFUSERS

Diffusers shall be of the adjustable swirl diffusers constant volume type, suitable for ceiling installation, complete with a low body profile and radial front face plate.

The diffuser shall provide a high induction and radial distribution of air even at minimum air quantities, to ensure efficient air distribution throughout the comfort zone of the room.

22.3. WEATHER LOUVERS

As shown on the drawings ducts shall terminate with a weather louver located outside the building. The weather louvers shall be of the "Trox AWK" or other approved type finished with epoxy colour coated finish to architect's detail.

Weather louvers shall include a blade section and vermin screen with mosquito net, plenum box and duct connection spigot.

22.4. DISC VALVES

All disc valves shall be of the "Trox LVS" or other approved type according to the sizes shown on the drawings. The valves shall consist of a valve ring and central disc fitted with a sealing strip. Airflow adjustment shall be by way of a rotating central disc, which alters the gap between the disc and the valve. The units are to be supplied with a sub-frame for installation purposes.

22.5. DOOR GRILLES

All door grilles to be installed shall be of the "Trox AGS" or other approved type finished to the Architect's requirements. Sizes of the door grilles are shown on the drawings.

21 SOUND ATTENUATORS

The Contractor shall supply and install a silencer in each position shown on the drawings. The silencers shall be factory supplied from an approved manufacturer and shall be selected and installed so that sufficient sound attenuation is obtained to maintain the noise level created by the equipment in all spaces in the building to the specified standards in Clause 16.

Pressure ratings of fans at the specified quantities are to be adjusted by the Contractor to take into account any difference between pressure drop across sound attenuation equipment installed.

Sound attenuators in ductwork after supply air fans shall be designed for an insertion loss large enough to limit the total sound pressure level of the noise at a distance of 1.5 meters directly in front on the first air outlet in the duct system to the noise level specified.

Sound attenuators shall be manufactured by a reputable specialist manufacturer in accordance with published specifications. The units shall generally be manufactured from galvanised mild steel with a woven glass cloth acoustic media retained behind a galvanised wire mesh. The acoustic media shall have a Class 1 fire rating to BS 476. The unit shall be compatible with the fan diameter and at least twice its length.

The Contractor shall submit noise estimating sheets for all systems as well as the insertion loss ratings of sound attenuators for approval before ordering. Failure to do so may result in additional costs to the Contractor if noise levels in any area should exceed the specified limits.

23. SUPPLY AND EXHAUST FANS

The toilet extract system shall consist of one Donkin, Vortice Lineo axial flow fan or other approved.
Duct mounted tube fans of the capacities indicated shall be supplied and installed in multiple toilet facilities where shown on the drawings.

The sound attenuators shall be factory supplied from an approved manufacturer and shall be selected and installed so that sufficient sound attenuation is obtained to maintain the noise level created by the ventilation equipment in all spaces in the building to below the specified standards.

Noise in plant rooms must not be transmitted to adjacent areas through any supply, return or extract ductwork.

Pressure ratings of fans at the specified quantities are to be adjusted by the Contractor to take into account any difference between pressure drop across sound attenuation equipment installed.

Sound attenuators in ductwork after supply air fans shall be designed for an insertion loss large enough to limit the total sound pressure level of the noise at a distance of 1,5 meters directly in front on the first air outlet in the duct system to the noise level specified.

Sound attenuators shall be manufactured by a reputable specialist manufacturer. The units shall generally be manufactured from galvanised mild steel with a woven glass cloth acoustic media retained behind a galvanised wire mesh. The acoustic media shall have a Class 1 fire rating to BS 476. The unit shall be compatible with the fan diameter and at least twice its length.

The Contractor shall submit noise estimating sheets for all systems as well as the insertion loss ratings of sound attenuators for approval before ordering. Failure to do so may result in additional costs to the Contractor if noise levels in any area should exceed the specified limits.

The fans shall be activated by the light switches, the wiring of which shall be included in the Tender price

24. DUCTWORK AND DUCT TESTING

24.1. GENERAL

Insulated and un-insulated ducted ventilation systems are to be installed in the positions shown on the drawing. The general specification for all items is covered in this clause and the contractor shall supply and install the relevant items for each system as shown on the drawings.

The ventilation to the toilets shall be done via the heat reclaim ventilation unit. The Kitchen will be ventilated via the in-line duct type of the capacities specified.

Unless otherwise specified or noted, ductwork casings and plenum chambers shall be made of galvanized sheetmetal.

All ductwork indicated on drawings is schematic. Therefore, changes in duct sizes and/or location must be made where necessary to conform to space conditions without additional cost to the owner. Dimensions given on drawings, including all acoustically lined ducts shall be actual sheetmetal sizes.

Galvanized and stainless steel ductwork shall not be fitted with any copper or copper alloy parts unless the junctions between ductwork and such parts are so insulated that electrolytic inter-action is prevented.

24.2. DUCTWORK CLASSIFICATION

All ductwork shall be manufactured and erected according to standards as set down by the SANS Standard Specification for Air conditioning Ductwork SANS 1238/1979.

Contractors may use "MEZ" flanges as supplied by Messrs Europair or Ventline or any other approved make for rectangular ducting, provided they are installed in strict accordance with the manufacturer's recommendations and that they are completely air-tight. Between the flanges the Contractor is to apply an inseal rubber gasket or any other approved seal.

This specification must be read in conjunction with the SANS standard and the section on ductwork, fittings etc. that follows, act as a guide only.

Ducting is to be classified as follows:

Low Pressure: When the air velocity is less than 10 m/sec the duct system total static pressure is less than 500 Pa.

Medium Pressure: When the air velocity is less than 10 m/sec and the duct system total static pressure is below 1,5 kPa.

High Pressure: When the air velocity is higher than 10 m/sec and the duct system total static pressure is between 2,5 kPa and 1,5 kPa.

24.3. SCHEDULE OF SHEETMETAL THICKNESS FOR RECTANGULAR DUCTS

LOW PRESSURE

Longer Side of Duct Cross-Section (mm)	Sheet Thickness (minimum)
	Steel (mm)
Up to 400	0,6
401 - 600	0,6
601 - 800	0,8
801 - 1000	0,8
1001 - 1600	1,0
1601 - 2000	1,0

24.4. SCHEDULE OF SHEETMETAL THICKNESS FOR CIRCULAR DUCTS

LOW PRESSURE DUCTS

Size (mm)	Nominal Thickness
	Steel (mm)
Up to 300	0,5
301 - 450	0,6

451 - 800	0,8
801 - 1000	1,0
1001 - 1200	1,2

Low velocity ducts shall be strongly and rigidly constructed and joints shall be mechanically tight as well as substantially air-tight. Sheet metal for slips and drive caps shall be of the same material and thickness as the ducts. The ducts shall be cross-broken between joints where necessary to give more rigidity to the ductwork.

All transverse joints, duct stiffening, beading, seams etc. must conform to the SANS standard as laid down.

24.5. RADIUSED BENDS AND SPLITTERS

Radiused bends must be used wherever possible except in cases where the installation space is so restricted that other types of bends must be used. The throat bending radius for radiused bends shall be equal to or greater than 0,75 times the duct width.

Where this is not practical, the throat radius shall be at least 100 mm and splitters must be used, the construction of which must comply with clause 5.5.2.2. of the SANS standard. For any radiused bend that does not comply with the above, the same clause shall apply.

Positions and details of splitters can be seen on Standard drawing No. STD 16.

Rectangular bends that have no throat radius but a full heel radius are to have splitters fitted that comply with clause 5.5.2.2 of the SANS standard.

NB. Splitters shall extend along the whole radius of the bend.

24.6. SQUARE BENDS AND GUIDE VANES

Each bend must have metallic guide vanes, the thickness, strength, and durability of which shall be at least equal to those of the material of the bend. For low pressure ductwork the guide vanes must be of the single-skin type with a maximum spacing of 60 mm. They shall extend over the full 90□ of the bend, and the vane radius is to be equal to 2.5 times the spacing. (Refer to standard drawing No. STD 16).

For medium and high pressure ductwork the guide vanes shall be of double-skin aerofoil type and spacing shall be as shown on standard drawing no. STD 15.

24.7. ACCESS PANELS

The Contractor shall supply and install access panels at each of the automatic pressure control and fire dampers. Access panels shall be of the Europair type AP and shall be supplied in accordance with the sized indicated on the drawings. Each panel shall be internally insulated with 15mm sonic liner, which will be neatly secured and finished off. Access panels shall be manufactured from 0,80mm galvanised sheetmetal and shall be cross braced for rigidity. Each panel shall be equipped with locks and a purposely manufactured frame, which will be connected to the supply air duct. A rubber gasket shall be inserted to ensure an air tight seal between the panel and duct.

24.8. TRANSFORMATIONS AND OFFSETS

When a taper is used in either a "diverging" or "contracting" air flow and the duct size is either increased or decreased the sides are not to be pitched to a greater angle than 22.5degrees.

If a square offset is used (say to pass a beam) then the square elbows are to be fitted with turning vanes as already mentioned.

24.9. FLEXIBLE CONNECTIONS

Flexible connections shall be provided in connections between fans and ducts or casings where required to prevent excessive movement or vibration being transmitted through the ducts and where specified elsewhere in this specification or where indicated on a drawing.

All flexible duct connections shall be sized by the Contractor to suit the spigot sizes or outlet sizes of fans, air conditioning units etc. and the length of the flexible joint shall not exceed 250 mm. The material, when fitted, shall be free from folds and shall not be under tension.

Flexible connection material must comply with the SANS standard.

The Contractor is to note however, that no flexible connection material may be joined together with adhesive only, but must also be neatly stitched.

24.10. FLEXIBLE DUCTING

Flexible ducting shall be standard micro perforated Aludec flexible ducting insulated externally with 25mm aluminium foil backed fibre glass insulation of 16mm^3/kg density.

The operating limits of this flexible ducting is to be:

Max. static pressure	:	300 mm W.G.
Max. velocity	:	20 m/s
Temperature range	:	-30°C to 121°C

The ducting is to be Sonodec Type 25P flexible ducting supplied by Messrs Europair Africa (Pty) Ltd or any other approved manufacturer. Which-ever type of flexible duct is used, the contractor shall ensure that no noise is generated from it and that it is non-combustible.

24.11. DUCT SUPPORTS

Duct hangers and supports must be in accordance with the following clauses:

Ducts must be fixed, supported or hung from surfaces in either of the following ways:

(a) Band iron strap hanger to support horizontal duct on wall - for small size ducts that have a width less than the height. The band must be anchored into the wall at top and bottom with any approved fastener. Refer to standard drawing no. STD 13.

(b) Shelf type bracket to support horizontal duct on a wall - for ducts that have width greater than height. The vertical angle leg must be anchored securely into the wall with any approved fastener. Refer to standard drawing STD 13.

(c) Supports for vertical ducts through floor or ceilings etc. shall be angle supports projecting beyond the opening in the floor or ceiling etc. and shall be metal screwed into the ducts. Refer to standard drawing STD 13.

(d) Band iron strap hanger to support vertical duct to wall. (For small ducts). Refer to standard drawing STD 11.

The band must be anchored into the wall with any approved fastener.

(e) Angle brackets for supporting vertical ducts to wall. (For large ducts). The bracket must be anchored securely to the wall with any approved fastener and metal screwed to the duct. Refer to standard drawing no STD 11.

All angle iron brackets used are to be neatly cut and the ends must be grinded smooth.

Holes in mild steel brackets for bolts are to be drilled and no holes cut with a cutting torch will be permitted.

No ducts are to be hung from other services.

24.12. STRAP HANGERS

Strap hangers must be metal screwed to the duct sides. The size of the straps and spacing thereof will vary with the duct size, as shown below.

Hangers sizes for rectangular ducts (for horizontal ducts)

	Wider Side of Duct	Steel Rod Dia.	Strap Hangers	Trapeze Shelf Angles	Max. Spacing
Low Press. Duct Work	Up to 450	10	25 x	25 x 25 x 3	3000
	451 - 800	10	2000	25 x 25 x 3	3000
	801 - 1600	10	-	40 x 40 x 3	2500
	1601 - 2000	10	-	50 x 50 x 3	2500
Med. and High Press. Duct Work	Up to 450	10	-	40 x 40 x 3	3000
	451 - 800	10	-	40 x 40 x 3	2500
	801 - 1600	10	-	50 x 50 x 5	2500
	1601 - 2000	10	-	50 x 50 x 6	2000

All dimensions in millimetres.

Hangers sizes for round ducts (for horizontal ducts)

Nominal Diameter	Steel Rod	Steel Strap Dimensions	Max. Spacing Low Press. Ducts		Medium and High Press. Ducts	
			Rect.	Spiral	Rect.	Spiral
Up to 200	10	25 x 3	2000	3000	1800	3000
201 - 450	10	25 x 3	2500	3500	2500	3500
451 - 800	10	25 x 3	2500	3500	2500	3500
801 - 1200	10	25 x 3	2500	3500	2500	3500

All dimensions in millimetres.

24.13. BRANCH DUCT AND OUTLET SPIGOT TAKE-OFFS

Contractors are to make use of the clinch lock detailed in the accompanying standard drawing no. STD 24 when securing branch ducts or spigots or collars to main ducts.

As an alternative the branch duct, spigot or collar may be attached to the main duct by means of a turned over flange plus a 1,6 mm galvanized sheetmetal flange, sealed and pop-riveted every 150 mm. Refer to standard drawing no. STD 24. No other method of fixing will be permitted unless approved by the Consulting Engineer. These methods will be strictly adhered to.

Ceiling diffuser spigots are to be installed as indicated on the standard drawing no. STD 24 only when there is a false ceiling. When there is no false ceiling the method indicated for branch ducts shall be used. Whatever method is used, the Contractor is to ensure that no fibre-glass ends are exposed to the air stream. If he needs to seal off the fibre-glass, he shall use linen tape and recommended duct sealer or "Foster Seal" or any other approved sealer.

24.14. AIR FLOW BALANCING

Air quantity measurements in main and branch ducts shall be performed by pitot tube, traverse of the entire cross sectional area of the duct. Ducts having velocities of 5 or more meters per second shall be measured by inclined manometers (draft gauge) or magnehelic gauges. Openings in ducts for pitot tube insertion shall be sealed with snap-in plugs after air balance is complete. Outlet and inlet air quantities shall be determined by direct reading anemometers in accordance with outlet and inlet manufacturer's recommendation.

Corrected total air quantities shall be obtained by adjustment of fan speeds. Branch duct air quantities shall be adjusted by volume dampers where called for in the supplementary specification. Dampers shall be permanently marked after air balancing has been completed so that they can be returned to their correct position if disturbed at any time. All dampers are to be clearly marked to indicate their open and closed positions.

Volume adjusters may be used to balance air quantities at outlets and inlets provided that final adjustments do not produce sound levels in excess or heretofore specified limits, or objectional drafts. NB: Air quantity adjustments by outlets, deflectors, grids or air scoops will not be permitted.

All flow systems shall be adjusted and balanced so that air quantities at outlets are as specified and the distribution from supply outlets do not cause drafts and the air flow is uniform over the face of each outlet.

Total diffuser volume for low pressure duct systems, measured by means of an anemometer, shall be at least 95% of actual fan supply (measured by means of a duct traverse taken with a pitot tube and water manometer).

25. DUCT INSULATION

25.1. GENERAL

Internal insulation shall comply with SANS 1238 and external insulation shall comply with SANS 10173.

All portions of the ductwork that are intended to be insulated shall be completely lined with the insulating material.

25.2. CUTTING AND JOINTING

All joints in insulating material shall be neatly butted and sealed and, except where portions of ductwork are not intended to be insulated, there shall be no interruptions or gaps.

Rigid insulating material shall be cut and fitted to ensure tight, overlapped longitudinal joints, the top pieces being supported by the side pieces and the side pieces by the bottom pieces. Transverse joints in insulating material shall be formed as follows:

(a) Each transverse joint of insulating material at a duct joint shall have a metal nosing of not less than one (1.0) mm thick.

(b) Each transverse joint in insulating material other than at the joints referred to in (a) above shall be covered with a sealing membrane.

25.3. EXTERNAL LOW DENSITY INSULATION (Use on ducting elsewhere than Plantrooms)

Low density insulation shall be aluminium foil faced fibreglass insulation of a density not less than 36 kg/m^3 and a thickness of 25mm.

Insulation shall be secured to the ducts with an approved fireproof adhesive. The insulation shall either be spirally wound onto the ducts, or alternatively shall be applied in blanket form. The insulation shall further be strapped on using 12 mm wide nylon strapping applied with the appropriate strapping and joining machine.

Joints and laps of cooling ducts shall be vapour sealed, using vapour-barrier compound, impermeable tape, or strips of vapour-barrier material and adhesive. The tape to be used shall be "Arno Aluminium Foil Ducotape no. C 430" as supplied by Messrs "Europair" or other approved.

Insulation for hot ducts does not require a vapour barrier except in the event where ducts are used for alternate heating and cooling.

Blue and red adhesive tape shall be used for cold and hot air ducts respectively.

26. FILTERS

26.1. PRIMARY FILTERS

The primary filters shall be where specified or show on drawing be fitted either held into galvanised frames with clips and sealing gasket or mounted into slides and situated upstream of the fan. The filter frames shall be flashed to the casing to prevent unfiltered air bypassing the filter bank.

Filters shall be selected to produce a face velocity of not more than 2.5m/s and shall comply with EN 779 Class G4.

Each filter shall have an average arrestance of 90% and a dust holding capacity of at least 650g/m^2 face area.

The primary filters shall be washable and of the "Trox" series or other approved.

26.2. FILTER MANOMETER

A suitable easily read manometer shall be permanently mounted against the ductwork or air handling unit and shall be installed to show the pressure drop across the filter. The manometer shall indicate Pascal and shall indicate when filter change is required. The contractor is to install a set of measuring points across each filter bank with which the static pressure difference over the filter will be measured. The manometer must have two PVC tubes connected to the measuring

points. The tube is to be installed in Ega-tubing securely fixed along the route. The contractor must fit stickers onto the manometer to indicate the maximum across each filter bank.

27. DAMPERS

Dampers shall be sized at a maximum face velocity of 6m/s and shall be fitted with mez flange on the duct connection side. Damper blades shall be airfoil profiled aluminium operated with gears to provide an opposed blade action. Manual dampers shall have sturdy locking quadrants and dampers to be motorised shall have suitable extended shafts.

27.1. CYLINDRICAL AIR FLOW RATE BALANCING DAMPERS

The dampers shall be used to adjust air volume flow rates and pressures and shall be of circular design. Air flow adjustment shall be done via a manual control knob with positive locking click stop system (2° increment adjustments). No tools shall be required for the adjustment setting. The casing and blade shall be manufactured from galvanised sheet metal. The adjusting device and bearings shall be made from plastic PPE, with fire protection rating (UL 94V-0)

The unit shall be of the Trox BD series or other approved.

28. ELECTRICAL EQUIPMENT AND WIRING

28.1. SCOPE OF WORK

This tender shall include for the supply points and all other cabling, conduits, cable racks, trays, switchgear, panels, distribution boards etc, necessary for the satisfactory operation of every part of the installation.

A 220V/380V electrical isolator shall be provided within one metre of the unit in the positions shown on the drawing. The electrical connections from the isolator to the air conditioner as well as all interconnecting wiring between indoor and outdoor units form part of this specification.

The onus lies with the air conditioning Contractor to ensure that the electrical power point provided complies with the position and requirements of the air conditioning manufacturer.

All wiring (power and control) shall be PVC insulated twisted pair overall screen 1,25mm diameter polythene sheathed cable.

No surface wiring shall be allowed and all wiring shall be installed inside the partition walls and above ceilings inside conduit or on cable racks.

The VRV air conditioning system shall have three (3) phase 50Hz electrical supply that will be supplied by others in the form of a distribution board at the condensing plant area. As part of the contract the contractor shall connect the unit(s) to the isolator(s) and in turn to the distribution board (s), the indoor units shall be connected to a three (3) pin socket outlet that shall be provided by others intside the ceiling space.

The VRV intelligent controllers shall be mounted at the condensing plant area with an enclosure in the position shown on the drawings.

A 3 phase 50Hz electrical power supply, supplied by others, shall be provided in the form of a distribution board at the rooftop package and the heat recovery ventilation unit(s) plant area.

As part of the contract, the Contractor shall connect the unit(s) to the isolator(s) to the control panel to the on/off switch and in the distribution board provided by others.

Each rooms's air conditioning system shall be controlled from the thermostat controller. The final position of the thermostat controller shall be determined on site. The contractor shall be responsible to ensure that the conduit system is installed in due time without any delays to the contract. The installation of the conduits shall be done by others.

As part of the contract, the Contractor shall connect the supply and exhaust fan for the toliet extractraction to the isolator(s), The electrical conduits, etc for the operation of the lights and fans inside the toilets shall be done by others.

28.2. WIRING IN CONDUIT

Conduit and conduit accessories exposed to weather condition will be of the Bossal type or other approved, otherwise conduit and conduit accessories shall be of the UPVC type. No joints shall be allowed and all looping must be done through approved connectors at fitting points.

The live phase shall be connected at the switching point. All wiring in conduit shall conform to the requirements of Table 4 of SANS 10142 as amended. Not more than one conduit shall be

accommodated in one circuit unless special permission is obtained from the Engineer. Before any wires are drawn into the conduit, a swab is to be drawn through to clear any water, dirt etc.

28.3. ELECTRICAL WIRING

The electrical equipment and installation shall conform fully to the requirements of the Occupational Health and Safety Act No. 85 of 1993 and amendments thereof, and shall also be in accordance with the South African Bureau of Standards Code of Practice for the Wiring of Premises and amendments thereof (SANS 10142) as amended.

Conduit to be installed under plaster finish shall be installed in good time so as not to delay the Building Contractor or cause finished plaster to be chased.

All electrical cables shall be fastened to cable racks shall be laid in cable ducts. Cables carried in racks shall as far as possible be laid parallel and shall be neatly installed.

Descents shall be firmly secured with provision for the swinging of flexible tubing or cables where attached to moving machines and electrical motors.

Sizes of conduit, conductors and cables shall be at least equal to those laid down in the relevant tables of the Code of Practice.

Flexible conduit and cables shall be provided wherever it is necessary to avoid transmission of vibration. No joints in cables or wires will be permitted in a conduit. The ends of cables shall be properly made off. Terminal lugs shall be used wherever special clamp-washers or sleeve terminals are not provided on equipment. Conductor strands may not be cut away or reduced in size, and care must be taken to select switchgear, etc., with terminals of adequate size for looping, etc., where necessary.

No open wiring will be permitted at any point in the system, with the exception of the copper bus-bars in the switchgear boards. These shall be taped up with PVC tape with the relevant phase colours.

29. SYSTEM CONTROL DESCRIPTION

The Ground storey offices will each be air-conditioned with a heat recovery type VRF unit, providing simultaneous cooling and heating to these spaces, whilst fresh air is introduced through fresh air filtered fans office.

The temperature to the indoor units will be controlled through a wall mounted controller and overall independent controller via a centralized controller, with running times programmed into the centralized controller.

The fire relay interface shall all be hard wired to switch off the HVAC equipment when a fire signal is received.

The toilet extract fans will be switch on/off by the wall mounted controller in the HVAC plant and automatically switched off when fire signal is received. The BMS is to monitor the running of these fans.

30. STANDARD DRAWINGS

The following standard drawings are attached and are to be read in conjunction with the Specification: ***See Annexure 1 for drawings***

STD11	Brackets for ducts.
STD12	Hangers for ducts.
STD13	Brackets for ducts
STD15	Aerofoil type guide vanes for square bends.
STD16	Radiused bends and vanes.
STD17	Flexible Duct Connection.
STD18	Pipe U-bolt and Insulation Pipe Fixing Details.
STD19	Standard Machine Base Tray
STD24	Tee Connections.
STD25	Insulating Fixing Details.

31. SCHEDULES OF INFORMATION

31.1. VRF INDOOR UNITS

Model Name	Type of equipment	Quantity	Description
ARNU07GTRB4	4 Way Cassette	1	2200(W) / 2500(W)
ARNU09GTRB4	4 Way Cassette	5	2800(W) / 3200(W)
ARNU09GTRB4	4 Way Cassette	5	2800(W) / 3200(W)
ARNU12GTRB4	4 Way Cassette	20	3600(W) / 4000(W)
ARNU15GTQB4	4 Way Cassette	10	4500(W) / 5000(W)
ARNU15GTQB4	4 Way Cassette	2	4500(W) / 5000(W)
ARNU18GTQB4	4 Way Cassette	7	5600(W) / 6300(W)
ARNU21GTQB4	4 Way Cassette	1	6000(W) / 6800(W)
ARNU24GTPC4	4 Way Cassette	2	7100(W) / 8000(W)
ARNU24GL3G4	Low Static Duct	2	7100(W) / 8000(W)
ARNU42GM2A4	Mid Static Duct	1	12300(W) / 13800(W)

31.2. VRF OUTDOOR UNITS

Model Name	Type of equipment	Quantity	Product charge [kg]
ARUM180LTE5	MULTI V 5	1	16.00
ARUM220LTE5	MULTI V 5	1	16.00
ARUM241LTE5	MULTI V 5	2	19.00

31.3. **VRF BRANCH KITS**

Model Name	No of ports	Quantity
ARBLB07121	2	7
ARBLB01621	2	4
ARBLB03321	2	6
ARCNB21	2	2

31.4. **VRF ACCESSORIES**

Model Name	Description	Quantity
PQRCHCA0QW	Simple Controller without mode (White)	1
PQRCVCL0QW	Simple Controller with mode (White)	53
PT-MCHW0	Grille (4 Way Casette - TN, TM, TP Chassis)	2
PT-QAGW0	Grille (4 Way Casette - TR, TQ)	51

31.5. **HR BOXES**

Model Name	No of ports	Max kW	Quantity
PRHR023	2	58.0	10
PRHR033	3	58.0	7
PRHR043	4	58.0	4

Model Name	Type of equipment	Quantity	Description
M19AKH.NK2	Indoor Split Unit	1	5280(W) / 5420(W)
M19AKH.UK2	Outdoor Split Unit	1	5280(W) / 5420(W)

31.6. **DIFFUSERS, DISC VALVES, GRILLES AND LOUVERS**

ITEM	QTY	AIR FLOW (ℓtr/s)	SIZE	MAKE & MODEL
DG01	3	varied	(300x300)mm	Non-vision door grille (Trox type AGS or other approved), natural aluminium finish.
DG02	2	varied	(400x400)mm	Non-vision door grille (Trox type AGS or other approved), natural aluminium finish.
SAD01	6	111ℓtr/s	dia 200 mm	Constant volume swirl ceiling diffuser, epoxy colour coated to architect's detail, c/w square face plate manual adjustable damper (Trox type TDF-C-Q).
SAD02	4	158ℓtr/s	dia 250 mm	Constant volume swirl ceiling diffuser, epoxy colour coated to architect's detail, c/w square face plate manual adjustable damper (Trox type TDF-C-Q).
SAD03	43	varied	dia 125 mm	Ceiling mounted disc valve for supply air (Trox type ZLVS) epoxy colour coated to architect's detail.
WL01	1	-	350x350	Trox Type AWG
WL02	3	-	400x400	Trox Type AWG
WL03	3	-	300x300	Trox Type AWG
WL04	2	-	250x250	Trox Type AWG
WL05	1	-	500x500	Trox Type AWG
RG1	1	-	1250x200	Trox Type AR
RG2	1	-	1250x350	Trox Type AR
DV01	14	varied	ϕ160	Ceiling mounted disc valve for supply air (Trox type LVS) epoxy colour coated to architect's

				detail.
EAG01	1	118 ℓtr/s	250X250	Ceiling mounted extract grille (Trox) epoxy colour coated to architect's detail.
RAFF01	3	varied	600x600	Return Air Filter frame (Trox) epoxy colour coated to architect's detail.

31.7. **DAMPERS**

ITEM	QTY	SIZE	MAKE & MODEL	DESCRIPTION
D1	3	150x150	Trox DB or other approved.	Hand lockable airflow rate balancing damper.
D2	43	dia 125mm	Trox DB or other approved.	Hand lockable airflow rate balancing damper.

31.8. **DAMPERS**

ITEM	QTY	SIZE	MAKE & MODEL	DESCRIPTION
F1	1	350x350	Trox or other approved.	Pleated filters complete with filter cupboard
F2	1	400x400	Trox or other approved.	Pleated filters complete with filter cupboard

F3	1	300x300	Trox or other approved.	Pleated filters complete with filter cupboard

31.9. **SUPPLY & EXTRACT FANS**

ITEM	QTY	AIRFLOW(L/S)	MAKE & MODEL
FAF01	4	varied	In-line axial fan and matching sound attenuators (Vortice Lineo 200VO or other approved).
FAF02	1	varied	In-line axial fan and matching sound attenuators (Vortice Lineo 250VO or other approved).
FAF03	1	varied	In-line axial fan and matching sound attenuators (Vortice Lineo 125VO or other approved).
FAF04	6	varied	Wall mount fan (Vortice Vario 230/9P or other approved).
FAF05	1	varied	Wall mount fan (Punto Filo MF 120 or other approved).
FAF06	1	varied	Wall mount fan (Punto Filo MF 150 or other approved).
EAF01	2	varied	In-line axial fan and matching sound attenuators (Vortice Lineo 200VO or other approved).
EAF02	1	varied	In-line axial fan and matching sound attenuators (Vortice Lineo 315VO or other approved).
EAF03	1	varied	In-line axial fan and matching sound attenuators (Vortice Lineo 150VO or other approved).

ALTERATIONS TO THE DEPARTMENT OF TRANSPORT BUILDING

AIR-CONDITIONING & VENTILATION INSTALLATION

PART 3: SCHEDULES OF INFORMATION FOR EQUIPMENT OFFERED BT TENDERER

The information below shall be supplied by the Tenderer and shall be completed by date of tender and shall be deemed to comply with the Specification unless deviations from the Specification are specifically pointed out in writing in the tender by the Tenderer.

1. VRF INDOOR UNITS

ITEM	DESCRIPTION	QTY	TOTAL COOLING CAPACITY (kW)	TOTAL SENSIBLE CAPACITY (kW)	AIR QUANTITY (ℓtr/s)	MAKE	MODEL
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							

ITEM	DESCRIPTION	QTY	TOTAL COOLING CAPACITY (kW)	TOTAL HEATING CAPACITY (kW)	MAKE	MODEL
1						
2						
3						

2. **VRF OUTDOOR UNITS**

3. **VRF BRANCH KITS**

ITEM	QTY	JOINT SELECTION	MAKE
1			
2			
3			
4			
5			

4. **VRF ACCESSORIES**

ITEM	QTY	DESCRIPTION	MAKE
1			
2			

5. HEAT RECOVERY BOXES

ITEM	QTY	DESCRIPTION	AIRFLOW(ℓtr/s)	ENTHALPY EFFECIENCY (%)	EXTERNAL STATIC PRESSURE (Pa)	MAKE	MODEL
1							
2							

6. DIFFUSERS, DISC VALVES, GRILLES AND LOUVERS

ITEM	QTY	AIR FLOW (ℓtr/s)	SIZE	MAKE & MODEL
DG01	3	varied	(300x300) mm	
DG02	2	varied	(400x400) mm	
SAD01	6	111ℓtr/s	Dia. 200 mm	
SAD02	4	158ℓtr/s	Dia. 250 mm	
SAD03	43	varied	Dia. 125 mm	
WL01	1	-	350x350	
WL02	3	-	400x400	
WL03	3	-	300x300	
WL04	2	-	250x250	
WL05	1	-	500x500	
RG1	1	-	1250x200	
RG2	1	-	1250x350	

DV01	14	varied	ϕ160	
EAG01	1	118 ℓtr/s	250X250	
RAFF01	3	varied	600x600	

7. DAMPERS

ITEM	QTY	SIZE	MAKE & MODEL	DESCRIPTION
F1	1	350x350		Pleated filters complete with filter cupboard
F2	1	400x400		Pleated filters complete with filter cupboard
F3	1	300x300		Pleated filters complete with filter cupboard

8. SUPPLY & EXTRACT FANS

ITEM	QTY	AIRFLOW(L/S)	MAKE & MODEL
FAF01	4	varied	
FAF02	1	varied	
FAF03	1	varied	
FAF04	6	varied	
FAF05	1	varied	
FAF06	1	varied	
EAF01	2	varied	
EAF02	1	varied	

EAF03	1	varied	

9. WASHABLE AIR FILTERS

9.1. Make: _____

9.2. Name of Supplier: _____

9.3. Model and Type: _____

9.4. Country of Origin: _____

10. AIR DISTRIBUTION SYSTEM

10.1. Name of Supplier: _____

11. AUTOMATIC CONTROL SYSTEM

11.1. Name of Supplier: _____

12. ELECTRICAL SYSTEM

12.1. Name of Supplier: _____

12.2. SIGNATURE OF TENDERER: _____

12.3. NAME OF SIGNATORY: _____

12.4. DATE: _____

12.5. ADDRESS OF TENDERER: _____

_____

12.6. TELEPHONE NUMBER: _____

12.7. FAX NUMBER: _____

ALTERATIONS TO THE DEPARTMENT OF TRANSPORT BUILDING

MECHANICAL INSTALLATION

PART 4

COLD WATER SPECIFICATION

TECHNICAL SPECIFICATION

I N D E X

COLD WATER SPECIFICATION

TECHNICAL SPECIFICATION

1. TECHNICAL SPECIFICATION

This Supplementary Specification is for the supply, delivery and installation of Fire and cold water installation at the Department of transport building ,Pietermaritzburg.

The clauses referred to herein are clauses of standard Specification. Relevant clauses not specifically mentioned shall also apply.

All equipment and installations shall comply in all respects with the requirements of the Occupations Health and safety Act No. 85 of 1993.

Department of Works Policy Document for Design Of Mechanical Installations- Rev5 January 2011 and General Specification For Hot and Cold Water For Building Services – April 2005 shall apply in respect of the supply, delivery and installation of the hot and cold water installation.

2. INTRODUCTION

The contractor shall supply fire and cold water to the proposed building all as indicated on the tender drawings.

3. COLD WATER DISTRIBUTION

Cold water shall be supplied from a common central domestic water and fire storage tank located on the ground floor of the back of the building. The contractor shall supply and install 2 off, 5500l cold water storage tank.

Cold water shall be fed from the municipality by means of an 42mm water meter and shall feed directly into the common fire and domestic water storage tank.

The water level inside the tank shall be controlled by means of level controllers which shall be capable of controlling the fire water storage.

Cold water is sucked from the tank via run and standby pumps, and distributed to a common domestic and fire line. The pumps shall be fed from emergency power.
The line shall be split to a dedicated fire and cold water supply to the building. The cold water line is fitted with a normally open motorised control valve which will completely shut down in the event that the domestic water becomes depleted. Power supply to the valve shall be emergency power supply.
A manual valve shall also be installed to in the event that the motorised valve should fail.

All domestic water pipes underground pipework shall be HDPE CLASS 10 and fire to be HDPE CLASS 16 unless otherwise indicated. All pipework above ground shall be Class

2 copper.

4. HOT WATER DISTRIBUTION

There is no allocation for hot water as this is not required.

5. EQUIPMENT

5.1 Cold Water Pumps

Contractor shall supply and install 2 domestic water centrifugal pumps for the building complete with 5.5 Kw motors and anti-vibration mounts. Pumps shall be designed to do a duty of 1.8l/s @ 53m head. Pumps shall be installed as run and standby pumps. Pumps shall be installed complete with 11 kW variable speed drives.

Contractor shall supply and install 2 fire water centrifugal pumps for the building complete with 11 Kw motors and anti-vibration mounts. Pumps shall be designed to do a duty of 20.5l/s @ 30m head. Pumps shall be installed as run and standby pumps. Pumps shall be installed complete with 22 kW variable speed drives.

All pumps shall be similar or equal to KSB.

All pumps to be selected to ensure that the motors are adequately sized to run with one pump only in the event that the second pump should fail.

Pumps shall be selected for flat head characteristics.
Pumps shall not be selected at maximum impeller size.
Pump motors shall be sized for the selected operating point plus at least 20%.

Pump impellers shall be bronze; shafts shall be stainless steel grade 316.
All pumps to be fitted with heavy duty high quality mechanical seals.

All pumps shall be fitted with heavy-duty stainless steel drip trays piped to waste. All pumps shall be aligned and balanced before delivery to site. Proprietary bases shall be used. Should any imbalance develop after installation the pump and base shall be removed for re-balancing off site

Chilled water pump casings need not be insulated but shall be protected by drip trays.
All pumps shall be fitted with a spacer and a flexible coupling for quick removal of the impellers without dismantling motors and casing.

Pump assemblies shall be mounted on anti-vibration spring mounts selected for the pump and concrete inertia base mass and for outdoor duty. The entire pump assembly and motor shall be fully weatherproof.

6. PLANT DAILY OPERATION

All water systems shall operate 24hrs.

7. PIPING AND SYSTEM FITTINGS

7.1 Piping Material

All domestic water pipes underground pipework shall be HDPE CLASS 10 unless otherwise indicated. All pipework above ground shall be Class 2 copper.

7.2 Painting

All exposed piping to be degreased and painted over its entire length in accordance with .

Department of Works Policy Document for Design Of Mechanical Installations- Rev5 January 2011

7.3 Pipe Hangers And Brackets

Pipe hangers and supports shall be installed at the following maximum centres: -

Pipe Bore: (Millimeters)	**Distance Between Supports:** (Meters)
Up to 10	1,0
12 to 15	1,25
22	1,8
28 up to 50	2.5
65 to 100	3.0

Additional supports shall be installed where dictated by structural details:

8. VALVES

All valves to be ball valves with stainless steel bodies and balls and PTFE or Teflon seals. They shall be suitable for a working pressure of 1000 Kpa gauge.

Valves shall be fitted into the pipeline by means of capillary hard soldered joints containing silver.

9. OPERATING AND MAINTENANCE MANUALS

9.1 General

At the completion of the project the contractor shall supply three copies of "Operating and Maintenance Manuals' containing the following information: -

A general description of the systems.

Plant operating instructions.

Details of the major equipment suppliers and contact telephone numbers.

Leaflets and general information on all installed major equipment.

Regular and routine maintenance schedules.

Final commissioning data.

'As-Built' drawings and electrical wiring and control diagrams.

In addition copies of the diagrams shall be framed and mounted in the individual plant rooms.

All the above documents shall be bound into a durable plastic 'ring binder' file, and suitable indexed and titled.

The documents shall also be provided in software on a computer disc.

10. EQUIPMENT IDENTIFICATION AND SIGNAGE

The Contractor shall supply and install Identification Labels to all equipment, plant, switchgear, controls and gauges. The labels shall be fabricated in black plastic sheet and shall be engraved clearly in white, to indicate the equipment controlled.

All items of plant and exposed pipes shall be provided with neat signs or signboards describing or naming the particular function or duty in each instance, together with arrows indicating the direction of the water flow in pipes, e.g., -

PUMP

TANK

The contractor shall detail all such signage, wording and terminology and submit the same to the Engineer for approval prior to installation

11. COMMISSIONING AND TESTING

11.1 Commissioning

Upon the 'Practical Completion of the Contract Works', the contractor shall efficiently test and commission all relevant items of equipment before setting such equipment into regular operation.

Each item of equipment shall be set to produce the required designed capacity when operating against the calculated duty of the relevant system, i.e.: -

Specified vacuum capacities under full load conditions.
Specified air quantities against the relevant system resistances.

11.2 Testing

When the above commissioning of the installation has been completed to the satisfaction of the Engineer, the contractor shall, initially, set the water and air temperature controls to give specified conditions.

11.3 General

When the contractor has completed the above commissioning and testing, and has set the temperature controls, he shall then carry out temperature and air quantity measurements in the air-conditioned rooms to verify the operation of the plant.

Before the Commissioning and Testing of the overall installation is considered complete, the contractor shall submit to the Engineer, in writing, a full Test Schedule giving the following information: -

Size of pump.
Speed of pump.
Rating of pump motor.
Electrical current drawn by pump motor,
System Head Calculation.

Under no circumstances shall the settings or the specified quantities be altered without prior permission of the Engineer.

12. DRAWING AND STRUCTURAL REQUIREMENTS

Immediately upon his appointment, the contractor shall prepare full detailed CAD drawings of all concrete bases, plinths and structural openings that are required to accommodate the equipment to be installed by him. Two copies of all such detailed drawings shall be submitted to the Engineer for comment prior to installation.

13. STANDARDS

SANS 460 – Copper tubes for domestic plumbing services.

SANS 966-1 – HDPE tubes for domestic plumbing services.

The contractor shall provide all protective devices, etc. and arrange for all inspections, tests, certificates , etc. necessary to comply with the said Acts, Regulations and By – Laws, whether specified herein or not.

14. LIST OF DRAWINGS

The following drawing is issued with this tender:

D 3374-MW-P1-01	Fire and cold water reticulation
D 3374-MW-P1-02	Internal Drainage Layout

ALTERATIONS TO THE DEPARTMENT OF TRANSPORT BUILDING

MECHANICAL INSTALLATION

PART 5

FIRE SPECIFICATION

TECHNICAL SPECIFICATION

I N D E X

FIRE SPECIFICATION

TECHNICAL SPECIFICATION

NOTICE TO TENDERERS AND CONTRACTORS

This installation is to comply fully in all respects with SABS 0287. In the case of conflict, SABS 0287 shall take precedence.

THE WORK

1. GENERAL

The contractor shall supply and install fire hose reels, hydrants, extinguishers as specified on the drawings.

2. THE PROJECT

The project shall consist of the supply installation, testing, commissioning and 12 months guarantee (with free maintenance during the guarantee period) of the Department of Transport Building, Pietermaritzburg.

The work entails the installation of a dedicated fire supply line for fire protection to the building, independent from the domestic water supply.

A 42Ø line shall feed a 2, 5500 l fire storage tank located on the ground at the back of the building. The water storage is dedicated for fire and domestic use only and will only be utilised in the event of a fire.

Water from the storage tank shall be sucked via pumps to maintain a minimum pressure of 300 kPa at the fire hose reels and hydrants.

The fire pumps shall be fitted with variable speed drives and pressure sensors, to maintain the pressure on the fire line to 350 kPa. In the event that water is used from the fire line, the pump will speed to maintain the pressure on the line.

The filling of the tanks shall be controlled by float valves supplied with the tank, which will automatically shut the water supply to the tank once the tank is full. Level controllers installed in a PVC header shall control the stopping and re-starting of the pumps when the tanks when the tank level becomes too low.

3. PC SUMS

Nil

4. PROVISIONAL SUMS

Nil

5. WORK BY OTHERS

The following work will be carried out by others free of charge to the Contractor. It shall be done to the Contractor's requirements as reflected in his detailed working drawings.

5.1 P & G Items

(a) Access to the site and to the places where the work is to be carried out, including the use of any temporary personal hoists erected by the principal contractor for his own use.

(b) The provision of water, lighting and single-phase electric power (by the principal contractor) to a position within 50 metres of the place where work is to be carried out. The single-phase power (15 amp) shall be sufficient to operate an arc welder.

(c) The provision of all power and water (by someone other than the Principal Contractor) required for the testing and commissioning of the installation. (NB Any fuel required for commissioning of a diesel engine pump set must be provided by the Sprinkler Sub Contractor.)

(d) The use of mess rooms, latrines, health and welfare facilities, and the like, where so provided.

(e) The use of the site telephone, where provided, subject to payment by the contractor of all is outgoing calls.

(f) The provision of an area for the Contractor to establish his office accommodation, temporary workshops and for the storage of plant and materials. The contractor shall at his own expense, erect (and dismantle) all temporary workshops, sheds or other buildings required.

(g) The use of the Principal Contractor's hoist or crane (plus operator) whilst erected on site, but strictly subject to the times arranged and agreed and agreed between both parties.

6. PAINTING AND PLANT IDENTIFICATION

The contractor shall be responsible for the painting and colour coding of:

a) All brackets and fixings prior to erection
b) All metalwork which is not otherwise protected against rust
c) All piping (exposed and concealed within ceiling voids)

All items of equipment shall be identified by labels or painted inscription, and such

identification be compatible with the corresponding identification on the mounted zone demarcation diagrams, drawings and labels on the switchboard.

7. **NON PRODUCTION OF AUXILIARY ITEMS OF THE INSTALLATION**

The specification calls for the Contractor to furnish certain auxiliary items as part of his overall installation. Examples of such items are:

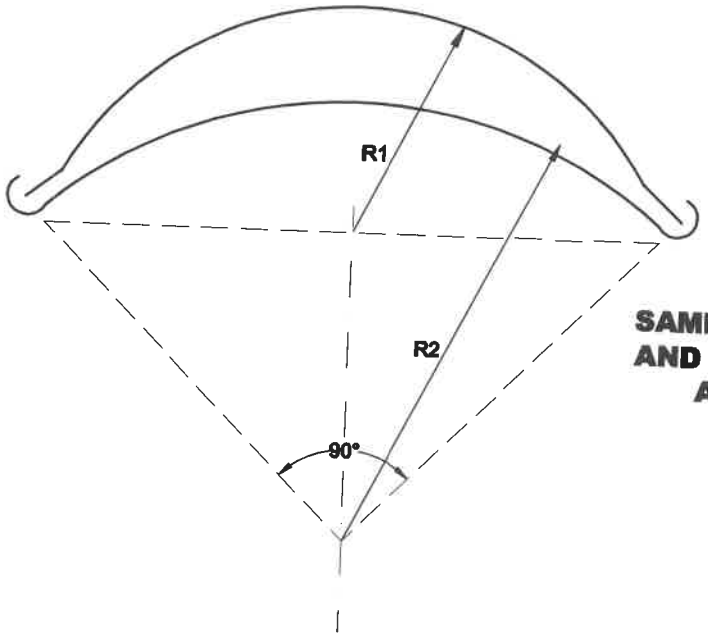
-The Operating and Maintenance Manuals.
-The Production of as-built drawings, including computer discs.
-The Production, framing and fixing of switchboard diagrams, piping schematics, simplified operating instructions etc.
-The instruction of the Employer's staff in the operation and routine maintenance of the works.

Should the Contractor fail to meet these requirements, monies will be withheld against the specific items at a value estimated by the Consulting Engineer. This estimate will be based on what it could cost the Engineer to undertake the task on behalf of the Contractor.

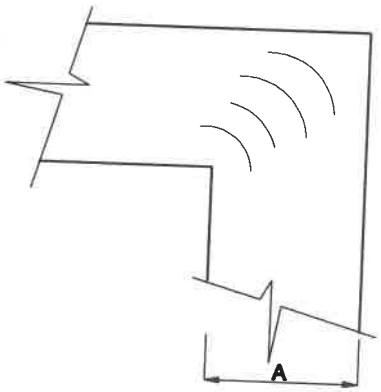
8. **LIST OF DRAWINGS**

The following drawing is issued with this tender:

D 3374-MB-P1-01 Fire Services-Ground Floor layout



SAME MATERIAL AND THICKNESS AS BEND



A	R1	R2	S
UP TO 600	25	50	55
OVER 600	55	115	80

REFERENCE DRAWINGS

REV:	DATE:	DESCRIPTION	SIGN:
0		FIRST ISSUE	

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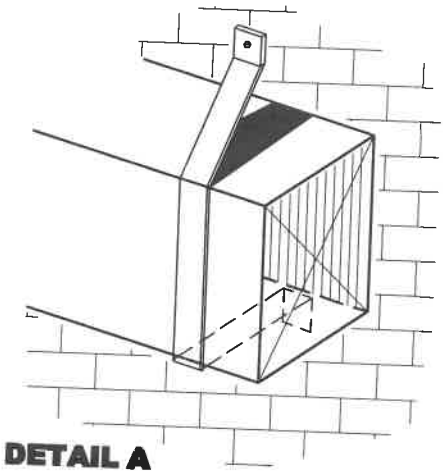
Practical Innovation

PROJECT:

DRAWING DESCRIPTION:
AEROFOIL TYPE VANES
FOR
SQUARE BENDS

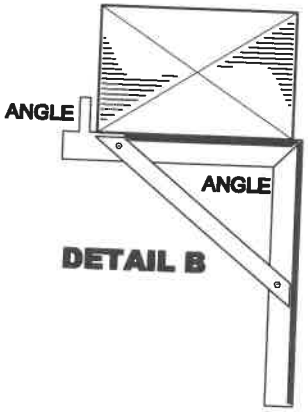
DATE: AUGUST 2005	CAD REF. NO. STD
FILE NO:	DRAWN BY: W. VENTER
SCALE: N.T.S.	CHECKED BY: L.A.LE ROUX
REV. NO. 0	CHECKED BY: P. MORNET
DRAWING NO: STD 15	



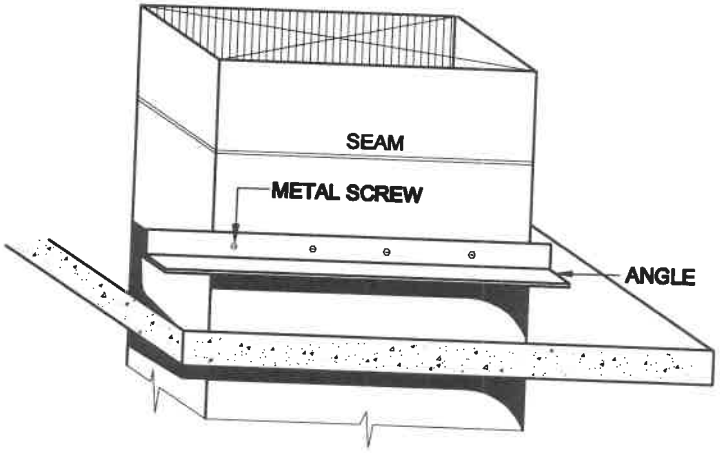
DETAIL A

DUCT SIZE	ANGLE	SPACING
300x450	38x1,6	2400
380x600	38x1,6	2400
450x900	38x1,6	2400

DUCT SIZE (WIDTH)	ANGLE	SPACING
UP TO 450	38x38x3,2	2400
460x760	38x38x3,2	2400
761	38x38x3,2	2400



DETAIL B



DETAIL C

DUCT SIZE	ANGLE
900x450	38x38x3,2
1200x600	38x38x3,2
1520x750	38x38x3,2
1520	51x51x4,8

NOTE:
OVER 1520mm INCREASE
ANGLE SIZE AS REQUIRED
FOR SPACING AND DUCT SIZE

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	SIGN
0		FIRST ISSUE	

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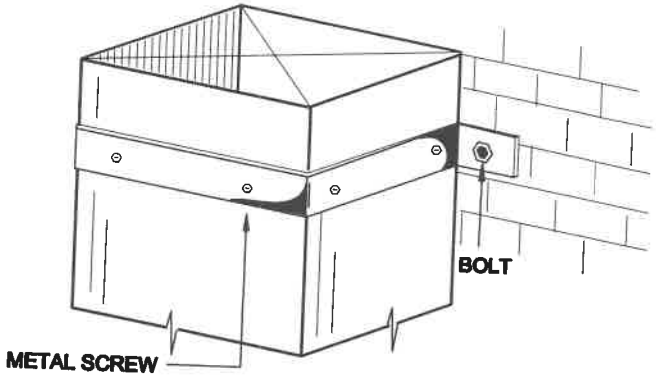
PROJECT:

DRAWING DESCRIPTION:
BRACKETS FOR DUCTS

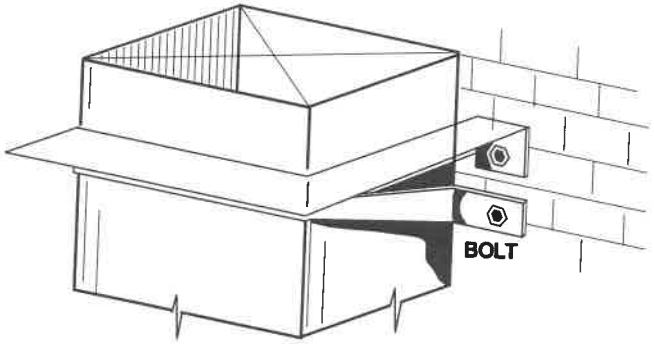
DATE: AUGUST 2005	CAD REF. NO. STD
FILE NO:	DESIGNED BY: W. VENTER
SCALE: N.T.S.	DRAWN BY: L.A.LE ROUX
REV. NO. 0	CHECKED BY: P. MORNET
DRAWING NO: STD 11	



DETAIL A

DUCT SIZE	ANGLE	SPACING
460x300	13x1,6	3660
600x380	13x1,6	3660
600x500	13x1,6	3660

DUCT SIZE	ANGLE	SPACING
760x300	25x25x3,2	3660
900x460	25x25x3,2	3660
1066x600	32x32x3,2	3660
1200x760	32x32x3,2	3660



DETAIL B

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	SIGN
0		FIRST ISSUE	

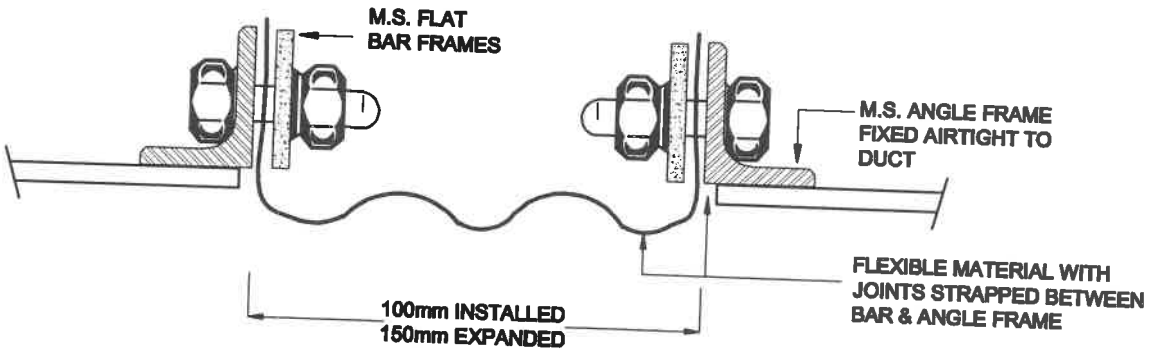
Dihlose CONSULTING ENGINEERS
Practical Innovation

PROJECT:

DRAWING DESCRIPTION:

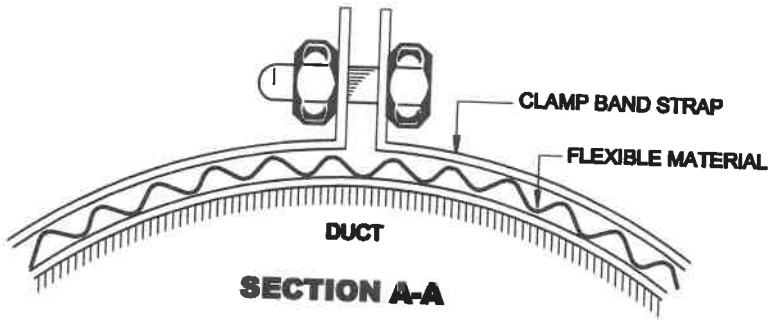
BRACKETS FOR DUCTS

DATE: AUGUST 2005	CAD REF. NO. STD
FILE NO:	DESIGNED BY: W. VENTER
SCALE: N.T.S.	DRAWN BY: L.A.LE ROUX
REV. NO. 0	CHECKED BY: P. MORNET
DRAWING NO: STD 13	

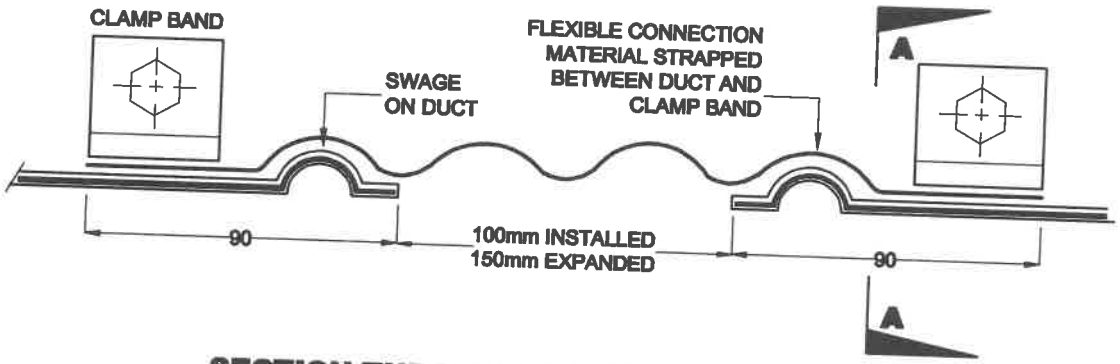


SECTION THROUGH FLEXIBLE CONNECTION FOR RECTANGLULAR DUCTS

FLEXIBLE CONNECTION IS NOT TO BE DRAWN TIGHT



SECTION A-A



SECTION THROUGH FLEXIBLE CONNECTION FOR ROUND DUCTS

REFERENCE DRAWINGS			
0		FIRST ISSUE	
REV:	DATE:	DESCRIPTION	SIGN:

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Practical Innovation

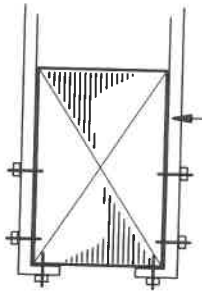
PROJECT:

DRAWING DESCRIPTION:

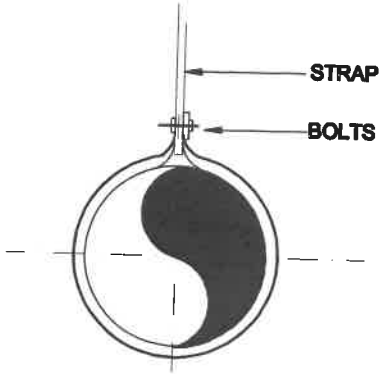
FLEXIBLE DUCT CONNECTIONS

DATE: AUGUST 2005	CSV REF. NO. STD
FILE NO:	DESIGNED BY: W. VENTER
SCALE: N.T.S.	DRAWN BY: LA.LE ROUX
REV. NO. 0	CHECKED BY: P. MORNET
DRAWING NO: STD 17	

STRAP HANGERS

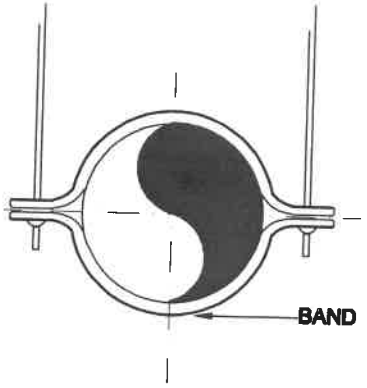


1.2mm MIN.
STRAP HANGERS



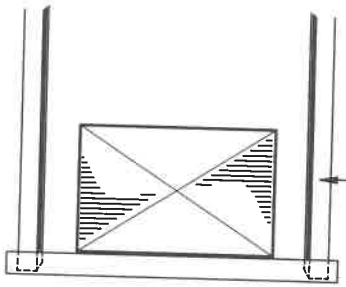
STRAP HANGERS

BOLTS

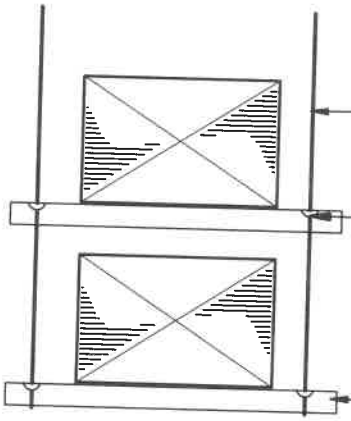


BAND

TRAPEZE HANGERS



ANGLE
IRON



HANGER
RODS

FIXTURE
CLIPS

ANGLE IRON

NOTE:
HANGERS FOR HOT
OR COLD DUCTS

REFERENCE DRAWINGS

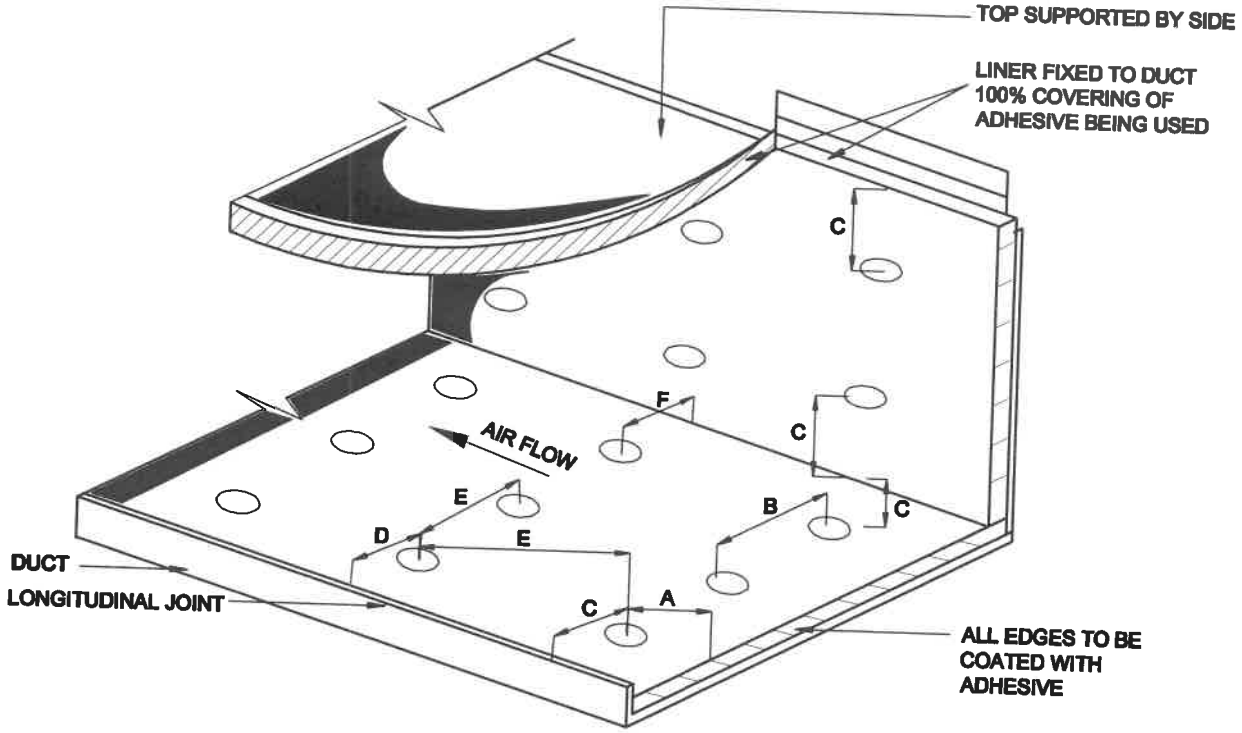
0		FIRST ISSUE	
REV.	DATE	DESCRIPTION	INITIALS

Dihlase
Practical Innovation

PROJECT:

DRAWING DESCRIPTION:
HANGERS
FOR
DUCTS

DATE: AUGUST 2005	DRV REF. NO. STD
FILE NO:	DESIGNED BY: W. VENTER
SCALE: N.T.S.	DRAWN BY: L.A.LE ROUX
REV. NO. 0	CHECKED BY: P. MORNET
DRAWING NO: STD 12	



FASTENING OF RIGID INTERNAL INSULATING MATERIAL

	SPACING OF MECHANICAL FASTNERS (mm)					
DUCT SYSTEM	A	B	C	D	E	F
LOW PRESSURE	75	400	400	400	400	400
MEDIUM PRESSURE	75	400	400	400	400	400

REFERENCE DRAWINGS

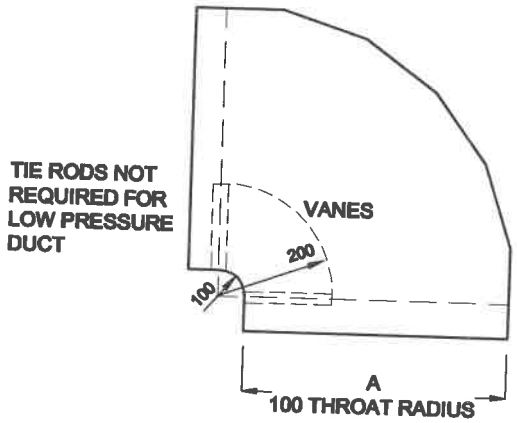
REV:	DATE:	DESCRIPTION	SIGN:
0		FIRST ISSUE	

Dihlose CONSULTING ENGINEERS
Practical Innovation

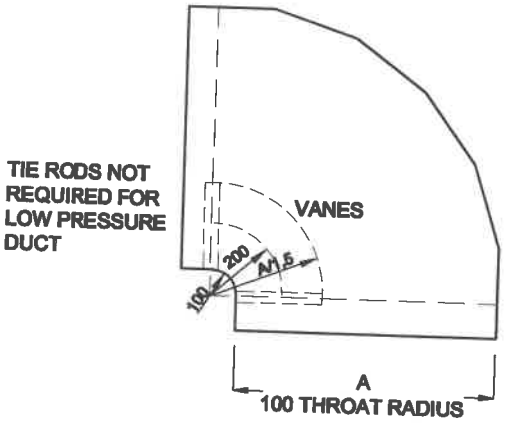
PROJECT:

DRAWING DESCRIPTION:
INSULATION
FIXING DETAILS

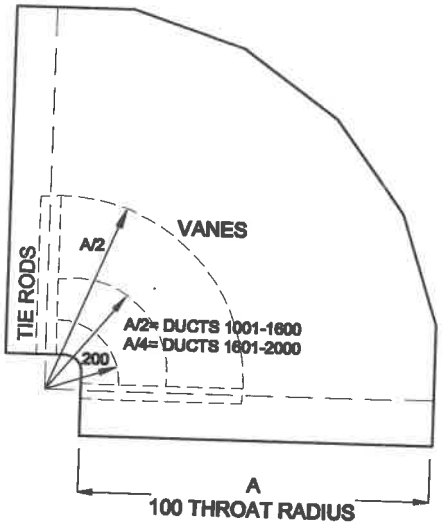
DATE: AUGUST 2005	CAD REF. NO. STD
FILE NO:	DESIGNED BY: W. VENTER
SCALE: N.T.S.	DRAWN BY: L.A.LE ROUX
REV. NO. 0	CHECKED BY: P. MORNET
DRAWING NO: STD 25	



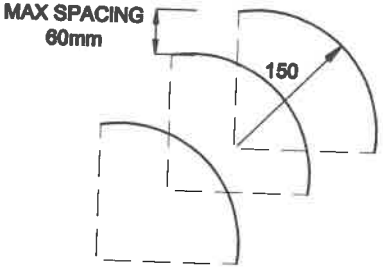
A 301 to 500 WIDE



A 501 to 1000 WIDE



A 1001 to 2000 WIDE



GUIDE VANES IN SQUARE BENDS FOR LOW PRESSURE DUCTING

NO. OF RODS (NOT FOR L.P. DUCTS)
301 - 500 = 1
501 - 1000 = 2
1001 - 1600 = 3
1601 - 2000 = 4

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	SIGN
0		FIRST ISSUE	

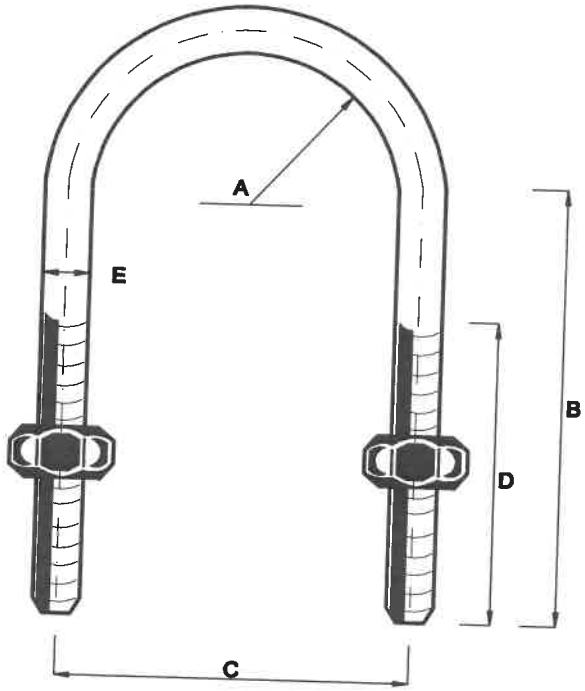
Dihlose
Practical Innovation

PROJECT:

DRAWING DESCRIPTION:

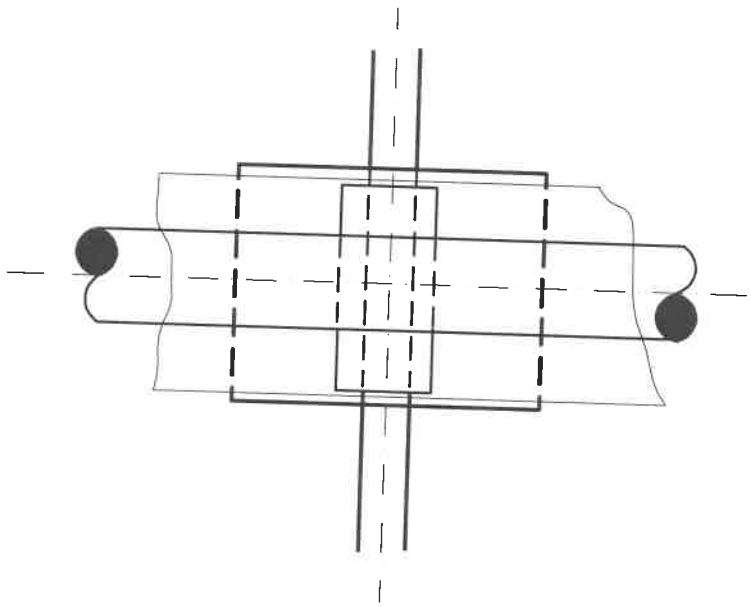
RADIUSED BENDS & VANES

DATE: AUGUST 2005	CAD REF. NO. STD
FILE NO:	DESIGNED BY: W. VENTER
SCALE: N.T.S.	DRAWN BY: L.A.LE ROUX
REV. NO. 0	CHECKED BY: P. MORNET
DRAWING NO: STD 16	



U-BOLT DETAIL

MATERIAL: MILD STEEL ROUND BAR



THESE SIZES ARE FOR PIPES WITHOUT INSULATON. ALLOWANCE MUST BE MADE TO THE LENGHTS AND RADIUS OF THE U-BOLTS WHERE INSULATION ON PIPING IS TO BE USED.

PIPE BORE	A	B	C	D	E
25	19	64	45	50	6
32	22	64	50	50	6
38	25	67	59	50	8
50	32	75	73	50	8
64	41	75	90	50	8
75	48	86	103	50	8
100	60	100	129	50	8
127	73	110	154	50	8
150	86	127	179	50	8

REFERENCE DRAWINGS

REV:	DATE:	DESCRIPTION	SIGN:
0		FIRST ISSUE	

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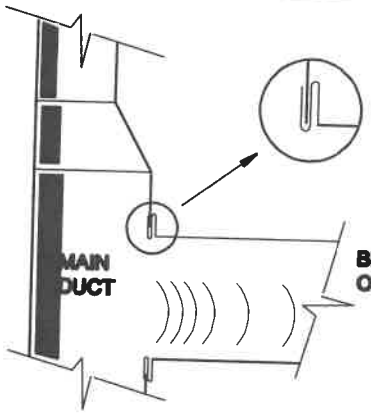
Practical Innovation

PROJECT:

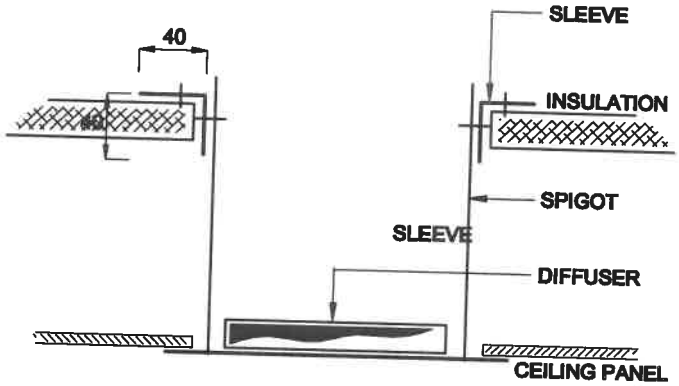
DRAWING DESCRIPTION:
PIPE U-BOLT & INSULATION PIPE FIXING DETAILS

DATE: AUGUST 2005	CAD REF. NO. STD
FILE NO:	DESIGNED BY: W. VENTER
SCALE: N.T.S.	DRAWN BY: LA LE ROUX
REV. NO. 0	CHECKED BY: P. MORNET
DRAWING NO: STD 18	

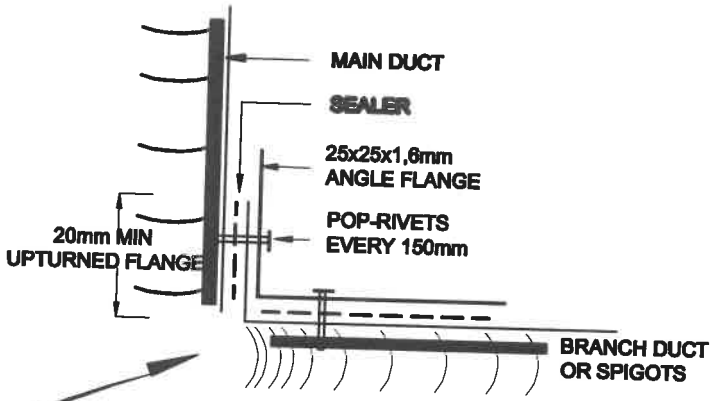


CLINCH LOCK DETAIL

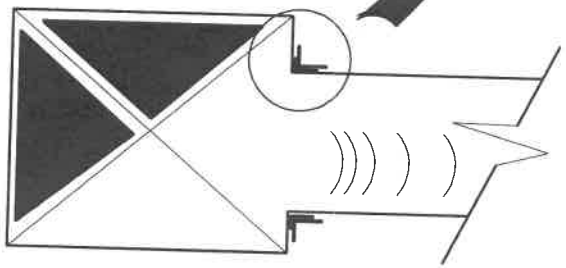
CLINCH LOCK CONNECTION



DETAIL OF SPIGOT FIXING FOR DIFFUSERS



DETAIL OF BRANCH DUCT & SIDE WALL OUTLET SPIGOT CONNECTIONS



FLANGE CONNECTION

THIS DRAWING REFERS TO
LOW PRESSURE DUCTS ONLY.
FOR MEDIUM & HIGH PRESSURE
DUCTS REFER TO SABS 1238–1979

'MEZ' FLANGES ARE TO BE USED
FOR ALL THESE CONNECTIONS
WHEN 'MEZ' HAVE BEEN QUALIFIED
FOR USE ON THE DUCTING SYSTEM.

REFERENCE DRAWINGS			
.	.	.	.
0		FIRST ISSUE	
REV.	DATE:	DESCRIPTION	SIGN:

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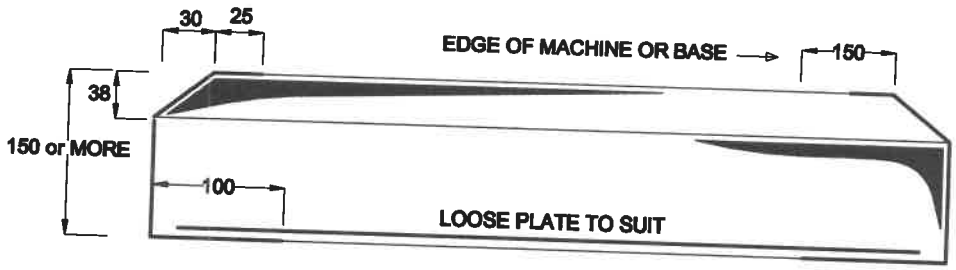
PROJECT:

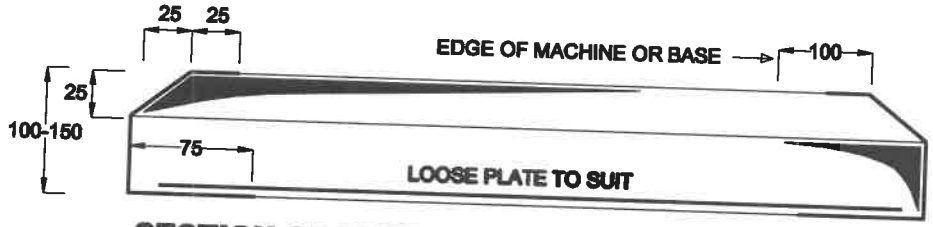
DRAWING DESCRIPTION:

TEE CONNECTIONS

DATE: AUGUST 2005	CAD REF. NO. STD
FILE NO:	DESIGNED BY: W. VENTER
SCALE: N.T.S.	DRAWN BY: L.A.LE ROUX
REV. NO. 0	CHECKED BY: P. MORNET
DRAWING NO: STD 24	



SECTION OF BASE TRAY - 150mm OR DEEPER



SECTION OF BASE TRAY - 100mm TO 150mm DEEP

MAX. LENGTH OF SIDE	S/M THICK
UP TO 1220	1.6mm
1220 AND OVER	2.0mm

WEIGHT OF CONCRETE IN BASE TRAY TO EQUAL 1,5 WEIGHT OF EQUIPMENT RESTING ON IT.
WEIGHT OF CONCRETE=2403kg/m³ (150lbs/cu ft)

MATERIAL: GALVANISED SHEETMETAL (SEE TABLE)

CONSTRUCTION: WELDED CORNER JOINTS

FINISH: WELDS WERE BRUSHED & GIVEN 1 COAT ZINC OXIDE PAINT & ONE FINAL COAT GLOSS ENAMEL TO BE APPLIED ON SITE WITH COLOUR TO SUIT

POLYSTERENE BLOCKS IN APPROX.MTG POSITION TO BE PROVIDED FOR FIXING BOLTS TO BE GROUTED IN.

REFERENCE DRAWINGS

REV.	DATE	DESCRIPTION	SIGN
0		FIRST ISSUE	

Dihlose
Practical Innovation

PROJECT:

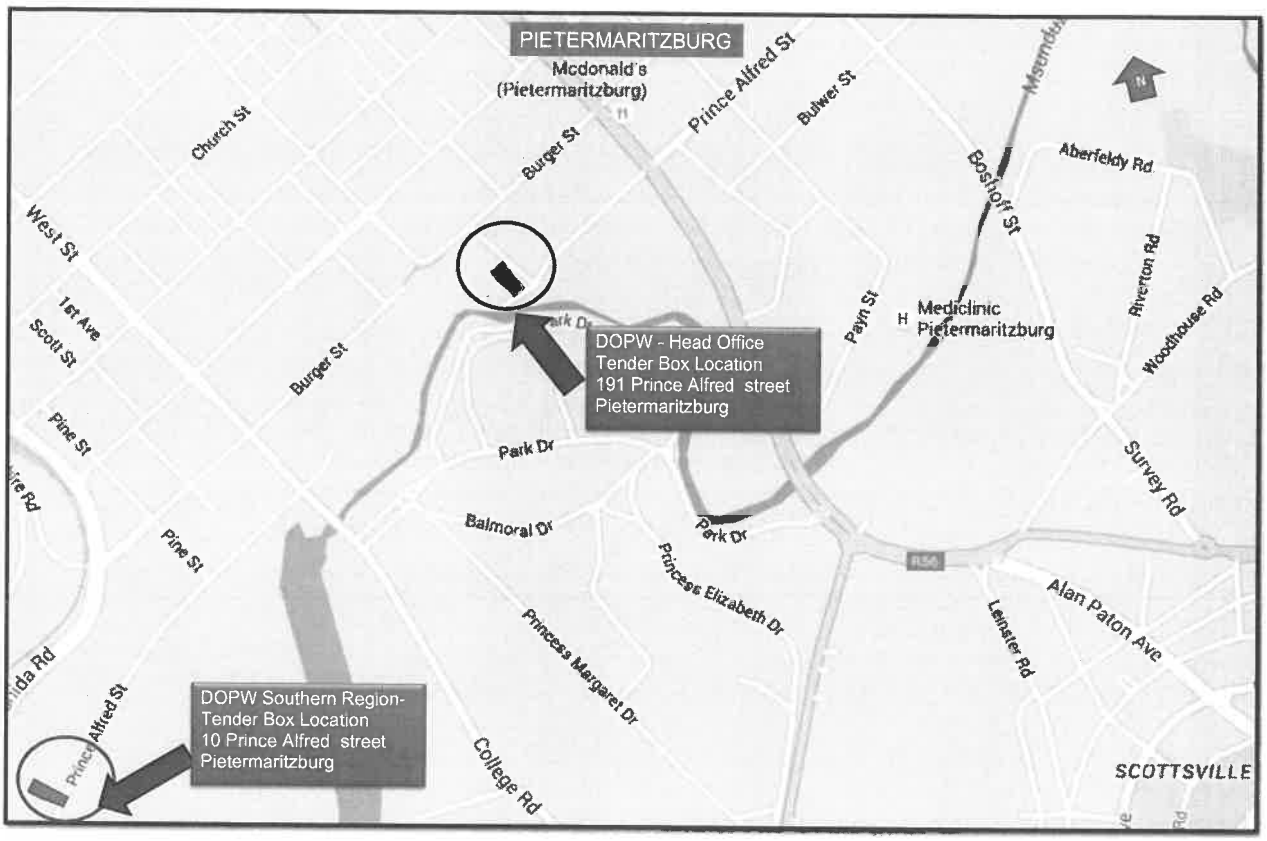
DRAWING DESCRIPTION:
STANDARD MACHINE BASE TRAY (PLINTH)

DATE: AUGUST 2005	CSV REV. NO. STD
FILE NO:	DESIGNED BY: W. VENTER
SCALE: N.T.S.	DRAWN BY: L.A.LE ROUX
REV. NO. 0	CHECKED BY: P. MORNET
DRAWING NO: STD 19	

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

ANNEXURE 4


PIETERMARITZBURG
Mcdonald's
(Pietermaritzburg)
Church St
Burger St
Prince Alfred St
Bulwer St
Boshoff St
Aberfeldy Rd
West St
1st Ave
Scott St
Burger St
Payn St
Mediclinic
Pietermaritzburg
Riverton Rd
Woodhouse Rd
DOPW - Head Office
Tender Box Location
191 Prince Alfred street
Pietermaritzburg
Pine St
Park Dr
Survey Rd
Balmoral Dr
Park Dr
Pine St
R56
Princess Elizabeth Dr
Alan Paton Ave
Leinster Rd
Princess Margaret Dr
DOPW Southern Region-
Tender Box Location
10 Prince Alfred street
Pietermaritzburg
College Rd
SCOTTSVILLE

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

ANNEXURE 5

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

Annexure 5

Joint Venture Agreement

(March 2004)

(First Edition of CIDB document 1017)

1. **PREAMBLE**

This agreement is made and entered into by and between

_____

_____

_____

of the first part and

_____

_____

_____

of the second part and

_____

_____

_____

of the third part.

(allow for additional parties as necessary).

Whereas the foregoing parties have resolved to form a Joint Venture under the title of

_____

_____

_____

for the exclusive purposes of securing and/or executing the Contract to be awarded by

(name of Employer)

to the Province of KwaZulu-Natal : Department of Transport in respect of the following project:

for *(brief description of Contract)*

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

Now it is hereby agreed as follows :

2. **DEFINITIONS AND INTERPRETATION**

2.1 Definitions

The following words and expressions shall have the meanings indicated, except where the context otherwise requires. Defined terms and words are, in general, signified in the text of the Agreement by the use of capital initial letters, but the absence of such letters does not necessarily signify that a term, or word, is not defined.

'Agreement' means the agreement between the Members of the Joint Venture and includes this model form of agreement together with the Preamble, Specific Provisions, if any, Schedules 'A', 'B' and 'C' and any relevant Documents prepared prior to the signing of the Agreement and appended thereto.

'Contract' means the contract with the Employer for the supply of the Deliverables, for the purposes of securing and executing which, the Joint Venture has been formed.

'Deliverables' means the works and/or services, equipment, materials, goods, etc. to be furnished by the Joint Venture to the Employer in terms of the Contract.

'Document' means any written, drawn, typed, printed, or photographic material, which relates to the Agreement.

'Employer' means the person, or body, which is to award the Contract and will employ the Joint Venture if it is awarded the Contract.

'Joint Venture' means the joint venture formed by the Members in accordance with the Agreement.

'Management Committee' means the body established in terms of the Agreement to manage all aspects of the work of the Joint Venture in securing and executing the Contract and in meeting the provisions for the Agreement.

'Member' means a person, or body which, being a party to the Agreement, is a member of the Joint Venture.

'Member's Interest' means the proportion expressed as a percentage, which the total monetary value of all resources provided and contributions made by a Member towards the execution by the Joint Venture of the Contract bears to the total of such values by all Members and, unless otherwise indicated in the Agreement, represents the extent to which the Member participates in the fortunes of the Joint Venture.

'Representative' means the person representing a Member on the Management Committee.

'Schedules' means Schedules 'A', 'B' and 'C' which set out general, financial and other information relating to the Members and the obligations, duties, rights, risks and benefits arising from their participation in the Joint Venture.

'Specific Provisions' means the variations, if any, required to this standard form of agreement for the specific purposes of the Agreement.

2.2 Interpretation

Unless inconsistent with the context, an expression in the Agreement which denotes:

- any gender shall include the other genders
- a natural person shall include a juristic person and vice versa
- the singular shall include the plural and vice versa

2.3 Headings

The headings to clauses of the Agreement shall not be considered part thereof, nor shall the words they contain be taken into account in the interpretation of any clause.

2.4 Law

The Agreement shall be construed in accordance with and governed by the laws of the Republic of South Africa and the English language versions shall prevail.

2.5 Language

English shall be exclusively used by the Members in the preparation of Documents unless otherwise indicated.

2.6 Conflict between Agreement and Contract

Should any provision of the Agreement be in conflict with the terms of the Contract, the Agreement shall be amended to the approval of the Management Committee so as to eliminate the conflict.

3. JOINT VENTURE GENERAL

3.1 Establishment and Purpose

The Joint Venture established by the Members in terms of the Agreement is an unincorporated association with the exclusive purposes of securing and executing the Contract for the benefit of the Members.

3.2 Termination

The operation of the Joint Venture and the validity of the Agreement shall terminate if and when it becomes evident that the Joint Venture will not be awarded the Contract, or, if the Joint Venture secures the Contract, when all obligations and rights of the Joint Venture and the Members in connection with the Contract and the Agreement have ceased and/or been satisfactorily discharged.

Unless otherwise decided by the Management Committee, the Agreement shall not terminate if a Member changes its name, or is taken over by, or merged with, another body.

This agreement will terminate when any one of the Members resigns, are liquidated or opts out of this agreement and the Joint Venture will be in breach of contract with the Employer and their contract could be cancelled.

3.3 Exclusivity

Unless otherwise agreed by the Management Committee, or provided for in the Contract no Member shall engage in any activity related to the Contract other than as a Member of the Joint Venture and Members shall ensure that their subsidiaries and other bodies over which they have control comply with this requirement.

3.4 Participation of Members

Except as may otherwise be stipulated in the Agreement, each Member shall be responsible for all costs incurred by it prior to the date of inception of the Agreement.

Subsequent to the date of inception of the Agreement, each Member shall, participate in the operations, risks, responsibilities and fortunes of the Joint Venture including, inter alia, the provision of funding, sureties, guarantees, insurances, human and other resources and participation in profits and losses to the extents indicated in the Schedules. Participation in any aspect not covered in the Schedules shall, if an agreement cannot be reached between the Members, be to the same extents as indicated by the Members Interests.

3.5 Management

The affairs of the Joint Venture shall be directed and controlled by the Management Committee, as set out in Section 4 hereof.

3.6 Confidentiality

All matters relating to the Agreement and the Contract shall be treated by the Members as confidential and no such matter shall be disclosed to any third party without the prior written approval of the Management Committee.

No Member shall be party to the dissemination of publicity relating to the Contract, or the Agreement, without the prior written approval of the Management Committee and the Employer.

3.7 Assignment

No Member shall cede, assign, or in any other way make over any of its rights, or obligations, under the Agreement without the prior written consent of the Management Committee.

3.8 Subcontracting

No Member shall subcontract any obligation, work or duty for which it is, itself, responsible in terms of the Agreement without the prior written consent of the Management Committee.

3.9 Variations to Agreement

No variation, modification, or waiver of any part of the Agreement shall be of any force, or effect, unless unanimously agreed by the Members and reduced to writing.

3.10 Liability

Each Member warrants that it will indemnify the other Members against all legal liabilities arising out of, or in connection with the performance of its obligations under the Agreement.

It is acknowledged by the Members that they may be held jointly and severally liable in respect of claims against the Joint Venture by the Employer or third parties.

4. MANAGEMENT OF JOINT VENTURE

4.1 General

The affairs of the Joint Venture shall be directed, controlled and managed by the Management Committee, which, within the terms of the Agreement and the Contract, shall have full authority to bind the Members in all matters relating to the affairs of the Joint Venture.

Communication between the Joint Venture and the Employer, or third parties, relating to the Contract shall be conducted exclusively by the Management Committee, or by such person as it may delegate to perform this function.

The Management Committee shall have the power to appoint a project manager and/or such other persons as it may see fit to appoint for the purpose of executing the Contract and may delegate such of its powers, responsibilities and duties as it may consider necessary, or desirable, to persons or bodies appointed or seconded for this purpose.

Such administrative functions as are necessary to ensure the effective operation of the Management Committee shall be performed by its chairman.

4.2 Management Committee

4.2.1 *Composition*

The Management Committee shall, unless otherwise agreed by all the Members, consist of one Representative of each Member and each Member shall be obliged, at all times, to maintain a Representative on the Management Committee.

Each member shall, not later than three working days after the signing of the Agreement, appoint its Representative and notify the other Members of the name and contact details of the Representative. Such Representative shall have the power to bind the Member that he represents in all matters relating to the execution of the Contract and the performance of the Agreement.

A Member shall be entitled, after giving the other Members not less than three working days written notice of his intention to do so, appoint, remove and/or replace, an alternate who shall, at any meeting of the Management Committee from which the Representative whom he represents is absent, be vested with all rights and powers and subjected to all the obligations of the absent Representative.

The chairman of the Management Committee shall be the Representative of the Member which has the largest Member's Interest. If two, or more, Members have the same, largest Member's Interest, the chairmanship shall rotate between the Representatives of such Members at three monthly intervals, the order of rotation to be determined by ballot.

Notwithstanding the foregoing, the chairmanship of the Management Committee may be determined, or changed, at any time by unanimous decision of the Management Committee.

No remuneration shall be paid by the Joint Venture to Representatives or their alternates for serving on the Management

4.2.2 *Meetings*

Meetings of the Management Committee shall take place at such times and places as the Management Committee may determine, provided that the chairman shall convene a meeting of the Management Committee to be held not later than ten working days after he has been requested, in writing, by a Member to do so. Not less than five working days written notice of any meeting of the Management Committee shall be given to all Representatives and their alternates.

The Management Committee may permit, or invite, persons other than Representatives or alternates to attend any of its meetings, but such persons shall not have voting rights.

4.2.3 *Decisions*

Each Representative shall have one vote on the Management Committee and where, in terms of this clause, a casting vote is required, this shall be exercised by the chairman.

All decisions of the Management Committee shall, desirably, be unanimous. Accordingly, if unanimity cannot, initially, be achieved in regard to a decision, the meeting at which that decision is sought shall be adjourned for a period of 48 hours to enable Representatives to consult with their principals. If, on resumption of the adjourned meeting, unanimity can still not be achieved, the decision, provided it is not one requiring unanimity of the Members, shall be taken by majority vote and, in the event of a tie, the chairman shall exercise a casting vote.

A Member not satisfied with a majority decision of the Management Committee may declare a dispute, to be dealt with in terms of Clause 8 hereof, but the majority decision shall, nevertheless, be implemented with immediate effect.

Decisions of the Management Committee, whether taken at a meeting, or otherwise, shall be recorded in written minutes, which shall be distributed by the chairman to reach the Representatives not later than five working days after those decisions were taken. Such minutes shall be deemed to have been affirmed by the Representatives unless written notice of dissent is received by the chairman not later than three working days after receipt of the minutes by the Representative.

4.2.4 Powers and duties

The functions, responsibilities and powers of the Management Committee shall include, inter alia, those listed below:

4.2.4.1 Formulating overall policy in regard to the achievement of the objectives of the Joint Venture.

4.2.4.2 Managing the day to day affairs of the Joint Venture.

4.2.4.3 Monitoring, directing and co-ordinating the activities of the Members to ensure that the objectives of the Joint Venture are achieved and that the obligations and responsibilities of the individual Members are met.

4.2.4.4 Monitoring and controlling the financial affairs of the Joint Venture and ensuring that proper books of account and financial records relating to affairs of the Joint Venture are maintained in an approved form and submitted to the Management Committee for approval at regular intervals, which shall not be longer than one month.

4.2.4.5 Determining the necessity for and the details of any changes in the duties and responsibilities of Members provided that any resulting changes in Members' Interests shall be unanimously approved by the Members.

4.2.4.6 Determining the terms and conditions of employment of personnel and the emoluments applicable to staff seconded to the Joint Venture by the Members.

4.2.4.7 Controlling and approving the appointment of all subcontractors.

4.2.4.8 Procuring, after the completion of the Contract and the release of all bonds, guarantees and sureties given in respect of the performances of the Joint Venture and the Members, the preparation and auditing of a final set of accounts, on the basis of which the final profits, or losses, attributable to the individual Members shall be determined and any necessary adjustments effected.

5 RESOURCES OF JOINT VENTURE

The resources to be utilised by the Joint Venture in securing and executing the Contract shall, insofar as these are to be provided directly by the Members, be as set out in the Schedules and may, from time to time, be amended by decision of the Management Committee, provided that the Member's Interests are not, except with the unanimous approval of the Members, affected thereby.

Similarly, specific areas of responsibility of the Members for the performance of work and the provision of facilities shall be as set out in the Schedules and may, from time to time, be amended by decision of the Management Committee, provided that the Members' Interest are not, except with the unanimous approval of the Members, affected thereby.

5.1 Schedule 'A' (General)

Schedule 'A' shall contain general information relating to the Joint Venture including, inter alia, the following :

1. The Employer's name and address.
2. A brief description of the Contract and the Deliverables.
3. The name, physical address, communications addresses and domicilium citandi et executandi of each Member and of the Joint Venture.
4. The Members' Interests.
5. A statement indicating whether, or not, Specific Provisions apply to the Agreement.
6. A schedule of insurance policies which must be taken out by the Joint Venture and by the individual Members.
7. A Schedule of sureties, indemnities and guarantees that must be furnished by the Joint Venture and by the individual Members.
8. Details of the persons, who, in the event of failure by the Members to reach agreement on the appointments of mediator and arbitrator, will nominate appointees to these positions in terms of Clauses 8.2 and 8.3.

5.2 Schedule 'B' (Financial)

Schedule 'B' shall contain information regarding the financial affairs of the Joint Venture including, inter alia, the following :

1. The working capital required by the Joint Venture and the extent to which and manner whereby this will be provided and/or guaranteed by the individual Members from time to time.
2. The banking accounts that are to be opened in the name of the Joint Venture and the manner in which these are to be operated.
3. The rates of interest that will be applicable to amounts by which Members are in debit, or credit, to the Joint Venture.
4. The names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture.
5. The intervals at which interim financial accounts and forecasts will be prepared for approval by the Management Committee.
6. Insofar as not covered in Schedule 'C', the basis on which contributions of various types by the Members towards the work of the Joint Venture in securing, executing, managing and satisfactorily completing the Contract, will be valued.
7. The basis on which profits and/or surplus cash will, if available from time to time, be distributed to Members.
8. The basis upon which losses, if any, are to be apportioned to Members.

5.3 Schedule 'C' (Contributions by Members)

Schedule 'C' shall set out the contributions of various types, other than cash, that will be made by the individual Members towards the work and obligations of the Joint Venture and shall, as far as possible, indicate the monetary values to be placed on such contributions, which may include, inter alia, the following :

1. Staff seconded to the Joint Venture.
2. Work carried out and services provided to, or on behalf of, the Joint Venture.
3. Plant, equipment, facilities etc. made available for use by the Joint Venture.
4. Materials and goods supplied to, or on behalf of, the Joint Venture.
5. Licences, sureties, guarantees and indemnities furnished to, or on behalf of, the Joint Venture.
6. Joint Venture Disclosure form required for the Contract.

6. BREACH OF AGREEMENT

If a Member breaches any material provision of the Agreement, or delays or fails to fulfil its obligations in whole, or in part, and does not remedy the situation within fourteen calendar days of receipt of notice from the Management Committee, or another Member, to do so, the other Members shall have the right, without prejudice to any other rights arising from the default, to summarily terminate the Agreement and re-assign the defaulting Member's rights and obligations in the Joint Venture as they see fit and withhold any moneys due to the defaulting member by the Joint Venture.

Each Member shall indemnify the other Members against all losses, costs and claims which may arise against them in the event of the Agreement being terminated as a result of breach of the Agreement by the said Member.

7. INSOLVENCY OF MEMBER

Should a Member be placed in liquidation, or under judicial management, whether provisionally or finally, or propose any compromise with its creditors, the other Members shall be entitled to proceed in terms of Clause 6, as if the Member had breached the Agreement.

8. DISPUTES

8.1 Settlement

The Members shall negotiate in good faith and make every effort to settle any dispute, or claim, that may arise out of, or relate to, the Agreement.

If agreement cannot be reached, an aggrieved Member shall, if he intends to proceed further in terms of Clause 8.2 hereof, advise all other Members in writing that negotiations have failed and that he intends to refer the matter to mediation in terms of Clause 8.2.

8.2 Mediation

Not earlier than ten working days after having advised the other Members, in terms of Clause 8.1, that negotiations in regard to a dispute have failed, an aggrieved Member may require that the dispute be referred, without legal representation, to mediation by a single mediator.

The mediator shall be selected by agreement between the Members, or, failing such agreement, by the person named for this purpose in Schedule 'A'. The costs of the mediation shall be borne equally by all Members.

The mediator shall convene a hearing of the Members and may hold separate discussions with any Member and shall assist the Members in reaching a mutually acceptable settlement of their differences through means of reconciliation, interpretation, clarification, suggestion and advice. The Members shall record such agreement in writing and thereafter they shall be bound by such agreement.

The mediator is authorised to end the mediation process whenever in his opinion further efforts at mediation would not contribute to a resolution of the dispute between the Members.

8.3 Arbitration

Where a dispute or claim is not resolved by mediation, it shall be referred to arbitration by a single arbitrator to be selected by agreement between the Members or, failing agreement, to be nominated by the person named for this purpose in Schedule 'A'.

The Member requiring referral to arbitration shall notify the other Members, in writing, thereof, not later than thirty calendar days after the mediator has expressed his opinion, failing which the mediator's opinion shall be deemed to have been accepted by all Members and shall be put into effect.

Arbitration shall be conducted in accordance with the provisions of the Arbitration Act No. 42 of 1965, as amended, and in accordance with such procedure as may be agreed by the Members or, failing such agreement, in accordance with the rules for the Conduct of Arbitrations published by the Association of Arbitrators and current at the date that the arbitrator is appointed.

The decisions of the arbitrator shall be final and binding on the Members, shall be carried into immediate effect and, if necessary, be made an order of any court of competent jurisdiction.

9. DOMICILIUM

The Members choose domicilium citandi et executandi for all purposes of and in connection with the Agreement as stated in Schedule 'A'. A Member shall be entitled to change his domicilium from time to time, but such change shall be effective only on receipt of written notice of the change by all other Members.

Member No. 1

Thus done and signed at _____ this _____ day of _____ 20___

For and on behalf of _____ *[Company]*

by *[name]* _____ who warrants his authority to do so.

_____

As witnesses 1. _____ As witnesses 2. _____

Member No. 2

Thus done and signed at _____ this _____ day of _____ 20___

For and on behalf of _____ *[Company]*

by *[name]* _____ who warrants his authority to do so.

_____

As witnesses 1. _____ As witnesses 2. _____

Member No. 3

Thus done and signed at _____ this _____ day of _____ 20___

For and on behalf of _____ *[Company]*

by *[name]* _____ who warrants his authority to do so.

_____

As witnesses 1. _____ As witnesses 2. _____

[Allow for additional parties as necessary].

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

ANNEXURE 6

WAIVER OF CONTRACTOR'S LIEN

DEFINITIONS

Contractor:	
Employer:	Head: Public Works (Province of KwaZulu-Natal : Department of Transport: Province of KwaZulu-Natal)
Agreement:	GCC FOR CONSTRUCTION WORKS - SECOND EDITION 2010
Works (description):	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**
Site:	Region: District Municipality: Local Municipality: Ward Nr.: Cluster Nr x:

AGREEMENT

The Contractor waives, in favour of the Employer, any lien or right of retention that is or may be held in respect of the Works to be executed on the Site

Thus done and signed at _____ on _____
[Date]

_____ _____
Name of signatory Capacity of signatory

_____ _____
As witness For and on behalf of the contractor who by signature hereof warrants authorisation hereto

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

ANNEXURE 7

ANNEXURE A

STRUCTURE OF THE DETAILED OHSE PLAN

A detailed OHSE Plan is to be submitted by the successful tenderer as per section 3 (a) on this document. The following are the minimum standard legal documentation that must form part of the OHSE Plan based on the risks attached in executing this project –

Replacement of existing roof with new including Rehabilitation & Restoration of other areas

1. Letter of Good Standing with Compensation Commissioner or Compensation insurer
2. The Contractor's Health, Safety & Environmental Policy, signed by the chief executive officer, which outlines the Contractor's OHSE compliance objectives and how they will be achieved. The OHS Policy is to include the compliance for the management of COVID 19.
3. Pre-Construction risk assessment *(Site specific and date)*
4. Relevant checklists and registers
5. Statutory test and inspections have been carried out on machinery, tools and equipment used on the Project
6. Site specific OHSE Organogram onsite.
7. Preliminary Induction Program
8. OHS Audit format for scheduled audits on all appointed contractors and self-audits
9. Fall Protection Plan
10. Demolition Plan. To be approved by the structural/architect before any works can be executed due to the building been declared a heritage building.
11. Environmental Management Plan which is to be developed to comply with the requirements of the National Environmental Management Act (NEMA) and the requirement of the permit issued by AMAFA. The environmental management plan is to provide a detailed waste management plan as all demolished/stripped dismantled building material/items is to be stored as per requirements of the permit issued by AMAFA.
12. Public Safety Management Plan
13. Emergency preparedness plan
14. COVID 19 Policy and Management Plan
15. Traffic Management Plan
16. Duties and responsibilities of key appointed staff for the project

Proof of competency, which should include detailed CV, proof of qualifications, registration with relevant statutory bodies, relevant experience, and references from previous clients for the following legal appointees.

16.1. Construction Manager
16.2. Construction Work Supervisor
16.3. Construction H&S Officer – Registration with SACPCMP
16.4. Risk Assessor – SAQA accredited competency certificate
16.5. Accident Investigator – SAQA accredited competency certificate
16.6. Fall Protection Planner – SAQA accredited unit standard: 229994/229995/229998
16.7. Demolition work inspector
16.8. Electrician – Wireman's licence
16.9. Temporary works Designer – ECSA registered
16.10. Temporary works supervisor

Legal appointments to be appointed	
Prior Site Handover	**After Site Handover on commencement with Construction work**
• 16.2 • Construction Manager • Assistant Construction Manager • Construction Work Supervisor • Construction H&S Officer • Risk Assessor • Fall protection Planner • Covid Compliance Officer • Demolition Works Supervisor	• Excavation work supervisor • Scaffold Erectors • Scaffold Inspectors • Scaffold Supervisors • First Aiders • Emergency co-ordinator • Fire Marshalls • Fire team members • Portable Electrical tool inspector • Hand tools inspector • Assistant Construction Work Supervisor • Housekeeping inspector • Stacking and storage inspector • Construction Vehicle and mobile plant inspector • Construction Vehicle and Mobile plant operators • Traffic Controller (Flagman) • Lifting machinery operators • Lifting equipment inspector • Banksman • Temporary electrical installation inspector • Temporary works designer • Temporary works supervisor • Flammable liquids Storage Inspector • Hazardous substance storage inspector • Ladder inspector • Health and safety representatives • Accident investigator

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

ANNEXURE 8

WIMS no. 060988	PROJECT SPECIFIC HEALTH AND SAFETY SPECIFICATION FOR:- SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGETYPOLOGY)			
Company/Group/Division Department of Transport		Document Number DoPW-PSHSS-PMB-01-2023	Revision 01	Reference CR 5 (1) (b,c,d,f)
Approval	Name	Designation	Signature	Date
Document Owner	KP Gunkel	Pr CHSA 095/2019	KP Gunkel	23/01/2023

public works

Department:
Public Works
PROVINCE OF KWAZULU-NATAL

DEVELOPED BY:

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CK ARCHITECT & VALUER

DOCUMENT CONTROL SHEET

The purpose of this form is to ensure that documents are reviewed and approved prior to issue. The form is to be bound into the front of all documents released by Department of Public Works

CLIENT	DEPARTMENT OF PUBLIC WORKS
PROJECT NAME	THE REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY)
DOCUMENT TITLE	OH&S SPECIFICATION FOR THE REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS
DOPW REFERENCE No	DoPW-PSHSS-PMB-01-2023

DOCUMENT HISTORY

DATE	REVISION	COMPILED BY	REVIEWED BY	COMMENTS
23 January 2023	0	Mr. K Gunkel	Mr. G Du Plooy	Original Specification
10 February 2023	01	Mr. K Gunkel	Ms P Xaba	Amended as per Clients request

APPROVAL: - DESIGNER AND PROJECT MANAGER

NAME	POSITION	SIGNATURE

PROJECT SPECIFIC HEALTH AND SAFETY SPECIFICATION

Contents

1. PURPOSE

The KwaZulu Natal Department of Public Works is deemed as the "Client" in terms of the definitions of Construction Regulations of 2014 as published in Government Gazette No. 37305.The Construction Regulations of 2014 under CR (5) (1) stipulates that the client must prepare a suitable, sufficiently documented, and coherent site specific Occupational Health and Safety Specification for the intended construction work based on the baseline risk assessment.
The purpose of this Occupational Health, Safety and Environmental Specification document (which hereinafter will be referred to as OHSE Spec) is to provide designers and the successful tenderer with essential OHS information to ensure effective safety management during the design and construction phase of the project.

This OHSE Spec forms an integral part of the contract between the Client and the Principal Contractor, so as to ensure compliance with the Occupational Health and Safety Act, Act 85 of 1993 and its applicable regulations and must serve as the basis for the Principal Contractor to develop his/her Project Safety, Health and Environmental Management Plan. As with any other plan for it to be implemented and managed effectively it requires the allocation of sufficient funds to achieve the objectives set out in the plan. In line with this requirement Construction Regulation 5(1) (g) requires the Client to ensure that the Principal Contractor has made adequate provisions for the cost of Health and Safety Measures in their tenders.

It must be noted that this OHSE Specification as much as it is detailed it is not exhaustive and the onus is on the Principal Contractors to ensure that they comply with Section 8 of the OHS Act, Act 85 of 1993 which states that "Every Employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees." this means that Principal Contractors as they are employers in their own right must at all times ensure continuous assessments are done for continued provision and maintenance of a healthy and safe working environment.
The Principal Contractor is to also pay specific attention to the requirements of the Disaster Management Act, 2002, the Directive issued by Minister of Employment and Labour in respect of COVID-19 Occupational Health Measures in Workplaces, 2020 and the applicable guidelines as issued by the National Institute of Communicable Diseases (N.I.C.D) and the Centre for Disease Control and Prevention (CDC)

Contractors and Service Providers are required to read and take note of the requirements within this specification and ensure that they provide the required budget for stipulated safety requirements

2. INTERPRETATION

2.1 Scope of Health and Safety Document

The Health and Safety Specification pertaining to this project," The replacement of the existing roof with new located at the Department of Transport: Motor Transport Services (MTS) B Block; including

Rehabilitation & Restoration of other areas (Heritage Typology) at 230 Prince Alfred Street. "covers the subjects contained in the index and is intended to outline the normal as well as any special requirements of Department of Public Works pertaining to the health and safety matters (including the environment) applicable to the project in question. This specification must be read in conjunction with the OHSA, Regulations (as amended) and any other standards relating to work being done, and ensure compliance thereto. The stipulations in this specification, as well as those contained in all other documentation pertaining to the project, including contract documentation and technical specifications shall not be interpreted, in any way whatsoever, to countermand or nullify any stipulation of the Act, Regulations and Safety Standards which are promulgated under, or incorporated into the Act.

2.2 Implementation of the Project Specific Occupational Health and Safety Specifications (PSHSS)

The project specific H&S specification (PSHSS) forms an integral part of the Contract, and the PC is required to make it an integral part of their Contracts with Contractors and Suppliers.

The information relative to the scope of the project, the works etc. are detailed in the tender documentation and are to be considered when developing the H&S Plan and associated documentation.

The OHSA S.37.2 Mandatary Agreement must be fully completed by the PC, supplied by the Client. These documents shall be deemed to form part of the returnable Contract Documents.

No work may commence without written approval of the H&S Plan by Department of Public Works H&S Agent.

Should there be design changes, or change in the scope of works, an amended PSHSS may be issued. Where amended PSHSSs are issued, the PC will be required to ensure a resubmission of an amended H&S Plan for approval. Further to this, the PC must ensure that similar information must be provided as it applies to the works to all their Contractors, within 5 working days following notification thereof. The H&S Agent or a member of the Clients Health and Safety Department will visit the project to ensure compliance and limit risk. All activities on the site and all appropriate documentation will be monitored and reported on to the Client's Project Manager.

2.3 Definitions

- **Agent** means any competent person who acts as a representative for a client in managing the overall construction work performed for that client.
- **Angle of repose** means the steepest angle of a surface at which a mass of loose or fragmented material will remain stationary in a pile on the surface, rather than sliding or crumbling away;
- **ALARP (As Low As Reasonably Practicable)** means the concept of weighing a risk against the sacrifice needed to implement the measures necessary to avoid the risk. With respect to health and safety, it is assumed that the measures should be implemented unless it can be shown that the sacrifice is grossly disproportionate to the benefit.

- **Barricade** means a temporary structure that is erected as a physical barrier to prevent persons from inadvertently coming into contact with an identified hazard.
- **Battering** means sloping the sides of an excavation to a predetermined angle (usually less than the natural angle of repose) to ensure stability.
- **Benching** is the creation of a series of steps in the sides of an excavation to prevent collapse.
- **Bund** means an impervious containment structure around and beneath a hydrocarbon and / or chemical storage facility, isolating the facility from ground and surface water reticulation. Bunds are designed to contain spillages and leaks, and to facilitate cleanup operations, thus preventing pollution of the surrounding environment.
- **Client** means any person for whom construction work is performed
- **Competent person** means a person who has, in respect of the work or task to be performed, the required knowledge, training and experience and, where applicable, qualifications, specific to that work or task: Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualification Framework Act, 2000 (Act No.67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and is familiar with the Act and with the applicable regulations made under the Act;
- **Consequence** means the outcome of an unwanted event (risk scenario) expressed qualitatively or quantitatively. It is usual to consider this in terms of the maximum reasonable potential outcome
- **Construction work** means any work in connection with -
  - The erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;
  - The installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;
  - The construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
  - The moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;
- **COID Act** means the Compensation for Occupational Injuries and Diseases Act.
- **CR** mean Construction Regulations
- **Construction Work Permit** means a document issued in terms of regulation 3 of the Construction Regulations 2014;
- **COVID 19** Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus
- **Employer** means, subject to the provisions of subsection (2), any person who employs or provides work for any person and remunerates that person or expressly or tacitly undertakes to remunerate him, but excludes a labour broker as defined in section 1 (1) of the Labour Relations Act, 1956 (Act No. 28 of 1956);

- **Hazard** means a chemical, physical, social or political condition that has the potential of causing damage or any kind of harm to people, property the environment or business continuity.
- **HCS** means Hazardous Chemical Substances.
- **Health and safety file** means a file, or other record containing the information in writing required by these Regulations;
- **Health and safety plan** means a site, activity or project specific documented plan in accordance with the client's health and safety specification;
- **Health and safety specification** means a site, activity or project specific document prepared by the client pertaining to all health and safety requirements related to construction work;
- **Safety, Health and Environmental file** means a file, or other record in permanent form, containing the information required as contemplated in these specifications;
- **Safety, Health and Environmental plan** means a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified
- **Safety, Health and Environmental Specification** means a documented specification of all health, safety and environmental requirements pertaining to the associated works on a construction site or contract work, so as to ensure the health and safety of persons as well as the protection of the Environment,
- **Letter of good Standing** is the Letter from the Compensation Commissioner which provides proof of registration and that payment are in order
- **National Building Regulations** means the National Building Regulations made under the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977), and promulgated by Government Notice No. R. 2378 of 30 July 1990, as amended by Government Notices No's R. 432 of 8 March 1991, R. 919 of 30 July 1999 and R. 547 of 30 May 2008;
- **Principal Contractor** means an employer, as defined in section 1 of the Act who performs construction work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site;
- **Professional Engineer or Professional Certificated Engineer** means a person holding registration as either a Professional Engineer or Professional Certificated Engineer in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000);
- **Professional Technologist** means a person holding registration as a Professional Engineering Technologist in terms of the Engineering Profession Act, 2000;
- **Project** refers to the contract and has reference to the premises or any part thereof where the work which has been contracted for is to be performed.
- **Risk** means uncertain future events that can influence the achievement of the company's objective. Chance of loss
- **Risk Assessment** means a programme to determine any risk associated with any hazard at a specific construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard
- **SHE** means Safety, Health and Environment.

2.4 List of Abbreviations

OHSA	Occupational Health & Safety Act No. 85 of 1993
BoQ	Bill of Quantities
COC	Certificate of Compliance
COIDA	Compensation for Occupational Injuries and Diseases Act No. 130 of 1993
CR	Construction Regulations
DMR	Driven Machinery Regulations
DoE&L	Department of Employment and Labour
FEMA	Federated Employers Mutual Association
GAR	General Administration Regulations
GSR	General Safety Regulations
HCSR	Hazardous Chemical Substances Regulations
HIRA	Hazard Identification Risk Assessment
H&S	Health and Safety
MSDS	Material Safety Data Sheet
PSHSS	Project Specific Health and Safety Specification
PC	Principal Contractor
PPE	Personal Protective Equipment
AIA	Approved Inspection Authority
AAR	Asbestos Abatement Regulations
SANS	South African National Standard
SABS	South African Bureau of Standard

2.5 Legislated References

- Compensation for Occupational Injury and Diseases Act, 130 of 1993
- Occupational Health and Safety Act, 85 of 1993
- Disaster Management Act, Act 57 of 2002 and associated regulations.
- Asbestos Abatement Regulations, 2020 [GN R.1196 2020]
- Construction Regulations, 2014 [GN R.84 07/02/2014]
- Driven Machinery Regulations, 1988 [GN R.295 1988]
- Ergonomics Regulations, 2019 [GN R.1589 2019]
- Electrical Installation Regulations, 2009 [GN R.242 2009]
- Electrical Machinery Regulations, 1988 [GN R.1593 1988]
- Environmental Regulations for Workplaces, 1987 [GN R.2281 1987]
- Facilities Regulations, 2004 [GN R.924 2004]
- General Administration Regulations, 2003 [GN R.929 2003]
- General Machinery Regulations, 1988 [GN R.1521 1998]
- General Safety Regulations, 1986 [GN R.1031 1986]
- Hazardous Biological Agents Regulations, 2001 [GN R.1390 2001]
- Hazardous Chemical Substances Regulations, 1995 [GN R.1179 1995]
- Lift, Escalator and Passenger Conveyor Regulations, 1994 [GN R.797 1994]
- Noise Induced Hearing Loss Regulations, 2003 [GN R.307 2003]
- Pressure Equipment Regulations, 2009 [GN R.734 of 15 July 2009

3. ADMINISTRATIVE REQUIREMENTS

3.1 Reporting

The Principal Contractor and/or his designated person appointed in terms of Section 16(2) of the Occupational Health and Safety Act 85 of 1993 ("the OHS Act") shall:

- Report to the Department of Public Works appointed Health and Safety Agent, Project

Manager and/or a representative designated by the Client prior to commencing the work at the premises.

- Be responsible for notifying the appointed Health and Safety Agent in advance, if for any reason it is to hand over to any other person and arrange for the person to be appointed in a like manner with the necessary approval and authorization from the Project Manager.
- Provide twenty-four (24) hour emergency contact numbers.

3.2 Registration with the Compensation Commissioner

The Principal Contractor shall ensure that he holds a valid registration with the Compensation Commissioner, as required in terms of the Section 89 of the Compensation for Occupational Injuries and Diseases Act 130 of 1993, and that all payments owing to the Commissioner are discharged. The Principal Contractor shall further ensure that the cover shall remain in force while present on the premises.

The Principal Contractor shall provide to the Client, in writing, its compensation registration number and a copy of a recent (within a month of date of signing) letter of good standing with the Commission, this letter shall be kept valid for the duration of the contract/ project.

The Principal Contractor shall warrant that all its employees and Sub-Contractor employees are covered in terms of the provisions of the Compensation for Occupational Injuries and Diseases Act 1993 (COIDA), which cover shall remain in force whilst any such employees are present on the Company premises; or which shall remain in force for the duration of the contractual relationship between the Department of Public Works and the Principal Contractor which ever period is the longest.

3.3 Application of Construction Work Permit

The Principal Contractor shall assist the Client in compiling the evidence required by the Department of Employment and Labour for the issuing of the Construction Work Permit.
The Principal Contractor shall ensure that the H&S Plan presented for approvals includes:

- Evidence that the Principal Contractor made adequate provision for the cost of H&S measures
- Evidence that the Principal Contractor has the necessary competencies and resources to carry out the construction work safely.
- A copy of the Letter of Appointment of the Construction Manager ito CR 8(1) + proof of his qualification, competence and registration where applicable.
- Proof of the registration of the Principal Contractors Health and Safety Officer with the SACPCMP.

The Principal Contractor shall display the work permit number at the main site entrance. This display must be conspicuous to the satisfaction of the Department of Employment and Labour. The construction works can only commence once the construction work permit is issued by the Department of Employment and Labour. Where changes to the conditions given in the submission are required (i.e. Contractors, completion dates, increase in workers), a revised Annexure 1 must be submitted to the Department of Employment and Labour. The completion date will include the defect and liability period. A copy of the notification form and any further submissions/ correspondence must be kept in

the H&S file

3.4 Statutory Appointments

The CEO (OHSA S16.1) of the Principal Contractor will take overall responsibility for the appointment of competent site staff for the duration of the project. Should the CEO not be personally involved in the project, the H&S responsibilities are to be delegated to the Contracts Manager (OHSA 16.2) Knowledge and training in H&S is required, and certificates indicating H&S training as well as experience to be included in CVs.

All other legal appointments are to be made with relevance to the type of work required and kept current with the project programme. The construction team is to ensure the appointed full - time SACPCMP registered H&S Officer is kept up to date with all planned activities, to ensure all H&S requirements are met.

The Occupational Health and Safety Plan shall include the following, but is not limited to the following key appointments:

3.4.1 Construction Manager

The Principle Contractor is to appoint a competent Construction Manager (i.e. B-Tech or National Diploma qualifications in Civil Engineering; relevant experience and has completed similar projects) to manage part or all of the works and in the absence of Construction Manager an alternate must be appointed.

The appointed Construction Manager must ensure that a Health and Safety Policy that clearly states the contractor's values and objectives for the effective management of health and safety on the project is in place and is communicated to all contractor and sub-contractor employees

- Ensure that all applicable legal and project health and safety requirements are identified and complied with at all times
- Ensure that effective hazard identification and risk management processes are established and implemented for all work to be carried out by the contractor
- Participate in the Baseline Risk Assessment for the contractor's scope of work (prior to site establishment)
- Participate in (and approving) all Task-Based Risk Assessments conducted for the work to be carried out by the contractor
- Drive the achievement of agreed health and safety objectives
- Ensure that the necessary resources are made available for the effective implementation of the contractor's Health and Safety Management Plan
- Ensure that all work is adequately and competently supervised
- Ensure that all contractor employees have clearly defined responsibilities with regard to health and safety (assigned in writing), and that these responsibilities are clearly communicated and understood

- Ensure as far as is reasonably practicable that each contractor and sub-contractor employee is competent to perform his role, and has received appropriate workplace health and safety training and instruction
- Manage all appointed sub-contractors with regard to health and safety performance

3.4.2 Contractor Supervisors

The contractor must ensure that all project and / or construction works are supervised at all times by an adequate number of qualified, competent and appointed supervisors who have experience in the type of work being carried out.

- No work may be carried out without an appointed supervisor being physically present in the work area.

  Each Contractor Supervisor shall be responsible for:
- Ensuring that all work carried out under his supervision is done so in accordance with the requirements of all applicable legislation, rules, standards, specifications, plans and procedures;
- Participating in Baseline and Task-Based Risk Assessments;
- Ensuring that all employees under his supervision are made aware of the hazards, risk scenarios and control measures identified in relevant risk assessments;
- Ensuring that the control measures stipulated in all relevant risk assessments are in place and are implemented fully for all work carried out under his supervision;
- Ensuring that all employees under his supervision conduct pre-task hazard assessments when necessary;
- Driving the achievement of health and safety objectives set for his team;
- Ensuring that the necessary written appointments are in place for each employee under his supervision (e.g. first aider, mobile crane operator, etc.);
- Ensuring that all employees under his supervision attend all required training;
- Ensuring that no employee carries out any work that he is not competent to perform or has not been appointed to perform;
- Identifying training needs within his team;
- Conducting a weekly Toolbox Talk with his team;
- Leading a Daily Safe Task Instruction discussion with his team;
- Attending Health and Safety Meetings as required;

Each supervisor must accept these responsibilities in writing as part of his appointment.

3.4.3 Construction Health and Safety Officer

The PC will employ a competent full time H&S Officer for the duration of the contract. The H&S Officer's CV is to be submitted for approval by the H&S Agent. The PC is to ensure adequate resources are provided in order to undertake all responsibilities (i.e. *mobile phone, computer and internet access, vehicle* etc.) Qualifications should include at least Grade 12, SAMTRAC/NEBOSH/Diploma in H&S qualifications or similar together with additional appropriate short courses (ie. Fall Protection Developer, Risk Assessor, Incident Investigator and First Aider Level 1) with at least 3-5 years' exposure to building

construction that is appropriate and **registration with SACPCMP as a Health and Safety Officer**. An in-depth knowledge of legislative requirements and the application thereof is required. The site supervisor may not act as the H&S Officer. The H&S Officer will be held responsible for all H&S on the project.

- Site staff, Supervision, Contractors and visitors are to follow the approved OH&S system and instructions given by the H&S Officer at all times;
- No new workers or Contractors may commence work without the approval of the submitted H&S Plan or having attended the site induction
- No inductions of Contractor staff until the H&S documentation is approved by the H&S Officer
- The H&S Officer/s may not be removed or replaced without the approval of the H&S Agent
- A replacement Construction Health and Safety Officer, satisfying the above criteria, must be readily available in case of absence of the appointed Construction Health and Safety Officer (to be placed on site where absence is greater than one day).
- Where work shall take place on the night shift or weekend or public holiday, a Construction Health and Safety Officer shall be present on site

A monthly report of all H&S activities and incidents is required by the end of the first week of each month, or at a date agreed to by the H&S Agent and the H&S Officer.

The H&S Officer will be responsible for collating the H&S documentation at the close out of the project in electronic format. The PC is to ensure that all Contractors documentation follows the same requirements and closed out H&S documentation must be completed and be available with the close out of the main contract.

3.5 The Designer's Responsibilities

In terms of Regulation 6 of the Construction Regulations the Designer of a structure is responsible for inter alia the following:

- Ensure that the applicable safety standards incorporated into the Regulations under Section 44 of the Act are complied with in the design;
- Take into consideration the health and safety specification submitted by the Client;
- Before the contract is put out on tender, make available in a report to the Client:
    i. All relevant health and safety information about the design of the relevant structure that may affect the pricing of the construction work;
    ii. The geotechnical-science aspects, where appropriate; and
    iii. The loading that the structure is designed to withstand.
- Inform the Client in writing of any known or anticipated dangers of hazards relating to the construction work, and make available all relevant information required for the safe execution of the work upon being designed or when the design is subsequently altered;
- Refrain from including anything in the design of the structure necessitating the use of dangerous procedures or materials hazardous to the health and safety of persons, which can be avoided by modifying the design or by substituting materials;
- Take into account the hazards relating to any subsequent maintenance of the relevant structure and must make provision in the design for that work to be4 performed to minimise the risk;

- When mandated by the Client to do so, carry out the necessary inspections at appropriate stages to verify that the construction of the relevant structure is carried out in accordance with the design: provided that if the designer is not so mandated, the client's appointed agent in this regard is responsible to carry out such inspections;
- When mandated as contemplated above, stop any contractor from executing any construction work which is not in accordance with the relevant design's health and safety aspects: provided that if the designer is not so mandated, the Client's appointed agent in that regard must stop that contractor from executing that construction work;
- When mandated as contemplated above, in his or her final inspection of the completed structure in accordance with the National Building Regulations, include the health and safety aspects of the structure as far as is reasonably practicable, declare the structure safe for use, and issue a completion certificate to the Client and a copy thereof to the contractor; and
- Take cognisance of the ergonomic design principles during the design stage, in order to minimize ergonomic related hazards in all phases of the life cycle of the structure.

The designer of temporary works must ensure:

- All temporary works are adequately designed so that it will be capable of supporting all anticipated vertical and lateral loads that may be applied;
- The designs of temporary works are done with close reference to the structural design drawings issued by the contractor, and in the event of any uncertainty consult the contractor;
- All drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector; and
- The loads by the temporary works and any imposed loads are clearly indicated in the design

3.6 Health and Safety Organogram

The Principal Contractor must prepare an organogram, outlining the site health & safety management structure and appointed competent persons. In cases where appointments have not been made, the organogram shall reflect the intended positions. The organogram must be updated when there are changes in the Site Management Structure, and dated accordingly. All HSE appointments are to be indicated on the organogram, clearly identifying the individual as well as providing contact details.

3.7 Risk Management

3.7.1 Risk Assessments and Hazard Identification (HIRA)

The Principal Contractor shall cause a hazard identification and risk assessment (HIRA) to be performed by a competent person, appointed in writing, on the functions, activities and tasks relating to the work to be done, before any of the contract work can commence on site and a copy of the document must be presented to the Clients appointed SHE Agent. The documented risk assessments shall form part of the SHE plan and must include all plans as may be applicable. Refer to the Baseline Risk Assessment conducted by the appointed SHE Agent as the minimum risks to be addressed in the contractor, site and task specific risk assessments.

Method statements are to be submitted prior to, and during the project where changes or new work is

required, and the approval of the Designer is required before work on that aspect or activity can commence. The H&S Officer is to be included in progress/ planning sessions/meetings to ensure that the appropriate risk assessments, safe work procedures and communication required are available and completed timeously.

The Risk Assessment shall include, at least:

- A detailed **method statement** of how the work is to be done including the controls and mitigating measures as identified during the risk assessments,
- The **scope** of all Safety, Health and Environmental hazards and risks as may be anticipated for the construction or Principal Contractor work,
- The **identification** of the risks and hazards to which persons may be exposed to,
- The **analysis** and **evaluation** of the risks and hazards identified,
- A documented plan of **safe work procedures** to mitigate, reduce or control the risks and hazards that have been identified,
- A **monitoring** plan and
- A documented **review** plan

Any Principal Contractor shall cause the relevant risk assessment to be reviewed:

- where changes are brought to the design and construction work,
- when an incident has occurred,
- At intervals not exceeding 3 months.

Based on the Risk Assessments, the Principal Contractor must develop a set of site-specific SHE rules that will be applied to regulate the SHE aspects of the construction or Principal Contractor work. All Principal Contractor employees and sub-contractors must be advised of the risks they will be exposed to and must be trained in the methods or procedures to be used to mitigate these hazards or risks.

3.7.2 Hazard & Risk Control

The Principal Contractor shall ensure that mitigation and control strategies for hazards and risks as per the risk assessment are implemented. The implementation of any risk management strategies shall consider the hierarchy of controls as well the concept of reasonably practicable when prioritizing suitable controls. In terms of the hierarchy of control the following needs to be considered during selection;

- **Elimination**

Elimination of a hazard results in elimination of the associated risk. While elimination is the most desirable it is often the least practical, but it's not impossible.

- **Substitution**

Substituting a more hazardous substance with a lesser one reduces the risk.

- **Engineering/Isolation**

Modifying the engineering of the exposure source or interrupting the path between the employee and the exposure source will mitigate the risk.

- **Administrative**

Administrative controls include reduction of exposure times through shift rotation, training, scheduling work at certain low risk times and other measures.

- **Personal Protective Equipment (PPE)**

It is important to note that PPE is the least desirable option and should only be considered after all the above have been investigated or used in conjunction with them. The Principal Contractor shall ensure that his responsible persons and employees are provided with adequate personal protective equipment (PPE) for the work they may perform in accordance to the HIRA outcomes and in accordance with the requirements of General Safety Regulation 2(1) of the OHS Act and that the PPE is worn accordingly. Such personal protective equipment shall be maintained in a good working condition and users shall be trained in the reason for wearing and the correct use and care thereof. An employer or a user of machinery, as the case may be, shall take steps to ensure that no safety equipment or facility provided as required by this or any other regulation is removed from a workplace or from premises where machinery is used, except for purposes of cleaning, repair, maintenance, modification, mending or replacement, and no person shall remove any such safety equipment or facility from a workplace or premises where machinery is used, except for the aforesaid purposes.

3.8 Incidents and Accident Management

The Principal Contractor shall ensure that its employees, as well as the employees of its agents and sub-contractors, co-operate fully with any accident or incident investigation involving injury to people, or damage to property. All serious accidents or incidents must be investigated by a competent team within 7 days and records of such investigations shall be kept in the SHE File. All serious accidents/incidents are reported immediately to the Health and Safety Agent or Health and Safety Officer of the Department of Public Works and record a summary thereof in the daily report.

The Principal Contractor shall ensure that a suitable Accident and Incident Procedure is drawn up for the duration of the Project.

The Principal Contractor will be responsible to inform the relevant authorities (i.e. Department of Employment and Labour) of any Serious or Reportable Incidents which may occur in terms of the applicable legislation. All correspondence of the (Relevant Authorities) regarding these incidents must be copied and kept in the SHE File.

Furthermore, it must be noted that any Lost Time Injury (LTI) or more serious must be communicated immediately, both verbally and in writing to Department of Public Works Health and Safety Agent or Health and Safety Officer for this project.

All incidents referred to in Section 24 of the OHS Act shall be reported by the Principal Contractor to the Department of Employment and Labour as may be applicable and to Department of Public Works. The Client shall further be provided with copies of any written documentation relating to any incident. The Principal Contractor shall as part of their commitment to SHE submit to the Client least once a month incident statistics/ reports inclusive of injuries (first aid; medical; disabling (lost day); and fatal) as well as

other occupational safety and environmental incidents and near misses.

The Department of Public Works retains an interest in the reporting of any incident as described above as well as in any formal investigation and/or inquiry conducted in terms of Section 32 of the OHS-Act into such incident.

Injury Management

The aim of injury management is to ensure appropriate and adequate medical treatment is provided to injured employees to enable a quick and efficient return to the workplace.
The Contractor should consider nominating a local doctor for the project to which all injured employees requiring medical assistance in the first instance will be referred to. The treatment of injured personnel and the immediate needs as required by the project first aiders must not be compromised.
The doctor should be briefed on the commitment by the Contractor to injury management, alternative duties, and early return to work programmes and rehabilitation.
Effective injury management must commence immediately after the accident has occurred and it includes:

- Counselling of the patient.
- Referral to the nominated medical practitioner via the Project First Aid Centre (where required).
- Follow up, including personal off site visits by the Contractor (where required).
- Provision of off-site personal, family and social assistance where required.
- Formal assessments of employee capabilities prior to return to work.
- Provision of alternate meaningful duties, where appropriate.

3.9 SHE Plan

The Principe Contractor must prepare, implement and administer the Contractor's SHE Management Plan. The Plan is in writing and forwarded prior to mobilisation to the construction site for work under the Contract, to the Client or Clients Agent for review. The Principal Contractor is required to keep it up to date throughout the Construction Phase. The degree of detail required in the SHE Plan and the time and effort in preparing it should be in proportion to the nature, size and level of Health and Safety risks involved in the project. Projects involving minimal risks will call for simple, straight forward plans. Large projects or those involving significant risks will need more detail. The SHE plan must at least cover the requirements of these specifications as may be applicable to the Principal Contractor as well as Risk Assessment outcomes.
The SHE Management Plan must comply with the Contract including Project Site Rules & Requirements, and applicable laws relating to workplace health and safety and environmental health. Any proposed amendments or revisions to the Contractor's Safety Management Plan are submitted to the Client or Client Agent for acceptance.
The SHE Management Plan must provide a systematic method of managing hazards according to the risk priority, and must include all mobilisation and site set-up activities.
The Plan will be audited for completeness by the Client or Clients nominated representative before it will be "accepted with comments".
The Plan is presented and at least "accepted with comments" by the Client BEFORE permission will be

granted to the Contractor to mobilise to site.

3.10 The OH&S File (Construction Regulation 7(1)(b))

As required by Construction Regulation 7(1)(b), the Principal Contractor will keep an OH&S File on site containing the documents as indicated in **Annexure A.**

3.11 Audits

Compulsory monthly audits of the Contractor's health and safety system and physical conditions on site will be conducted by the Department of Public Works or an Agent authorised thereto. Reasonable notification will be provided to the Contractor. The Principal Contractor is obligated to conduct monthly audits on all sub-contractors and keep audit reports in the SHE file.

3.12 Records

The Principal Contractor must keep and maintain SHE records to demonstrate compliance with these specifications, with the OHS Act 85/1993 and applicable regulations, Environmental Management legislation as well as other applicable legislation or standards.

Provide a register confirming that induction, specific training, and medical fitness assessment and declaration of competency of employees and/or sub-contractors has been completed before the contract work commences.

Ensure that a **daily report** (as applicable) is to be filled out to record all activities taking place on site and must include items such as inclement weather conditions, accident/incidents details (including near misses), details of contractors on site, hours worked, progress with contract work schedule, inspections carried out, quality checks, details of health and safety talks and issues, special instructions, etc, issued by the Construction Manager, or other person. The Principal Contractor must ensure that every Contractor keeps its own SHE file, maintains the file and makes it available on request (the file must include the Contractor's SHE plan).

4. OPERATIONAL REQUIREMENTS

4.1 Training

The Principal Contractor shall ensure that all his employees are adequately trained and experienced to perform their work and are further trained on the SHE aspects relating to the work and that they understand the hazards associated with such work being carried out on the premises.

4.1.1 Induction

The Principal Contractor must ensure that all site personnel (workers, professional team and visitors) undergo a site-specific SHE induction training session before any worker starts work prior to commencing on the Project or Contract, as applicable. The induction must include the general duties of the employer and the employees, possible hazards and their associate risks that employees may be exposed to while on site as well as the control measures in place to mitigate the risks. A record of

attendance shall be kept in the SHE file, as well as a copy of the contents of the said induction. The Principal Contractor will be required to induct all contractors' employees. Workers must carry some sort of proof of inductions on their person.

4.1.2 Awareness

The contractor must prepare a Toolbox Talk on a weekly basis and must share it with all personnel for which the contractor is responsible (including all sub-contractors). Toolbox Talks must address health and safety issues that are relevant to the work performed on the project site(s) and must include information and / or knowledge sharing, lessons learnt from incidents that have occurred, information concerning specific hazards and / or risks and control measures to prevent injury, etc.
Attendance records must be kept and maintained in the contractor's health and safety file.

4.1.3 Daily Safe Task Instructions (DSTI's)

A Daily Safe Task Instruction (DSTI) is a pre-start discussion amongst the members of a work team, led by the appointed supervisor, aimed at anticipating hazards and potential risks associated with the activities planned for the day or shift, and ensuring that the necessary control measures are in place to prevent incidents.
At the start of each day or shift, prior to the start of any work, each appointed supervisor must inspect the work area for which he is responsible and ensure that it is safe. He must then conduct a DSTI with his work team specifically concerning the tasks that they will be performing during the course of the day or shift. The relevant Task-Based Risk Assessment for the activity must be used as the basis for the discussion. The correct work method must be reiterated and the identified hazards, risks and control measures must be discussed with the team (each team member must be given the opportunity to contribute and participate in the discussion).
Any team member arriving late must first be taken through the information that was discussed (work method, hazards, risks and control measures) before being permitted to start working. If the work method changes after activities have already begun, the DSTI must be revisited and updated with the team, and the changes must be signed off by the relevant Contractor Health and Safety Officer.
Every member of the work team must sign the DSTI attendance register. The attendance records must be kept and maintained in the contractor's health and safety file.
The contractor's Health and Safety Officer must evaluate the content of the DSTI's daily to ensure that they are task-specific. Furthermore, the Health and Safety Officer must attend at least one DSTI per day prior to the start of work. The Health and Safety Officer may not lead the DSTI discussions, as this is the responsibility of the appointed supervisor.

4.14 Competence

Prior to mobilisation to site, the Principal Contractor and Contractors must provide evidence to the Client and/or Clients' Health and Safety Agent that personnel appointed on the construction site are competent and are in possession of the appropriate experience and current qualifications, necessary registrations, licences or certifications as required by legislation. All personnel shall work under competent supervision. It is the responsibility of the Principal Contractor(s) and contractors to

maintain all training records and plan ahead for certificates which may be expiring.
Training shall be in accordance with the National Qualification Framework Act, 2000: Act No 67 of 200 (e.g. SAQA, CETA, HWSETA or similar registered course as applicable). Where legislation is not prescriptive, the applicable industry standard for registered courses shall be considered.
Where unit standards exist for training courses, the Principal Contractor(s) and Contractors shall ensure that shall ensure that training is done in accordance with the unit standards and certificates are issued accordingly by accredited service providers.

4.2 Supervision, discipline and reporting

The Principal Contractor shall ensure that all work performed on the project are done under strict supervision of a trained and competent person appointed in writing and that no unsafe or unhealthy work practices are permitted. Discipline regarding, SHE matters shall be strictly enforced against any of his employees regarding non-compliance by such employee regarding any SHE standard.

The Principal Contractor shall further ensure that his employees report to him all unsafe or unhealthy work situations immediately after they become aware of the same and that he in turn immediately reports these to representative of the Client.

The Principal Contractor shall ensure that all its agents, sub-contractors and service providers assigned, or admitted to any of the Department of Public Works premises in terms of the Agreement are fully conversant with the SHE and security rules as might be applicable to the Clients premises, as well as the provisions of the Act, and it shall obtain their written commitment to adhere to such rules and provisions in the pursuit of their activities.

The Principal Contractor shall ensure that all its employees, agents, sub-contractors and service providers assigned to its operations, conduct themselves appropriately at all times, and refrain from running, playing, or engaging in unsafe activities on the Department of Public Work premises. Where semi-skilled employees are employed, adequate supervision must be available to maintain standards of work and to ensure compliance with SHE standards on the project/ contract.

4.3 Occupational Health

The Principal Contractor shall ensure compliance to all requirements relating to Occupational Health both in term of preventative (Occupational Hygiene) and curative (Occupational Medicine).

4.3.1 Occupational Medicine/ Medical Surveillance

As required by Construction Regulation 7(1)(g), the principal contractor must ensure that all workers (including Sub-Contractors and site staff of Contractor, where the definition 'construction work' is met) are required to be in possession of a valid medical certificate of fitness prior to commencing work. These certificates must be issued by an occupational health practitioner in the form of Annexure 3 (i.e. Annexure 3 in the Construction Regulations).
Arrangements for keeping medical records for the required time are to be noted. It is preferable that the PC has a medical surveillance plan with annual and periodic medicals in place. Full medical

records are not to be placed in the H&S file.
Note that the CR's 2014 will require all Contractor personnel to undergo medical assessments based on the work they undertake (not merely work in fall risk positions or plant operators).
The P/Contractor may also require *Designers and other persons to be declared medically fit to undertake their tasks on site e.g. inspections in fall risk locations, driving vehicles on site, etc. • Any other tests identified as relevant from chemical or specifically identified risks of exposure
Failure to do so will be considered a serious offence.

4.3.2 Occupational Hygiene

Industrial Hygiene (exposure to physical and chemical stressors)

Exposure of workers to occupational health hazards and risks is very common in any work environment, especially in construction. Occupational exposure is a major problem, and all Contractors must ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards. Prevent inhalation, ingestion, and adsorption through the skin of hazardous chemical substances.

Noise induced hearing loss is a highly underrated occupational condition. Occupational noise emitted by construction machinery and power tools must be controlled as far as possible by implementing engineering solutions such as noise dampening, regular maintenance, servicing and inspection, screening off the noise, and reducing the number of persons exposed. Personal protective equipment such as earmuffs and earplugs must also be used in conjunction with engineering controls so as to reduce noise exposure to below the acceptable levels. Each and every contractor is required to identify sources of noise which could impact on its personnel, to then assess the levels of noise, followed by implementing the necessary control measures to reduce the noise to acceptable levels. This must be clearly set out in the Contractor's hearing conservation programme contemplated in the NIHL Regulations.
*Designers also have a role to play wrt designing out the need for materials, methods and activities which have the potential of exposing personnel to noise levels over the permissible levels e.g. chasing into floors and walls.

Ergonomics is the study of how workers relate to their workstations. We advise the Principal Contractor and Contractors to take this into consideration when conducting risk assessments, thereby improving the worker-task relationship, which will in turn improve productivity and reduce chronic conditions such as back strains, joint problems and mental fatigue, amongst others.
*Designers also have a role to play wrt designing out the need for materials, methods and activities which have the potential of exposing personnel to ergonomic hazards
e.g. the use of lighter, easier to handle materials and products.

Inhalation of dust (silica, etc.), fumes, vapours, and other hazardous chemicals/particulates. Chemical stressors identified by the Contractors on this project must be managed by the respective contractors who must also prevent exposure to workers/visitors other than their own employees.
*Designers also have a role to play wrt designing out the need for materials, methods and activities which have the potential of exposing personnel to hazardous chemical substances, by substituting

such products for something less hazardous.

4.4 Construction Work Area Hoarding/Fencing, Access Control and Security

The Principal Contractor shall ensure that all persons under the contractor's control or the Principal Contractor himself shall comply with the site security requirements, including stop and search procedures if required to enter any Department of Public Works Sites. Special permission may need to be obtained for after hours and/ or weekend/public holiday access.

Contractor access to site will be limited to the specified access routes as defined by the P/Contractor and must be strictly enforced. Contractor employees will be required to carry access tags (or a similar form of identification) indicating their authority to enter the respective construction zones. Such access tags must also serve as proof of H&S induction attendance – no tag, no entry.
All roadways and pedestrian walkways must remain in a clean state, free of construction related materials and equipment.
All access points to site must carry the necessary signage and site manager's contact number.
Notices and signs must also be posted up warning persons of any dangers which may be encountered.
The Client and its agents reserve the right to search and scrutinise all persons, bags, toolboxes, vehicles at any time.
All construction work must be adequately enclosed preventing access to unauthorised persons – such external fencing must be at least 1.8m high and firmly secured in position.
Supervision by the P/Contractor and subbie concerned during all after-hours work.
Daily inspections by the P/Contractor of public interfaces such as fencing, gates, signage, roadways and walkways.
Requirement for access control tags/stickers as proof of H&S induction and authority to enter the site.
Fencing of work areas must be at least 1.8m high.
The Principal Contractor and his employees shall enter and leave the premises only through the main entrances and/or checkpoint(s), unless a separate access is made available by the Client. The Principal Contractor shall ensure that employees and subcontractors observe the security rules of the Client at all times and shall not permit any person who is not directly associated with the work from entering any Department of Public Works premises.

Each of the Principal Contractor's employees must be issued with a company identification card which must be displayed on his / her person at all times whilst on duty, or on the premises. Should any employee of the Principal Contractor:

- tamper or otherwise interfere with the Clients equipment, plant, or other assets;
- steal, or otherwise engage in acts of dishonesty;
- appears to be under the influence of alcohol or drugs;
- ignore any security, safety or occupational health rule, or engage in unsafe conduct.

Then the Principal Contractor as employer or employer's representative shall have the right to immediately remove such a person or have him withdrawn from the premises, and, if appropriate, charged at law for such relevant offence/s.

The Principal Contractor and his employees shall not enter any area of the premises that is not directly associated with the work.

The Principal Contractor shall ensure that all materials, machinery plant or equipment brought by himself onto the premises are recorded at the main gate(s) and/or checkpoint(s). A failure to do this may result in a refusal by the Client to allow the materials, machinery or equipment to be removed from the premises.

The Principal Contractor shall secure a written acknowledgement from each Agent, Sub Contractor and service provider that its employees and vehicles will be subject to search at any time, and the Principal Contractor shall ensure that its agents, sub-contractors and service providers co-operate fully with these arrangements.

4.5 Emergency Preparedness

The Principal Contractor shall ensure adequate supply of emergency equipment and facilities as follows;

4.5.1 First Aid

The Principal Contractor shall ensure that a sufficient number of trained first aiders as well as sufficient facilities are available on site for the duration of the Project. The number of First aiders will be determined by the complexity and exposed risks of the project and not numbers of workers. The PC must ensure the appointment of at least one competent Level 1 First Aider at each work area.

4.5.2 Fire Equipment

The Principal Contractor shall ensure that an adequate supply of fire-protection including equipment, facilities and trained personnel are provided for the work to be performed on site, save that the parties may mutually make arrangements for the provision of such facilities.

The Principal Contractor shall further ensure that all his employees are familiar with fire and emergency precautions at the premises, which include evacuation routes and assembly points, fire-alarm signals and emergency exits, and those precautions are adhered to.

4.5.3 Emergency Plan

A simple Emergency Management Plan and procedure that is appropriate to the risks is required prior to commencement on site. It is advised that the system should be simple and easy for any worker to follow. The Plan may be adapted should new information or risks be identified.
The procedure shall detail the response plan in relation to the works, and include at least (but are not limited to) the following key elements:

- Appointment of a competent emergency response coordinator
- The Contractor will be responsible for developing and implementing a suitable fire management plan for fires at the Site Office, Accommodation and Storage Areas;
- Public / Staff injuries
- Motor vehicle accidents;

- Falls from heights;
- Serious injury to workers (medical or work-related); and
- Possible snake bites
- The management of COVID 19 possible cases;
- Possible fires
- Demolition and Structure collapse
- Incidents involving members of the public
- Excavation collapse
- Any other major risks identified during risk assessments

The Emergency Management Plan is to ensure the inclusion of local service providers where possible. Such arrangements should be made with these persons prior to the commencement of the project. A contact list of all emergency Contractors (Fire Department, Ambulance, Police, Medical and Hospital, DoPW SHE Department representative, etc.) must be maintained and available for site personnel. The general principals of emergency management are to be applied as it applies to the hierarchy of control and management.
The Site Manager must conduct an emergency identification exercise and establish what emergencies could possibly develop whilst working on this project.

An emergency situation, which is likely to require outside emergency assistance, may attract mass circulation, written media or electronic media attention and be harmful to the Client's reputation. No person may comment on the incident on site without prior approval from the Client.

Emergency Drills

The Contractor must conduct emergency response drills (including, but not limited to, fire, rescue and spill drills) to test the effectiveness of its emergency procedures and equipment, and the knowledge and proficiency of all response personnel. The timing of such drills is agreed and is the responsibility of the Contractor after consultation with the Employer or the Employer nominated representative. The Contractor must report the test results to the Employer, or the Employer nominated representative if requested and as required by any regulatory agency.

4.6 Occupational Health and Safety Signage

On-site H&S signage is required. Signage shall be posted up at fixed or temporary working areas, or other potential risk areas/operations. These signs shall be in accordance with the requirements of the General Safety Regulations or SANS requirements as amended. Signage is to be noted on the site drawings indicating where fixed/temporary signage is required.

Temporary signage is to include (but not be limited to) the following:

- 'Report to site office'/ 'Warning: Construction Site – Keep out' or similar;
- Warning of falling debris'
- Hazardous Biological Agents Awareness
- 'hard hat area' or other PPE requirements noted;
- First aid box positions (including vehicles); and

- Fire extinguishers.
- Assembly points
- Construction works ahead/Heavy Vehicles turning etc.

Signs shall be posted at areas of work on site indicating that a construction site is being entered and that persons should take note of H&S requirements.

4.7 Welfare Facilities

The Principal Contractor must supply/ ensure availability of sufficient toilets (1 toilet per 30 workers), clean, lockable changing facilities, hand washing facilities, soap, toilet paper, hand drying material. This should include the erection of temporary mobile sheltered rest areas during the construction activities. Where there is a risk of exposure to HCS separate lockers shall be provided for clean and soiled/ contaminated clothing for each employee. Waste bins must be strategically placed around the working area and emptied regularly. Workers must not be exposed to hazardous materials/substances while eating and must be provided with adequate, sheltered eating areas complete with benches and tables. Stores may not double up a change rooms or mess areas. The Principal Contractor will not be entitled to permit its employees to live or sleep on the property.

4.8 Health related Epidemics and Pandemics

The Contractor shall, as far as reasonably practicable describe in his health and safety plan how health related epidemics and pandemics will be dealt with. The employer is aware that this section in the health and safety plan will not speak to specifics, but generic procedures. The Contractor must ensure that the requirements stipulated in the Hazardous Biological Agents (HBA) Regulation are adhered to and in particular the following as described in the mentioned Regulation:

- Assessment and risk assessment reviews;
- Prevention measures;
- Response measures;
- Employee training / information sharing;
- Employee health monitoring;
- Management of infected persons;
- Isolation room/s;
- Employee transportation;
- Employee accommodation;
- Eating facilities;
- Additional Ablutions;
- Meetings / toolbox talks / Daily safety talks;
- Cleaning of offices / facilities;
- Duties of person that may be exposed to HBA's
- Monitoring exposure at the workplace
- Medical surveillance of employees
- Keeping of records
- Personal Protective Equipment
- Personal Hygiene

- Maintenance of control measures and facilities
- Waste Management including symbolic signage of dedicated waste bins and safe disposal at a registered landfill site
- Applicable Mandatory, Warning and Informative Signage in colour

Once the nature and scale of the epidemic or pandemic is known, the Contractor must update his Health and Safety Plan or develop a "Workplace Plan" with the relevant information and send the updated plan to the appointed OHS Agent for approval. Once approved, the Contractor must implement the updated Health and Safety Plan and maintain the updated separate File on site. Cognisance must also be given to the "Consolidated Direction on Occupational Health and Safety in Certain Workplaces 2021" directive as issued by the Department of Employment & Labour.

4.9 Co-operation

The Principal Contractor and/or his responsible persons and employees shall provide full co-operation and information if and when the Department of Public Works or its representative enquires into occupational SHE issues concerning the Principal Contractor. It is hereby recorded that the Department of Public Works and his representative shall at all times be entitled to make such inquiry.

Without derogating from the generality of the above, the Principal Contractor and his responsible persons shall make available to the Client, his representative, on request, all and any checklists and inspection registers required to be kept by him in respect of any of his materials, machinery or equipment.

4.10 Sub-contractors

The Principal Contractor shall notify the Client or where applicable delegated Agent of any Sub Contractor he may wish to perform work on Department of Public Works premises. It is hereby recorded that all the terms and provisions contained in this clause shall be equally binding upon the Sub-Contractor prior to the Sub-Contractor commencing with the work. Without derogating from the generality of this paragraph:

- The Principal Contractor shall ensure that training as discussed under appointments and training, is provided prior to the Sub Contractor commencing work on the Clients premises.
- The Principal Contractor shall ensure that work performed by the Sub Contractor is done under strict supervision and discipline, as stipulated under Supervision, discipline and reporting.
- The Principal Contractor shall inform the Client or delegated Agent of any safety, health and environmental hazards and/or issue that the Sub Contractor may have brought to his attention.
- To ensure compliance the Principal Contractor must audit each of its contractors on a monthly basis, with audit reports filed in the SHE file on site. The audit must include an administrative assessment as well as a physical inspection of the contractor's site activities.
- The Principal Contractor shall inform the Client, its representatives of any difficulty encountered regarding compliance by the Sub Contractor with any SHE instruction, procedure and/or legal provision applicable to the work the Sub Contractor performs on the construction site.

The Department of Public Works holds the right to refuse the use of subcontractors not approved by them.

4.11 Site Visitor Health & Safety

The PC must give consideration to the location of the construction site, the safety and security of personnel, DoT staff and equipment. Site visitors must be briefed on the hazards they may be exposed to as well as what measures are in place or should be taken to control these hazards. As per the Construction Regulations, a record of these 'inductions' must be kept on site. It is advised that a visitor book with site rules leaflet be kept at the site office and all visitors to be directed to such point where they must read through the site safety information and sign the visitor book.

4.12 Health and Safety Representatives

The Principal Contractor shall ensure that a sufficient number of Health and Safety Representative be nominated, elected and trained to carry out his / her functions in his/ her area of responsibility. This shall also be required in areas where less than fifty (50) employees are engaged in activity. The Principal Contractor shall ensure employees elected shall be designated in writing for a specific area and period of time. The designated persons shall be required to conduct monthly inspections within their area of responsibility, the records must be kept for CLIENT auditing purposes and that deviations recorded are reported to the responsible supervisor within the designated person's area so that appropriate action can be taken.
The designated person/s shall be permitted to participate in the Health and Safety Committee Meetings.

4.13 Housekeeping

The Principal Contractor to ensure that:

- Housekeeping is continuously implemented on the site
- Scrap, waste & debris are removed according to the requirements of the Waste Management Plan (WMP) for the site.
- Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to free movement of pedestrian and vehicle traffic
- Waste & debris may not accumulate on any unauthorized area
- Waste & debris must be removed regularly off site
- Where practicable, the construction site is fenced off to prevent access of unauthorised persons
- An unimpeded work space is maintained for every employee
- Every workplace is kept clean, orderly and free of tools etc. that are not required for the work being done.
- As far as is practicable, every floor, walkway, stair, passage and gangway is kept in good state of repair, slip and trip, skid-free and free of obstruction, waste and materials
- Openings in floors, hatchways, stairways and open sides of floors or buildings are barricaded, fences, boarded over or provided with protection to prevent persons from falling.
- The road surface of all public and private roadways and pavements/pedestrian walkways must remain in a reasonably clean state, free of excessive sand, stone, water or other construction

related materials.

- Any shared boundary walls /fences are to be hoarded of at least 1.8m high and according to the specific instructions of the Client.
- Housekeeping crews must also actively assist in creating and maintaining a safe work environment by being aware of unsafe conditions, bringing these conditions to the attention of appropriate personnel and by direct intervention through tasks such as ensuring leads and hoses are placed in a manner which avoids the creation of trip hazards or potentially unsafe conditions.

Note: No shift may commence without and/or before proper housekeeping is in place.

4.14 Discipline, Alcohol and Substance Abuse

All employees (management included) are to follow instructions given in the interest of H&S. Disciplinary action is to be imposed on those who do not follow such instructions or company rules or policies. The PC is to have a drug and alcohol policy available to manage such instances. No intoxicating substance of any form shall be allowed on site. Any person who appears to be drunk or under the influence of drugs or any conditions which may render, or be likely to render him incapable of taking care of himself or the persons under his charge or suspected of being intoxicated shall not be allowed on the site. Any person required to take medication shall notify the relevant responsible person thereof, as well as the potential side effects of the medication. Any person suffering from any illness/condition that may have a negative effect on his/her /anyone else's health or safety performance must report this to his/her superior.

The Principal Contractor shall ensure that no person under the Principal Contractor's control, shall bring any intoxicating liquor or mind altering substance, onto the premises, or at any time be under the influence of intoxicating or mind altering substances. The Department of Public Works reserves the right to subject any person under the Principal Contractor's control, or the Sub Contractor, to testing for substance abuse. Anyone refusing to undergo such a test will be denied access to the operation.

4.15 Environmental impact and nuisance

The Principal Contractor shall ensure that neither he nor his employees undertake any activity that may cause environmental impairment or constitute any form of nuisance to the Department of Public Works and/or his surroundings.

The Principal Contractor shall ensure compliance to all applicable environmental legislation and standards during the course of the project including (but not limited to) waste management, handling, transportation and disposal.

The Principal Contractor shall ensure that no hindrance, hazard, annoyance or inconvenience is inflicted on Department of Public Works, or another Contractor. Where such situations are unavoidable, the Principal Contractor shall give prior notice to the Department.

4.15.1 Noise

The Principal Contractor is to be compliant with the Noise Induced Hearing Loss Regulations and aim to identify tasks where noise levels might exceed 85 dB at any one time. The PC must further ensure that all

reasonable steps are taken to reduce noise levels at the source. The PC must try and schedule all noisy work activities during times that will not cause a nuisance/ disturbance to existing staff in any of the nearby buildings.

When Contractor's personnel are required to operate such equipment, noise levels at the operator position must not exceed an equivalent level of 85-dB (A) during normal working conditions. Employees working in the vicinity must not be subjected to an equivalent continuous level of 85-dB (A) during normal operating conditions. Audiometric testing of all workers is required in the medical surveillance programme prior to work commencing. Audiometry records are to be available in the H&S file. Suitable SANS approved hearing protective equipment shall be issued and worn where noise levels are identified as equal to or greater than 85 db. Noise
Comply with time periods and PPE requirement where applicable.
The sound level at any works boundary caused by mobile equipment must not exceed the night time background level pre-existing the operation of the equipment. At no time must the noise emission of the equipment cause the sound level at the nearest residence to exceed 40-dB (A). Sound levels are measured in accordance with SANS 10083, with due allowance being made for total or impulsive components. A plot plan of project or plant must be used to identify the measuring points with date, time and frequency duration of measurement.
Symbolic safety signs warning employees of the hazard of noise in the area shall be erected at all entrances to the area and be in a position where it is clearly visible.

4.15.2 Dust Prevention

The creation of dust in the PC's working area shall be kept to a minimum, and shall conform to the requirements of the Environmental Management Plan, where applicable. The PC shall water, as and when required, the areas of the work, where dust is created by the PC's working methods or as ordered by the Project Manager. The PC shall take all measures necessary to prevent the creation of dust from any source under his control.

4.15.3 Lighting

The Principal Contractor is to ensure that wherever work is performed where the lighting conditions are less than the minimum requirement as defined in Environmental Regulation 3 and Schedule E of the Regulation. Where natural lighting is inadequate, artificial lighting is to be provided in all work areas, access ways and for rescue equipment.
The Principal Contractor shall not undertake any night work without written permission from the Department of Public Works. Should night work be allowed by the Client illumination checks are to be performed to check conformation to minimum illumination requirements.
Portable lights must have adequate stability and be fitted with a mechanical guard to protect the lamp. Temporary festoon lighting is to be of the "all insulated" type and be supported at least 2.5m above the floor if possible.
NB> Emergency lighting for safe evacuation must be installed according to requirements and shall be activated during power failures.

4.15.4 Sun Protection

The Contractor must ensure that all personnel are protected in sunlight by the use of long sleeve shirts, long trousers; brims to safety helmets, UV factored sunscreen and shade structures.
The Contractor must conduct training and awareness sessions with its workforce, advising on the risks of working in the heat and dehydration and the precautions to be taken including an acceptable fluid intake depending on conditions. The Contractor must ensure that adequate water is available to its workforce at all times.

4.15.5 Ventilation

The Contractor must implement and comply with OH&S Act – Environmental Regulation No 5.
For any job, which generates excessive dust or fumes (for example welding), an effective exhaust system must be implemented.

5 PHYSICAL REQUIREMENTS

5.1 Project Specific Restrictions and Requirements

Site Establishment	
Restrictions / requirements	Temporary buildings and fencing are to be neat and presentable and the surrounding areas must at all times be kept in a neat, clean and sanitary condition. The Contractor must not cut down or damage any trees, nor make any excavation without the written permission of the Principle Agent and will be required to restore the site to its original condition on completion of the Works.
Storage areas	In container(s)
Security	Full time Security must be provided by the Contractor
Restrictions on times, access or other restrictions by Client	Normal working hours will be - 07:30 - 17:00 or as specified in the Contract Data
Arrangements for access, parking, deliveries, etc.	
Access to site by Construction Vehicles	Access to the site is good via Golf Road
Access to site by Construction Workers and Visitors	Access is prohibited unless formal induction has been undertaken and proof available on request
Speed restrictions	15km/hr must be adhered to on DoPW premises
Ablutions and Welfare Arrangements	
Toilets & Washing facilities	Contractor to supply their own ablution and washing facilities within the allocated site camp

Drinking Water	The Contractor shall make his own arrangements for potable water
Shelter	Contractor to supply own facilities within the allocated site camp

- Safety files of both the Principal Contractor and all other contractors must be **site specific** and any documentation not being site specific will be disregarded and will be redone to the Clients satisfaction.
- This specification forms the platform for all Safety Plans required to be drawn up by all contractors and strict adherence in this regard will be expected.

  The Contractor must provide, ensure implementation and comply with the following: -
- Site safe access and egress to and from site
- Good Housekeeping and Stacking Practices – continuous cleaning and clearing of work platforms after every shift. No work to commence before complying
- Safe and orderly routing of welding cables, electrical extensions and air hoses. Elevated out of walk ways on temporary hooks/racks
- No lifting in windy conditions exceeding 40 km/h. (This is only a guide - it will also depend on Risk Assessment/Rigging study/Shape mass & Size of load and the capability of the Crane to be used!)
- Work benches to be provided for onsite work
- Riggers/Spotters to be identified by means of illuminating vests
- Solid barricading – Solid frame covered with orange netting - Excavations, Overhead Work, walkways and all Openings
- Attaching of Tools and Equipment at heights – use lanyards
- Wearing of Gloves applicable to task and approved eye protection for all activities, hard hats with chinstraps for all employees working at heights
- Use of Spacers/Wedges when fitting equipment
- Shields and fire blankets to be used for grinding, welding & gas cutting operations to contain sparks
- Fire Extinguishers – With people when doing hot work, on self-propelled mobile machines and at all fuel driven machines
- Guide ropes to be used for all lifts
- Firewatchers to be posted when commencing hot work in hazard prone areas
- Permits to be obtained and adhered to
- Dedicated flagmen with illuminating vests to be in control of movement of heavy mobile and earth moving equipment
- The cradle to grave principle is implemented and adhered to regarding spillage of hazardous and flammable substances
- Earth leakage units to be fitted to all portable generator sets and welding machines with electrical outlets
- The Contractor must submit to the Employer or the Employer nominated representative, in writing, notification of completion of any plumbing work prior to water being supplied. No further work is undertaken without the written acceptance of the Employer or the Employer nominated

representative. All plumbing work is carried out in accordance with the relevant statutory requirements.

- Earth moving vehicles to be fitted with prescribed rotating lights and operated with headlights on. Site vehicles to be fitted with whip aerials and rotating lights. Reverse hooters/back up alarms to be functional at all times
- Nine Inch Grinders not to be used, unless fitted with backing plate
- All cranes are fitted with: Anti two block cut out devices/Automatic load arrest systems/ Automatic load limit devices and indicators/Gear lock on neutral and a waste safety belt
- All Self-propelled mobile machines is fitted with Fire extinguishers and reverse hooters/ back up alarms
- Flashback Arrestors at cylinders and torches and proper clamps (gas cutting equipment
- The Principal Contractor must also develop site specific OH&S rules for the project which must be adhered to by all personnel and visitors and implement weekly site specific toolbox talks with all workers on site and an attendance register kept

5.2 Lifting Machines, Tackle and Lifting Operations (Driven Machinery Regulations)

The Principal Contractor shall ensure that lifting machinery and tackle are inspected before use and thereafter in accordance with the Driven Machinery Regulations 18 and the Construction Regulations (Regulation 22 & 23).

There must be a competent lifting machines inspector (registered with the Department of Employment and Labour, Gazette number 27305) and a competent lifting tackle inspector who must inspect the equipment, taking into account that:

- All lifting machinery and tackle has a safe working load clearly indicated;
- Regular inspection and servicing is carried out (3-monthly inspections and records for tackle and 6-monthly inspections and records for lifting machines);
- Records are kept of inspections and of service certificates;
- There is proper supervision in terms of guiding the loads that includes a trained banks man to direct lifting operations and check lifting tackle and attachments daily;
- Rigging of loads to be done in accordance with acceptable safe work procedures;
- Annual load test certificates for lifting machines are in place;
- The operators are certified to operate the specific machine (valid certificate to be on site);
- The operators are physically fit to work and in possession of a medical certificate of fitness to be available on site.

The Principal Contractor must further ensure that safe lifting operations are adhered to. This must include the following:

- Pallets of bricks being lifted by a tower crane or mobile crane may only be lifted when secured in a brick cage or brick net, securing the entire load of bricks to the crane hook;
- Mortar bins, waste bins and any other receptacle must be deemed to be a lifting attachment and must be designed to carry the required load. Such attachments must be on register and

inspected every 3 months by the competent lifting tackle inspector;

- Temporary Works may only be lifted by using purpose designed and manufactured lifting tackle – eight-gauge wire and the like is prohibited;
- A competent banks man must be in control of all rigging, slinging and lifting operations and must wear a high visibility vest, be in possession of a two-way radio and make use of a
- Whistle, warning persons of overhead loads. The crane operator may only take commands and signals from the designated bank men;
- Guide ropes (tag lines) must be used when lifting large shutters, long bundles of re-bar and other similar loads. This must be detailed in the Principal Contractor's and Contractors' fall prevention plans.
- Lifting operations must be re-evaluated once wind speeds reach 40 km/h unless otherwise specified by the lifting machine manufacturer.

All Contractors must adhere on site to the following before any crane is allowed to operate on site: No crane is to be used at arrival on site before copies of all documentation has been handed over to the Clients Health and Safety Agent and the crane has been inspected by a competent Client Site Supervisor.

Crane Test Certificate

The Certificate must not be older than 3 (three) months, and must cover the following:

- Ropes
- Hooks
- Slew Brakes
- Outriggers & Pads
- Boom & Guides
- Anti-Two-Block Device
- Load Indicating System
- Boom OH & Save Wheels Condition
- Crane Brakes and Air System

Copies of all documentation are to be kept in the crane at all times.

5.3 Fall Protection (Working in Elevated Positions)

A Fall Protection Plan (FPP) developed by a competent person is to be available and supplied as an addendum to the H&S Plan. The FPP must be appropriate for the project with consideration given to the scope of work required for this specific project. Method statements, appropriate risk assessments, safe work procedures and training are to be available prior to work commencing. All workers exposed to fall risks must undergo formal SAQA accredited "working from height/fall risk position" training i.e. *US 229998* Should part of the works be contracted out, a competent Contractor is to be appointed and submit documentation according to the project requirements. The PC is to note if such work is to be contracted to specialists in the H&S Plan.

As far as is practicable, any person working in an elevated position will work from a platform, ladder or other device that is at least as safe as if he/she is working at ground level and whilst working in this position be wearing and using a double lanyard full body harness that will be worn to prevent the

person falling from the platform, ladder or other device utilised. This safety harness will be, as far as is possible, secured to a point away from the edge over which the person might fall and the double lanyard must be of such a length that the person will not be able to move over the edge.

Workers working in elevated positions must be medically fit and trained to do this safely. Proof of medical fitness and training must be maintained in the contractors site safety file.

The Risk Assessments shall place specific emphasis on the placement, erection, dismantling and inspection of scaffolding or similar materials, (including contingency safety measures), which when exposed to any adverse condition within the various working areas represents a serious safety hazard.

5.4 Excavation Work

The Contractor is to ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing for this purpose
The Contractor must ascertain the location and nature of electricity, water, gas or other similar services which may in any way be affected by the work to be performed before the commencement of excavation work that may affect any such services the necessary steps to render the circumstances safe for all persons involved must be implemented. The principal contractor shall take cognisance to the conditions of the construction site and must plan all excavation work in accordance with the recommendations of the professional engineer.
The Principal Contractor shall further ensure that the total length of open excavation at any given time does not exceed the allowed maximum length of open excavation as per the Contract Specification. The Contractor shall ensure that all precautionary measures stipulated for confined spaces as determined in the General Safety Regulations, 2003, are complied with by any person entering any excavation. The Contractor shall erect warning signs next to an excavation within which persons are working or carrying out inspections or tests. No person shall enter an excavation that is deeper than 1.5m which has not been adequately shored or braced or gunited unless the sides of the excavation are sloped to at least the maximum angle of repose measured relative to the horizontal plane, or permission is given in writing by the appointed competent person mentioned above that it is safe to do so after upon evaluation of the site conditions by the said appointed

The Contractor shall cause every excavation that 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 covered with Orange "Snow Netting" and as close to the excavation as is practicable. In addition, these excavations shall be provided with clearly visible boundary indicators at night. Monitoring of the demarcation of open excavations shall be done on a daily basis as long as there are open excavations.
Where water filled excavations exists the contractor shall either ensure such excavations are backfilled overnight and on non-working days (i.e. weekends and public holidays), or ensure such excavations are fenced with a solid barricading covered with Orange "Snow Netting" at least 1 meter in height to prevent any unauthorised persons from entering.
Where the stability of an adjoining building, structure or road may be affected by making an excavation suitable, steps must be taken to ensure the stability of such a structure, building or road

and safety of persons. Suitable and safe means of access must be provided to excavations. person.

5.5 The use of Radioactive Equipment

The use of radioactive equipment for the measuring of compaction parameters shall conform to the requirements of the "Code of Practice for the safe use of soil moisture and density gauges containing radioactive sources" as published by the Department of Health: Directorate: Radiation Control Soil revised September 2001. The PC must ensure that the use of a Nuclear Gauge (Troxler) is safely managed on site by ensuring that a suitable risk assessment and safe work procedure is conducted on the use of the troxler, the operators suitably trained by the manufacturer or similar, workers made aware of the risk exposure and a Radiation Protection Officer appointed. A valid calibration certificate must also be on file.

5.6 Structures

The Principal Contractor will ensure that in terms of the Construction Regulations

- all reasonably practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work;
- (no structure or part of a structure is loaded in a manner which would render it unsafe; and
- all drawings pertaining to the design of the relevant structure are kept on site and are available on request to an inspector, other contractors, the client and the client's agent or employee.

An owner of the structure must ensure that —

- inspections of that structure are carried out periodically by competent persons in order to render the structure safe for continued use;
- that the inspections contemplated in paragraph (a) are carried out at least once every six months for the first two years and thereafter yearly;
- the structure is maintained in such a manner that it remains safe for continued use;
- the records of inspections and maintenance are kept and made available on request to an inspector.

That the structure on/in, which works, is to be performed has been inspected by a certified structural engineer declaring the structure to be safe for construction, demolition or renovations work processes. Steps are taken to ensure that no structure becomes unstable or poses a threat of collapse due to demolition and construction work being performed on it, or in the vicinity of it.
No structure is overloaded to the extent where it becomes unsafe

He/she has received from the designer the following information:

- Information on known or anticipated hazards relating to the construction/demolition work and the relevant information required for the safe execution of the construction/demolition work
- A geo-scientific report (where applicable)
- The loading the structure is designed to bear
- The methods and sequence of the construction/demolition process

All drawings pertaining to the design are on site and available for inspection

- The structural engineer shall carry out inspections at appropriate and sufficient intervals of the construction work involving the design of the relevant structure to ensure compliance with the design and record the results of these inspections in writing. These records shall be maintained on the relevant site safety files as per Construction regulation 11(2) d.

5.7 Pneumatic Tools and Compressed Air

The Contractor must implement and comply with OH&S Act – Driven Machine Regulation 15.
May only be used on site with prior written approval from the Employer Site Supervisor.
It is illegal for a pneumatic tool to be operated by using a compressed gas cylinder. Pneumatic equipment must only draw supply from mobile air compressors or from compressed air lines installed within the premises after gaining permission from the Employer representative.
When using the interlocking type of connection of an airline, connectors are to be secured with wire clips through holes provided to prevent accidental disconnection.
Compressed air must not be used for general cleaning purposes or be used to blow down dirty clothes on people.

5.8 Communication on Site

All H&S communication during the project between the H&S Agent and the PC will be done through the Principal Agent and be in writing, including the issue and responses to non-conformances and H&S audit results.

Failure to address issues timeously will be considered a serious offence.

5.9 Hazardous Chemical Substances (HCS)

The Principal Contractor must ensure that the use, transport, and storage of HCS are carried out as prescribed in the HCS Regulations. The Principal Contractor and contractors must ensure that all hazardous chemicals on site have Material Safety Data Sheets (MSDS) on site and the users are made aware of the hazards and precautions that need to be taken when using the chemicals.

The First Aiders must be made aware of the MSDS's and how to treat HCS incidents appropriately. Copies of the MSDS's must be kept in the first aid box and in the store. All containers must be clearly labelled.

Flammable substances must be stored separately, away from other materials, and in a well- ventilated area (appropriate cross ventilation). A competent person should be appointed to be in control of this portfolio. Fuel storage tanks must conform to the general environmental legislation and Environmental Management Plan. The necessary safety signage must to be posted up on the tanks – 'no naked flames', 'no smoking'. Two 9kg DCP fire extinguishers must be placed near to fuel tanks, but not within 5m of the tanks. These extinguishers are over and above the minimum required for the offices

Diesel Storage

May only be on site with prior written approval from the Employer Site Supervisor.
The Contractor must ensure that:

- Storage should be well clear of buildings.
- Storage areas are kept free from all combustible materials.
- All danger signs are prominently displayed, e.g., no smoking, no naked flames.
- Adequate firefighting equipment is available.
- Diesel tanks are installed in a bunded area; bunded area is able to contain 110% of tank capacity.
- Bund walls are to be plastered on the inside.
- Bunded area must have a solid concrete/cement floor.
- Bunded area must have a functional drain valve.
- Loading/fuelling bay is a solid concrete base with a spillage trench leading to a spillage sump to contain any spillages.
- All equipment is to be bonded.
- All electrical lighting and equipment is of an approved flameproof type.
- No other material/equipment is stored in the bunded area.
- Ensure adequate through flow ventilation.
- Up-to-date Material Safety Data sheets (MSDS) is to be clearly displayed.

5.10 Monthly Health and Safety Compliance Audits (Construction Regulations, Regulation 5 (1)(o)

The Contractor and the Health and Safety File must be made available for monthly auditing by the Client or Client's Health and Safety Agent. This is to ensure that the approved Health and Safety Plan is being implemented and maintained.

5.11 Temporary Works (Scaffolding, Formwork and Support Work)

The PC must ensure that a Temporary Work Management Plan is developed and approved before any work commences with consideration given to the requirements of the CR 12 and SANS 10085.
"Design - in relation to any structure, includes drawings, calculations, design details and specifications."
Temporary works must be properly designed and signed off by a competent person who has sufficient experience in the design of the type of temporary work in question to be able to assess the design. The competent person/(s) appointed must either be a registered professional engineer or technologist. The appropriate competent persons are to be appointed to manage and monitor such works to the satisfaction of the Engineer and H&S Agent. Records and registers are to be properly completed and kept in the H&S file. If temporary works are to be erected by a Contractor, this must be notified to the Designer/H&S Agent. All personnel required to erect, move or dismantle temporary works structures are to be provided with adequate SAQA unit standard aligned training and instruction to perform those operations safely.
As per the Government Gazette, 2 June 2017, no. 40883, guidelines, Regulation 12 (1) is a three functions competent person(s) appointment. The temporary works designer could be one person or different persons to design; inspect and or approve [read with Regulation 6(g); (h) and (i)]. Temporary works designer(s) must be mandated by the Contractor to perform any or all of the three functions. A risk-based methodology should be applied in respect of competencies for temporary works.

The PC must further price for and ensure that all exposed vertical reinforcing steel is suitably protected to

prevent impalement injuries by installing suitably sized (8 -20mm; 25mm; 32mm) "rebar safety caps".

Access Scaffolding must be erected, used and maintained safely in accordance with Construction Regulation 16 and SA Bureau of Standards Code of Practice, SANS 10085/1 entitled, 'The Design, Erection, and Use & Inspection of Access Scaffolding.
Detailed consideration must be given to all scaffolding to ensure that it is properly planned to meet the working requirements, designed to carry the necessary loadings and maintained in a sound condition. It must also be ensured that there is sufficient material available to erect the scaffolding properly.
A competent person shall be appointed to supervise the scaffolding work. Proof of his competency will be kept on site. Proof of competency of scaffold erectors, team leaders and inspectors will be kept on site. Specific attention must be given to the appointment of Scaffolding Inspectors and Scaffolding Erectors who shall not be the same person. The continuous inspection of scaffolding structures must be recorded on the applicable Scaffold register. Tagging/Signs reflecting the status of the scaffold must be used and fixed to the structure at all times. (Safe to use / Scaffold not Safe) Scaffolding shall be inspected after erection, daily thereafter and after changes have been made to it as well as after bad weather. Registers of the inspections shall be kept on site. All erected scaffolding structures shall be numbered for reference on inspection registers. "Safe to use/ Not Safe to Use" scaffolding tags shall be displayed on all access points onto scaffolding. Where scaffolding is declared safe for use but still requires employees to wear their safety harnesses when accessing such scaffolding, relevant signage needs to be displayed to inform them thereof. All scaffolding used must be of sound and safe material, must have base plates, sufficient braces, safe working platforms, guard rails, inspection tags and toe boards as a minimum, in accordance with SANS 10085.

5.12 Traffic Management and Access

The Contractor shall compile a traffic and pedestrian management plan including drawings and procedure documents. Taking into consideration the need for vehicular movement by the Department of Public Works, the contractor should in consultation with the Client and/or the H&S Agent, only cordon off access to major excavations or areas of high-risk activities and ensure alternate routes are created and accessible. These areas should be cordoned off. The P/Contractor must place the necessary emphasis on safe pedestrian / staff walkways and routings throughout the construction stage. The construction site will be located along relatively busy internal roadways and walkways with the necessary priority and planning put in place so as to prevent unnecessary impact on members of the public and DoT staff. The health & safety of such persons must be a priority at all times.

Should the need arise for any night work to be performed the Principal Contractor shall provide sufficient lighting to enable the entire work site to be illuminated to a degree that any employee must not have to work in any dark (un-illuminated) or dimly lit areas. Care must be exercised as not to use a few lights with high light intensives as this will cause night blindness. A night lighting survey should be conducted by an Approved Inspections Authority.

If work is continuing from day light into night, at dusk, a tool box talk must be held where all employees must be advised of the hazards of night work and the extra precautions that are required to be taken, i.e. poor housekeeping, stepping on uneven ground, stepping into holes etc.

5.13 Severe Weather Plan

When high wind creates a hazard to workmen or work being performed, i.e. instability in elevated areas, limited visibility due to dust or particles in the air, unmanageable materials, etc., supervision will stop work activities, re-assign work and area, properly store and secure material which might blow away, injure or damage, lower/tie down crane booms and obtain further instruction from Site Management.

When rain creates a hazard to workmen on work being performed, i.e., un-stable footing conditions due to slippery structural steel, muddy and flooded work environments, unstable trenches or excavations, poor visibility due to rain or eye protection, supervision will stop specific work due to hazard, re-assign work duties and/or areas, and obtain further instructions from DoPW Project Management representative. The Contractor's Emergency Response Manual must include procedures for adverse weather conditions (high winds, flooding, storm surge, lightning, etc.). In the event of impending adverse weather or other conditions the Contractor, in consultation with the Employer and the Employer nominate representative, must decide whether to institute such precautionary measures in connection with the carrying out of the work, for example emergency temporary bunding, tie down of cranes and partly installed structures, etc.

The Contractor must have available a proper Lightning Detection system. All delays due to weather related conditions must be logged on a register and submitted on a weekly basis to the Project Manager

5.14 Construction Vehicles and Mobile Plant (Construction Regulation 23)

Construction Vehicles may be inspected by Department of Public Works or its agent prior to being allowed on the premises and suppliers of plant and equipment will be required to comply with this specification as well as the OHS Act and Regulations.

Construction Vehicles and Mobile Plant (CV&MP) are to be:

- of acceptable design and construction
- maintained in good working order
- operated/driven by trained, licensed competent and authorised operators/drivers. No unauthorised persons to be allowed to drive or operate CV&MP
- Drivers of CV&MP must be in possession of a valid medical certificate declaring the operator/driver physically fit to operate or drive CV&MP.
- CV used to transport employees shall have seats firmly secured and adequate for the number of employees to be carried. All construction vehicles and mobile plant travelling, working or operating on public roads shall comply with the requirements of the National Road Traffic Act, 1996.
- Only licensed and road worthy vehicles will be allowed on the public roads
- All CV&MP inspection records must be kept in the OH&S File.
- The Contractor shall ensure that all construction vehicles and mobile plant are kept, used, maintained and inspected as required by Regulation 23 of the Construction Regulations, so as to

protect the health and safety of the Contractor's employees and the public, and to ensure proper care of the plant and vehicles.

- All construction vehicles and mobile plant shall be fitted with reverse alarms and shall be maintained in a safe operating condition.

5.15 Confined Space Work

Sewer manholes

a. Ventilation

All available manholes or ventilation covers must be removed and the manhole ventilated for 10 (ten) to 15 (fifteen) minutes, using compressed air or a portable blower. Such ventilation must be continued while personnel are in the sewer. Ensure that exhaust fumes from blower do not enter the confined space.

Before entering any manhole or confined space, the atmosphere must be tested by the principal contractor's competent person (trained by the supplier of the gas monitoring equipment) by lowering the gas monitoring equipment to the bottom of the confined space by means of a rope. A register must be kept indicating that the atmosphere has been tested and that the area is fit to work in. The Principal Contractor's Construction Supervisor must check and co-sign this register every time he visits the site to ensure that the atmosphere is continuously being monitored. Fumes must be extracted from the chamber while welding.

b. Entering vessel or manholes

When entering a vessel or manhole the person entering must wear a safety harness as well as the gas detector. A lifeline must be attached to the safety harness and a person on the surface must be in continuous contact with the person in the manhole. At least one person on the surface must be trained in basic first aid and resuscitation.

In no circumstances shall any person remain within a confined space for a period of more than one hour at a time. A ten-minute rest on the surface must be taken after this period before re-entering.

Should the alarm sound when a person is in the confined space, the area must be evacuated immediately and the atmosphere re-tested and certified safe before re-entry into the confined space.

General

All employees working in confined spaces or manholes must be issued with gas monitoring equipment and safety harnesses and self- rescuers where applicable. All these employees must be trained in their use.

Under no circumstances may any confined space be entered unless it has been certified safe to work in. Safety harnesses and attachments must be checked for damage to webbing, metal fittings and ropes on a monthly basis and the findings recorded in a register. Should a harness be damaged, it must be reported to the construction supervisor immediately.

The following records shall be taken and maintained by the principal contractor:

I. Confined space entry permits
II. Confined space entry registers
III. Safety harness registers
Iv. Calibration Certificates

5.16 Welding, Cutting, Grinding and Heating

The Contractor must implement and comply with OH&S Act – General Health and Safety Regulation 9. Contractors must instruct employees in the safe use of welding equipment. Cutting and welding work is carried out in accordance with General Safety Regulation 9.
Non-combustible or flameproof shields to protect employees from direct rays and air-borne particles must shield arc welding, cutting and grinding operations.
Electrode holders or welding guns are to be maintained in good order, and when left unattended, the electrodes are to be removed and the holders placed or protected so that they cannot make contact with or conducting objects.
All arc-welding cables are to be properly maintained and completely insulated. No repairs or splices within 3 metres of the electrode holders, except where splices are insulated equal to the cable. Defective cable is to be repaired or replaced. The earth cable is to be connected to the work place.
Fuel gas hose and oxygen hose are to be of an approved type, be easily distinguishable and must not be interchangeable. Hoses are to be inspected at the beginning of each day and repaired or replaced if defective.

Hot Work

- Hot work permit to be obtained before job starts.
- Falling sparks and/or hot cuttings are to be contained.
- Fire blankets and fire extinguishers are to be on hand.
- Ensure not to carry out any hot work, cutting and/or grinding in the vicinity of flammable liquids
- Protect rubber lined vessels/tanks, etc.
- Combustible floors are to be wetted down, covered with damp sand or fire proof sheets.
- All wall and floor openings covered.
- Containers/pipes purged of flammable vapours.
- Fire watch to be provided.
- Area to be inspected after hot work has been completed.
- Fire watch to be kept on duty for at least 30 minutes after operation.
- Warn all employees working under hot work process.
- Ensure adequate fire extinguishers, where appropriate, Mobile Water Supply with water spray/pressure available, at all times during hot work operation.

Harmful gases are abated when doing certain types of welding work, therefore the Contractor must provide breathing apparatus when welding, cutting or heating the following:

- Zinc, lead, cadmium, mercury or beryllium bearing based or coated materials in enclosed spaces
- Stainless steel with inert-gas equipment

- In confined spaces
- Galvanised steel
- Where an unusual condition can cause an unsafe accumulation of contaminants

Proper protective equipment is to be provided.

No welding or cutting is to be undertaken where hot metal or sparks can fall onto walkways, work areas, cable ladders, electrical equipment, etc. Before welding or cutting is started, fire retardant blankets are to be placed to arrest such hot meal or sparks. Particular attention is to be taken when working above cables that are not adequately covered.

Use an approved type flint lighter for lighting torches. Do not use matches, rope wicks or other smouldering materials.

Hoses are to be depressurised before cutting torches are cleaned and nozzles are not to be cleaned/rubbed against gloves.

During welding operations, the earth lead is to be attached to the work area, refrain from earthing through equipment bearings or through clearance gaps of any sort.

Welders and other people executing hot work must not wear any jewelry or carry cigarette lighters.

All welding machines to be earthed receive power through an approved earth leakage system and are fitted with an approved voltage reducer. A certificate is to be kept on register, on site.

5.17 Trespass

The Contractor and his employees must not trespass on any land outside the limits of the site, as determined by the Employer representative, and must ensure that all fences/hoarding are maintained during the Contract. If instructed by the Employer representative, the Contractor must remove from the site any employee who offends against the provision of this clause.

The Contractor and his employees are required to work only in the specified construction areas allocated within the building site and access to these areas is only by routes specified by the Employer representative.

5.18 Deliveries, Waste Removal, Stacking/Storage of Materials

Construction materials and equipment may only be stacked/stored in designated areas as identified and agreed with the P/Agent.

Stacking and storage of materials must be performed under the supervision of a Competent Person who has been appointed in writing. All materials must be stacked and stored safely, on level, compact ground and out of pedestrian walkways or roadway. Pallets of bricks for instance may not be stacked more than two above each other and must be on timber pallets, on compacted, level ground. No construction materials or equipment may be stacked or stored in public areas unless authorised by the Client and fenced off as per the Client's requirements. Waste materials must be kept within designated construction zones and disposed of regularly. A system of separation is required in the interest of good environmental management practice.

Adequate space stacking, storage and lay down areas must be provided on site, these must be kept neat and under control. In addition to the abovementioned the requirements of General Safety Regulations published in Government Notice No. R.1031 dated 30 May 1986 and amendments thereto

must be complied with.

In the event that unauthorized persons enter an area where materials are stacked, such area must be barricaded off to prevent access to such area.

5.19 Personal & Other Protective Equipment (Sections 8 of the OHS Act)

PPE will be provided free of charge to all employees on site. Records of issue will be maintained on site. The issue of PPE will be site specific as per scope of works. All employees will be responsible for the care and maintenance of their own PPE.

The following SABS approved PPE will be compulsory for all employees working on the project:

- foot protection including gumboots for concrete or wet work and no slip shoes for roof work;
- Overalls;
- Reflective vests; and
- Safety gloves.

Eye and face protection is to be used when operating the following:

- Jack hammer
- Angle grinder
- Electric drill
- Explosive powered tools
- Hammer and chisel
- Cutting and welding torches
- Bench saw

Any other equipment, which may cause harm to the eyes and face.

Hearing protection must be used for the following:

- Jack hammers
- Explosive powered tools
- Wood or aluminum working machines (saws, planners, routers)

With any other equipment that may cause hearing loss.

Hand protection must be used for the following:

- Cement, steel or chemical work
- Welding equipment
- Hammer and chisel
- Jack hammer

With any other equipment, which may cause harm to the hands or may cause infection

Any other PPE pertaining to the work not mentioned here must be worn at all times. There must be a record of PPE issued on site. A commitment must be made by the employee in writing to wear the PPE issued to him/her.

Visitors to wear safety boots, hard hats and reflective vests as a minimum

5.20 Portable Electrical Tools & Equipment (Electrical Machinery Regulation 9)

Portable electrical tools and equipment includes every unit that draws electrical power and is moved around for use in the workplace i.e. drills, saws, grindstones, portable lights, etc. In addition electrical appliances such as fridges, hotplates, heaters, etc. must be inspected and maintained to the same

standards as portable electrical tools and appliances.

The use, inspection and maintenance of portable electrical tools and equipment must be governed by the following:

- Regular inspections by a competent person appointed in writing (Daily inspections before use)
- Inspection must be performed by a competent person and the results recorded in a register.
- Only competent authorised persons are allowed to use portable electrical tools and equipment
- The correct protective equipment is worn/used whilst operating portable electrical tools and equipment
- Must be maintained in good condition at all times to prevent an electrical shock to the user

5.21 Electrical Equipment

Approximate positions of known services are indicated on the drawings for information purposes only. The position of existing services cannot be guaranteed. The PC shall take all necessary steps to ascertain the exact location of the existing services before commencing any section of the works and shall exercise the greatest care when working in the vicinity of such services. The PC must establish the position of existing services where applicable by contacting the authority or authorities responsible for such services, by using specialized equipment and opening up by hand.

The PC shall so carry out all his operations as not to encroach on, or interfere with, or damage adjoining buildings and road structures, in the vicinity of the works and so as not to interfere in any way at any time with the smooth and continuous operation of the existing facilities.
Where required, the PC shall pay special attention to the various Low, Medium or High Voltage power lines that might run overhead, safe working distances adjacent to and below live wires, as well as to maintain and provide temporary stability where required to existing power and Telkom poles which may be positioned in close proximity to the existing works.

5.22 Demolition work

Any Contractor carrying out demolition work must ensure that prior to any such work being carried out, and in order also to ascertain the method of demolition to be used, a structural engineering survey of the structure to be demolished must be carried out by a competent person and that a method statement on the procedure to be followed in demolishing the structure is developed.
The following measures must also be adhered to:
The Contractor must appoint a competent person in writing to supervise and control all demolition work on site;
The Contractor must ensure that any partly demolished structure does not pose a safety risk to workers;
Should the Contractor be in doubt about the safety of a partly standing structure, the structure must be demarcated at a reasonable distance and sign posted, warning persons of the risk until such structure is made safe;
The Contractor must ensure that no persons work, move or stand under any partly demolished overhanging material, which has not been adequately shored, braced or supported;
Any support work must be designed to withstand the load being imposed on it, the design must be held

on site;

Where the stability of an adjoining structure, building or road may be negatively impacted, the Contractor must take all necessary steps to ensure the stability thereof;

The Contractor must ascertain the location and nature of electricity, water, gas or other similar services, which may be affected by the work being performed. A safe method of removal or work around these services must be drawn up;

Safe and convenient access must be provided to all work areas;

While demolition is taking place, all persons must be kept well away from the operation;

The demolition safety plan must include what applicable personal protective equipment and clothing is required. The minimum being leather gloves; steel toecap boots; eye protection where the risk of eye injury exists i.e. cutting, grinding, hot work, impact work; hearing protection for operators and other workers exposed to noise over 85dB(A); and fall prevention and/or arrest equipment when the risk of falling exists.

The suppression of noise and dust is important due to worker exposure as well as sensitivity to neighboring premises.

5.23 Safety Conflict

Where any conflict exists between the requirements of this Health and Safety Specification, the Site Rules or Statutory requirements or Regulations the higher standard must apply unless such conflict is brought to the attention of the H&S Agent and a direction provided. The PC is deemed to have allowed for the higher standard.

The PC is legally responsible for ensuring that they conform to all applicable aspects of the Occupational Health and Safety Act 85 of 1993 and Regulations (as amended) and other relevant Acts and Regulations. If in dispute with the Health and Safety Specification and other legislation the most stringent requirement must apply.

5.24 Roof Work and Cladding

The Contractor must implement and comply with OH&S Act – General Safety Regulation 6 & 11, Construction Regulations 10.

The Contractor must provide safe access for gaining access onto roofs.

The Contractor must provide ladders, scaffolds, man-cage or elevated work platforms for this purpose.

A life-line, consisting of a steel wire rope, the diameter calculated to suit the span and the number of persons attached to it, is to be erected on the ridge of the structure, using a mechanical device, e.g. turnbuckle, for tensioning the wire rope. (To be erected and placed on register and checked daily by a competent person.)

Structure anchor points for this life line are to be inspected prior to use by a structural engineer.

The crew working on the roof is tied with nylon rope to the life-line via their safety harnesses to allow them freedom of movement for placing the roof sheets.

No work is permitted during rain or when wind speeds exceed 30kph. This is only a guide. It must also depend on risk assessment and working conditions.

The Responsible Person must enforce this with the delegated authority on site.

Bundles of roof sheeting / roof tiles stacked on the roof must conform to the following:

- Only sufficient bundles are to be stacked on the roof to meet immediate needs – other bundles are to remain stacked on the ground until required.
- Bundles of sheeting are to be secured by means of 20mm steel strapping applied with a strapping tool.
- Securely tied to the rafters so as to prevent sheets being blown from the roof during high winds.
- No material may be stored on the roof over weekends and holiday periods.
- Side and gable cladding is to be erected by means of a swing scaffold attached to the roof truss extensions as specified by the manufacturer. No makeshift arrangements are permitted.

5.25 Waste Chutes

The disposal of rubble and other waste from elevated positions may only be conducted under controlled conditions. Waste chutes must be secured to a scaffold structure, which must in turn be secured to the main building. A person must be designated to take control of waste chute operations, which must include the inspection of the chute on a daily basis. Waste must discharge into an enclosed area (ready fence panels to be used), eliminating the risk of persons being struck by waste material.

5.26 Cranes and lifting equipment

Should any form of lifting device or crane (fixed or mobile) be used during the project for deliveries, moving of supplies or equipment, the appropriate documentation must be made available. Method statements, risk assessments, safe work procedures and training are to be available prior to work commencing. A procedure for managing loads and lifting must be made available as an addendum to the H&S Plan.

5.27 Transport of Personnel

Should it be necessary for the Contractor to transport their personnel to site, only safe vehicular transport must be provided. This shall include proper seating, side restraints and cover. Seats shall be firmly secured and adequate for the number of employees to be carried.

No personnel shall be permitted to travel on any plant or equipment on the site. Never on top of material! Road safety principles shall be adhered to on and off site.

5.28 Ergonomics

The Principal Contractor shall cause an ergonomic risk assessment to be undertaken by a competent person as contemplated in regulation 6 of the Ergonomics Regulations, 2018 and employees adequately trained in a training programme that incorporates the requirements of regulation 6. It is expected that a monthly ergonomics inspection register is developed for implementation with the following safe working practice adopted.

- Ergonomic observational checks must be conducted by every Supervisor for every task performed in his area of responsibility

- A competent person, will carry out an ergonomic study of the workplace every two years as to identify problem work areas and/or tasks, and recommend corrective action to rectify the deviations
- During job analysis and planned job observations, an ergonomic observational check must be conducted
- Any deviations will be rectified as to facilitate a safe and productive working environment
- Standardised and uniform equipment/tools must be purchased through procurement and introduced into the workplaces as far as reasonably possible
- If any equipment, process and/or personnel changes are introduced, then a planned job observation together with an ergonomic observational check will be conducted

5.29 Asbestos Work

The Contractor shall familiarise themselves with the 2020 Asbestos Abatement Regulations and implement measures to ensure compliance with the 2020 Asbestos Abatement Regulations.
"These Regulations apply to every employer and self-employed person who may expose any person to asbestos dust at the workplace.

5.30 Community Risk Management

The Principal Contractor must give consideration to the possibility of strike action, the safety and security of personnel and equipment. The appointed Community Liaison Officer and Safety Officer must form part of the Project Steering Committee and appropriate precautionary measures must be planned for. The PC must in conjunction with Community Liaison Officer and the Project Steering Committee further develop a response plan/procedure that will specify how situations will be dealt with should there be possible intimidation of staff members from the local communities or social groups which aim to stop the construction work to negotiate with the Department of Public Works.

6. GENERAL CONTRACT REQUIREMENTS

6.1 Fundamental Health and Safety Requirements

Before any work commences, proof of and the following non-negotiable deliverables are required:

- Letter of good standing with the Workman's Compensation Commissioner
- Public Liability Insurance (as per DoPW requirements)
- Competency training certificates of people to execute the job
- Method statements for work to be conducted
- Risk Assessments for every Job/Task
- Signed legal appointments as required by legislation
- All equipment to be on a current register
- A Medical fitness certificate for each employee with Annexure 3 completed per employee
- Attending of the Contractors Job Specific Induction
- Health and Safety Management Plan
- Health and Safety file table of contents (to follow order of Safety File Checklist Annexure A)

6.2 Clarification

In the event that the Principal Contractor requires clarification of any of the terms or provisions of this agreement, he should contact the Project Manager of Department of Public Works or his representative.

6.3 Duration of Agreement

The obligation to comply with this specification shall apply to any work performed for the Department of Public Works as agreed between the parties.

6.4 Non-Conformances

Failure or refusal on the part of the PC or their Contractors to take the necessary steps to ensure the safety of workers and the general public in accordance with these specifications or as required by statutory authorities or ordered by the Principle Agent, shall be sufficient cause for the OH&S Agent to stop work. Should, at any time, the works, or part of the woks, be stopped due to unsafe acts or non-compliance with the Clients PSHSS or PCs H&S Plan; neither the PC nor any other Contractor shall have a claim for extension of time or any other compensation.

The following constitute examples of the types of non-conformances that will attract penalties:

Minor: Penalty: R50/count	**Medium: Penalty: R500/count and a non-conformance**	**Severe Penalty: R5000/count, a non-conformance and/or activity stoppage**
Non-use of PPE supplied	Toilets not supplied or regularly serviced; lack of drinking water	Contractors working without Health and Safety Plan approval
Non completion of registers for plant and equipment on site	Contractors not audited	Workers transported in contravention of the OHS plan or legal requirements
Lack of H&S signage at work areas	Working without training or the appropriate, approved H&S method statements	Invalid Letters of Good Standing
Tools and equipment identified in poor condition during inspections	Legal non-conformances identified during the previous audit and not addressed within the agreed time frame	Non-compliance with traffic accommodation requirements: layout or physical conditions
	No weekly OHS report at site meeting to report on	Any serious breach of legal requirements
	No certificates of fitness for workers as required	
	Working without approved method statements	

6.5 Failure to Comply with Provisions

Failure or refusal on the part of the PC or their Contractors to take the necessary steps to ensure the safety of workers and the general public in accordance with these specifications or as required by

statutory authorities or ordered by the Principal Agent (PA), shall be sufficient cause for the PA to apply penalties as follows:

(i) A penalty as shown in the Table above shall be deducted from the payment certificate for that month for each and every occurrence of non-compliance with any of the requirements of the PSHSS.

(ii) In addition a time-related penalty of R500, 00 per hour over and above the fixed penalty may be deducted for non-compliance to rectify any non-conformance within the allowable time after a site instruction to this effect has been given by the PA. The site instruction shall state the agreed time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

ANNEXURE A

STRUCTURE OF THE DETAILED OHSE PLAN

A detailed OHSE Plan is to be submitted by the successful tenderer as per section 3 (a) on this document. The following are the minimum standard legal documentation that must form part of the OHSE Plan based on the risks attached in executing this project –

Replacement of existing roof with new including Rehabilitation & Restoration of other areas

1. Letter of Good Standing with Compensation Commissioner or Compensation insurer
2. The Contractor's Health, Safety & Environmental Policy, signed by the chief executive officer, which outlines the Contractor's OHSE compliance objectives and how they will be achieved. The OHS Policy is to include the compliance for the management of COVID 19.
3. Pre-Construction risk assessment *(Site specific and date)*
4. Relevant checklists and registers
5. Statutory test and inspections have been carried out on machinery, tools and equipment used on the Project
6. Site specific OHSE Organogram onsite.
7. Preliminary Induction Program
8. OHS Audit format for scheduled audits on all appointed contractors and self-audits
9. Fall Protection Plan
10. Demolition Plan. To be approved by the structural/architect before any works can be executed due to the building been declared a heritage building.
11. Environmental Management Plan which is to be developed to comply with the requirements of the National Environmental Management Act (NEMA) and the requirement of the permit issued by AMAFA. The environmental management plan is to provide a detailed waste management plan as all demolished/stripped dismantled building material/items is to be stored as per requirements of the permit issued by AMAFA.
12. Public Safety Management Plan
13. Emergency preparedness plan
14. COVID 19 Policy and Management Plan
15. Traffic Management Plan
16. Duties and responsibilities of key appointed staff for the project

Proof of competency, which should include detailed CV, proof of qualifications, registration with relevant statutory bodies, relevant experience, and references from previous clients for the following legal appointees.

16.1. Construction Manager
16.2. Construction Work Supervisor
16.3. Construction H&S Officer – Registration with SACPCMP
16.4. Risk Assessor – SAQA accredited competency certificate
16.5. Accident Investigator – SAQA accredited competency certificate
16.6. Fall Protection Planner – SAQA accredited unit standard: 229994/229995/229998
16.7. Demolition work inspector
16.8. Electrician – Wireman's licence
16.9. Temporary works Designer – ECSA registered
16.10. Temporary works supervisor

Legal appointments to be appointed	
Prior Site Handover	**After Site Handover on commencement with Construction work**
• 16.2 • Construction Manager • Assistant Construction Manager • Construction Work Supervisor • Construction H&S Officer • Risk Assessor • Fall protection Planner • Covid Compliance Officer • Demolition Works Supervisor	• Excavation work supervisor • Scaffold Erectors • Scaffold Inspectors • Scaffold Supervisors • First Aiders • Emergency co-ordinator • Fire Marshalls • Fire team members • Portable Electrical tool inspector • Hand tools inspector • Assistant Construction Work Supervisor • Housekeeping inspector • Stacking and storage inspector • Construction Vehicle and mobile plant inspector • Construction Vehicle and Mobile plant operators • Traffic Controller (Flagman) • Lifting machinery operators • Lifting equipment inspector • Banksman • Temporary electrical installation inspector • Temporary works designer • Temporary works supervisor • Flammable liquids Storage Inspector • Hazardous substance storage inspector • Ladder inspector • Health and safety representatives • Accident investigator

ANNEXURE B

CLOSE OUT INFORMATION REQUIRED

The H&S file for the Principal Contractor and all Contractors require closure and handover to the Client at the completion of the project. The following list is an example of what should be included, but is not exhaustive. The CHS Agent appointed for this project may require further information at the time of completion and the Principal Contractor is to ensure that all instructions are met. Documentation would include all records from the start of the project. Daily or monthly plant inspection records are not required unless they are related to an accident. Tool box talks are also not required. DSTI's linked to any accident or injury on any day must be inclusive of closeout documentation. All records to be in electronic format and submitted to the CHS Agent for approval in adequately formatted lists and folders. Layout should be logical and in the same order as in the site files.

Health and Safety close out file requirements include:

a) Clients Baseline Risk Assessment and H&S Specification
b) Principal Contractor's OHS Plan (s)
c) Principle Contractors Site Specific Fall Protection Plan
d) Principle Contractors Environmental/Waste Management Plans
e) All Company Policies E.g. H&S Policy, Smoking Policy, Disciplinary Policy
f) Organograms
g) All Induction Registers to be in the file along with Induction Material
h) All Legal Appointments
i) Department of Employment and Labour Permit/Notification of Construction Work
k) Letters of Good Standing for the duration of the Project
l) Full files for all Sub -Contractors as well as their close out reports

- ❖ List of Contractors

All employees employed on a permanent or contractual basis over the duration of the contract

- ✓ Letters of Approval of Contractors SHE Plans
- ✓ Mandatary Agreements and Subcontractor Appointment Letter
- ✓ Letters of Good Standing
- ✓ Legal Appointments
- ✓ SHE Plans
- ✓ Method Statements
- ✓ Fall Protection Plan
- ✓ Subcontractor Audits
- ✓ Risk Assessments

m) All Project related Incident Records plus supporting documentation e.g. Photos, Statements etc.
n) Non-Conformance records
0) Agent's Audits and Inspection Reports
p) Method Statements
q) PPE issue Registers - Only
r) Risk assessments
s) Safe work procedures
t) Medical surveillance certificates of fitness. Medical records are to be kept according to the OH&S Act as amended

ANNEXURE C

OH&S BILL OF QUANTITIES

Date: 23/01/2023

Client: Department of Public Works

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT (R)
1.	SABS APPROVED PPE:				
1.1	Hi Visibility Conti - Suit	Annual/As required or needing replacement			
1.2	Hi Visibility T – Shirt	Annual/As required or needing replacement			
1.3	Steel Toe- Capped Safety Boots	Annual/As required or needing replacement			
1.4	Hi Visibility Safety vests	Annual/As required or needing replacement			
1.5	SABS Approved Hard Hats	Annual/As required or needing replacement			
1.6	Hi Visibility Rain- Suits	Annual/As required or needing replacement			
1.7	Steel Toe Capped Gumboots	Annual/As required or needing replacement			
1.8	Dust Masks (Stipulate FFP)	Annual/As required or needing replacement			
1.9	Safety Glasses / Visors	Annual/As required or needing replacement			
1.10	Gloves * Stipulate Type	Annual/As required or needing replacement			
1.11	Hearing Protection	Annual/As required or needing replacement			
1.12	Other:				
2.	Training				
2.1	Scaffold Team / Supervisor / Inspectors / Erectors / team leader	Once Off			
2.2	First Aider Training	Once Off			
2.3	Fire Fighting Training	Once Off			
2.4	Health and Safety Representatives	Once Off			
2.5	Legal Liability for Supervisors	Once Off			
2.6	Fall Protection Planner US 229994 & 229998	Once Off			
2.7	Temporary Works Supervisor US119061	Once Off			
2.8	Working at Height/ Use of fall protection equipment Rescue from Falling from Height (US 22998 & 229995)	Once Off			
2.9	Excavation Supervisors	Once Off			
2.10	Allow for HIV/AIDS awareness and Implementation programmes, including STI and TB, including COVID 19 management	Once Off			

2.11	Riggers and Banks men Training	Once Off			
2.12	Other competence training as per project requirements	Once Off			
3.	H&S Salaries				
3.1	CHS Officer	Monthly			
3.2	Other	Monthly			
4.	Specific H&S Items				
4.1	Medicals plus COVID 19 screening	Pre Placement / Annual / Exit			
4.2	Spill Kits	Once Off			
4.3	Scaffolding Equipment	Once Off			
4.4	First Aid Kits	Once Off			
4.5	Fire Extinguishers	Once Off			
4.6	Provision of ablution facilities for both male and female and Sheltered eating areas	Once Off			
4.7	Barrier Netting and Rebar caps	Once Off/replacement			
4.8	Annual / Six Monthly and Quarterly inspections and load testing as per legal requirements	As per DMR 18			
4.9	Certification of all lifting gear during the course of the project	As per DMR 18			
4.10	Double Lanyard Safety Harnesses (SANS approved)	Once Off/replacement			
4.11	Anchor points and Life Lines	Once Off/replacement			
	Screening of access scaffolding that has been erected	Once Off			
4.12	Outsourced Service Providers e.g. Temporary Works Designer e.g. Scaffolding, Support Work	As Per CR12(1)			
4.13	Appointment of AIA for asbestos	Once Off			
4.14	Asbestos Management plan	Once Off			
4.15	Asbestos removal by competent asbestos contractor	Once Off			
4.16	Disposal of products containing asbestos	Once Off			
4.17	Other time related Head Office and site costs relating to the compliance with the H&S Specifications.				

5.	Hazardous Biological Agents				
5.1	Development of OHS Plan / COVID 19 Management Plan for the project to cater for COVID 19. Rate to include for risk assessment specific items to mitigate the COVID-19 Epidemic and other adjustments to ensure compliance for the assignment	Once off/ as and when required			
6.	Safety Signage				
6.1	Construction Boards and Safety / Information Signage	Once Off			
6.2	Temporary traffic Accommodation(If Required)	Once Off			
6.3	Fire Extinguishers	Once Off			
6.4	Directional Arrows	Once Off			
6.5	Emergency Assembly points	Once Off			
6.6	Ladies and Men's Toilets	Once Off			
6.7	No smoking and no Naked Flame	Once Off			
6.8	First Aid Boxes	Once Off			
6.9	Other fixed site office and site costs relating to the compliance with the H&S Specifications.				
				TOTAL	

ANNEXURE D

Items	Client Specific Requirements
Site Office location	• The location of the site office should be in an area that will not require visitors to pass through or enter area where construction work is active and will not require the re-location of the office as the project progresses. • The site office location is to be fully fenced off with access control
Medical Certificates	• In compliance with the requirements of the Construction Regulations 2014 section 7(8) the Contractor must ensure that all of his employee's onsite have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.
Appointment of a Full-time safety officer	• The Principal Contractors will have to appoint a competent Construction H&S Officer, for this project, who is registered with SACPCMP and will have to be onsite for the duration of this project.
	• Principal Contractor is to submit a COVID 19 Policy which can be

COVID 19 Policy	implemented by the contractor to manage Covid 19 related illnesses. Management plan for review and approval before any construction works can commence • The COVID policy can be developed in line with the following: i. Guidelines for the COVID 19 management as issued by NICD and CDC
Demolition work	• All demolition works is to be comply with the requirements of Construction Regulations 14. • The Principal Contractor/Contractor must appoint a competent person in writing to supervise and control all demolition work on site. • Surface beds are to be demolished to gain access to foundations and contractor is to ensure the required method statement and risk assessments are submitted for review and approval before any demolition works can be executed. • The Principal Contractor/Contractor must ensure that prior to any demolition work being carried out, and in order also to ascertain the method of demolition to be used, a detailed structural engineering survey of the structure/section to be demolished is carried out by a competent person and that a method statement on the procedure to be followed in demolishing the structure is developed and provided to the appointed Engineer / Architect for review and approval as this building is classified as a heritage building. • During the demolition, the competent person shall check the structural integrity of the structure at regular intervals determined in the method statement in order to avoid any premature collapses. • All salvageable items/material is to be stored as per requirements of AMAFA permit requirements. • Photographic evidence is to be recorded prior to any demolition removal /dismantling conducted on site
Extreme weather conditions	• If the weather condition poses a threat to the health & safety of employees, be it extreme heat, cold, lighting or any adverse weather condition appropriate safety measures have to be taken. • Adequate measures to be implemented to mitigate rain damage to any exposed internal sections of the building
Change to scope of work	• Should there be changes to the original scope of work, the Principal Agent must inform appointed Construction Health and Safety Agent to effect changes to the OHSE Specification.
Contractors OHSE Plan Submission	• The successful Tenderer must submit a copy of the detailed OHSE Plan for approval and keep the original for onsite use during construction. The principal Contractor will not be allowed to start site establishment before his/her OHSE Plan has been approved in writing. Should there be a change in the original scope of works, the principal contractor is to amend his/her OHSE Plan • Prior to the preparation of the contractors SHE Plan, the appointed Construction Safety Manager/Officer is to conduct a site visit to identify the site specific hoarding that will be done on this project which will require partial closure of identified roads. *Refer to Site Plan*
Bylaws	• The Principal Contractor must incorporate any aspects of the Local Municipal bylaws which affect the Safety and Environmental wellbeing of the employees and the public into his/her OHSE Plan and ensure compliance to such bylaws.
Risk assessment for construction	• To comply with CR (9) and to also address environmental issues • To also include exposure to hazardous chemical substances, gases

work	*See the attached baseline risk assessment to be considered by both the designer and the principal contractor.* • Issue a Baseline and Continuous Risk Assessment • Risk assessments and method statements are to be submitted to the SHE Agent at least 2 weeks in advanced for review and approval before any works commence on site. • Ensure all risk assessments are communicated to staff prior to commencement of the task.
Occupational Hygiene and infection control	• Occupational exposure to biological agents is a present risk to this project and the contractors must ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards. • Contractors must prevent inhalation, ingestion, and absorption of any harmful chemical or biological agents. • Appropriate PPE to be used when working in the sewers • Water to be utilized for drinking purposes may only be drawn from taps designated for drinking water purposes. • Hazardous materials such as asbestos may not be included in general rubble and need to be disposed of as per applicable legislative requirements
Fall protection	• Submit s site specific fall protection plan prior to any heights works conducted on site. • To comply with CR (10) And the applicable unit standards namely: 229994, 229995 and 229998 • Edge protection and protection of floor openings need to be of such a manner as to properly protect employees from falling off elevated positions or falling into floor openings • All staff working at heights to have valid medicals and competency training.
Structures	• To comply with CR (11) • Underpinning is to be done and principal contractor is to ensure required inspections are conducted by the appointed competent person. • The required method statement and risk assessment is to be submitted and approved before any works commence on site
Excavations	• To comply with CR (13) and the following; • If the risk exists of a person in an excavation being enclosed in an event of a collapse the following will apply; shoring sufficient to prevent enclosure, any excavated material must be placed at least 1metre from the edge and at the maximum angle of repose to the horizontal. • No excavation may affect the stability of any adjoining structure or road unless steps have been taken as identified by an Engineer or a Technologist. • Adequate provisions must be made to ensure that water is drained from excavations where water may enter such excavations as a result of seepage or rain • All excavations made by the Principal or Sub Contractors must be barricaded by means of solid barricading and barricading tape may only be used to make such barricading more visible • All deep open excavations to be sign posted. • Site specific risk assessment and method statement are to be provided for review and approval for excavations executed inside

	the buildings.
Scaffolding	• To comply with CR (16) and SANS 10085 and the following; • Scaffolding Inspectors, Scaffolding Supervisors and Scaffolding Erectors must be different individuals and be deemed competent with records of competency in file • Scaffolding erected behind Block C and encroached onto the road is to comply with SANS 10085 • Scaffolding erected behind Block C must be fitted with screens to prevent items falling onto public road • Scaffolding erection behind Block C can commence once the hoarding has been erected and the road traffic management plan has been implemented. • Scaffold Harness must be used on Scaffolding, normal Harnesses may not be used on scaffolding • Sufficient Scaffolding material e.g., tags, trapdoors etc. need to be on site as determined by the activities on site • Scaffold bases may not be supported by materials such as bricks and chipboard. Suitable material needs to be used as per SANS 10085. Due to existing building having wooden flooring, all scaffolding erection done inside the buildings is to be erected as per design plan/s due to void beneath wooden flooring. • All scaffolding to be erected, is to have a design plan and the following documents are to be provided before use: Scaffold request form Scaffold Inspection form Scaffold handover certificate
Construction vehicles and mobile plant	• To comply with CR (23) and the National Road Traffic Act 1996. and the following; • Have the appropriate code of licence and training to operate the class of construction vehicle and mobile plant • Provision of a serviced portable fire extinguisher in vehicles at all times.
Electrical installations and machinery on construction sites	• To comply with CR (24) • All temporary electrical connections to be done by a registered electrician and a valid CoC is to be provided and in file. • All electrical supply to the buildings is to be isolated and locked out by the appointed Electrician by the Principal contractor.
Use and temporary storage of flammable liquids on construction sites	• To comply with CR (25) and the following: • All flammable liquids to be stored in a flammable liquid cupboard/cage. • A spill kit is to be available to clean any spillages. • All fuels to be stored in designated storage containers
Housekeeping and general safeguarding on construction sites	• To comply with CR (27) and the following; • Contractor to designate areas for placing refuse and rubble prior to being removed from site • Dust suppression is to be maintained on site during construction activities • Contractor must implement a daily task site clean-up for all activities these should cover work areas, stairways, walkways etc. to free of any construction debris obstruction. • Refuse to be separated for recycling purposes • All domestic refuse is to be placed into refuse bins with lids.

Stacking and storage on construction sites	• To comply with CR (28) and the following; • All stacking and storage is to be done within the construction work site • All salvageable material removed from the existing building/s is to be stored within a designated area as per AMAFA permit requirements. • Items dismantled /removed / demolished for reuse is to be safely stored within a designated area for reuse.
Fire precautions on construction sites	• To comply with CR (29) and the following; • No smoking may be permitted on site except in designated smoking areas • All stacking and storage of hazardous chemicals and flammable chemicals must be stored based on their class of compatibility. • Adequate firefighting equipment is to be provided on site
Construction employees' facilities	• To comply with CR (30) and the following; • Sufficient toilets to be provided for both male and female staff • All portable toilets are to be serviced twice a week with records in file. • Gender signs to be placed at appropriate locations • All welfare facilities to be kept in a hygienic condition at all times. Schedule for COVID disinfecting is to be provided on site • Employees to be trained in good hygiene practices • COVID 19 isolation area is to be provided on site • Adequate hand wash and sanitising areas to be provided on site
Public Safety & Signage	• The Principal Contractor engaged in construction work must ensure that each person working on or visiting a site, and the general public in the vicinity of the construction site, shall be made aware of the dangers likely to arise from onsite activities and the precautions to be observed to avoid or minimise those dangers. • All hoarding to be erected must be 2.1-meter-high and shield them from view and prevent unauthorised access • Adequate signage and safety measures are to be implemented to ensure no vehicles drive into the hoarding • Appropriate signage shall be posted at conspicuous points within and around the perimeter of the site. The steps to comply with this requirement must be outlined in the OHSE Plan. • The public or visitors may only be permitted on site if they go through an appropriate health and safety induction detailing hazards and risks, they may be exposed to and what measures are in place to control these hazards and risks • The entire project site must be secured against unauthorized access and provided with appropriate warning signage. Where roadways or walkways must be encroached or closed due to work, adequate barriers shall be installed to safely redirect the flow of vehicles and pedestrians and protect them from construction activities. • Whenever it is necessary to maintain public use of work areas (such as sidewalks, roads, ramps, entrances to buildings, corridors, or stairways), the public shall be protected with appropriate guardrails, barricades, temporary fences, overhead protection, or temporary partitions and hoarding. The public must also be adequately protected from any work created hazards, such as noise and dust exposure. Appropriate warnings, signs, warning lights and instructional safety signs shall be conspicuously posted and placed where necessary.

	• The public must also be protected from falling debris and objects from the project site. • Overhead protection shall be provided that will fully protect the public and be capable of withstanding the maximum forces that could be applied from potential falling objects. • Special attention shall also be given to developing adequate means to protect against wind-blown debris and construction-related materials. • A traffic management plan is to be submitted together with the contractors SHE Management Plan prior to any site establishment done on site • Control measures as indicated in the traffic management plan is to be implemented on site to manage traffic flow. • The public road leading to the construction site is to be displayed with the applicable construction signage indicating the movement of construction plant and vehicles.
On Site Health and Safety Training & Induction	• The Principal Contractor shall ensure that all site personnel and visitors undergo a risk-specific health & safety and COVID induction training session before starting work or being permitted to enter the site. A record of attendance shall be kept in the health & safety file. • The Principal Contractor shall ensure that, on site periodic toolbox talks take place at least once per week. These talks should deal with risks relevant to the construction work at hand. A record of attendance shall be kept in the health & safety file. The above should also cover all sub-contractors that are onsite. • All Contractors have to comply with this minimum requirement. • Environmental issues to be included in toolbox talks where required.
General Record Keeping	• The Principal Contractor and all Sub Contractors must keep and maintain Health and Safety records to demonstrate compliance with this Specification, The OHS Act 85/1993; and with the Construction Regulations of 2014. The Principal Contractor shall ensure that all records of incidents/accidents, training, inspections; audits, etc. are kept in a health & safety file held in the site office, which must be present on site at all times. • The Principal Contractor must ensure that every Sub Contractor opens its own health & safety file, maintains the file, and makes it available on request.
Health & Safety Audits, Monitoring and reporting	• The Client or its duly appointed Agent shall conduct monthly health & safety audits. • The Principal Contractor is obligated to conduct similar audits on all Sub Contractors appointed by them at least once a month. • Detailed audit reports must be presented and discussed at all levels of project management meetings and a copy of such audit will be provided to the Client or it's duly appointed Agent within 7 working days of such audit. • Copies of the Client's audit reports shall be kept in the Principal Contractors Health & Safety File.
Emergency Procedures	• The Principal Contractor shall submit a detailed Emergency Plan for approval to the Clients Agent prior to commencement on site. The plan shall detail the response procedure including the following key elements: 1. List of key competent personnel. 2. Contact details of emergency services.

	3. Actions or steps to be taken in the event of the specific types of emergencies that may be encountered on site or within the vicinity of the project. 4. Information on hazardous material/situations.
First Aid Boxes and First Aid Equipment	• To comply with GSR (3) and the following; • The appointed First Aider(s) to be in possession of a valid first aid training certificate Level 2. • Valid certificates are to be kept in the Site Safety File. • All Sub Contractors with more than 5 employees shall supply their own first aid box, except if otherwise agreed upon between Principal and Sub- Contractor in writing. • The contents of the first aid box is to have the minimum contents as per the Regulation 3.
Accident / Incident Reporting and Investigation	• To comply with GAR (8) and the following; • Injuries are to be categorised into Near miss, first aid, LTI, fatal etc. • Fatal accidents to be reported in addition to applicable legislative requirements to the Client or its duly appointed Agent with immediate effect. • The Principal Contractor must stipulate in its construction phase OHSE Plan how it will handle each of these categories. • When reporting injuries to the Client, these categories shall be used. • The Principal Contractor shall investigate all injuries, with a report being forwarded to the Client/clients agent immediately. • All Sub- Contractors have to report on the abovementioned categories of injuries to the Principal Contractor at least monthly. • All categories of incidents/accidents must be in the Statistics Section of the Monthly Audit Reports, submitted to the Client or it's duly appointed Agent.
Hazards and Potential Situations	• The Principal Contractor shall immediately notify other Sub Contractors as well as the Client and the client's representative of any hazardous or potentially hazardous situations that may arise during performance of construction activities. • Should a hazardous situation require work stoppages, the work must be stopped, and corrective steps taken such as the issue of Written Safe Work Procedures and the issue of Personal Protective Equipment.
Personal Protective Equipment (PPE) and Clothing	• The Principal Contractor must ensure that all workers are issued with the required PPE as required by the risks associated with the activities they perform. • The minimum PPE to be worn on site will be Safety Shoes/Boots, Hard Hats, Overalls, COVID face masks and reflective vests. • No Visitors may enter the site without Safety Shoes/Boots, COVID face mask and Hard hats. • The Principal Contractor and all Sub Contractors shall make provision and keep adequate quantities of SABS approved PPE on site at all times. • All employees issued with PPE to be trained in correct use, records of training and issue to be kept in the Site SHE File. • Procedure to be in place to deal with: 1. Lost or stolen PPE. 2. Worn out or damaged PPE replacement. 3. Employees not utilising PPE as required • The above procedure applies to Principal Contractors and

	their appointed Sub- Contractors, as they are all employers in their own right.
Permits	• The Principal Contractor shall prepare and issue the required written permits relating to but not limited to the following: 1) Hot Work 2) Roof Work; and 3) Electrical work (both temporary and permanent) 4) Confined Space Entry 5) Partial obstruction of any Road for construction purposes • The Principal Contractor must ensure that where permits are required that they be properly implemented and adhered to. • Contractor is to comply with the permit requirements as issued by AMAFA
Speed Restrictions and Protections	• Unless otherwise stipulated, the maximum speed limit on sites must be limited to 5 km/h. 1) Vehicle movement routes on site must be clearly indicated where applicable. 2) Signage to ensure the safe movement of vehicles on site, as well as to ensure the health and safety of all employees and visitors on site, must be displayed in strategic locations. 3) The max speed limit for all delivery vehicles /construction plant when traveling on the public road is to be restricted to 40km/h 4) The public roads leading to the construction site is to be displayed with the applicable construction signage indicating the movement of construction vehicles and partial obstruction of road.
Hazardous Chemical Substances (HCS)	• To comply with Hazardous Chemical Substances Regulations as published in Government Notice No. R. 1179 dated 25 August 1995. • In addition to the abovementioned, Material Safety Data Sheets must be kept on site for all materials, which may contain hazardous chemical substances • All staff responsible for use of any HCS must be inducted of the MSDS. The MSDS is to be referred to when conducting risk assessments, DSTI's and the waste management plan for disposal requirements. Appointed first aiders to reference required MSDS during any incidents involving HCS. • If contractor intends to use any high risk HCS, this is to be approved by the Designer and the required mitigation measures to be included in the site specific risk assessment.
Fire Extinguishers and Fire Fighting Equipment	• The Principal Contractor and Sub-Contractors must allow for and provide adequate provision of regularly serviced temporary firefighting equipment located at strategic points on site, specific for the classes of fire likely to occur. • The appropriate notices and signs must be allowed for and be erected as required • Contractors may not utilize fire protection equipment belonging to the Client without prior consent • Adequate number of staff to be trained in use of fire equipment.
Ladders and Ladder Work	• To comply with GSR (13A) and the following; 1) The Principal Contractor must allow for and ensure that all ladders are inspected at least monthly, are in a good safe working order, are the correct height for the task, extend at

	least 1m above the landing, are fastened and secured and are placed at a safe angle. 2) Records of inspections must be kept in a register on site.
Use of lifting equipment on site	• All lifting done on site is to comply with Driven Machinery Regulations 18(11) and Driven Machinery Regulations 2015
Portable Electrical Tools and Hand Tools	• The Principal Contractor shall ensure that all electrical tools, electrical distribution boards, extension leads, and plugs are kept in a safe working order. • The Principal Contractor shall ensure that all portable electrical Equipment, is clearly numbered, inspected by a Competent appointed person and records of such inspections to be kept on record in an appropriate register on the site SHE file • The Principal Contractor shall allow for and ensure the following in relation to hand Tools: 1) That a "Competent Person" undertakes routine inspections and records are kept on site. 2) That only authorized trained persons use the tools. 3) That safe working procedures apply. 4) That PPE is provided and used.
Adequate Lighting	All Contractors must allow for and ensure that adequate lighting is provided to allow for work to be carried out safely. Warning lights are to be displayed along hoarding on to create visibility for motorists during poor visibility
Transportation of Workers	• In addition to CR 23 and the National Road Traffic Act 1996 the following will apply: The Principal Contractor and Sub-Contractors shall not: 1) Transport persons together with goods or tools unless there is an appropriate area or section of the vehicle in which to store such goods. 2) Transport persons on the back of trucks except if a proper canopy (properly covering the sides and top) has been provided with suitable seating areas. 3) Permit workers to stand or sit on the edge of the transporting vehicle. 4) Transport workers in LDVs unless they are closed/covered and have the correct number of seats for the passengers 5) Allow driver to transport more than four people on the back of a 1 Ton LDV and more than two passengers on the back of a ½ Ton LDV. • The driver of any LDV may not permit more than two passengers to occupy the cab of any LDV. • Drivers of such vehicles must have a valid driver's license for the code of vehicle being driven by them. • No servicing of vehicles will be permitted on a Construction Site. No Vehicles or machinery leaking oil will be permitted on site due to the risk posed to the environment. • Any oil or diesel spilled on site must be cleaned up as per accepted environmental practice In the event that Earth Moving Machinery is present on site the following must be adhered to: • Drivers of vehicles must be instructed to avoid parking behind earth moving machinery in order to ensure that their vehicles are visible to the operators of earth moving machinery. • Right of way must be afforded to earth moving machinery at all times.

	• Vehicles must only be permitted to park, where possible, in designated areas
Environmental Management	• The Principal Contractor and Sub-Contractors must comply with the requirements of NEMA Act (Act 107 of 1998) • The Principal Contractor must develop a waste management plan, implement, and maintained it onsite • Cement mixing to be done at a predetermined location on site which must include a solid, slab, and bunded edges to prevent runoff • A concrete wash out area to be established to clean all contaminated equipment • Contaminated run off water from the site must be treated such as to ensure that it does not pose a risk to the environment • Dust suppression is to be managed on site • Any material which may have a harmful effect when disposed of by normal means must be disposed of in an appropriate manner to eliminate its harmful effect on the environment after disposal. • The Principal Contractor must allow for and ensure that adequate procedures are implemented and maintained to ensure that waste generated is placed in suitable receptacles and removed from the site promptly. • Plans to deal with spillages must be in place and maintained. • No waste materials (liquid or solid) may be disposed of in drains. • No burning of waste material may take place on site as such material being burned may result in pollution of the air or give off toxic vapours which could be harmful to the health of employees, or any other person present on site.
Alcohol and other Drugs	• To comply with GSR (2A) and the following; • No alcohol and other drugs will be allowed on site without the express permission of the Principal Contractor • No person may be under the influence of alcohol or any other drugs while on the construction site. • Any person on the construction site who is on prescription drugs must inform his/her Employer accordingly and the Employer shall in turn report this to the Principal Contractor immediately. • Any person on the construction site who is suffering from any illness/condition that may have a negative effect on his/her safety performance must report this to his/her Employer, who in turn must report this to the Principal Contractor forthwith. • Any person on the construction site who is suspected of being under the influence of alcohol or other drugs must be removed from site immediately and be instructed to report back the next day for a preliminary inquiry. A full disciplinary procedure must be followed by the Contractor concerned and a copy of the disciplinary action must be forwarded to the Principal Contractor for his records.
Provision of water and electricity for building purposes	• The principal contractor is responsible for his supply and cost of water and electricity for building purposes and his site office. • Principal contractor is to ensure the applicable applications are done once appointed by the client to prevent possible delays • Public water supply is not to be used by the principal contractor.
Compliance training for construction staff	• The principal contractor shall ensure that all staff working at heights is trained for work at heights and against the fall protection plan. • The Principal Contractor shall implement a training matrix based on

	the required training needs for the project • Training is to be done via accredited training service providers
Traffic Management Plan	• The Traffic Management Plan must be developed to be site specific as per project requirements. • The Traffic Management Plan will be developed in line with the South African Road Traffic Signs Manual Volume 2, Chapter 1 (SARTSM) • The TMP will be reviewed and approved by the client and Local Authority before any site establishment can commence on site. • Prior to the development of the TMP, the contractor is to review the Site Plan as to which access roads might be affected.

ANNEXURE E

METHOD STATEMENTS/ SAFE WORK PROCEDURES REQUIRED

The hazardous operations listed below have been identified by the Client and must be managed by Principle Contractor in the form of preparation of method statements/ Risk Assessment and *SWP's* before such work begins. The onus remains on the P.C. to compile method statements and conduct risk assessments for hazardous tasks (Construction Regulations). Contractors appointed by the P/Contractor will be required to conduct the necessary risk assessments and method statements and forward these to the P/Contractor before such work begins.

Method Statements *(But not limited to the below)*	
1	Transportation of material to and from site
2	Site Establishment
3	Survey - Setting out of the works
4	Electrical and water connections
5	Movement of construction vehicles, mobile cranes, delivery vehicles on roadways and walkways (including cleaning procedures and road signage
6	Excavations and Foundations
7	Stacking and Storage
8	Hazardous chemicals
9	Manual Handling
10	Hot work (Welding, grinding, cutting, gas cutting, heating)
11	Lifting And rigging
12	Structural steel (Steelwork)
13	Erecting Scaffolding, Support Work, Formwork etc.
14	Working at Heights
15	Steel fixing
16	Brick/ Concrete works
17	Mechanical and Electrical Works
18	Roof Work and Cladding
19	Housekeeping
20	Hand over and close out
21	De-Establishment

SAFE WORK PROCEDURE	
Resources Required:	
Basic Minimum PPE required:	Hardhat – Safety Shoes – Reflective Vest – Safety Glasses or Goggles – Task specific gloves – Overalls where required – Earplugs
Task Specific PPE:	Face shield - Masks– Spats – Aprons – Welding Gloves – Safety Harnesses (Fall Protection) – Raincoats as required by Issue/task based risk assessment
Labour Requirements:	Appointed Construction Manager - Appointed Construction Supervisors – Appointed Health and Safety Officer – Trained and authorized equipment/mobile plant operators – Authorized Hot work Personnel – Appointed Scaffold Supervisor, Erectors and Inspectors. – Trained Labour
Plant and Equipment:	Trucks – LDV's – Excavator – Lifting Equipment – Small hand tools – Concrete mixers – Welding machines and grinders – Gas cutting equipment – Electronic Equipment (Laptops and Printers) – Kitchen Equipment (Fridge or Microwave)
Emergency Equipment:	First Aid Kits – Fire Extinguishers – Barricading Tape – Hard Barricade – Flashlights –Emergency Lighting – Digital Cameras – Rescue Kits – Signage- Spill kits- Hand sanitising stations
Documentation Required:	Risk Assessments – Daily, Weekly and Monthly Inspections – Permits to work – Permits specific to activities – Pre use checklists – Equipment Registers
Step in process and explanation of how it is to be done safely	
Risk Assessment Process	All workers, visitors, client representatives and sub-contractors must be informed of all identified risks including COVID 19 virus when approaching the work site. Acknowledgement in writing of communication of the risks and controls must be available for all involved in the project.
Transportation	All drivers and operators must have valid South African drivers' licenses, must be trained in the operation of their equipment, appointed or authorized in writing to operate specific equipment and be monitored via PTO by their respective supervisor at least once per month. Vehicles must be pre inspected and all deviations must be repaired before vehicle is put into service. Refuelling may only be done in designated fire controlled areas.
Establishment	Area for establishment must be authorized by client, all connections such as water and electricity must be done by competent client approved personnel.
Electrical and water connections	Only competent electrician may connect electricity to containers, inspected and working distribution boards with earth leakage and main switches must be in place. Monthly testing must be conducted to ensure safe working conditions inside temporary containers.
Stacking and Storage	A supervisor/s will be appointed for safe stacking and storage. Stacking and Storage must be done in such a way that it does not hinder or disturb site operations, housekeeping must be done continuously to ensure there is always a safe working environment. Material such as scaffold must be stacked in such a way that it does not pose a danger when items are removed an unwanted movement is limited if not eliminated.
Hazardous	Hazardous chemical controller to be appointed. Chemicals such as epoxy and cement to

chemicals	be stored according to OEM specifications and access to it must be limited. Quantities to be controlled and spillages to be cleared as soon as possible. MSDS's for all chemicals to be available and proof of communication to all employees must be kept.
Manual Handling	All employees to be coached on correct manual handling methods (Lift with legs not back). Manual Handling to be assessed via PTO procedure, where possible machinery or equipment to be used to move heavy loads. Teamwork to be used when handling awkward loads, Supervisor to be present when heavy items are handled manually.
Hot work (Welding, grinding, cutting, gas cutting, heating)	Hot work to be conducted under supervision only. Only trained and authorized personnel may conduct hot work activities. Caution must be taken to not do hot work near flammable material. Sufficient firefighting equipment to be available.
Lifting And rigging	All equipment to be inspected and approved by for use. Only trained and authorized personnel to conduct lifting activities. Correct equipment to be used for specific activity. Competent riggers/spotters to be used during any rigging/lifting activities
Structural steel erection (Steelwork)	Care to be taken when handling steel beams for pinch points created. Hand on steel contact is to be limited as far as possible by supervisor. Superfluous steel materials to be taken to pre-determined area and stored in such a way that it does not create a hazard.
Erecting Scaffold	All erectors and inspectors to be trained and appointed (As per OSH Act Construction Regulations). Completed scaffolds to be handed over to working supervisor in writing when inspection is completed.
Concrete work	Concrete work to be done under supervision. "Shot Crete" to be done by trained and authorized personnel only. All employees in the vicinity of activities must wear the correct PPE. Issue based risk assessment to include high pressure equipment inspection and certifications.
Tower cranes and mobile cranes	Trained operator with the necessary certification and load test certificates (and 6 monthly inspections plus other inspections as per the crane manual) for each lifting machine. Trained banksmen to be assigned to tower cranes and mobile cranes i.e. two per crane, one on ground and one on elevated floor. Guy ropes to be available and to be used at all times to control each load due to proximity to the public. Crane base design and sign off by an engineer.
Housekeeping	After all activities housekeeping must be conducted. The area must after each shift be left in a safe an orderly fashion.
Hand over and close out	All hand overs to be done in writing. All deviations to be closed out beforehand overs are done.
De-Establishment	All connected services to be removed once authorized by client. Only appointed authorized personnel to remove services. Issue based risk assessment for loading of containers onto trucks to be submitted to client for approval.

ANNEXURE F

CONTRACTORS HEALTH, SAFETY & ENVIRONMENTAL DECLARATION

Project title:	**Replacement of existing roof with new including Rehabilitation & Restoration of other areas**
Contract no:	WIMS 060988

INTRODUCTION

In terms of Construction Regulation 7(1) (a) of the Construction Regulations of February 2014 a Contractor may only be appointed to perform construction work if the Client is satisfied that the Contractor has the necessary competencies and resources to carry out the work safely in accordance with the Occupational Health and Safety Act, Act 85 of 1993 and the Construction Regulations of February 2014. In line with this requirement the Contractor is required to read through this document carefully, sign it and submit it with his/her Tender.

DECLARATION

1. I the undersigned hereby declare and confirm that I am fully conversant with the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specification attached in the tender document.

2. I hereby declare that my company and its employees has the necessary competency and resources to safely carry out the construction work under this contract in compliance with the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specification.

3. I hereby confirm that adequate provisions have been made in my tender to cover the cost of all Safety, Health and Environmental duties and responsibilities imposed on me by the Occupational Health and Safety Act, Act 85 of 1993, the Construction Regulations of February 2014 and the Construction Safety, Health and Environmental Specification.

4. I confirm that I may not commence with any part of construction work under the contract until my Construction Safety, Health and Environmental Plan has been approved in writing by the Client.

5. I hereby confirm that copies of the following documentation will be kept on site for viewing and inspection purposes for the duration of the construction work:

   a) Client's Construction Safety, Health and Environmental Specification
   b) Approved Construction Safety, Health and Environmental Plan
   c) Occupational Health and Safety Act, Act 85 of 1993, and
   d) Construction Regulations of February 2014.
   e) COVID-19 Regulations 2020.

6. I agree that my failure to complete and execute this declaration to the satisfaction of the Client will mean that I am unable to comply with the requirements of the Occupational Health and Safety Act, Act 85 of 1993 and Construction Regulations 2014, and accept that my tender will be rejected.

Duly Signed at..... on this the..... day of.....20.....

Full Name of Signatory

Name of Enterprise

Capacity of Signatory

Signature of authorised representative of Bidder

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

ANNEXURE 9

CLIENT

public works

Department:
Public Works
PROVINCE OF KWAZULU-NATAL

PROJECT SPECIFIC
BASELINE RISK ASSESSMENT

Document Number	KNR-DoPW-01-23-23
Document Title	Baseline S.H.E. Risk Assessment
Client	Department of Public Works
Project	Replacement of existing roof to Block B with new including Rehabilitation & Restoration of other areas (Heritage Typology)
WIMS Number	WIMS 062326
Revision	0
Date	23 January 2023
Total Pages	46

TABLE OF CONTENTS

TITLE

The Hazard Identification and Risk Assessment of Occupational Health and Safety parameters on the Replacement of Existing Roof to Block B with new including Rehabilitation & Restoration of other areas project (heritage typology): DoPW

TERMS OF REFERENCE

Mr. Kevin Gunkel Pr CHSA 095/2019 of KNR Safety Consultants (PTY) LTD conducted a Baseline Risk Assessment based on the scope of works set out in **WIMS No: 062326 DESCRIPTION: - Replacement of Existing Roof to Block B with new including Rehabilitation & Restoration of other areas project (heritage typology): DoPW**. A physical site assessment was conducted on **27 January 2023** during normal working hours.

EXECUTIVE SUMMARY

The Occupational Health and Safety Act of 1993, and its relevant regulations require employers to conduct a Baseline Risk Assessment prior to the work being performed.

This assessment and observations were made at the above site under the conditions which prevailed on the date of the assessment. Detailed conclusions are given in the relevant sections of this report.

SCOPE OF WORK

EMPLOYERS OBJECTIVES

Upgrade existing building structures by replacing degraded and defective components with new components, where detailed as per AMAFA permit.

OVERVIEW OF THE WORKS

The removal of all existing old building components and replacing with new, where detailed as per AMAFA permit

EXTENT OF THE WORKS

The contract comprises alterations works, earthworks, wet works, removal and replacement of the; roof structure, carpentry and joinery, internal finishes, plumbing and drainage, external works, etc.

EMPLOYER'S DESIGN

All temporary work to comply with the Occupational Health and safety Act (Act 85 of 1993).

LOCATION OF THE WORKS

The site is situated at 230 Prince Alfred Street, LOT 120 Pietermaritzburg.

BASELINE RISK ASSESSMENT

1. **INTRODUCTION:** In accordance with the Occupational Health and Safety Act, (Act 85 of 1993) the Legislator places specific requirements on an Employer. One of these is prescribed in Section 8(i) of the Act where it requires the Employer to ascertain the risks and dangers which may occur within the workplace or section of the workplace and then goes on to establish working procedures or practices.

2. **PURPOSE:** This is conducted to create a benchmark of the potential risks that apply to the whole project or business operation.

3. **SCOPE:** This assessment could be approached on a site, regional or national level concerning any facet of the business operation or process or activity.

4. **ABBREVIATIONS, ACRONYMS AND DEFINITIONS**

ABBREVIATION, ACRONYM OR DEFINITION	MEANING
Risk	Uncertain future events that can influence the achievement of the company's objective. Chance of loss
Exposure	Is a condition or practice which involves the employee being subjected to the Hazard or Danger while being **normally unprotected**
Likelihood or Probability	(inevitable to almost impossible) the **Frequency** of the exposure (constant to rarely) being one of the parameters
Consequence or Severity	This could be either having a financial, injury and or illness outcome
Risk Ranking	There are three stages namely: **IDETIFYING the RISK:-** in terms of the hazard, threats **EVALUATING:-** the hazard, threats and or exposures identified to establish the potential magnitude of the RISK involved **VALUE JUDGEMENT or APPRAISING:-** the acceptability and potential impact as well as the magnitude of the hazards, exposure and evaluating the outcome on the business operations and or the health and safety of people and processes
Risk Rating	**Equals = Severity + Frequency + Exposure**
Baseline Risk Assessment	This is conducted to create a benchmark of the potential risks that apply to the whole project or business operation.
Issue based	This is normally focused at operational activities, processes, systems and functions and focuses on identifying the risks within a certain task, process or activity
Continuous Risk Assessment	The processes, systems and activities monitored on an ongoing basis
Hazard	A chemical, physical, social or political condition that has the potential of causing damage or any kind of harm to people, property the environment or business continuity.

OHS Act	Occupational Health and Safety Act, Act 85 of 1993
Task based Risk Assessment	The appointed Contractor develops a Risk Assessment based on the Clients Baseline and project specific activities
Severity / Consequence	The degree of harm, the potential severity of the injuries or ill health and or the number of people potentially affected
Exposure	Chance that a person or persons will be harmed during the exposure period
Frequency	A measure of the rate of occurrence of an event expressed as the number of occurrences in a given time

ABREVIATION, ACRONYM OR DEFINITION	MEANING
Frequency	A measure of the rate of occurrence of an event expressed as the number of occurrences in a given time
Intolerable Risk	Risk is intolerable and cannot be justified on any grounds
Significant Risk	Risk in which benefit outweighs cost
Moderate Risk	Risk is if cost of reduction would exceed improvement
Tolerable Risk	A Risk that has been reduced to a level that can be endured by the organization having regard to its legal obligations and its own Safety and Health Policy
Residual Risk	The risk that remain after taking into account the effect of the existing controls that have been applied

5. REFERENCE DOCUMENTS

Occupational Health and Safety Act, Act 85 of 1993 **COIDA 130 of 1993** **National Environmental Management Act 107 of 1998** **Construction Regulations 2014** **Disaster Management Act 57 of 2002** **Contract Tender Documentation** **Design Drawings**	

6. RISK ASSESSMENT METHODOLOGY

All Risks identified during Risk Identification has to be assessed for significance in terms of probability of the Risk event to occur and the impact of the event.

Ranking of the Risk can be based on a simple scale ranging from:

- Very likely to almost certainly
- Actual numerical probabilities can be used
- Risk that are ranking High receives highest priority

The approach and process:

1. Identify the risk / hazards associated with the work activities
2. Assess the risk in terms of severity, likelihood of occurring and controllability
3. Evaluate the risks / hazards
4. Determine the level of control
5. Implement controls
6. Monitor the effectiveness of controls

7. RISK ESTIMATION AND EVALUATION

RISK CLASSIFICATION USING A RISK SCORE TECHNIQUE

Exposure (E) How frequently does the hazardous event occur	**Risk classification**
Continuously	10
Frequently (daily)	6
Occasionally (weekly)	3
Unusually (monthly)	2
Rarely (few a year)	1

Probability (P) The probability of a loss when the hazardous event does occur	**Risk classification**
Frequent (happens often)	10
Probable (quiet possible)	6
Occasional (unusual, but possible)	3
Remotely possible (has happened somewhere)	1

Severity (S) Consequences of the hazardous event	**Risk classification**
Catastrophic many fatalities; or interruption of longer than 2 weeks; or asset or environmental damage (or both) exceeding R100m	100
Disaster (few fatalities; or interruption between one and 2 weeks; or asset or environmental damage (or both) exceeding R10m)	40
Very serious (one fatality; or interruption of 6 days; or asset or environmental damage (or both) exceeding R100,000	7
Important (temporary disability; or interruption between 6 and 24 hours; or damage exceeding R10,000	3
Noticeable (first aid needed; or interruption of less than 6 hours; damage exceeding R1000)	1

Risk classification (Risk score = E x P x S)

Risk score	Risk classification
Over 400 --------- 5	Very high risk – discontinue operation or activity
200 to 400 -------- 4	High risk – immediate correction needed
70 to 200 --------- 3	Substantial risk – correction needed
20 to 70 --------- 2	Possible risk – attention needed
Under 20 ---------- 1	Risk accepted

5	
4	
3	
2	
1	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **ACCESS TO THE SITE (230 Prince Alfred Street)**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURES
				E	P	S				
1	Accessing the Construction Site premises using construction vehicles and mobile plant	Transportation of staff to and from the site. Speed humps Excessive speeds/ Driving Recklessly. Fatigue. Other vehicles driving unsafely. speeding Slow moving plant. Pedestrians along roadway	Construction vehicles could crash into other vehicles / buildings resulting in damage to equipment or employees being injured Severe injuries (broken bones, lacerations, Death. Damage to Vehicles, Equipment/ Property. Vehicle Collision & Damage Hydrocarbon Spills cause ground water, rivers and water way contamination. Hydrocarbon Spills Creating Slippery road surfaces. Motorist collisions with slow moving plant. Pedestrians being knocked over	6	6	7	252	High	4	The Construction Manager must develop a Driving Policy which incorporates the use of cell phones whilst driving The Construction Manager must ensure the following: - That all construction vehicles and plant comply with CR23 All Drivers Licenses and Operator Certificates must be valid in order to drive any vehicle or plant. All drives are to be warned about the road conditions and comply with the speed limit All passengers are to remain seated at all times with seatbelts fastened. At no time will passengers be allowed to ride on the back of an open van, truck or trailer. Do Not exceed Speed Limits, and ensure speeds are kept to a safe limit giving the driver enough time to make an emergency stop (i.e. drive to the conditions, not to the speed limit of the road, and keep your distance from the vehicle in front of you using the 2-3 second rule). Keep to safe speed limit . Drivers are to drive a safe distance away from the roads edge to avoid the vehicle losing control (Includes no Yellow Line Driving). If visibility is impaired your headlights must be on to see and to be seen. Flag man to be provided to ensure vehicles are guided onto site.

2		Pot holes/Speed Humps	Construction vehicles and trucks could crash into other vehicles resulting in damage to equipment	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure the following: - Drivers are to be wide awake and should not be allowed to drive if they are feeling tired or sleepy. Regular breaks at least 2 hourly. Recommended to have an alternative driver available to share driving time (where required on long commutes). Do Not exceed Speed Limits, and ensure speeds are kept to a safe limit giving the driver enough time to make an emergency stop (i.e. drive to the conditions, not to the speed limit of the road, and keep your distance from the vehicle in front of you using the 2-3 second rule). Keep to safe speed limit of 60 km/h when driving in town. Drivers are to drive a safe distance away from the roads edge to avoid the vehicle losing control (Includes no Yellow Line Driving). If visibility is impaired your headlights must be on to see and to be seen
3	Uneven road surfaces	Machinery overturning	Employees slipping and Falling. Machinery / tools rolling out of control	6	6	7	252	High Risk	4	The Construction Manager must compile a site specific risk assessment for the site location and develop a safe work procedure from these
4	Delivering of equipment to the site via Prince Alfred Street	Pedestrians other vehicles using public road	Vehicles/trucks could crash into pedestrians walking along the roadside resulting in critical injuries or fatalities	6	6	7	252	High Risk	4	The Construction Manager to ensure the truck is deemed roadworthy. Ensure the Environmental Management Plan is adhered to and the vehicle is equipped with a spill control kit.

5		Oil or petrol spillages	Oil and petrol spill could cause ground contamination	6	6	1	36	Possible Risk	2	The Construction Manager to ensure all trucks are deemed roadworthy. Ensure the Environmental Management Plan is adhered to and the vehicle is equipped with a spill control kit.
6	Site Induction	Injuries due to persons not familiar to the site	Property damage Sustainable injuries	3	6	3	108	Substantial Risk	3	The Construction Manager must ensure that all staff and visitors are inducted prior to any work commencing
7	Possible local labour Unrest	Roads blocked off due to local Labour protest	Construction trucks and vehicles could crash into barricades resulting in damage to equipment or severe injuries	6	6	7	252	High Risk	1	The Construction Manager must ensure that close communication is kept with the local authorities and the appointed Community Liaison Officer to ensure that all personnel accessing the site are timeously alerted.
CATERGORY RISK PROFILE RATING									24	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **SITE ESTABLISHMENT**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
8	Site fencing /hoarding site camp including fencing off the construction site	Pinch points from manual handling Trip hazards Underground services Heat exposure Noise Dust Unauthorised persons entering site Damage to underground services	Unauthorised persons entering site Damage to underground services NIHL Respiratory Illnesses	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that all staff have company logo PPE with name tags All contractor staff and local labour to be inducted. On the project and site specific risk assessments All staff to use the required PPE when on site Contractor staff to work within designated areas only Staff to have required PPE registered signed by all staff.

										Contractor to conduct DSTI's and communicated at the beginning of the shift on a daily basis. DSTI close out to be conducted and attendance Stacking & Storage Supervisor to be appointed to control lay down areas. Site security to be provided at access points
9	Erecting / Placement of temporary offices	Incorrect off loading/ handling Crane truck overturning whilst off Loading Loads slipping/falling due to equipment failure or incorrect rigging	Injury to people, damage to material and property	6	6	7	252	High	4	Competent person with specific knowledge and experience designated to supervise offloading and placement of temporary offices Contractor to conduct DSTI's (Daily Safety Task Instruction) to be conducted and communicate at the beginning of the shift on a daily basis. Ensure Off-loading area is clear, level, secure and free from slip trip and falling hazards. Load test certificates must be available for all lifting machines and hand powered lifting devices; All training of lifting machine operators, Load testing and inspection of lifting machines and lifting tackle to be in compliance with Driven Machinery Regulations , 2015 A competent Banksman / Rigger to be available at all times
10	Ablutions for male / females	Inadequate Welfare Facilities Inadequate or insufficient Toilet Facilities	Inadequate or insufficient Ablution Facilities may result in employees using areas not designated for the use thereof Unhygienic condition	6	6	3	108	Substantial Risk	3	CR 28 1 per 30 NBR Prescribe chemical toilets for construction site. Sufficient showers and changing facilities for both male and female

11	Sheltered eating facilities	Unsafe positioning of ablution and sheltered eating areas	Unsafe positioning of ablutions and sheltered eating areas may result in vehicles veering of the road and into the facilities and resulting in critical injuries	6	6	7	252	High	1	Refuse bins with lids to be provided. Facilities clean and hygienic
12	Secure / safe storage of materials / plant and equipment	Incorrect stacking of parts and spares could cause tripping hazards	Slips, trips and falls	6	6	3	108	Substantial Risk	3	Adequately ventilated and ignition free premises must be provided Emergency shower / eye wash provided
13	The storage /usage of flammable liquid/gasses and combustible materials	The incorrect storage of flammable liquids/gasses and combustible materials	The incorrect storage could lead to Environmental spillages	6	6	3	54	Substantial Risk	3	The Construction Manager must ensure that they adhere to the Client H&S Specification with regards to combustible Substances.
14	Vehicle leaving / entering the site	Traffic disruption, potential collisions	Damage to property injury to people,	6	6	3	108	Substantial Risk	3	Competent operators/ drivers, use of flag person Traffic Management Plan to be developed and implemented where required
15	Unsafe stacking and storage practices	Collapse of stored materials	Collapse of stored materials may result in injury of personnel	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that they adhere to stacking and storage principles as contained in the General Safety Regulations
16	Connection of power supply and Installation of Temporary Electrical Installations	Exposed Electrical Cables/ Wires Use of employees who are not competent and registered as Electricians	Contact with exposed electrical cables may result in electrocution	6	6	7	252	High	1	Only authorised person to do electrical connection A CoC is to be provided by electrician once electrical connection is done and tested Monthly inspections to be done for all temporary electrical connections Contractor is to be responsible for power consumption

17	Housekeeping	Slips, trips and falls	Tripping and falling on superfluous materials can cause cuts on hands, injury to feet	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that waste is removed periodically and work areas kept clean at all times
18	Security fencing	Access to unauthorized persons	Injury to persons	6	6	3	108	Substantial Risk	3	Construction Manager to put systems of control in place. No unauthorized entry signs to be posted and access to the site must be controlled
19	Essential emergency equipment • Firefighting equipment • First Aid Boxes • Drinking water • Evacuation hand held sirens	Not having the essential services on hand	Health / loss of property through fire	6	6	3	108	Substantial Risk	3	Construction Manager to ensure these requirements are on site from the day site is established
CATERGORY RISK PROFILE RATING									43	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **MATERIALS DELIVERY TO THE SITE**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
20	Transporting of material to and from the site	Defective tipper trucks, excavators and front end loaders	The use of defective plant /equipment may result in accidents	6	6	3	108	Substantial Risk	3	The Construction Manager must verify that all Tipper trucks utilized on site has a recent service inspection register in place and is signed off by the relevant Technical /Mechanical Manager

21		Incompetent Operators	The use of incompetent operators may result in accidents	6	6	7	252	High		The Construction Manager must Verify that the Operators are deemed competent to operate plant onsite and are medically fit
22		Reversing into public vehicles or property	Reversing into vehicles and property resulting in damages	6	6	3	108	Substantial Risk		The Construction Manager must ensure that each driver is accompanied by a competent banks man and designated safe areas for offloading demarcated
23		Uneven ground, soft soil,	Damage to plant and equipment as well as crushing injuries or fatalities	6	6	7	252	High		The Construction Manager must ensure that each driver is accompanied by a competent banks man when working in high risk areas
24		Steep Gradients	Damage to plant and equipment as well as crushing injuries or fatalities	6	6	7	252	High		The Construction Manager must assess steep gradients on foot before plant is moved onto the site to determine if the area is safe before work commences
25	Loading / off-loading the truck	Incorrect weighted slings being used	Property damage and serious injury or fatality	6	6	7	252	High		Rigging to be done by a trained and competent rigger and the task to be supervised by the supervisor
26		Use of damaged lifting tackle and slings Substandard Plant and Equipment accessing and egressing sites & work areas	Injuries to employees Fatality Damage to plant / equipment / services Loss of production	10	6	7	420	Very High		• Only Licensed and Appointed Mechanical Aids Operators (i.e. TLB operators, Bobcat Operators, etc) to operate plant on site. • Inspection & Maintenance records must be maintained for all mechanical aids on site. • Mechanical Aids must be operated in accordance with the operators training and manufacturers guidelines (e.g.: outriggers must be fully extended, Safe Work Loads (SWL) must be observed, work area below lifts must be clear and nobody is to walk under load

27	Aggregate / sand and other materials delivered	Uneven ground, soft soil,	Damage to plant and equipment	6	6	3	108	Substantial Risk	3	The Construction Manager must assess steep gradients on foot before plant is moved onto the site to determine if the area is safe
28	Manual handling Ergonomics	Incorrect posture	Back strain Skeletal damage	3	6	3	54	Possible Risk	2	Employees to be trained in the correct lifting technique
29	Mechanical handling	Employee being struck	Serious injury	3	6	3	198	Substantial Risk	3	Constant supervision
30	Lifting / lowering operation	Employee being struck by the load	Serious injury Fatality	10	6	7	420	Very High	5	Rigging to be done by a trained and competent rigger and the task to be supervised
31		Lifting loads in excess of 5 Tons	Serious injury Fatality	10	6	7	420	Very High	5	The Contractor is to compile a rigging study for all lifts in excess of 5 Tons
CATERGORY RISK PROFILE RATING									**45**	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **TRAFFIC ACCOMODATION**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
32	Setting up of temporary road works signage	Placing of incorrect signage at locations	Misinformation may cause drivers to become unable to discern what to do resulting in accidents and irate members of the public	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that a suitable site specific Traffic Management Plan is developed and implemented and a competent Traffic Safety Officer is appointed for the duration of the contract. All temporary road traffic signage must comply with the SARTSM

33		Handling and placement of signage without wearing the correct PPE	Handling of signage without gloves, reflective vests and safety boots may result in injuries	3	3	1	9	Risk Accepted	1	The Construction Manager must ensure that a task specific risk assessment for PPE control is implemented
34	Public vehicular and pedestrian traffic travelling on the public road during construction work	Workers injured by passing traffic	Collision of public vehicles and workers	10	6	7	420	Very High	5	The Construction Manager must ensure that a competent Traffic Safety Officer is appointed and a site specific Traffic Management Plan is implemented
35		Limited or no advanced warning area may result in accidents	Collision of public vehicles and workers	6	6	7	252	High	4	The Traffic Safety Officer must ensure that temporary road works signage is laid out as per the SARTSM and approved Traffic Management Plan
CATERGORY RISK PROFILE RATING									13	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **EXCAVATION WORKS**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
36	Excavations using Machines or done Manually.	Improper barricading or warning signs to indicate location of an excavation	Serious injuries, possible fatalities can occur; vehicle drivers not aware of the excavation driving into the excavation especially at night; other workers not aware of the excavation falling into the excavation Animals falling into the open excavations getting injured or killed.	6	6	7	252	High Risk	4	Ensure that barricades (barrier or fence) are put around the excavation at least 1 meter away from the edge; Provide warning illuminates or any other clearly visible boundary indicators at night; Daily inspections are carried out & documented on a checklist by a competent trained person - Excavation Supervisor.

37		Striking unknown underground services i.e. electric power cables, water lines etc.	Striking unknown underground services i.e. electric power cables, water lines etc.							Client to obtain the information regarding the location of any underground services of the property on which the construction will take place and make it available to the Principal contractor; Proofing of services to be done by hand Daily inspections are carried out & documented on a checklist by a competent trained person - Excavation Supervisor.
38	Trenching	Spoil too close to the edge of the excavation	Spoil falling into trench, collapse of trench, injury / fatality	10	6	7	420	Very High	5	Spoil to be kept at equal distance as the actual depth of the trench
39	Shoring	Inadequate shoring/ no design in place	Sides collapsing	10	6	7	420	Very High	5	Daily inspection by excavation supervisor Appoint a competent Temporary Works Designer
40	Water in excavation	Sides of excavation not stable	Collapse of excavation resulting in injury / drowning/ fatality	10	6	7	420	Very High	5	Method statement of drainage of excavation Drainage procedure Daily inspections
41	Excavation works	Falling into open / unbarricaded excavations	Open excavations could result in employees, or members of the public falling into it	10	6	7	420	Very High	5	The Construction Manager must appoint a competent Excavation Supervisor at the work front. Excavations must be checked daily. The Construction Manager must ensure that open excavations (if necessary) are barricaded with a barrier or fence- like structure of at least 1m. (Requirements of CR13 must be met)

42	Manual Excavation	Open Excavation >1.5m	Excavations > 1.5m caving in may result in multiple fatalities	6	6	7	252	High	4	Excavations guarded / barricaded/ lighted after dark in public areas. Soil dumped at least 1m away from the edge of excavation. On sloping ground soil dumped on lower side of excavation The Construction Manager must ensure that excavations are shored/braced or vertical walls sloped to 45 degrees and the excavation
43		Unauthorized entry	Unauthorized access to site may result in critical injury to people	6	6	7	252	High	4	The Construction Manager must ensure that all excavations should be preferably not opened beyond what can be closed daily
44		The use of Hand tools (picks, spades)	An employee using a pick could strike the employee in front/rear resulting in injury	3	6	3	54	Possible Risk	2	The Construction Manager must ensure that employees are instructed in the contents of the site specific risk assessment
45		Working in natural elements, sun, rain, glare & wind	Prolonged exposure to extreme high temperatures may result in heat stroke	3	6	3	54	Possible Risk	2	The Construction Manager must ensure that all employees have undergone medical examinations by an Occupational Health Practitioner and the requirements of the Environmental Regulations for Workplaces are adhered to.
46		Fast moving vehicles	Passing traffic could crash into employees working in an existing excavation or onsite	6	6	7	252	High	4	The Construction Manager must ensure that a site specific Traffic Accommodation Plan is developed and implemented on site which may include installing solid barriers

47		Poor Ergonomics	Poor Ergonomics may result in muscular skeletal injuries	3	6	3	54	Possible Risk	2	The Construction Manager must ensure that a SWP is developed implemented and that all employees are instructed in the content of the site specific risk assessment
48		Snake bites	The presence of snakes may result in snake bites causing fatalities	6	6	7	252	High	4	The Construction Manager must ensure that a snake standard or procedure is developed and implemented on site. The Construction Manager must embark on a snake awareness training
49	Mechanical Excavation	The use of Defective Plant	The use of defective plant may result in accidents	6	6	3	108	Substantial Risk	3	The Construction Manager must verify that all plant utilized on site has a recent service inspection register in place and signed off by the relevant technical manager
50		Untrained operators	The use of an untrained operators may result in accidents and injuries	6	6	7	252	High	4	The Construction Manager must verify that the Operator is deemed competent to operate that specific plant and is medically fit The Safety Officer must take cognizance of the requirements of the Driven Machinery Regulations 2015
51		Public / Contractor interface	Public accessing the work area could result in injuries	6	6	3	108	Substantial Risk	3	The Construction Supervisor must ensure all work are adequately barricaded / cordoned off to prevent member of the public from entering
CATERGORY RISK PROFILE RATING									56	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **ASBESTOS WORK**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
52	Demolition of existing structures which may contain asbestos material	Asbestos dust fibres could be accidentally released during demolition works	If Asbestos Pipes are broken and asbestos fibres become airborne, the development of serious respiratory diseases and cancers are possible, including: Asbestosis, mesothelioma, and lung cancer.	6	6	7	252	High		Every effort must be made not to cut or break the Asbestos (remove in whole sections if possible) as fibres will become airborne and will pose a health risk. The contractor must ensure that an approved Aprroved Inspection Authority (AIA) as registered with Department of Labour is tasked with drafting an Asbestos Removal Plan, they are required to monitor compliance with the plan during the asbestos removal, and must supply a clearance certificate once all asbestos has been removed). Contractors must wear full clothing protection (such as one piece paper suite, hood, and booties), FFP3 Dust Mask (SABS/SANS Approved) or respirator rated for asbestos, and gloves and any other precautionary measure as specified in the Asbestos removal plan. All PPE (Personal Protective Equipment) / RPE (Respiratory Protective Equipment) components must be disposed of as hazardous waste and must not be taken home by anyone (changing facilities and showers will need to be provided, laundry service must be provided for clothing: laundry service provider must be set-up and competent for dealing with asbestos contaminated clothing or as
53	Disposal of asbestos material	Incorrect disposal of material	Incorrect disposal could lead to fines and prosecution	6	6	7	252	High		Asbestos must be double bagged and transported to a landfill site that is approved to accepts asbestos waste.
CATERGORY RISK PROFILE RATING									8	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **MECHANICAL INSTALLATIONS**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
54	The use of Lifting Equipment to hoist mechanical equipment	Defective lifting equipment	The use of defective lifting equipment could result in the load being dropped causing severe	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that all lifting equipment conforms to the Driven Machinery Regulations 2015 and a lifting plan developed for implementation
55		Incompetent operators	Injury to persons as well as damage to equipment	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that all operators are deemed competent in that specific class of lifting machinery as per DMR 2015
56		Working from Height	Working from height may result in falls and critical injuries	6	6	7	252	High	4	The Contract Manager must ensure that all personnel working from height are deemed medically fit by an Occupational Health Practitioner and a Fall Protection Plan developed and implemented
57	Manual handling and installation of mechanical equipment	Ergonomics, e.g. Bending, twisting and turning movements	Poor ergonomics may result in muscular skeletal injuries	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that a SWP is developed, implemented and that all employees are instructed in the content. The Contractor must further ensure that a site specific ergonomic risk assessment is compiled
58		The incorrect use of a hand-held Blow Torch	The incorrect use may result in severe burns or injuries	6	6	7	252	High	4	The competent Safety Officer must ensure that only trained employees utilize the Blow Torch, a SWP developed and implemented
59		Open Flames	Open Flames may result in fires	6	6	3	108	Substantial Risk	3	The competent Safety Officer must ensure that all the workers have undergone training in basic firefighting and a valid fire extinguisher kept in close proximity to the work area

60		Inhalation of fumes or gases	Inhalation of fumes or gases could result in irritation of the nose, throat, respiratory tract and cause fatigue and drowsiness	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that an MSDS is available for all hazardous chemical used on site and workers trained in its safe use The use of the correct PPE must be enforced at all times
CATERGORY RISK PROFILE RATING									27	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **ELECTRICAL INSTALLATIONS**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
61	Electrical Installation	Employee lack of competency	Utilizing incompetent electricians may result in shock and electrical fires	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that competent electricians are appointed and proof of their competencies kept on file
62		Working from Heights/Fall risk positions	Working from heights/ fall risk positions may result in falls and critical injuries	10	6	7	420	Very High	5	The Contract Manager must ensure that all personnel working from height are deemed medically fit by an Occupational Health Practitioner and a Fall Protection Plan developed and implemented
63		No lockout or inadequate procedures	No lockout procedure implemented could result in electrocution	10	6	7	420	Very High	5	The Construction Manager must ensure that a lockout procedure is developed and a site specific risk assessment developed for implementation
64	Manual handling and installation of electrical equipment	Ergonomics, e.g. Bending, twisting and turning movements	Poor ergonomics may result in muscular skeletal injuries	6	6	7	252	High	4	The Construction Manager must ensure that a SWP is developed, implemented and that all employees are instructed in the content. The Contractor must further ensure that a site specific ergonomic risk assessment is compiled

CATERGORY RISK PROFILE RATING	17	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **BRICKWORK AND PLASTERING**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
65	Working from height	Traffic accidents on site when transporting materials. Reversing of trucks and mobile plant Dust inhalation	Working from height may result in falls and critical injuries	6	6	3	108	Substantial Risk	3	Speed limit to be adhered to Enforced reverse alarms to be fitted Use of PPE eg dust masks
66	Manual Handling of bricks and material	Ergonomics, e.g. Bending, twisting and turning movements	Poor ergonomics may result in muscular skeletal injuries	6	6	7	252	High	1	The Construction Manager must ensure that a SWP is developed, implemented and that all employees are instructed in the content. The Contractor must further ensure that a site specific ergonomic risk assessment is compiled
67	Handling and working with Cement	Cement dust	Employees continuous inhalation of cement may result in respiratory illnesses	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that all employees are instructed of the risk of inhaling cement. All employees handling cement must be provided with an appropriate level dust mask
68		Old cement bags not being disposed of in the correct manner as per the environmental management plan	Cement packaging could enter the water course or cause ground pollution	6	6	3	108	Substantial Risk	3	The Contract Manager must ensure that a site specific Waste Management Plan is developed and implemented and is in accordance with the Clients EMP

69		Poor Ergonomics	Poor ergonomics may result in muscular skeletal injuries	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that a SWP is developed, implemented and that all employees are instructed in the content. The Contractor must further ensure that a site specific ergonomic risk assessment is compiled
70	Pouring Ready Mix Concrete	Concrete Truck tipping over	The Concrete Truck tipping over could result in serious injury to the operator and employees close by	6	6	7	252	High	4	The Construction Manager must ensure that safe access to pouring platform is created before the truck arrives on site
71	Steel Fixing	Handling Reinforced steel	Steel fixers handling steel could result in cuts or puncture wounds	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that only trained employees carry out the steel fixing duties and that all exposed rebar are capped with rebar caps
72	The use of Lifting Equipment	Defective lifting equipment	The use of defective lifting equipment could result in the load and lifting equipment being dropped causing severe injury	10	6	7	420	Very High	5	The Construction Manager must ensure that all lifting equipment conforms to the Driven Machinery Regulations 2015
73	The use of unsafe scaffolding	The use of unsafe Scaffolding can result in critical injuries in the event of a collapse or a fall	Injury to persons Fatality	10	6	7	420	Very High	5	The Construction Manager must ensure that the Scaffolding conforms to SANS 10085 and has been declared safe to work on. This must be noted by a "safe for use" green tag attached to the scaffolding and signed off by the competent Scaffolding Inspector
74		Overloading Scaffolding	Overloading Scaffolding may result in scaffolding collapse and multiple injuries	6	6	7	252	High	4	The competent Scaffolding Supervisor / Inspector must ensure that the Scaffolding conforms to SANS 10085 and the loading of the structure per square meter

75		Falling Hazards	Falling hazards may result in severe to critical injuries	6	6	7	252	High		The Construction Manager must ensure that scaffolding bays use to place equipment is equipped with toe boards and erectors trained in this risk assessment The Construction Manager must ensure that adequate warning signage is displayed ie. "working at height hazard" and a drop zone established
76		Harness Failure	Harness failure may result in workers falling resulting in severe to critical injuries or death	6	6	7	252	High		The Construction Manager must ensure that the harnesses purchased conform to SANS 50361 and workers trained in its use, care and maintenance requirements
77		Unsafe anchorage	Unsafe anchorage points may result in erectors or workers falling from height resulting in severe to critical injuries or death	6	6	7	252	High		The competent Safety Officer must ensure that erectors have undergone training and made aware of the minimum supporting load per anchorage as per the developed and approved Fall Protection Plan
78	Painting	Storage of flammable liquids.	Fire / explosion if coming into contact with open flames or heat; Fire damage to equipment, vehicles or buildings; Can result in ground and water pollution; Fire burns to persons.	6	6	7	252	High		Storage of flammable liquids must be preferably in a cabinet specific designed for that purpose in a well ventilated area out of the sun; "No open Flame" and "No Smoking signs" must be displayed; "Flammable Liquid Store" sign to be displayed. A Fire extinguisher capable of putting out any fire that may occur to be within 20 metre of the storage area; Cabinet or storage area must be able to contain any leakage or spillage that may occur to prevent ground or water pollution.

79		Incorrect, damaged or no Personal Protective Equipment.	Foot and Hand Injuries. Skin contact with paint or chemicals can cause skin problems; Inhalation of fumes and dust can cause sinus / throat irritations, asthma, bronchitis etc. Eye injuries.	3	6	3	54	Possible Risk	2	Personal Protective Equipment requirements to be identified; Proper personal protective equipment to be issued to employees i.e. Safety boots, gloves, dust masks, chemical respirators, splash goggles and overalls; Hard hats to be issued if required for head protection; Employees to be trained in the purpose and correct wearing of the personal protective equipment; Employees to wear the PPE issued where required; PPE to be in a clean and good condition. PPE properly stored when not in use; Material Safety Data Sheets to be available for all chemicals and workers trained on the contents thereof.
80		Unsafe use of builder's trestles.	Falling off a trestle can result in serious injury or death; Paint containers falling off the trestle can result in ground and water pollution.	3	6	3	54	Possible Risk	2	Trestles to be placed on a level surface; Minimum of three planks of each 225 mm x 38 mm to be used for the platform and the platform not to exceed 2 m between the trestles; The legs of the trestles must be spread to their maximum width; Planks must be secure in the brackets and protrude at least 150 mm past the brackets; Planks must not be overloaded; Trestle to be inspected daily before use.

81	Plastering of walls	Using unsafe ladders or using ladders unsafely. Falls from heights Use of hand tools	Falling off a ladder can result in serious injury or death; Ergonomical injuries	6	6	7	252	High	4	All works to be supervised Only persons trained on the safe use of ladders are allowed to use ladders; Ladders must be properly inspected before use for any defects and no defective ladder must be used to work with; Defective ladders must be tagged as unsafe for use and removed to be repaired or discarded; Ladders must always be placed on an even stable surface; Single / extension ladders must either be secured in position or held in position by another person when used; Only one person at a time may climb up or work from a ladder; All water plaster cement to be safely disposed from site
CATERGORY RISK PROFILE RATING									57	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **TEMPORARY WORKS**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
82	Erecting formwork, support or scaffolding for columns and decks	Incompetent Designer, erectors and or Supervisor	Incompetent personnel may result in severe injuries or collapses	10	6	7	420	Very High	5	The Construction Manager must ensure that the personnel are deemed competent as per the requirements of the Construction Regulations 12
83		Defective Formwork and Support Work	Defective Formwork and Support Work may result in equipment failure Structural collapse and severe injuries	6	6	7	252	High	4	The Construction Manager must ensure that all the equipment is carefully examined by a competent persons before use

84		Unsafely erected Scaffolding	Unsafe scaffolding could result in collapse along with critical injuries to personnel	6	6	7	252	High	4	The appointed competent Scaffolding supervisor must ensure that all erectors are deemed competent and the scaffolding conforms to SANS 10085
85		Working from Heights	Working from height may result in falls and critical injuries	6	6	7	252	High	4	The Construction Manager must ensure that all personnel working from height are deemed medically fit by an Occupational Health Practitioner and a Fall Protection Plan developed and implemented
86	The use of Lifting Equipment to place shuttering and rebar	Defective lifting equipment	The use of defective lifting equipment could result in the load and lifting equipment being dropped causing severe injury	6	6	7	252	High	4	The Construction Manager must ensure that all lifting equipment conforms to the Driven Machinery Regulations 2015
87		Falling material or tools	Falling materials or tools may result in severe head trauma injuries to workers below	6	6	7	252	High	4	The Construction Manager must ensure that a site specific Fall Protection Plan is developed for implementation which includes the inclusion of the drop zone beneath the work areas and tools carried in waist tool bag or similar
88	Steel Fixing	Handling Reinforced steel	Steel fixers handling steel could result in cuts or puncture wounds	6	6	7	252	High	4	The Construction Manager must ensure that only trained employees carry out the steel fixing duties and that all exposed rebar are capped with rebar caps
89	The use of unsafe scaffolding	The use of unsafe Scaffolding can result in critical injuries in the event of a collapse or a fall	Injury to persons Fatality	10	6	7	420	Very High	5	The Construction Manager must ensure that the Scaffolding conforms to SANS 10085 and has been declared safe to work on. This must be noted by a "safe for use" green tag attached to the scaffolding and signed off by the competent Scaffolding Inspector
90		Overloading Scaffolding	Overloading Scaffolding may result in scaffolding collapse and multiple injuries	6	6	7	252	High	4	The competent Scaffolding Supervisor / Inspector must ensure that the Scaffolding conforms to SANS 10085 and the loading of the structure per square meter

CATERGORY RISK PROFILE RATING	38	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **ROOF WORK / CLADDING**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
91	Climbing on and off gable roof and the removal of existing deteriorated timber roof trusses & removal of damaged purlins	Falls from heights, slip, no use of safety harnesses, inclement weather, faulty ladder, unsafe scaffolding. etc	The use of untrained erectors / assistants may result in falls from elevated positions	6	6	7	252	High	4	The Construction Manager must ensure that only trained and medically fit personnel are utilized Use of applicable PPE mandatory, Training, Working at height training, competent scaffolding erector, ladder checklist register proper supervision etc
92		No lifelines installed	No lifeline installed will result in employees not attaching to a secure anchor point resulting in falls from height	6	6	7	252	High	4	The Construction Manager must ensure that a site specific Fall Protection Plan is developed for implementation which includes the use of SABS approved lifelines
93		Unsafe anchorage	Attaching safety harnesses to unsafe anchor points may result in falls from height due to anchor point failure	6	6	7	252	High	4	The Construction Manager must ensure that a site specific Fall Protection Plan is developed for implementation which includes the identification of safe anchor points
94	Replacement of Roof Sheeting / Tiles	Falling material or tools	Falling materials or tools may result in severe head trauma injuries to workers below	6	6	7	252	High	4	The Construction Manager must ensure that a site specific Fall Protection Plan is developed for implementation which includes the inclusion of the drop zone beneath the work areas and tools carried in waist tool bag or similar

95		The use of unsafe scaffolding to access roof	The use of unsafe Scaffolding can result in critical injury in the event of a collapse or a fall	10	6	7	420	Very High	5	he Construction Manager must ensure that the Scaffolding conforms to SANS 10085 and has been declared safe to work on. This must be noted by a "safe for use" green tag attached to the scaffolding and signed off by the competent Scaffolding Inspector
96		Working from a fall risk position	Working from a fall risk position may result in falls and critical injuries	10	6	7	420	Very High	5	The Construction Manager must ensure that all personnel working from a fall risk positions are deemed medically fit by an Occupational Health Practitioner and a Fall Protection Plan developed and implemented
97		No lifeline installed	No lifeline installed will result in employees not attaching to a secure anchor point resulting in falls from height	6	6	7	252	High	4	The Construction Manager must ensure that a site specific Fall Protection Plan is developed for implementation which includes the use of SABS approved lifelines that have been installed as per engineers specification
98		Unsafe anchorage	Unsafe anchorage points may result in erectors falling from height resulting in severe to critical injuries or death	6	6	7	252	High	4	The competent Safety Officer must ensure that erectors have undergone training and made aware of the minimum supporting load per anchorage as per the developed and approved Fall Protection Plan
99		Inclement weather	Erection during inclement weather will result in possible dropping of the loads or severe injuries to erectors	6	6	7	252	High	4	The Construction Manager must ensure that the Fall Protection Plan gives consideration to inclement weather condition such as strong winds and heavy rains and work stoppage for wind speeds in excess of 20km/hr, rain or wet structures
CATERGORY RISK PROFILE RATING									38	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **DRIVING / OPERATING OF CONSTRUCTION VEHICLES AND MOBILE PLANT**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
100	TLB/ Excavator / Bomag /Front end loader/Bobcat operations	Unauthorised or incompetent person operating the machine	Causing accidents involving people, other mobile plant & construction vehicles and existing structures; Causing serious injuries, fatalities or damage; Spillages resulting in ground contamination.	6	6	7	252	High	4	Only trained certified competent, medically fit and legally appointed employees may operate mobile plant & construction vehicles; Certificates of competency of the operators Must be filed in the safety file on site.
101		Poor condition of mobile plant & construction vehicles.	Failure of mobile plant & construction vehicles can result in injury to the operator, other workers, damage to mobile plant, or structures; Oil leaks resulting in ground contamination.	6	6	7	252	High	4	Ensure that all plant is maintained & records thereof kept; A planned maintenance schedule must be followed & operators must record daily inspections & report deviations immediately to the supervisor.
102	Plate compactor	Operator working with plate compactor not trained, running over workers feet	Foot injury and bruises	6	6	7	252	High	4	Only competent operator to be appointed SWP and task specific risk assessment to be developed

103	Working in vicinity of interested and affected parties	Noise emissions from construction activities Interface between members of the public and mobile plant/construction vehicles	Noise induced hearing loss Possible complaints from nearby communities Possible collisions with pedestrians and public vehicles utilizing the main road resulting in accidents and possible fatalities	6	6	7	252	High	4	Mandatory Code of Practice - Occupational health programme on Noise. The machine shall comply with, or better the noise limit requirements specified by legislation. Machine must be fitted with an exhaust system that incorporates mufflers to limit the exhaust noise so as to comply with legislative requirements. Operator situated in a sealed compartment, and need to ensure that all windows and doors are properly closed and sealed off (limit exposure to noise). PPE - hearing protection may be needed when the machine is operated with an open operator station for extended periods or in a noisy environment. Reverse hooter must be fitted and operational on all mobile plant Clear demarcation of the worksite must be of top priority due to the closeness of the neighbouring community The Contractor must ensure there are enough traffic and access controllers where there is an interface between mobile plant and the public
104	Push smooth drum roller	Hand arm vibration	White finger syndrome	6	6	3	108	Substantial Risk	3	Ensure correct gloves are worn by operators Supervisor to rotate employees and allow for frequent breaks
105		Exposure to noise	Noise Induced hearing Loss	6	6	3	108	Substantial Risk	3	Employee to make use of SABS approved hearing protection, supervisor to ensure that the correct P.P.E is used. Task to be supervised by a competent supervisor
106		Exposure to dust	Respiratory Infections	6	6	3	108	Substantial Risk	3	Dust abatement measure muss be put in place and the enforcing of wearing of PPE e.g. dust masks
CATERGORY RISK PROFILE RATING									28	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **WORKPLACE ENVIRONMENT, HEALTH AND HYGIENE**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
107	Protection against dehydration and heat exhaustion from extreme heat conditions	Dehydration/collapse	Health consequences to workers Possibly fatal	6	6	3	108	Substantial Risk	3	The Construction Manager must put measures in place to prevent heat exhaustion in heat stress problem areas During Hot periods, regular breaks must be taken. Drinking water must be made available on site close to work areas. Sun block lotion must be provided and applied to exposed skin, long sleeve overalls to be worn and brim hats fitted to hard hats made available
108	Working in wet / cold conditions	Affecting ability to work safely	Injury to workers	6	6	3	108	Substantial Risk	3	Provide rain wear / wellingtons where necessary Provide protection against the cold
109	Handling of hazardous chemical substances	Contact with skin/ eyes Inhalation or indigestion	Skin irritation, burns or infections Could cause loss in eyesight	6	6	3	108	Substantial Risk	3	All substances identified and a list of available MSD's Substances stored safely
110	Manual handling	Back strain / injury	Injury	6	6	3	108	Substantial Risk	3	The Construction manager must develop a SWP on correct lifting Techniques and implement onsite
111	Working with insufficient lighting	Unsafe working conditions	Can lead to possible injuries	6	6	3	108	Substantial Risk	3	Responsible person to ensure that suitable lighting is provided to allow a safe working environment.
112	Demolition work / mixing dugga	Dust Inhalation	Respiratory illnesses	6	6	3	108	Substantial Risk	3	Dust abatement measure muss be put in place and the enforcing of wearing of PPE e.g. dust masks
CATERGORY RISK PROFILE RATING									18	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **PUBLIC SAFETY**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
113	Neighboring business and public exposed to the nature of the construction activities	Emission of HCS, dust and noise	Health risk impact	6	6	3	108	Substantial Risk	3	Communication with neighboring business is critical. Health risk must be communicated to all employees Dust , noise generated out of the construction work must be managed
114	Boundary fence along road reserve boundary	Pedestrians , school children walking next to site could be injured or killed by passing construction vehicles	The potential of Public Liability Claims is high	6	6	3	108	Substantial Risk	3	Fence constructed to approved standard Ensure a safe dedicated barricaded pedestrian walkway is constructed
115	Unauthorised person/s entering the work zone	Unknown to the immediate surroundings	Serious injury Fatality	10	6	7	420	Very High	5	Security to control Construction Manager to ensure no unauthorized person/s to enter the work zone
CATERGORY RISK PROFILE RATING									11	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **SECURITY MEASURES AND EMERGENCY PREPARENESS**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
116	Notices and signs	Appropriate signage not displayed	Person /s not aware of the danger injury / serious injury	6	6	7	252	High	4	Construction Manager to ensure all danger areas are properly demarcated at all times

117	Emergency Preparedness	No Emergency Plan in place	Person/s unprepared to respond to the emergency at hand	6	6	3	108	Substantial Risk	3	Emergency contact numbers displayed with designated person
118	Emergency Drill & Evacuation	No training No implementation Planning done	Person/s unprepared to respond to the emergency at hand	6	6	3	108	Substantial Risk	3	Adequate number of employees trained in the use of fire equipment
119	Development and implementation of an Emergency Management Plan	Failure to have a basic site specific Emergency Management Plan	Failure to have a basic, site specific Emergency Management Plan may result in injury and damage to property	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that a site specific Emergency Management Plan is developed / approved and communicated for implementation
120		Workers not trained in the Emergency Plan	Workers not trained in the Emergency Plan may result in their inability to respond to Emergencies	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that those workers are adequately and regularly trained to respond to Emergencies.
121		Insufficient or no Emergency equipment or personnel	Insufficient or no Emergency equipment or personnel on site may result in Emergencies being critical	6	6	7	252	High	4	The Construction Manager must ensure that a suitable number of employees are appointed to the Emergency Team and that First Aid boxes, First Aiders, Fire Team members and any other equipment as identified during the risk assessment process is on site.
CATERGORY RISK PROFILE RATING									**20**	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **COMMUNITY MANAGEMENT**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
122	Poor liaison with the CLO	Failure to adequately monitor and manage the multi faced social issues	Failure to manage social issues could result in violent protests and injury to employees	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that a Community Liaison Officer (CLO) and project steering Committee is appointed to manage social issues
123		Roads blocked off due to community protest	Construction trucks and vehicles could crash into barricades resulting in damage to equipment or severe injuries	6	6	7	252	High	4	The Construction Manager must ensure that close communication is kept with the local authorities and the appointed Community Liaison Officer to ensure that all personnel accessing the site are timeously alerted.
CATERGORY RISK PROFILE RATING									7	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **SUB – CONTRACTOR MANAGEMENT**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
124	No proper management control	Failure to adequately assess Sub Contractors S.H.E Management System before work commences and at regular intervals	**Failure to** manage Sub Contractors may result in injury and non-compliance to Legislation	6	6	3	108	Substantial Risk	3	The Safety Officer must ensure that the appointed Sub Contractors S.H.E system is audited monthly and on site activities supervised or monitored

125		Inadequate supervision/ Incompetent supervision	Inadequate/ Incompetent Supervision may result in a high level of employee unsafe behavior and non-compliance to company policies and procedures	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that Sub Contractors have adequate competent Supervision on site at all times
126	Utilizing incompetent Sub-Contractors	Utilizing incompetent Sub Contractors may result in accidents		6	6	7	252	High	4	The Construction Manager must be reasonably satisfied that the Sub-Contractors intended to be appointed have the necessary competencies and resources to carry out the work safely
127	Utilizing incompetent Sub-Contractors	Utilizing incompetent Sub Contractors may result in damage to the Environment		6	6	7	252	High	4	The Construction Manager must be reasonably satisfied that the Sub Contractors intended to be appointed have the necessary competencies and resources to carry out the work safely
CATERGORY RISK PROFILE RATING									14	

BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **CONSTRUCTION ACTIVITIES**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
128	Brickwork	Repetitive strain injuries	Poor ergonomics may result in muscular skeletal injuries	6	6	3	108	Substantial Risk	3	The Construction Manager must ensure that a SWP is developed implemented and that all employees are instructed in the content of this SWP.
129	Mixing mortar	Repetitive strain injuries	Loading / unloading material	3	6	3	54	Possible Risk	2	The Construction Manager must ensure that a SWP is developed and Implemented on safe lifting and loading procedures.

130	Stripping of fascia / bargeboards / ceilings using hand tools	Fall from heights Use of hand tools Injuries Manual handling Fragile roof	Injury and damage to property	6	6	7	252	High		The Construction Manager must ensure that an approved fall protection plan is in place All staff to be trained for work at heights Required PPE to be used All staff to have required medicals done All works to be done under site supervision Work area to be closed off from unauthorised entry DSTI to be done prior to works Safe works procedure and risk assessments to be approved prior to works been executed. All removed items to be stored within a designated area as per AMAFA permit requirements All scaffolding to be erected as per SANS 10085
131	Erecting formwork, support work or scaffolding onsite	Incompetent erector, designer or supervisor	Incompetent personnel may result in severe injuries or collapses	6	6	7	252	High		The Construction Manager must ensure that the personnel are Deemed competent as per the requirements of the Construction Regulations 12 (Temporary Works)
132		Defective Form work and Support work	Defective Form work and Support work may result in equipment failure and severe injuries	6	6	7	252	High		The Construction Manager must ensure that all the equipment is Carefully examined by a competent person before use
133	Erection of Scaffolding.	Erection of scaffolding not carried out by competent persons or not supervised by a competent person	Can result in serious injuries or death to persons should the Scaffolding collapse; Damage to scaffolding or other equipment; Contravention or failure to comply with Construction Regulation 16, can lead to prosecution.	6	6	7	252	High		Only competent Scaffold Erectors, Team leaders and Inspectors allowed to erect scaffolding; Competent person appointed in writing to supervise scaffolding operations. Daily pre-inspection to be carried out; Complying with SANS 10085-1 on the design, erection and inspection of access scaffolding.

134		Unsafe scaffolding/ trestle scaffolds	Unsafe scaffolding could result in collapse and critical injuries	6	6	7	252	High	4	The appointed competent Scaffolding supervisor must ensure that all erectors are deemed competent and the scaffolding conforms to SANS 10085
135		Working from height	Working from height may result in falls and critical injuries	6	6	7	252	High	4	The Construction Manager must ensure that all personnel working from height are deemed medically fit by an Occupational Health Practitioner and a Fall Protection Plan developed and implemented
136		Operating of TLB or Excavator in close proximity to workers and public vehicles	Critical injuries caused by TLB/ Excavator striking workers or TLB rolling over	6	6	7	252	High	4	The Construction Manager must ensure that the TLB/ Excavator Operator utilize a competent banks man
137	Water Proofing	Defective equipment	Using defective equipment causing serious injuries to the employees	6	6	7	252	High	4	All equipment should be on an inspection checklist and deviations reported; Any equipment that is defective will be deemed not fit for use.
138		Hazardous chemical substances.	Use & coming into contact with hazardous chemical substances causing skin irritation to the employees.	6	6	3	108	Substantial Risk	3	Employees should be trained on the material safety data sheet of the substance being used; The employees should wear the correct personal protective equipment as per the material safety data sheet requirements.

139	Removal of windows/ doors/ doorframes/ plumbing fixtures/cornices/glazing/ mirrors	Defective hand tools Use of ladders Use of portable electrical tools eg drills Superfluous materials laying around Manual handling Possible broken glass	Pinch points from hand tools Back injuries Cuts to hands Trips and falls from ladders	6	6	7	252	High	4	The Construction Manager must ensure that all works to be done under competent supervision DSTI to be done before work starts In house training to be done on correct procedures of dismantling structures All removed items to be stored within a designated area as per AMAFA permit requirements All windows and doors to be refurbished before installation All hand tools to be inspected before use Windowpanes broken during removal to be segregated and disposed All staff to comply with the required PPE as per risk factors
140	Use of hand tools	Incorrect use of defective hand tools	The incorrect and or defective hand tools could result in non- disabling/ first aid case i.e. the hand or eyes	6	6	3	108	Substantial Risk	3	The Construction Supervisors must ensure that all hand tools are Inspected monthly and recorded in an applicable register with all defective hand tools removed from the site
141	Use of portable electrical equipment and tools	Incorrect use of defective electrical tools	The incorrect and or defective electrical tools could result in non- disabling/ first aid case i.e. the hand or eyes	6	6	3	108	Substantial Risk	3	The Construction Supervisors must ensure that all portable electrical tools are inspected monthly and recorded in an applicable register with all defective equipment removed from the site
142	Use of ladders	Defective ladders; ladders used by workers not trained in the safe use and maintenance of ladders; unsafe placing, climbing or securing of ladders; using the wrong ladder for the job; using ladders in unfavourable weather conditions; work done from a ladder.	All potential hazards can result in serious injuries or Fatality.	6	6	7	252	High	4	Only ladders in compliance with General Safety Regulation 13A of the Occupational Health and Safety Act may be used and used in the manner as set out in the regulation; No home-made ladders are allowed on site; Only workers trained in the safe use and maintenance of ladders are allowed to use ladders; ladders must be numbered and listed in a register; ladders must be inspected on a

										scheduled basis by an appointed competent person who has the training and the knowledge on the safe use and maintenance of ladders in compliance with GSR 13A and the results of the findings recorded in register; damaged ladders which cannot be repaired must be cut up and discarded; before using a ladder, the person trained in the use of ladders who is going to use the ladder, must inspect the ladder to ensure that it is safe to use; Ladders must not be used in inclement weather conditions; both hands to be used to climb the ladder; Carry tools in a tool bag that's secured to the waist; The ladder must always be secured when used, either by tying the top end of the ladder to the structure with a rope or being held in position by another person; The ladder must where possible ,always protrude 900mm past the working platform; Where work is to be carried out whilst standing on a ladder, a safety harness must be used anchored to a point above the point of work; place a ladder so that its feed is a quarter of its own length from the object it is resting against; Only wooden ladders or ladders specifically constructed for the purpose should be used where there is a danger of coming into contact with electricity.
143	Construction of drains/ manholes	Poor Ergonomics	Poor Ergonomics may result in muscular skeletal injuries	3	6	3	54	Possible Risk	2	The Construction Manager must ensure that workers are trained in the risk of ergonomically acquired injuries and methods to mitigate the risks
144	Cutting and demolishing of identified walls of building manually	Use of jack hammers –injuries Use of angle grinders - injuries Use of hand tools –injuries Collapse of structures onto staff Slips and falls, Bodily injuries Trips and falls	The handling of profiles, wires and stones may result in minor cuts and abrasions	6	6	7	252	High	4	The Construction Manager must ensure that appropriate machinery to be used for demolishing Demolishing plan to be provided Demolish area to be netted off

										Dust suppression is to be maintained Risk assessments to be done for scope of worksduring construction All staff to have required PPE All machinery to be inspected before use DSTI to be done before works commence Competent person to use jack hammers Risk assessments to be done for scope of works Required PPE is to be used All power tools to be inspected before use Correct cutting disc to be used when cutting masonry walls All angle grinders to have safety guards fitted
145	Steel fixing to foot foundations	Handling Reinforced steel	Steel fixers handling steel could result in cuts or puncture wounds Back injuries	2	6	3	54	Possible Risk	2	The Construction Manager must ensure that only trained employees carry out the steel fixing duties and that all exposed rebar are capped with rebar caps All staff to have the required PPE All steel to be stacked within a designated area
146		Unsafe Scaffolding/ ladders temporary form work	Unsafe scaffolding/ form work could result in collapse and critical injuries Unauthorized personnel and entry in the area could result in injury	6	6	7	252	High	4	The appointed competent Scaffolding supervisor must ensure that all erectors/inspectors are deemed competent and the scaffolding conforms to SANS 10085. Designer must have signed off drawings for the structure Construction Manager to ensure area is enclosed off
147	Elevated work platforms, working at height and scaffolding	Unsafe scaffolding/ trestle scaffolds	Unsafe scaffolding could collapse resulting in critical injuries	6	6	7	252	High	4	The appointed competent Scaffolding Supervisor must ensure that all erectors /inspectors are deemed competent and the scaffolding conforms to SANS 10085

148	Operating cherry pickers on site. (Mobile Elevated Work Platform)	Incompetent operators	Improper operation can cause the cherry picker to strike structures, other equipment or other persons which can result in serious injuries or death to the operator, assistant worker or other persons struck by the platform, boom or moving cherry picker and also damage to the machine and/or property.	6	6	7	252	High	4	Only certified competent, medically fit and legally appointed employees may operate mobile plant & construction vehicles; Cherry picker must be operated by a trained & competent person who has been appointed in writing by the employer in compliance with the Driven Machinery Regulations, Reg. 18(11); Unauthorised persons must not operate the cherry picker on site at all; Certificates of competency of the operators must be filed in the safety file on site.
149	Relocation of water and or Electrical cables	Disruption of essential services	Department of Transport staff & possible other businesses effected	6	6	3	108	Substantial Risk	3	Notification of supply service being disrupted to be communicated well in advance
150	Inclement Weather	Extreme Hot / Cold/ Rainy/ Windy and Stormy weather conditions	All potential hazards can result in serious injuries or Fatality. Lightning Strikes causing death, or severe burns/injuries.	6	6	7	252	High	4	A Safe Work Procedure dealing with Lightning must be developed by the contractors dealing with the 30-30 Rule, what must be done, when work must be stopped, first aid, etc. During Hot periods, regular breaks must be taken. Drinking water must be made available on site close to work areas. Sun block lotion must be provided and applied to exposed skin, long sleeve overalls to be worn and brim hats fitted to hard hats made available. Resting and eating areas must be provided near the site camp area
CATERGORY RISK PROFILE RATING									81	

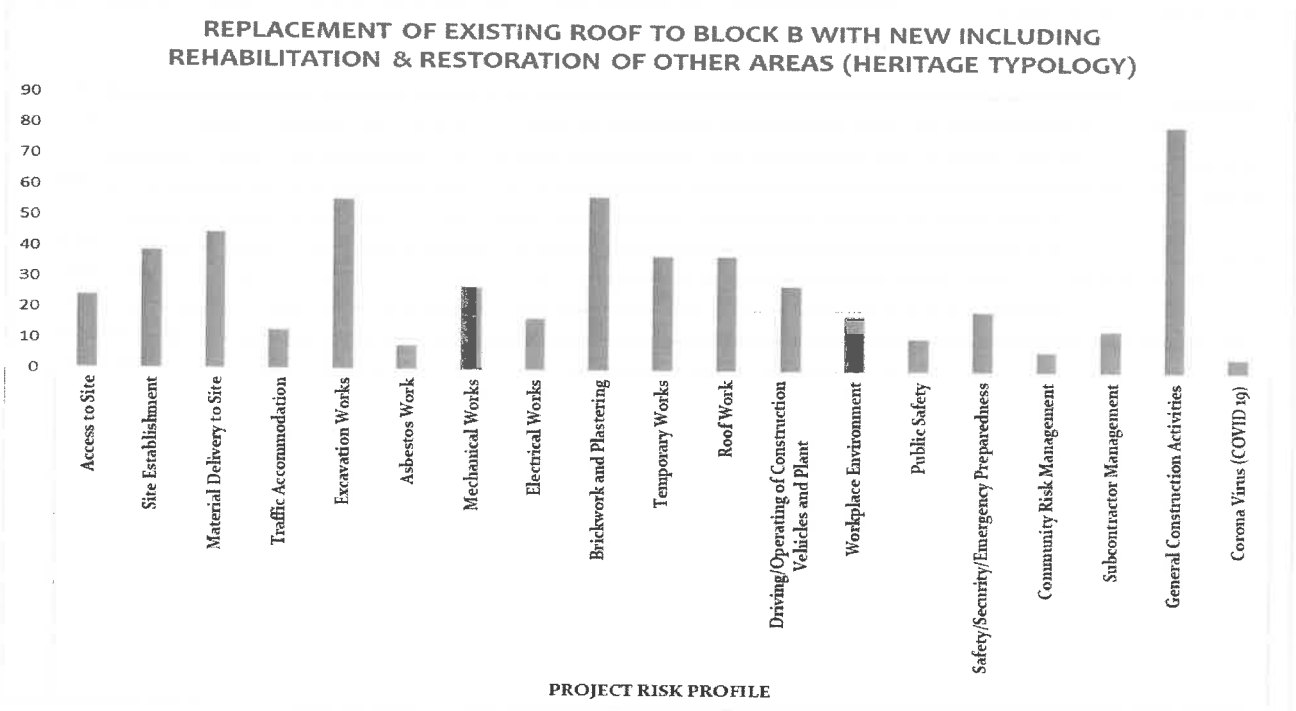
BASELINE RISK ASSESSMENT WORKSHEET: IDENTIFYING EXISTING & POTENTIAL RISKS

WORK PROCESS CATEGORY: **CORONA VIRUS / COVID 19**

RISK REF	ACTIVITY	POTENTIAL HAZARD	RISK	RISK EVALUATION			RISK SCORE E x P x S	RISK LEVEL	RISK RANK	CONTROL MEASURE
				E	P	S				
151	Use of public transport to and from work, having site meetings/ gatherings onsite and performing general construction work activities	Viruses, in particular COVID-19 (an infectious Disease caused by the Novel Coronavirus (SARS-CoV-2)	People can be infected with COVID-19 from others who have the virus through inhaling small droplets from infected people who cough or sneeze or through touching contaminated surfaces and then touching nose, mouth or eyes. Most people who become infected experience mild illness and recover, but for some it can be more severe. The symptoms include a combination of: Fever, Cough, Difficulty breathing, Muscle Pain, Tiredness. Contracting COVID-19 could result in:	10	6	7	420	Very High	5	Contractor to ensure that the Site Specific Health and Safety Specification Section entitled "CORONA VIRUS/COVID-19 Requirements" and all Government Rules and Regulations including but not limited to the Disaster Management Act 57 of 2002 and Regulations are complied with at all times. Contractor to Induct and Train all Staff on the Approved COVID-19 Policy and COVID-19 Prevention, Control Management Plan and workplace specific risk assessment Avoid close contact with sick people, especially people who are coughing or sneezing. Cough and sneeze into your elbow or in a tissue, NOT your hand. Dispose of the used tissue immediately in a closed bin and wash your hands with soap and water. Avoid touching your eyes, nose and mouth without washing your hands first. Regularly wash your hands with soap and water for at least 20 seconds OR use an alcohol-based disinfectant after Coughing / sneezing, before eating and preparing food, after toilet use, after touching surfaces in public places or tools and equipment on site. Practice social distancing. Masks to be worn if possible, otherwise 3 Layered Fabric Face Mask to be worn at all times (from the moment you leave your house until you get back home).

			Spreading the infection to others, Serious respiratory illness in severe cases death is possible							Training must be provided to all staff in the safe use and disposal/cleaning of PPE Allocate a dedicated person to implement a daily cleaning regime
CATERGORY RISK PROFILE RATING									5	

PROJECT RISK PROFILE



KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

ANNEXURE 10

HEALTH AND SAFETY IMPLEMENTATION COSTING

Contractor to give a breakdown of his Health and Safety costs on this sheet.

ITEM	DESCRIPTION	UNIT	QUAN-TITY	MONTHS (Indicative)	RATE	AMOUNT
			(a)		(b)	(a) x (b)
1	**MEDICALS**					
1.1	Pre-employment medical	Nr.	-			
1.2	Re-medicals - yearly	Nr.	-			
	TOTAL					
2	**PERSONAL PROTECTIVE EQUIPMENT**					
2.1	Overalls	Nr.				
2.2	Hard Hats	Nr.				
2.3	Safety boots/shoes	Nr.				
2.4	Gloves	Nr.				
2.5	Gumboots steel toe cap	Nr.				
2.6	Safety glasses	Nr.				
2.7	Reflector Bibs	Nr.				
2.8	Barricading Material	M				
2.9	Dust masks	Box 20				
	TOTAL					
3	**FIRE FIGHTING**					
3.1	Fire extinguishers - 4.5Kg	Nr.				
3.2	Surveys - Annual Service	Nr.				
	TOTAL					
4	**HEALTH AND SAFETY PERSONNEL**					
4.1	Safety Manager	Nr.				
4.2	Safety Officer	Nr.				
4.3	Construction Phase Safety, Health, Environmental and Waste Management Plan	Nr.				
	TOTAL					
5	**FACILITIES**					
5.1	Provision of ablution facilities	Nr.				
5.2	Service and maintenance of ablution facilities	Nr.				
5.3	Provision of eating areas	Nr.				
5.4	Cleaning of Lay down and other storage areas	Nr.				
5.5	Wash hand basin	Nr.				
5.6	Hot and Cold running water	Nr.				
5.7	Degreasing & Toilet soap	Nr.				
	TOTAL					

6	**FALL PREVENTION / PROTECTION**					
6.1	Safety harnesses with double lanyards	Nr.				
6.2	Safety harnesses with Scaffold hooks	Nr.				
6.3	Lifelines and vertical fall arrest systems	Nr.				
6.4	Scaffolding – material, erection and inspection (Estimate for project)	Nr.				
6.5	Temporary hand railing material and kick flats	Nr.				
6.6	Chin Straps	Nr.				
	TOTAL					
7	**FIRST AID**					
7.1	Replenishment of boxes and other supplies	Nr				
	TOTAL					
8	**TRAINING**					
8.1	SHE Representative	Nr.				
8.2	First Aid Level 1	Nr.				
8.3	Fire Fighting	Nr.				
	TOTAL					
9	**SIGNAGE**					
9.1	All Signage as required by Law, regulatory, warning and information	Nr.				
9.2	Posters for awareness	Nr.				
	TOTAL					
10	**ELECTRICAL**					
10.1	Replacement of Locks required for lockouts	Nr.				
10.2	Replacement of tags	Nr.				
10.3	Replacement for Permit books	Nr.				
10.4	Replacement of Callipers	Nr.				
	TOTAL					
11	**OTHERS (Project Specific)**					
11.1		Nr.				
	TOTAL					
	GRAND TOTAL TO BE CARRIED TO THE PRELIMINARIES AND GENERAL IN BILL OF QUANTITIES					

KWAZULU-NATAL PROVINCE
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ANNEXURE 11

(Insert Your Company Logo)

(This shall serve as the cover page on employment contracts for local labour)

EMPLOYMENT AGREEMENT

BETWEEN

[CONTRACTOR NAME].....

AND

[WORKER NAME].....

1. PARTIES

The Parties to this Agreement are -

1.1. Contractor: _____

herein represented by: _____

duly authorised thereto

And

1.2. Mr / Me: _____
[worker's name]

2. DEFINITIONS AND INTERPRETATION

2.1. In this Agreement and any Annexure thereto, unless inconsistent with or otherwise indicated by the context-

"Agreement"	means the contents of this Agreement.
"Company"	means the company that employs the worker
"Department"	means the Department of Public Works
"Worker"	is a person that performs a specific or necessary task or who completes tasks in a certain way
"EPWP"	The Expanded Public Works Programme is a government programme aimed at the alleviation of poverty and unemployment. The programme ensures the full engagement on Labour Intensive Methods of Construction (LIC) to contractors for skills development. The EPWP focuses at reducing unemployment by increasing economic growth by means of improving skills levels through education and training and improving the enabling environment for the industry to flourish.

3. PURPOSE

The purpose of this agreement is to:-

Ensure that the agreement is binding to both the Worker and the Employer.

4. TERMS AND CONDITIONS

- The worker will have no entitlement to the benefits of a full time employee, namely;

_____

_____

- The worker should not have the expectation that this contract will be renewed or extended.
- The worker will be subject to all laws, rules, policies, codes and procedures applicable to the;

_____

- The worker must meet the standards and requirements of the contractor
- The worker must render his/her services during normal working hours of minimum of forty to fifty five hours in any week; which comprise of an eight-hour working day in a five-day week.

5. REMUNERATION

The worker will receive compensation to the amount of R_____00 which must be paid by the 25th or on the last day of each month.

6. ROLES AND RESPONSIBILITIES

6.1 Employer / Worker

- Work for _____ in terms of the period as specified in the employment agreement contract.
- Be available for and participate in all learning and work experience required by the company.
- Comply with workplace policies and procedures.
- Complete any attendance or any written assessment tools supplied by the contractor to record relevant workplace experience.
- Demonstrate willingness to grow and learn through work experience.

Provide the following documentation to the employer,

- Certified identity document not longer than 3 months
- ID size photos
- Sign employment contract

6.2 Employer

- Employ the worker for a period specified in the agreement.
- Provide the worker with appropriate work based experience in the work environment.
- Facilitate payments of wages / stipends.
- Keep accurate records of workers.
- Where a worker/ learner is disabled, the employer will have to provide in the additional needs e.g. special materials, learning aids and in some cases physical or professional support (such aids remain the property of the employer).
- Keep up to date records of learning and discuss progress with the intern on a regular basis.
- Apply fair disciplinary, grievance and dispute resolution procedures to the worker.
- Prepare an orientation/ induction course to introduce worker/ learner to the workplace and specific workplace requirements.
- Ensure the daily attendance register is signed by the worker.

7. DURATION.

This agreement commences on: _____

and

expires on: _____

8. BREACH.

If either party commits any breach of the terms of this contract (and fails to rectify it within 30 days of receipt of a written notice calling it to do so, then) the other party shall be entitled to terminate the contract or to claim specific performance without prejudice to any of its other legal rights, including its rights to claim damages.

9. CONDITIONS OF EMPLOYMENT

9.1. Meal Breaks

9.1.1 A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.

9.1.2 An employer and worker may agree on longer meal breaks.

9.1.3 A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

9.1.4 A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

9.2. Special Conditions for Security Guards (Only applicable to security Guards)

9.2.1 A security guard may work up to 55 hours per week and up to eleven hours per day.

9.2.2 A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

9.3. Weekly Rest Period

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

9.4. Work on Sundays and Public Holidays

9.4.1 A worker may only work on a Sunday or public holiday to perform emergency or security work.

9.4.2 Work on Sundays is paid at the ordinary rate of pay.

9.4.3 A task-rated worker who works on a public holiday must be paid;

(a) the worker's daily task rate, if the worker works for less than four hours;

(b) double the worker's daily task rate, if the worker works for more than four hours.

9.4.4 A time-rated worker who works on a public holiday must be paid

(a) the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;

(b) double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.

9.5 Sick leave

9.5.1 Only workers who work more than 24 hours per month have the right to claim sick-pay in terms of this clause.

9.5.2 A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.

9.5.3 A worker may accumulate a maximum of twelve days' sick leave in a year.

9.5.4 Accumulated sick-leave may not be transferred from one contract to another contract.

9.5.5 An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.

9.5.6 An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.

9.5.7 An employer must pay a worker sick pay on the worker's usual payday.

9.5.8 Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is

(a) absent from work for more than two consecutive days; or

(b) absent from work on more than two occasions in any eight-week period.

9.5.9 A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.

9.5.10 A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

9.6. Maternity Leave

9.6.1 A worker may take up to four consecutive months' unpaid maternity leave.

9.6.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.

9.6.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.

9.6.4 A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.

9.6.5 A worker may begin maternity leave as follows;

(a) four weeks before the expected date of birth; or

(b) on an earlier date

(i) if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or

(ii) if agreed to between employer and worker; or

(c) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.

10.6 A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.

9.7. Family responsibility leave

9.7.1 Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances;

(a) when the employee's child is born;

(b) when the employee's child is sick;

(c) in the event of a death of

(i) the employee's spouse or life partner;

(ii) the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.

9.8. Keeping Records

9.8.1 Every employer must keep a written record on site for the duration of the project and three (3) year after completion records should consists of at least the following;

(a) the worker's name and position;

(b) copy of an acceptable worker identification

(c) in the case of a task-rated worker the number of tasks completed by the worker;

(d) in the case of a time-rated worker, the time worked by the worker;

(e) payments made to each worker in a form of Proof of Payment, Payroll registers and the acknowledgement of payment receipt signed by the worker.

9.8.2 The employer must keep this record for a period of at least three years after the completion of the EPWP.

9.9. Payment

9.9.1 An employer must pay all wages at least monthly in cash or by cheque or into a bank account.

9.9.2 A worker may not be paid less than the Ministerial Determination wage rate.

9.9.3 A task-rated worker will only be paid for tasks that have been completed.

9.9.4 An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.

9.9.5 A time-rated worker will be paid at the end of each month.

9.9.6 Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

9.9.7 Payment in cash or by cheque must take place

(a) at the workplace or at a place agreed to by the worker;

(b) during the worker's working hours or within fifteen minutes of the start or finish of work;

(c) in a sealed envelope which becomes the property of the worker.

9.9.8 An employer must give a worker the following information in writing

(a) the period for which payment is made;

(b) the numbers of tasks completed or hours worked;

(c) the worker's earnings;

(d) any money deducted from the payment;

(e) the actual amount paid to the worker.

9.9.9 If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it.

9.9.10 If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

9.10. Inclement weather

If no work has begun on site, and if an employee has reported for work, the employee will be paid for four hours. Should work be stopped after the first four hours, the employee will be paid for the hours worked. Where the employer has given employees notice on the previous working day that no work will be available due to inclement weather, then no payment will be made.

9.11. Deductions

9.11.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

9.11.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

9.11.3 An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement of Law; court order or arbitration

9.11.4 It is the responsibility of the employers to arrange for all persons employed on a Project to be covered in terms of the Unemployment Insurance Fund Contributions Act, 2002 (Act No. 4 of 2002)

9.11.5 An employer may not require or allow a worker to

(a) repay any payment except an overpayment previously made by the employer by mistake;

(b) state that the worker received a greater amount of money than the employer actually paid to the worker; or

(c) pay the employer or any other person for having been employed.

9.12. Health and Safety

9.12.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.

9.12.2 A worker must;

(a) work in a way that does not endanger his/her health and safety or that of any other person;

(b) obey any health and safety instruction;

(c) use any personal protective equipment or clothing issued by the employer;

(d) report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

9.13. Compensation for Injuries and Diseases

9.13.1 It is the responsibility of the employers to arrange for all persons employed on a Project to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993 as amended by COIDA Act 61, 1997.

9.13.2 A worker must report any work-related injury or occupational disease to their employer or manager.

9.13.3 The employer must report the accident or disease to the Compensation Commissioner.

9.13.4 An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

9.14. Termination

9.14.1 The employer may terminate the employment of a worker for good cause after following a fair procedure.

9.14.2 A worker will not receive severance pay on termination.

9.14.3 A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.

9.14.4 A worker **who is absent for more than three consecutive days** without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available.

9.14.5 A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available.

Notice procedure is as follows;

- One week if employed for four weeks or less
- Two weeks if employed for more than four weeks but not more than a year
- Four weeks of employed for one (1) year or more

9.15. Certificate of Service

9.15.1 On termination of employment, a worker is entitled to a certificate stating;

(a) the worker's full name;
(b) the name and address of the employer;
(c) the Project on which the worker worked; the work performed by the worker;
(d) any training received by the worker;
(e) the period for which the worker worked on the Project; and
(f) any other information agreed on by the employer and worker.

9.16. DOMICILE

The address to which notices and all legal documents may be delivered or served are as follows:

Employee Details

Name & Surname: _____

ID No: _____

Residential Address: _____

_____

Contact No: _____

Date of Employment: _____

To be supervised by: **Main Contractor:** ☐
or Sub Contractor: ☐

Category of employment: **Skilled:** ☐
Semi-skilled: ☐
Unskilled: ☐

For Skilled & Semi-skilled state the trade: _____

Period of employment: Fixed for until when your services are still required on site

I confirm that I have been inducted and fully understand the condition of my appointment.

Employee Signature: _____ **Witness by SGB/CLO:** _____

Signature by Witness: _____

Employer Details

Name & Surname: _____
Designation: _____
Contact No: _____ **Signature:** _____

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

ANNEXURE 12

SCOPE OF WORKS IN RESPECT OF WORK RELATING TO THE EXTENDEND PUBLIC WORKS PROGRAMME (EPWP)			
Project title:	**SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**		
Project Code:	**WIMS 062326**	EPWP NO:	**N/A**

Introductory notes:

1. The works, or parts of the works will be constructed using labour-intensive methods only in terms of this specification. The use of plant to provide such works, other than plant specifically provided for in the scope of work, is a variation to the contract. The items marked with the letters **LI** are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour intensive specification in the Scope of Works.

2. Payment for items which are designated to be constructed labour-intensively (either in this schedule or in the Scope of Works) will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.

DESCRIPTION OF THE WORKS

Employer's objectives

The employer's objectives are to deliver public infrastructure using labour-intensive methods in accordance with EPWP Guidelines.

Labour-intensive works

Labour-intensive works comprise the activities described in the Labour-Intensive Specification. Labour-intensive works shall be constructed/maintained using local workers who are temporarily employed in terms of the scope of work.

LABOUR-INTENSIVE COMPETENCIES OF SUPERVISORY AND MANAGEMENT STAFF

Contractors shall only engage supervisory and management staff in labour-intensive works that have completed the skills programme including Foremen/ Supervisors at NQF level 4 "National Certificate: Supervision of Civil Engineering Construction Processes" and Site Agent/ Manager at NQF level 5 "Manage Labour-Intensive Construction Processes" or equivalent QCTO qualifications (See Appendix C). at NQF outlined in Table 1. (See GUIDELINES FOR THE IMPLEMENTATION OF LABOUR-INTENSIVE INFRASTRUCTURE PROJECTS UNDER THE EXPANDED PUBLIC WORKS PROGRAMME (EPWP) -THIRD EDITION 2015)

Emerging contractors shall have personally completed, or be registered on a skills programme for the NQF level 2 unit standard. All other site supervisory staff in the employ of emerging contractors must have completed, or be registered on a skills programme for the NQF level 2 unit standards or NQF level 4 unit standards. Table 1: Skills programme for supervisory and management staff.

Table 1: Skills programme for supervisory and management staff

Personnel	NQF level	Unit standard titles	Skills programme description
Team leader / supervisor	2	Apply Labour-Intensive Construction Systems and Techniques to Work Activities	This unit standard must be completed, and
		Use Labour-Intensive Construction Methods to Construct and Maintain Roads and Storm water Drainage	any one of these 3 unit standards
		Use Labour-Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	

		Use Labour-Intensive Construction Methods to Construct, Repair and Maintain structures	
Personnel	**NQF level**	**Unit standard titles**	**Skills programme description**
Foreman/supervisor	4	Implement Labour-Intensive Construction Systems and Techniques	This unit standard must be completed, and
		Use Labour-Intensive Construction Methods to Construct and Maintain Roads and Storm water Drainage	any one of these 3 unit standards
		Use Labour-Intensive Construction Methods to Construct and Maintain Water an Sanitation Services	
		Use Labour-Intensive Construction Methods to Construct, Repair and Maintain structures	
Site Agent /Manager (i.e. the contractor's most senior representative that is resident on the site)	5	Manage Labour-Intensive Construction Processes	Skills Programme against this single unit standard
Details of these skills programmes may be obtained from the CETA ETQA manager (e-mail :gerard@ceta.co.za , tel: 011-265 5900)			

EMPLOYMENT OF UNSKILLED AND SEMI-SKILLED WORKERS IN LABOUR-INTENSIVE WORKS

1.1 Requirements for the sourcing and engagement of labour.

1.1.1 Unskilled and semi-skilled labour required for the execution of all labour-intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.

1.1.2 The rate of pay set for the SPWP per task or per day will be an acceptable rate determined by the Department of Labour.

1.1.3 Tasks established by the contractor must be such that:

a) the average worker completes 5 tasks per week in 40 hours or less; and
b) the weakest worker completes 5 tasks per week in 55 hours or less.

1.1.4 The contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of 1.1.3.

1.1.5 The Contractor shall, through all available community structures, inform the local community of the labour-intensive

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

1.1.6 The Contractor shall endeavour to ensure that the expenditure on the employment of unskilled and semi-skilled workers is in the following proportions:

a) 55% women;
b) 55% youth who are between the ages of 18 and 35; and
c) 2% on persons with disabilities.

1.2 Specific provisions pertaining to SANS 1914-5

1.2.1 Definitions

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

1.2.2 Contract participation goals

1.2.2.1 There is no specified contract participation goal for the contract. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.

1.2.2.2 The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.

1.2.3 Terms and conditions for the engagement of targeted labour
Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

1.2.4 Terms and conditions for the engagement of targeted labour
Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

1.2.5 Variations to SANS 1914-5

1.2.5.1 The definition for net amount shall be amended as follows:
Financial value of the contract upon completion, exclusive of any value added tax or sales tax which the law requires the employer to pay the contractor.

1.2.5.2 The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

1.3 Training of targeted labour

1.3.1 The contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.

1.3.2 The cost of the formal training of targeted labour, will be funded by the local office of the Department of Labour. This training will take place as close to the project site as practically possible. The contractor must access this training by informing the relevant regional office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required. The Employer and the Department of Public Works (Fax: 012 3258625/ EPWP Unit, Private Bag X65, Pretoria 0001) must be furnished with a copy of this request.

1.3.3 The contractor shall do nothing to dissuade targeted labour from participating in training programmes and shall take all reasonable steps to ensure that each beneficiary is provided with two days of formal training for every 22 days worked.

1.3.4 An allowance equal to 100% of the task rate or daily rate shall be paid by the contractor to workers who attend formal training, in terms of the above.

1.3.5 Proof of compliance with the above requirements must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

GENERIC LABOUR-INTENSIVE SPECIFICATION

1 Scope

This specification establishes general requirements for activities which are to be executed by hand involving the following:

a) trenches having a depth of less than 1.5 metres
b) storm water drainage
c) low-volume roads and sidewalks

2 Precedence

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

3 Hand excavateable material

Hand excavateable material is material:

a) Granular materials:

i) whose consistency when profiled may in terms of table 1 be classified as very loose, loose, medium dense, or dense; or

ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

b) Cohesive materials:

i) whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff; or

ii) where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

Note: 1) A boulder, a cobble and gravel is material with a particle size greater than 200mm, between 60 and 200mm.

2) A dynamic cone penetrometer is an instrument used to measure the in-situ shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum diameter of 20mm (cone angle of. 60 degrees with respect to the horizontal) into the material being used.

Table 2: Consistency of materials when profiled

GRANULAR MATERIALS		COHESIVE MATERIALS	
CONSISTENCY	**DESCRIPTION**	**CONSISTENCY**	**DESCRIPTION**
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in upto 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of a geological pick; requires many blows for excavation.	stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumb-nail' with difficulty; slight indentation produced by blow of a geological pick point.

4 Trench excavation

All hand excavateable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

5 Compaction of backfilling to trenches (areas not subject to traffic)

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100mm. Each layer shall be compacted using hand stampers

a) to 90% Proctor density;

b) such that in excess of 5 blows of a dynamic cone penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders, or

c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

6 Excavation

All hand excavateable material including topsoil classified as hand excavateable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

7 Clearing and grubbing

Grass and small bushes shall be cleared by hand.

8 Shaping

All shaping shall be undertaken by hand.

9 Loading

All loading shall be done by hand, regardless of the method of haulage.

10 Haul

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

11 Offloading

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilised for haulage.

12 Spreading

All material shall be spread by hand.

13 Compaction

Small areas may be compacted by hand provided that the specified compaction is achieved.

14 Grassing

All grassing shall be undertaking by sprigging, sodding, or seeding by hand.

15 Stone pitching and rubble concrete masonry

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.

Grout shall be mixed and placed by hand.

16 Manufactured Elements

Elements manufactured or designed by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320kg. In addition, the items shall be large enough so that four workers can conveniently and simultaneously acquire a proper handhold on them.

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ANNEXURE 13

ADDITIONAL SPECIFICATION - EPWP

SL **EMPLOYMENT AND TRAINING OF EPWP BENEFICIARY ON THE EXPANDED PUBLIC WORKS PROGRAMME (EPWP) Infrastructure Projects:**

CONTENTS

SL 01 SCOPE

This project is part of the Expanded Public Works Programme aims to train young people and provide them with practical work experience as part of this programme. Youth aged between 18 and 35 will be recruited and trained in skills relevant to the work to be done on this project. These youth will have to be employed by the contractor as part of this project so that they can gain their work experience on these projects. The training of the youth will be coordinated and implemented by a separate service provider. This service provider will provide the contractor with a list of all the youth and the training each of these youth have received. The Contractor will be required to employ all of these youth for a minimum period of 6 months. Furthermore the Contractor will be required to supervise these youth to ensure that the work they perform is of the required standard. If necessary the contractor's staff will be required to assist and mentor the youth to ensure that they are able to perform the type of work they need to do to the satisfactory standards required. The contractor will not be required to employ all youth in the programme at the same time, but may rotate the youth on the project, as long as all youth are employed for the minimum duration stated earlier.

This specification contains the standard terms and conditions for workers employed in elementary occupations and trained on a Expanded Public Works Programme (EPWP) for the Infrastructure Programme.

SL 02 TERMINOLOGY AND DEFINITIONS

SL 02.01 TERMINOLOGY

(a) EPWP The Code of Good Practice for Expanded Public Works Programmes, which has been gazetted by the Department of Labour, and which provides for special conditions of employment for these EPWP projects. In terms of the Code of Good Practice, the workers on these projects are entitled to formal training, which will be provided by training providers appointed (and funded) by the Department of Labour. For projects of up to six months in duration, this training will cover life-skills and information about other education, training and employment opportunities.

(b) EPWP Expanded Public Works Programme, a National Programme of the government of South Africa, approved by Cabinet.

(c) UYF Umsobumvu Youth Fund.

(d) DOL Department of Labour.

SL 02.02 DEFINITIONS

(a) "employer" means the contractor or any party employing the worker / beneficiary under the EPWP Programme.

(b) "client" means the Department of Public Works.

(c) " worker / trainee" means any person working or training in an elementary occupation on a EPWP.

SL 03 APPLICABLE LABOUR LAWS

In line with the Expanded Public Works Programme (EPWP) policies, the Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of labour in government Notice No. R63 of 25 January 2002, of which extracts have been reproduced below in clauses SL 04 shall apply to works described in the scope of work and which are undertaken by unskilled or semi-skilled workers. The Code of Good Practise for Employment and Conditions of Work for Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No. R64 of 25 January 2002 shall apply to works described in the scope of work and which unskilled or semi-skilled workers undertake.

SI 04 EXTRACTS FROM MINISTERIAL DETERMINATION REGARDING EPWP

SL 04.01 DEFINITIONS

(a) "department" means any department of the State, implementing agent or contractor;

(b) "employer" means any department that hires workers to work in elementary occupations on a EPWP;

(c) "worker" means any person working in an elementary occupation on a EPWP;

(d) "elementary occupation" means any occupation involving unskilled or semi-skilled work;

(e) "management" means any person employed by a department or implementing agency to administer or execute a EPWP;

(f) "task" means a fixed quantity of work;

(g) "task-based work" means work in which a worker is paid a fixed rate for performing a task;

(h) "task-rated worker" means a worker paid on the basis of the number of tasks completed;

(i) "time-rated worker" means a worker paid on the basis of the length of time worked

(j) "Service Provider" means the consultant appointed by Department to coordinate and arrange the employment and training of labour on EPWP infrastructure projects.

SL 04.02 TERMS OF WORK

(a) Workers on a EPWP are employed on a temporary basis.

(b) A worker may NOT be employed for longer than 24 months in any five-year cycle on a EPWP.

(c) Employment on a EPWP does not qualify as employment and a worker so employed does not have to register as a contributor for the purposes of the Unemployment Insurance Act

SL 04.03 NORMAL HOURS OF WORK

(a) An employer may not set tasks or hours of work that require a worker to work–

(i) more than forty hours in any week
(ii) on more than five days in any week; and
(iii) for more than eight hours on any day.

(b) An employer and a worker may agree that the worker will work four days per week. The worker may then work up to ten hours per day.

(c) A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks (based on a 40-hour week) allocated to him.

Every work is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

SL 04.04 MEAL BREAKS

(a) A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.

(b) An employer and worker may agree on longer meal breaks.

(c) A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

SL 04.05 SPECIAL CONDITIONS FOR SECURITY GUARDS

(a) A security guard may work up to 55 hours per week and up to eleven hours per day.

(b) A security guard who works more than ten hours per day must have a meal break of at least one hour duration or two breaks of at least 30 minutes duration each.

SL 04.06 DAILY REST PERIOD

Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

SL 04.07 WEEKLY REST PERIOD

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

SL 04.08 WORK ON SUNDAYS AND PUBLIC HOLIDAYS

(a) A worker may only work on a Sunday or public holiday to perform emergency or security work.

(b) Work on Sundays is paid at the ordinary rate of pay.

(c) A task-rated worker who works on a public holiday must be paid –

  (i) the worker's daily task rate, if the worker works for less than four hours;

  (ii) double the worker's daily task rate, if the worker works for more than four hours.

(d) A time-rated worker who works on a public holiday must be paid –

  (i) the worker's daily rate of pay, if the worker works for less than four hours on the public holiday;

  (ii) double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.

SL 04.09 SICK LEAVE

(a) Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.

(b) A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.

(c) A worker may accumulate a maximum of twelve days' sick leave in a year.

(d) Accumulated sick-leave may not be transferred from one contract to another contract.

(e) An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.

(f) An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.

(g) An employer must pay a worker sick pay on the worker's usual payday.

(h) Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is –

(i) absent from work for more than two consecutive days; or

(ii) absent from work on more than two occasions in any eight-week period.

(i) A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.

(j) A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

SL 04.10 MATERNITY LEAVE

(a) A worker may take up to four consecutive months' unpaid maternity leave.

(b) A worker is not entitled to any payment or employment-related benefits during maternity leave.

(c) A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.

(d) A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.

(e) A worker may begin maternity leave –

(i) four weeks before the expected date of birth; or

(ii) on an earlier date –

(1) if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or

(2) if agreed to between employer and worker; or

(iii) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.

(f) A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.

(g) A worker who returns to work after maternity leave, has the right to start a new cycle of twenty-four months employment, unless the EPWP on which she was employed has ended.

SL 04.11 FAMILY RESPONSIBILITY LEAVE

(a) Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances -

(i) when the employee's child is born;

(ii) when the employee's child is sick;

(iii) in the event of the death of –

(1) the employee's spouse or life partner

(2) the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling

SL 04.12 STATEMENT OF CONDITIONS

(a) An employer must give a worker a statement containing the following details at the start of employment –

(i) the employer's name and address and the name of the EPWP;

(ii) the tasks or job that the worker is to perform;

(iii) the period for which the worker is hired or, if this is not certain, the expected duration of the contract;

(iv) the worker's rate of pay and how this is to be calculated;

(v) the training that the worker may be entitled to receive during the EPWP.

(b) An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.

(c) An employer must supply each worker with a copy of the relevant conditions of employment contained in this specification.

(d) An employer must enter into a formal contract of employment with each employee. A copy of a pro-forma is attached at the end of this specification.

SL 04.13 KEEPING RECORDS

(a) Every employer must keep a written record of at least the following –

(i) the worker's name and position;

(ii) in the case of a task-rated worker, the number of tasks completed by the worker;

(iii) in the case of a time-rated worker, the time worked by the worker;

(iv) payments made to each worker.

(b) The employer must keep this record for a period of at least three years after the completion of the EPWP.

SL 04.14 PAYMENT

(a) A task-rated worker will only be paid for tasks that have been completed.

(b) An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer. Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

(c) A time-rated worker will be paid at the end of each month and payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

(d) Payment in cash or by cheque must take place –

(i) at the workplace or at a place agreed to by at least 75% of the workers; and

(ii) during the worker's working hours or within fifteen minutes of the start or finish of work;

(e) All payments must be enclosed in a sealed envelope which becomes the property of the worker.

(f) An employer must give a worker the following information in writing –

(i) the period for which payment is made;

(ii) the number of tasks completed or hours worked;

(iii) the worker's earnings;

(iv) any money deducted from the payment;

(v) the actual amount paid to the worker.

(g) If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it.

(h) If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

SL 04.15 DEDUCTIONS

(a) An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.

(b) An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.

(c) An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned.

(d) An employer may not require or allow a worker to –

(i) repay any payment except an overpayment previously made by the employer by mistake;

(ii) state that the worker received a greater amount of money than the employer actually paid to the worker; or

(iii) pay the employer or any other person for having been employed.

SL 04.16 HEALTH AND SAFETY

(a) Employers must take all reasonable steps to ensure that the working environment is healthy and safe and that all legal requirements regarding health and safety are strictly adhered to.

(b) A worker must:

(i) work in a way that does not endanger his/her health and safety or that of any other person;

(ii) obey any health and safety instruction;

(iii) obey all health and safety rules;

(iv) use any personal protective equipment or clothing issued by the employer;

(v) report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

SL 04.17 COMPENSATION FOR INJURIES AND DISEASES

(a) It is the responsibility of employers to arrange for all persons employed on a EPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.

(b) A worker must report any work-related injury or occupational disease to their employer or manager.

(c) The employer must report the accident or disease to the Compensation Commissioner.

(d) An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

SL 04.18 TERMINATION

(a) The employer may terminate the employment of a worker provided he has a valid reason and after following existing termination procedures.

(b) A worker will not receive severance pay on termination.

(c) A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.

(d) A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

(e) A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

SL 04.19 CERTIFICATE OF SERVICE

(a) On termination of employment, a worker is entitled to a certificate stating –

(i) the worker's full name;
(ii) the name and address of the employer;
(iii) the SPWP on which the worker worked;
(iv) the work performed by the worker;
(v) any training received by the worker as part of the EPWP;
(vi) the period for which the worker worked on the EPWP;
(vii) any other information agreed on by the employer and worker.

SL 05 EMPLOYER'S RESPONSIBILITIES

The employer shall adhere to the conditions of employment as stipulated in the *Code of Good Practice for Employment and Conditions of Work for Expanded Public Works Programmes*. Over and above the conditions stipulated above, he shall be responsible to:

(a) formulate and design a contract between himself/ herself and each of the recruited EPWP beneficiary, ensuring that the contract does not contravene any of the Acts stipulated in South African Law, e.g. Basic Conditions of Employment Act, etc. (A copy of a pro-forma contract is attached at the end of this specification);

(b) screen and select suitable candidates for employment from the priority list of EPWP beneficiary provided by the Umsobumvu Youth Fund (UYF);

(c) ensure that the recruited EPWP beneficiary are made available to receive basic life skills training which will be conducted and paid for by the Umsobumvu Youth Fund;

(d) ensure that all EPWP beneficiary receive instruction on safety on site prior to them commencing with work on site;

(e) ensure that all EPWP beneficiary are covered under workmen's compensation for as long as they are contracted to the contractor. Payment to the Compensation Commissioner shall be the responsibility of the contractor;

(f) assist in the identification and assessment of potential EPWP beneficiary to undergo advanced technical training in respective trades;

(g) test and implement strict quality control and to ensure that the health and safety regulations are adhered to;

(h) provide all EPWP beneficiary with the necessary protective clothing as required by law for the specific trades that they are involved in.

(i) provide overall supervision and day-to-day management of EPWP beneficiary and/or sub-contractors; and

(j) ensure that all EPWP beneficiary are paid their wages on time through a pre-agreed payment method as stipulated in the contract with the EPWP beneficiary.

SL 06 PLACEMENT OF RECRUITED EPWP BENEFICIARY

Employers will be contractually obliged to:

(a) employ EPWP beneficiary from targeted social groups from the priority list provided by the Service Provider/ Umsobumvu Youth Fund.

(b) facilitate on-the-job training and skills development programmes for the EPWP beneficiary;

(c) achieve the following minimum employment targets:

(i) 55% people between the ages of 18 and 35
(ii) 55% women;

(iii) 2% people with disabilities.

(d) brief EPWP beneficiary on the conditions of employment as specified in sub clause SL 04.09 above;

(e) enter into a contract with each EPWP beneficiary, which contract will form part of the Employment Agreement;

(f) allow EPWP beneficiary the opportunity to attend life skills training through DOL. This shall be arranged at the beginning of the contract;

(g) ensure that payments to EPWP beneficiary are made as set out in sub clauses SL 04.14 and SL 04.15 above.

(h) set up of personal profile files as prescribed by EPWP beneficiary and as set out in sub clause SL 04.13 above.

(i) in addition to (h)
- a copy of the I.D;
- qualifications;
- career progress;
- EPWP Employment Agreement, and
- list of small trade tools;

must be included in the EPWP beneficiary's personal profile file.

SL 07 TRAINING OF EPWP BENEFICIARY

Three types of training are applicable, namely

- Life skills;
- On the job training and
- Technical Skills training.

Training will be implemented by training instructors accredited by DOL and/or CETA :

- EPWP beneficiary shall be employed on the projects for an average of 6 months.
- EPWP beneficiary shall be deployed on projects in the vicinity of their homes. The same arrangements as for other workers regarding accommodation, subsistence and travel shall be applicable to EPWP beneficiary.

(a) Life skills training

All EPWP beneficiary are entitled to undergo life skills training. Training of this module will be flexible enough to meet the needs of the employer. Training should take place immediately after site hand-over and during the period of site establishment and pre-planning before actual construction starts, alternatively this will be spread over the duration of the contract period. The contractor will be required to work closely with the person to schedule the training sessions so that the timing of the training is aligned with the contractors work schedule and his demand for workers.

(b) On-the job training

The Employer shall provide EPWP beneficiary with on-the-job training to enable them to fulfil their employment requirements. The employer shall also be expected to closely monitor the job performance of EPWP beneficiary and shall identify potential EPWP beneficiary for skills development programmes.

(c) Technical skills training

The Employer shall assist in identifying EPWP beneficiary for further training. These EPWP beneficiary will undergo further technical training to prepare them for opportunities as semi-skilled labourers.

Such training will comprise of an off-site theoretical component and practical training on-site. The contractor will be responsible for on-site practical work under his supervision. EPWP beneficiary who graduate from the first phase of the training programme will be identified and given opportunities to register for skills development programmes. These can ultimately result in a accredited qualification. The programme will consist of theoretical instruction away from the construction site as well as on-site practical work under the supervision of the employer. Candidates will be entitled to employment to complete all training modules.

SL 08 BENEFICIARY (EPWP BENEFICIARY) SELECTION CRITERIA

SL 08.01 PREAMBLE

The *Code of Good Practise for Employment and Conditions of Work for Expanded Public Works Programmes* encourages:

- optimal use of locally-based labour in a Expanded Public Works Programme (EPWP);
- a focus on targeted groups which consist of namely youth, consisting of women, female-headed households, disabled and households coping with HIV/AIDS; and
- the empowerment of individuals and communities engaged in a SPWP through the provision of training.

SL 08.02 BENEFICIARY (EPWP BENEFICIARY) SELECTION CRITERIA

(a) The EPWP beneficiary of the programmes should preferably be non-working individuals from the most vulnerable sections of disadvantaged communities who do not receive any social security pension income. The local community must, through all structures available, be informed of and consulted about the establishment of any EPWP

(b) In order to spread the benefit as broadly as possible in the community, a maximum of one person per household should be employed, taking local circumstances into account.

(c) Skilled artisans from other areas may be employed if they have skills that are required for a project and there are not enough persons in the local communities who have those skills or who could undergo appropriate skills training. However, this should not result in more than 20% of persons working on a programme not being from local communities.

(d) Programmes should set participation targets for employment with respect to youth, single male- and female-headed households, women, people with disabilities, households coping with HIV/AIDS, people who have never worked, and those in long-term unemployment.

(e) The proposed targets as set out in sub clause SL 06 (c)

- 55% youth from 18 to 35 years of age;
- 55% women;
- 2% disabled.

SL 09 CONTRACTUAL OBLIGATIONS IN RELATION TO YOUTH LABOUR

The EPWP beneficiary to be employed in the programme (EPWP) shall be directly contracted to the employer. Over and above the construction and project management responsibilities, the employer will be expected to perform the tasks and responsibilities as set out in clause SL 05 above.

SL 10 PROVINCIAL RATES OF PAY

It is stipulated that youth workers on the EPWP receive a minimum of R 1 000 per month whilst working and R 600 per month whilst on training in ALL provinces. Should EPWP beneficiary be attending training whilst employed by the contractor, the contractor will still be responsible for payment to the EPWP beneficiary whilst at training.

SL 11 MEASUREMENTS AND PAYMENT

The number of EPWP beneficiary specified for this contract that will receive life skills training is 50 and technical training is 50

SL 11.01 PAYMENT FOR TRAINING OF EPWP BENEFICIARY

(TARGET:- 50 EPWP BENEFICIARY)

SL 11.01.01 Skills development and Technical training for EPWP beneficiary for an average of 10 days .....(Prov.Sum).....Unit: R/EPWP beneficiary

The above item is only applicable if DoL does not fund the Technical Training PRIOR to site handover.

SL 11.01.02 Penalty due to not meeting the target as in SL 11.01.01.....Unit: EPWP beneficiary

LESS R 2000 per EPWP beneficiary

SL 11.02 PAYMENT FOR TRAVELLING AND ACCOMMODATION DURING OFF-SITE TRAINING

SL 11.02.01 Life skills training for 26 days:

01 Travelling (based on 50 km/EPWP beneficiary) .....Unit: km

02 Accommodation.....(Prov.Sum).....Unit: R/EPWP beneficiary

03 Profit and attendance..... Unit: %

SL 11.02.02 Skilled development and Technical training:

01 Travelling (based on 50 km/EPWP beneficiary).....Unit: km

02 Accommodation.....(Prov.Sum)....Unit: R/EPWP beneficiary

03 Profit and attendance ..... Unit: %

The units of measurement for sub items SL 11.02.01 (01) and SL 11.02.02 (01) above shall be the distance travelled in km by the EPWP beneficiary trained off site. The tendered rate shall include full compensation to safely transport the youth workers to and from the training venue/s.

The unit of measurement for sub items SL 11.02.01 (02) and SL 11.02.02 (02) above shall be the amounts in Rand expended for accommodation and daily meal allowances for the EPWP beneficiary trained off site that must be arranged by the contractor. Amounts quoted shall be corrected according to re-measurement based on actual invoices.

The tendered percentages under sub items SL 11.02.01 (03) and SL 11.02.02 (03) will be paid to the contractor on the value of each payment pertaining to the accommodation and advance meal allowances to cover his expenses in this regard.

SL 11.03 ALTERNATIVE WORKERS FOR THE PERIOD OF OFF-SITE TRAINING

SL 11.03.01 Life skills training for 26 days ..... Unit: worker-days

SL 11.03.02 Skilled development and Technical training for EPWP beneficiary for (.....) days..... Unit: worker-days

The unit of measurement shall be the number of EPWP beneficiary replaced while in training multiplied by the number of days absent from the site.

The rates tendered shall include full compensation for additional replacement labour during periods of off-site training.

SL 11.04 EMPLOYMENT OF EPWP BENEFICIARY

SL 11.04.01 Employment of EPWP beneficiary.....(Prov.Sum)¼.Unit: R/ worker-month

SL 11.04.02 Employment of EPWP beneficiary.....(Prov.Sum)¼.Unit: R/ worker-month

The unit of measurement shall be the number of EPWP beneficiary at the statutory labour rates of R ..... multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of EPWP beneficiary and for complying with the conditions of contract. The cost for the training shall be excluded from this item. This item is based on 6 months appointment for EPWP beneficiary.

SL 11.05 **PROVISION OF EPWP DESIGNED OVERALLS TO EPWP BENEFICIARY**

SL 11.05.01 Supply EPWP designed overalls to EPWP beneficiary ..... (Prov.Sum).....Unit: R

EPWP beneficiary overalls should be orange (top and bottom) as per EPWP specification with the exception of Correctional Services contracts where the EPWP beneficiary top would be blue and the bottom orange.

SL 11.05.02 Profit and attendance..... Unit: %

An amount has been provided in the Schedule of Quantities under sub item SL 10.05.01 for the supply of EPWP designed overalls, as per the specification provided by the EPWP unit, arranged by the Service Provider. The Engineer will have sole authority to spend the amounts or part thereof. The tendered percentage under sub items SL 10.05.02 will be paid to the contractor on the value of each payment pertaining to the supply of overalls to cover his expenses in this regard.

SL 11.06 **PROVISION OF SMALL TOOLS FOR EPWP BENEFICIARY**

SL 11.06.01 **Provide all EPWP beneficiary with prescribed tools for their respective trades. Specification for the mentioned tools to be provided by the EPWP Service Provider. These tools will become the property of the EPWP beneficiary after the completion of the programme**.....(Prov.Sum)....Unit: **R 500-00** /youth worker

SL 11.06.02 Profit and attendance..... Unit: %

SL 11.07 **APPOINTMENT OF EPWP BENEFICIARY TEAM LEADER/S**

SL 11.07.01 **Appointment of (_____) EPWP beneficiary team leader/s for the duration of the contract.....(Prov.Sum)..... Unit: R / EPWP beneficiary team leader**

The EPWP beneficiary Team Leader will act as CLO/PLO to facilitate the project work between the EPWP beneficiary and the contractor. Umsobumvu Youth Fund can assist with the sourcing of EPWP beneficiary Team Leader for employment by the contractor.

SL 11.08 **LIAISON WITH SERVICE PROVIDER** .....Unit: hours

The tendered rate shall include full compensation for the cost of liaising with the Service Provider and Social Facilitators on all issues regarding the works.

KWAZULU-NATAL PROVINCE
PUBLIC WORKS
REPUBLIC OF SOUTH AFRICA

SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET

ANNEXURE 14

PAGE NO	ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1		**BILL NO 2**				
1		**EMPLOYMENT AND TRAINING OF LABOUR ON THE EPWP BENEFICIARY INFRASTRUCTURE PROJECTS**				
1		**PREAMBLES**				
1		Tenderers are advised to study the Additional Specification SL: Employment and training of Labour on the Expanded Public Works Programme (EPWP) Infrastructure Projects as bound elsewhere in the Bills of Quantities and then price this Bill accordingly				
1		**TRAINING OF EPWP BENEFICIARY**				
1		(TARGET: 50 EPWP BENEFICIARY)				
1		Skills development and Technical training:				
1	1	Skills development and technical training for EPWP beneficiary for an average of 10 days (ref. SL11.01.01)	Item	1		
1	2	Penalty due to not meeting the target as in SL 11.01.02	Y/Work	R 2 000.00		
1		**TRAVELLING AND ACCOMMODATION DURING OFF SITE TRAINING:**				
1		Life skills training for 26 days (ref. SL 11.02.01)				
1	3	Travelling (based on 50km/EPWP beneficiary)	km	2500		
1	4	Profit and attendance on Items 1, 2 & 3	%			
1		**EMPLOYMENT OF EPWP BENEFICIARY**				
1	5	Employment of EPWP beneficiary (30 youth) [New Office Block]	Item	1		
1		The unit of measurement shall be the number of EPWP beneficiary at the statutory labour rates of R 100/day multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of EPWP beneficiary and for complying with the conditions of contract. The cost for training shall be excluded from this item. This item is based on 6 months appointment for EPWP beneficiary				
1	6	Employment of EPWP beneficiary(40 youth) [Parking garage]	Item	1		
		TOTAL CARRIED TO SUMMARY				

			UNIT	QUANTITY	RATE	AMOUNT
2		The unit of measurement shall be the number of EPWP beneficiary at the statutory labour rates of R 110/day multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of EPWP beneficiary and for complying with the conditions of contract. The cost for training shall be excluded from this item. This item is based on 12 months appointment for EPWP beneficiary				
2	7	Employment of EPWP beneficiary (30 youth) [Conference Centre & Canteen]	Item	1		
2		The unit of measurement shall be the number of EPWP beneficiary at the statutory labour rates of R 120/day multiplied by the period employed in months and the rate tendered shall include full compensation for all costs associated with the employment of EPWP beneficiary and for complying with the conditions of contract. The cost for training shall be excluded from this item. This item is based on 12 months appointment for EPWP beneficiary				
2		**PROVISION OF EPWP DESIGNED OVERALLS TO YOUTH WORKERS**				
2	8	Supply EPWP designed overalls to EPWP beneficiary (ref. SL 11.05.01) for 100 workers	Item	1		
2	9	Profit and attendance on Items 5 - 8 (ref. SL 11.05.02)	%	7.5		
2		**PROVISION OF SMALL TOOLS FOR EPWP BENEFICIARY**				
2	10	Supply of small tools to EPWP beneficiary. Specification to be supplied by the EPWP-NYS Serviced Provider for the respective trades (ref. SL 11.06.01) for 100 workers	Item	1		
2	11	Profit and attendance (ref. SL 11.06.02)	%	7.5		
2		**APPOINTMENT OF YOUTH TEAM LEADERS**				
2	12	Appointment of EPWP beneficiary Team Leaders for the duration of the contract (ref. SL 11.07)	Item	1		
2	13	Liaison with Service Provider (ref. SL 11.08)	Hrs	30		
2	14	Profit and attendance on Items 12 & 13	%	7.5		
		FINAL TOTAL CARRIED TO PRELIMINARY AND GENERAL IN BILL OF QUANTITIES				

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ANNEXURE 15

KWAZULU-NATAL DEPARTMENT OF PUBLIC WORKS

EXPANDED PUBLIC WORKS PROGRAMME

The Attendance Register for on-site Workers

Reporting month: _____ Cell No: _____

Surname: _____ First Name: _____

Project Name: **SOUTHERN REGION: DEPARTMENT OF TRANSPORT: MOTOR TRANSPORT SERVICES (MTS) B BLOCK: REPLACEMENT OF EXISTING ROOF WITH NEW INCLUDING REHABILITATION & RESTORATION OF OTHER AREAS (HERITAGE TYPOLOGY) AT 230 PRINCE ALFRED STREET**

Project Code: **WIMS 062326** Tender No **ZNTM 01192 W**

IDENTITY NUMBER:

Day	Date	Time In	Signature	Time Out	Signature	Report On Any Formal Training Provided In The Reporting Month
WEEK 1						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 2						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 3						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 4						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 5						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
Total Days worked						