

THULAMELA LOCAL MUNICIPALITY



THE APPOINTMENT OF A PANEL OF THREE CONSORTIUMS OF CONTRACTORS FOR THE CONSTRUCTION OF UIF TO SHELL GARAGE INTERNAL STREETS, STORMWATER AS WELL AS LANDSCAPING AND STREETLIGHTS IN THE THULAMELA MUNICIPALITY ON AN AS AND WHEN REQUIRED BASIS FROM DATE OF AWARD FOR A PERIOD OF 36 MONTHS

Bid No. 48/2022/2023

CIDB Class Grading 7CE or Higher

(5EP: Electrical Sub-Contractor)
(5SH: Landscaping Sub-Contractor)

THULAMELA LOCAL MUNICIPALITY Contact Person: Mr T.P Mudzili Tel: (015) 962 7629		CONSULTANTS PRINCIPAL AGENT Contact Person: Mr. K. Mayayise Tel: (011) 805 0981	
Name of Bidder:			
Bid Amount (VAT Incl.):			
Bidder Address:			
Receipt Number:			
Email Address:			
Contact numbers:	Tel:	Cell:	Fax:
		 <p>EXPANDED PUBLIC WORKS PROGRAMME Creating opportunities towards human fulfilment</p>	

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THE TENDER

PART T1 : TENDERING PROCEDURES

PART T2 : RETURNABLE DOCUMENTS

PART T1 : TENDERING PROCEDURES

T1.1 TENDER NOTICE AND INVITATION TO TENDER..... T.5

T1.2 TENDER DATA T.9

T1.1 TENDER NOTICE AND INVITATION TO TENDER

Thulamela Local Municipality is inviting capable service providers for the Appointment of a Panel of Three Consortiums of Contractors for the Construction of UIF to Shell garage internal Streets, Stormwater as well as Landscaping and Streetlights in the Thulamela Municipality on an As and When required basis from the date of award for a period of 36 Months.

Bid number	Project Description	Contact Persons	CIDB Grading	Compulsory Briefing	Evaluation Criteria
No. 48/2022/2023	The Appointment of a Panel of Three Consortiums of Contractors for the Construction of UIF to Shell garage internal Streets, Stormwater as well as Landscaping and Streetlights in the Thulamela Municipality on an As and When required basis from the date of award for a period of 36 Months.	Mr. Kulani Mayayise (011) 805 0981 Ms Gangashe A. (015) 962 7626 Mr TP Mudzili (015) 962 7629	7CE, 5EP and 5SH or Higher	Date: 14 March 2023 Time: 11H00 Location: Thulamela Council Chamber, Thohoyandou Civic Centre, Old Agriven Building, Thohoyandou Co-ordinates: Latitude - 22.971178°, Longitude 30.460623°	80/20 Preference points system and functionality

Tender documents are obtainable from Procurement Office, Office No. 02 at Thulamela Local Municipality Head Office, during the following times: 08:00 to 15:30 (Monday to Friday) as from **02 March 2023 at a non-refundable bid price of R3.00 per page.** or can alternatively be downloaded from Thulamela website (www.thulamela.gov.za) for free. The bidders should also download SCM forms that are found in the **SCM-FORMS sub folder** on the website and complete as part of the Bid documents.

The service providers must submit the completed Bid documents (in black ink) and hand deliver or courier them to Thulamela Municipality. All completed

Bid documents (hand delivered or couriered) must be dropped in the BID BOX before the closing date and time of the Bids closure. The onus is on the service providers to make sure the Bid documents are submitted on time and late submission won't be accepted.

Interested service providers must attend a compulsory briefing session on 14 March 2023 at 11h00. Location: Thulamela Local Municipality Council Chamber.

- ❖ **Tax Compliance Status Letter or Tax Compliance Pin Number.**
- ❖ **Company registration documents (e.g., CK).**
- ❖ **Company profile.**
- ❖ **Valid proof of registration with CIDB**
- ❖ **Proof of registration on CSD**
- ❖ **Curriculum vitae of the proposed project team**
- ❖ **Organogram of the project team indicating project key personnel**
- ❖ **If the company is required by law to be audited, we need audited annual financial statements for the past three (3) years or audited financial statements since the establishment of the company if the company was established during the past three (3) years. If the company is not required by law to be audited, please provide us with a letter from a registered accountant stating that you are not required to be audited and the reasons thereof. Certified copy of partnership or JV agreement (if tenderer is a partnership or JV)**
- ❖ **Proof of municipal rates and taxes or municipal service charges owed by the bidder and ALL its directors, not in arrears for more than 3 months. (The proof of municipal rates and taxes or municipal service charges to be submitted must not be older than three (3) months from the closing date of the bid. Attach valid lease agreement in case of rental of office facilities and municipal clearance in respect of the areas exempted from billing by municipalities.**
- ❖ **List of Roads and Stormwater projects completed by the contractor in the past 10 years with clients contact details, description and contract values.**

NB: Only projects that were completed within the municipal environment or RAL or SANRAL (Attach signed appointment letters, completion certificates and reference letters) NB: The municipality reserves the right to conduct verification with the referred clients of the similar completed projects.

- ❖ **All documentation listed in the Tender document under Part T2: Compliance with Tender Conditions and other Requirements under section T2.1 and T2.2 should be submitted as compulsory requirements.**
- ❖ **All records of any additional information posted should be submitted as compulsory requirements and it is the responsibility of the bidders to check with the respective project engineer or client representatives (contact details as provided above) if there are any additional information before submission of the tender documents.**

Tenderers should note the following: Functionality will be scored out of **100% and the minimum threshold to qualify is 70%**. Tenderers who fail to meet the minimum threshold will not be considered for further evaluation. **The submitted tender document must contain all pages, as indicated, in specified colour, page sequence (*incl. double sided*) and binding method. The binding method must be staples plus an adhesive tape binding.**

	TARGETED GOALS:	WEIGHT
Points for functionality	Experience in Road and Stormwater Construction Projects: (Demonstrated company experience in Roads and Stormwater project and past performance).	40
	Key staff – Demonstrated experience- Qualifications and experience.	25
	Proof of Plant and Equipment owned by the bidder: Details of major equipment owned (please provide proof of ownership). Valid proof of license disk and registration	25
	Financial Reference	10
TOTAL		100

Bids will be assessed under the provisions of the following Acts and its Regulations: Municipal Finance Management Act, (Act 56 of 2003); PPPFA, Supply Chain Management Policy of the municipality in accordance with the specifications and in terms of **80/20 preferential points system and functionality as per the advert and bid document.**

Specific Goals Categories (CSD will be used for verification)	Number of Points (80/20 system) 20 Points breakdown
1. 100% Black ownership	10
2. 100% Women ownership	5
3. Youth	3
4. Disability (Medical certificate will be used to verify the disability status of the bidder).	2

Sealed bid documents must be submitted in envelopes clearly indicating ***“BID NUMBER AND DESCRIPTION”*** on the outside and must reach the undersigned by depositing it into the official Bid Box at the front of the main entrance to **Thohoyandou Civic Centre, Old Agriven Building, Thohoyandou**, by no later than **11h00 on, 3 April 2023.**

The Municipality is not bound to accept the lowest Bid and reserves the right to accept any part of a Bid. Bids must remain valid for a period of ninety (90) days after closing date of the submission thereof.

Bids may only be submitted on the bid documentation provided by the municipality.

NB: Bids which are late, incomplete, unsigned, completed by pencil, sent by telegraph, facsimile, electronically (Fax), or E- mail and without the compulsory requirements will be disqualified.

**MAKUMULE M.T.
MUNICIPAL MANAGER**

T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of SANS 294:2004.

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 of inconsistency between it and the Standard Conditions of Tender.

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

Subclause	Data
F.1.1	The employer is the Thulamela Municipality
F.1.2	<p>The Project Document issued by the employer consists of the following:</p> <p>THE TENDER</p> <p>Part T1: Tendering procedures:</p> <p style="padding-left: 40px;">T1.1 Tender notice and invitation to tender</p> <p style="padding-left: 40px;">T1.2 Tender Data</p> <p>Part T2: Returnable documents</p> <p style="padding-left: 40px;">T2.1 Returnable Schedules required for Tender Evaluation</p> <p style="padding-left: 80px;">RDP2 (E1): EME/QSE No. 1</p> <p style="padding-left: 80px;">RDP2 (E2): EME/QSE No. 2</p> <p style="padding-left: 80px;">RDP2 (E3): EME/QSE No. 3</p> <p style="padding-left: 80px;">RDP2 (E4): EME/QSE No. 4</p> <p style="padding-left: 80px;">RDP2 (E5): EME/QSE No. 5</p> <p style="padding-left: 40px;">T2.2 Other Documents required for Tender Evaluation</p> <p style="padding-left: 40px;">T2.3 Returnable Schedules that will be incorporated into the Contract</p> <p>THE CONTRACT</p> <p>Part C1: Agreements and contract data</p> <p style="padding-left: 40px;">C1.1 Form of Offer and Acceptance</p> <p style="padding-left: 40px;">C1.2 Agreement in Terms of the Occupational Health & Safety Act</p> <p style="padding-left: 40px;">C1.3 Abstracts of the Mine Health and Safety Act No 29</p> <p style="padding-left: 40px;">C1.4 Guarantee</p> <p style="padding-left: 40px;">C1.5 Contract Data</p> <p>Part C2: Pricing data</p> <p style="padding-left: 40px;">C2.1 Pricing instructions</p> <p style="padding-left: 40px;">C2.2 Bills of quantities</p> <p style="padding-left: 40px;">C2.3 Summary of Bills of Quantities</p> <p style="padding-left: 40px;">C2.4 Calculation of Tender Sum</p> <p>Part C3: Scope of work</p> <p style="padding-left: 40px;">C3.1 Description of Works</p> <p style="padding-left: 40px;">C3.2 Engineering</p>

Subclause	Data
	C3.3 Construction C3.4 Management Part C4: Site information C4.1 Site Information C4.2 Locality Plan Part C5: Annexures C5.1 : Proforma Documents C5.2 : Contract Drawings C5.3 : Geo Technical Report
F.1.4	The employer's agent is: Name: KTN Consulting Engineers and Project Managers. Address: PO BOX 10841 VORN VALLEY, 1686, Tel No. +27 (0) 11 805 0981 Telefax No. +27 (0) 11 604 0039 e-mail: ktn@ktnconsuting.co.za
F.2.1	<p>Only those tenderers who can demonstrate that they will have in their employ management and supervisory staff satisfying the requirement of the scope of work for labour-intensive competencies for supervisory and management staff during the validity of the contract are eligible to submit tenders.</p> <p>Only those tenderers who are registered with the CIDB, or can provide proof of having applied for registration, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a 7CE class of construction work.</p> <p>7CE or Higher for Main Civil Contractor. (5EP: Electrical Sub-Contractor) (5SH: Landscaping Sub-contractor)</p> <p>Joint ventures are eligible to submit tenders provided that:</p> <ol style="list-style-type: none"> every member of the joint venture is registered with the CIDB or can provide proof of having registered; the lead partner can be one contractor grading designation lower in the 7CE class of construction work; but the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations must be equal to or higher than a contractor grading designation determined in accordance with the sum tendered for an 7CE or HIGHER class of construction work. <p>7CE or Higher for Main Civil Contractor. (5EP: Electrical Sub-Contractor) (5SH: Landscaping Sub-contractor)</p>
F.2.7	The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and are: Location: At the Thulamela Local Municipality Building in Thohoyandou, Main entrance Thohoyandou Civic Centre, Old Agriven Building, Thohoyandou Co-ordinates: Latitude -22.971178°, Longitude 30.460623°

Subclause	Data
	<p>Date: 14 March 2023, Starting time: 11:00</p> <p>The Site Clarification Meeting Attendance Certificate, Form T2.1B in Section T2.1, can be signed by Employer's representative. Furthermore, it is a compulsory requirement that the attendance register be signed by the representative of the tenderer and the name of the company represented indicated.</p> <p>Failure to sign the compulsory clarification meeting attendance register will invalidate the Tender.</p> <p>NO DOCUMENTS WILL BE AVAILABLE FOR ISSUE AT THE CLARIFICATION MEETING.</p>
F.2.12	<p>If a tenderer wishes to submit an alternative tender offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the employer's standards and requirements, the details of which may be obtained from the employer's Agent.</p> <p>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.</p> <p>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.</p> <p>Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the contractor 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.</p> <p>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.</p>
F2.13.1	No tenderer may submit more than one tender as set out in this clause in the Standard Conditions of tender
F2.13.2	Tender documents do not have to be returned should the purchaser of the document not wish to tender.
F.2.13.3	<p>a) Submit original tender, no copies of tenders will be accepted.</p> <p>b) The submitted tender document must contain all pages, as indicated, in specified colour, page sequence (incl. double sided) and binding method. The binding method must be staples plus an adhesive tape binding.</p>
F.2.13.5	<p>The employer's address for delivery of tender offers and identification details to be shown on each tender offer package are:</p> <p>Location of tender box: Thulamela Municipality offices</p> <p>Physical address: Thohoyandou Civic Centre, Old Agriven Building,</p>

Subclause	Data
	<p>Thohoyandou,0950</p> <p>Identification details: The Appointment of a Panel of Three Consortiums of Contractors for the Construction of UIF to Shell garage internal Streets, Stormwater as well as Landscaping and Streetlights in the Thulamela Municipality on an As and When required basis from the date of award for a period of 36 Months.</p>
F.2.13. & F.3.5	A two-envelope procedure will not be followed.
F.2.15	<p>Closing time for submission of tender offers is:</p> <p>11h00 hours on 3 April 2023. Telephonic, telegraphic, telex, facsimile, e-mailed or postal tender offers will not be accepted.</p>
F.2.16	<p>2. 16.1a) Tenders shall remain valid for a period of ninety (90) days from the time set for the opening of Tenders and no Tender may be withdrawn during this period.</p> <p>2.16.1b) Should a Tenderer amend (other than according to F 3.9) or withdraw his Tender after the time set for the receipt and opening of Tenders and during the period of its validity, but prior to his being notified of the acceptance of his original Tender, or should a Tenderer, after having been notified that his Tender has been accepted</p> <ul style="list-style-type: none"> a) give notice of his inability to execute the Consultancy Agreement / Contract in terms of his tender; or b) fail to sign a Consultancy Agreement / Contract or furnish the security within the period fixed in the conditions reflected in the form of Tender or any extended period fixed by the Employer; or c) fail to execute the Consultancy Agreement / Contract according to the documents; <p>He shall pay either the difference between his Tender and a less favourable Tender accepted in terms of the provisions of Tender sub Condition 3.1(d), or if the Employer decides to invite fresh Tenders, all additional expenses which the Employer has to incur in this regard, as well as any difference between his Tender and the accepted new Tender; provided that the Employer may fully or partly exempt a Tenderer from the provisions of this sub condition if he is of the opinion that the circumstances justify the exemption.</p> <p>2.16.1c) When, in the circumstances mentioned in Tender sub Condition 3.10(c) it is not deemed desirable to invite fresh Tenders, the Employer may accept another Tender from those already received.</p>
F.2.1.7	<p>The tendered lump sum/price is final and binding. The engineer will check for arithmetical errors and if found the tenderer will be asked for clarification and revision of the rates, with the proviso that no change in the competitive position of the tenderers or substance of the tender offer is sought, offered, or permitted. (See C2.1.11).</p>

Subclause	Data
F.2.18	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 such staff members satisfy eligibility requirements.
F.2.23	The tenderer is required to submit with his tender a valid tax compliance status letter or tax compliance status pin. <u>This must be submitted with the Tender in order to be considered. The tenderer must also submit with the tender a letter of good standing from Compensation Commissioner or FEMA and any other documents mentioned in these tender data.</u>
F2.24	<p>TENDER WITHDRAWAL OR MODIFICATION PRIOR TO CLOSING DATE</p> <p>Any Tenderer has the right to withdraw, modify or correct his Tender after it has been delivered, provided that written request for such withdrawal, modification or correction, together with full details of such modification or correction is received at the address given for the submission of Tenders before the closing date and set for the receipt of Tenders. The original Tender as amended by such written or facsimile communication shall be considered Tenderer's offer.</p>
F.3.4	<p>The time and location for opening of tender offers:</p> <p>Time: 11h00 , 3 April 2023</p> <p>Location: Main entrance Thohoyandou Civic Centre, Old Agriven Building, Thohoyandou</p>
F.3.11	<p>EVALUATION CRITERIA</p> <p>The bids will be evaluated in two stages.</p> <p>The first stage will check whether the bidders have submitted all documents as requested on the advert. Although functionality does not form part of the final tender points scoring for award purpose, tenderer will be assessed for responsiveness and functionality first and if the tender is not responsive or meet the minimum functionality score, the tenderer will be eliminated and not considered further for second stage of evaluation.</p> <p>The second stage of the evaluation will be based on Price (80) and preference points system (specific goals) (20).</p> <p>Detailed points scoring for functionality are as follows:</p>

Subclause	Data			
	Functional Requirements A tenderer must score a minimum of Seventy points (70/100) to qualify for further evaluation. Tenders will be evaluated individually and scored by an evaluation panel according to the evaluation criteria mentioned below:			
	Functionality Evaluation Criteria	Sub Criteria	Points Allocation for Sub Criteria	Maximum Points obtainable per main functionality Criteria
	Company Experience (Demonstrated company experience on similar projects and past performance NB: Attach, appointment letters, completion certificates and reference letters with contactable references must be attached	Appointment letter indicating the project value and Completion Certificates of completed projects: <ul style="list-style-type: none"> Roads and Stormwater Construction completed within the municipality environment or RAL or SANRAL. Completed works with Minimum CIDB grading of 7CE or higher. Completed in the past 10 years. 5 points will be awarded for each project (minimum of 3 Projects required) as per requirements above to a maximum of 15 points. NOTE:	15	40

Subclause	Data			
		<ul style="list-style-type: none"> Projects that do not meet the requirements as mentioned WILL NOT BE ACCEPTED. <p>Project where the contractor was a sub-contractor will not get any points.</p>		
		<ul style="list-style-type: none"> Landscaping projects Completed works with Minimum CIDB grading of 5SH or higher. Completed in the past 10 years. <p>5 points will be awarded for each project (minimum of 1 Project required) as per requirements above to a maximum of 10 points.</p> <p>NOTE:</p> <ul style="list-style-type: none"> Projects that do not meet the requirements as mentioned WILL NOT BE ACCEPTED. <p>Project where the contractor was a sub-contractor will not get any points.</p>	10	
		<ul style="list-style-type: none"> Electrical Street Light construction completed within the municipality 		

Subclause	Data			
		<p>environment or RAL or SANRAL.</p> <ul style="list-style-type: none"> • Completed works with Minimum CIDB grading of 5EP or higher. • Completed in the past 10 years. <p>5 points will be awarded for each project (minimum of 1 Project required) as per requirements above to a maximum of 10 points.</p> <p>NOTE:</p> <ul style="list-style-type: none"> • Projects that do not meet the requirements as mentioned WILL NOT BE ACCEPTED. <p>Project where the contractor was a sub-contractor will not get any points.</p>	10	
		<p>Reference letter from the clients for each of the above-mentioned projects indicating:</p> <ul style="list-style-type: none"> • The full project description, • Project value; and • Completion date. <p>Each Refence letter must be on the client letterhead, have a client stamp,</p>	05	

Subclause	Data			
		<p>signed and contact details (Name, phone and E-mail) of the project manager included.</p> <p>One (1) points will be awarded for each project as per requirements above to a maximum of 5 points.</p>		
	<p>Key Personnel CV's (Demonstrated experience, Qualifications and experience)</p>	<p>A. Contract Manager with the following Requirements</p> <ul style="list-style-type: none"> • Must be professionally registered with ECSA or SACPCMP (Pr Eng. / Pr Tech Eng.) (4 Points). • Minimum Ten (10) Years of relevant experience – calculated post registration: <ul style="list-style-type: none"> ○ 10 Years = 4points ○ 9 Years = 3 points ○ 8 years = 2.5 points <p>B. Site Agent with the following Requirements:</p> <ul style="list-style-type: none"> • B-Tech: Civil Engineering or BSc Eng. or Higher (4 points). 	<p>08</p> <p>07</p>	<p>25</p>

Subclause	Data																							
		experience (actual duties performed, involvement and responsibility), including locations, dates and durations of assignments, starting with the latest. Full points will be awarded for all the requirements met.																						
	Plant and Equipment Details of major equipment owned (please provide proof of ownership). Valid proof of license disk and registration	Plant and Equipment for this project (Tenderer's own plant) <table><tr><th>Plant required</th><th>Min. Number Required</th><th>Weight</th></tr><tr><td>Dozer</td><td>1</td><td>2</td></tr><tr><td>Excavator</td><td>2</td><td>3</td></tr><tr><td>TLB</td><td>2</td><td>3</td></tr><tr><td>Watercart min.10 000 litres</td><td>2</td><td>2</td></tr><tr><td>Grader</td><td>2</td><td>3</td></tr><tr><td>10t Smoot</td><td>1</td><td>2</td></tr></table>	Plant required	Min. Number Required	Weight	Dozer	1	2	Excavator	2	3	TLB	2	3	Watercart min.10 000 litres	2	2	Grader	2	3	10t Smoot	1	2	25
Plant required	Min. Number Required	Weight																						
Dozer	1	2																						
Excavator	2	3																						
TLB	2	3																						
Watercart min.10 000 litres	2	2																						
Grader	2	3																						
10t Smoot	1	2																						

Subclause	Data					
		h drum roller				
		10t Grid roller	1	2		
		Tipper Truck, min. 6m³	4	8		
		SUB-TOTAL		25		
	Company's Financial Standing	Original stamped bank reference letter indicating the Bank Rating:			10	10
		Bank Rating		Points		
		A		10		
		B		8		
		C		6		
		D		4		
		E		2		
		F-G		0		
	Total					100
	Total					100

Subclause	Data												
	<p>Second Stage (Part 1) Evaluation: Price (P_s)</p> <p>The following must be completed in full</p> <ul style="list-style-type: none"> * The pricing schedule * The form of offer. No alterations, subtractions or additions may be made to the items in the pricing schedule. All items must be priced or calculated. <p>A total of 80 points will be awarded to the tender with the lowest balanced price. The other tenders will be awarded points based on the ratio of the price under consideration to the lowest price.</p> $P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$ <p>where</p> <p>P_s = Points scored for comparative price of bid under consideration</p> <p>P_t = Comparative price of bid under consideration</p> <p>P_{\min} = Comparative price of lowest acceptable bid</p> <p>Second Stage (Part 2) Preferential points (P_h)</p> <p>A maximum of 20 points may be awarded to a tenderer for preferential points for the specific goal specified for the tender in the following manner:</p> <table border="1"> <thead> <tr> <th>Specific Goals Categories</th><th>Number of Points (80/10 system)</th></tr> <tr> <th></th><th>20 Points breakdown</th></tr> </thead> <tbody> <tr> <td>1. 100% Black Ownership</td><td>10</td></tr> <tr> <td>2. 100% Woman Ownership</td><td>5</td></tr> <tr> <td>3. Youth Ownership</td><td>3</td></tr> <tr> <td>4. Disability Ownership</td><td>2</td></tr> </tbody> </table> <p>a. 10 Points will be awarded to a company that is 100% owned by black people (CSD report of the bidder will be used to verify the race of the bidder)</p> <p>b. 05 points will be awarded to a company that is 100% owned by women (a copy of the ID of the directors OR CSD report of the bidder will be used to verify the gender of the bidder)</p>	Specific Goals Categories	Number of Points (80/10 system)		20 Points breakdown	1. 100% Black Ownership	10	2. 100% Woman Ownership	5	3. Youth Ownership	3	4. Disability Ownership	2
Specific Goals Categories	Number of Points (80/10 system)												
	20 Points breakdown												
1. 100% Black Ownership	10												
2. 100% Woman Ownership	5												
3. Youth Ownership	3												
4. Disability Ownership	2												

Subclause	Data
	<p>c. 03 Points will be awarded to a company that is owned 100% by the youth (a copy of the ID's of director(s) or CSD report of the bidder will be used to verify the age of the director (s)</p> <p>d. 02 Points will be awarded to a company that is owned by person/persons with disability (Medical certificate will be used to verify the disability status of the bidder)</p> <p>Final Stage in Evaluation: Calculation of Final Total Points</p> <p>The final score or final total points for each tender will be calculated by adding the scores from the; calculations.</p> $P = P_s + P_h$
F3.13.1	<p>Tender offers will only be accepted on condition that:</p> <p>a) Tender documents have not been disassembled and they are not copies of the original document.(refer to Clause F3.11 (1a))</p> <p>b) The tenders have met all Tender conditions and administrative responsiveness requirements. (refer Clause F3.11 2(b).)</p> <p>c) Tenderer has obtained at least seventy (70) points for Functionality.(refer to Clause F3.11. 2(c))</p>
F.3.18	The number of paper copies of signed contract to be provided by the Engineer is the original contract plus three signed copies.

The following is a statement of Roads and Stormwater (similar) works executed by the company/ies in the last ten (10) years:

Employer Name, Contact person and telephone number	Description of contract	Value of work inclusive of VAT (Rand) if applicable	Start Date	Date Completed	Project Duration

The following is a statement of Electrical (similar) works executed by the company/ies in the last ten (10) years

Employer Name, Contact person and telephone number	Description of contract	Value of work inclusive of VAT (Rand) if applicable	Start Date	Date Completed	Project Duration

The following is a statement of Landscaping (similar) works executed by the company/ies in the last ten (10) years

Employer Name, Contact person and telephone number	Description of contract	Value of work inclusive of VAT (Rand) if applicable	Start Date	Date Completed	Project Duration

PART T2: LIST OF RETURNABLE DOCUMENTS

The tenderer must complete the following returnable documents:

T2.1	LIST OF RETURNABLE SCHEDULES.....	T.25
T2.2	OTHER DOCUMENTS REQUIRED FOR TENDER EVALUATION.....	T.50
T2.3	RETURNABLE SCHEDULES THAT WILL BE INCORPORATED INTO THE CONTRACT	T.71

T2.1 LIST OF RETURNABLE SCHEDULES

T2.1 A	CERTIFICATE OF AUTHORITY	T.26
T2.1 B	CERTIFICATE OF ATTENDANCE AT CLARIFICATION MEETING	T.29
	(ONLY APPLICABLE IF A COMPULSORY SITE INSPECTION WAS CONDUCTED).....	T.29
T2.1 C	SCHEDULE OF PROPOSED SUBCONTRACTORS (EXCL EME'S/QSE'S (30%)).....	T.30
T2.1 D	SCHEDULE OF PLANT AND EQUIPMENT	T.31
T2.1 E	SCHEDULE OF THE TENDERER'S EXPERIENCE.....	T.32
T2.1 F	RECORD OF ADDENDA TO TENDER DOCUMENTS	T.33
T2.1 G	DEVIATIONS OR QUALIFICATIONS BY THE TENDERER.....	T.34
T2.1 H	CONTRACTOR'S ESTABLISHMENT ON SITE.....	T.35
T2.1 I	CERTIFICATE OF NON-COLLUSIVE TENDER.....	T.36
T2.1 J	COMPLIANCE WITH OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 AND CONSTRUCTION REGULATIONS, 2003.....	T.38
T2.1 K	REQUIREMENTS IN TERMS OF GOVERNMENT'S RECONSTRUCTION AND DEVELOPMENT PROGRAMME	T.38

NB. Additional documentation including supporting documents and certificates shall be submitted in a separate, properly bound, document.

T2.1 A CERTIFICATE OF AUTHORITY

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for the relevant category.

A Company	B Partnership	C Joint Venture	D Sole Proprietor	E Close Corporation

A. Certificate for company

I,....., chairperson of the board of directors of hereby confirm that by resolution of the board (copy attached) taken on20...., Mr/Ms.....acting in the capacity of.....,was authorised to sign all documents in connection with this tender and any contract resulting from it on behalf of the company.

As witness

1.....
Chairman
2.....
Date

B. Certificate of partnership

We, the undersigned, being the key partners in the business trading as

hereby authorise Mr/Ms....., acting in the capacity of.....to sign all documents in connection with the tender for Contract.....and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

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

C. Certificate for Joint Venture

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms....., authorised signatory of the company

acting in the capacity of lead partner, to sign all documents in connection with the tender offer for Contract.....and any other contract resulting from it on our behalf.

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

NAME OF FIRM	ADDRESS	AUTHORISING SIGNATURE, NAME & CAPACITY
Lead partner		

D. Certificate for sole proprietor

I,, hereby confirm that I am the sole owner of the business trading as.....

As Witness:

1.....

.....
Signature: Sole owner

2.....

.....
Date

E. Certificate for Close Corporation

We, the undersigned, being the key members in the business trading as.....hereby authorise Mr/Mrs.....

Acting in the capacity of....., to sign all documents in connection with the tender for Contract.....and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

NOTE: This certificate is to be completed and signed by all the key members upon whom rests the direction of the affairs of the Close Corporation as a whole

T2.1 B CERTIFICATE OF ATTENDANCE AT CLARIFICATION MEETING

(ONLY APPLICABLE IF A COMPULSORY SITE INSPECTION WAS CONDUCTED)

This is to certify that

.....(Tenderer)

of

.....(address)

.....
was represented by the person(s) named below at the compulsory meeting held for all tenderers at
.....(location) on.....(date), starting at.....

We acknowledge that the purpose of the site inspection was to acquaint ourselves with the site of the works and / or matters incidental to doing the work specified in the tender documents in order for us to take account of everything necessary when compiling our rates and prices included in the tender. We further acknowledge that we have acquired all relevant information required.

Particulars of person(s) attending the meeting:

Name Signature.....

Capacity.....

Name..... Signature.....

Capacity.....

Attendance of the above persons at the meeting is confirmed by the employer's representative/
engineer, namely:

Name..... Signature.....

Capacity..... Date & Time.....

T2.1 C SCHEDULE OF PROPOSED SUBCONTRACTORS (EXCL EME'S/QSE'S (30%))

NOTE: This table is **NOT TO BE USED** to capture EMEs/QSEs Subcontractors/Suppliers contributing towards the EMEs/QSEs project goal

EMES/QSES TO BE USED AS SUB-CONTRACTORS / SUPPLIERS MUST BE CAPTURED UNDER FORM: RDP 2 (E) EMPLOYMENT OF EMES/QSES

We notify you that it is our intention to employ the following subcontractors for work in this contract.

If we are awarded a contract we agree that this notification does not change the requirement for us to submit the name of proposed subcontractors in accordance with requirements in the contract for such appointments.

	Name and address of proposed Subcontractor	Company Registration Number & CIDB Classification	Description of Work to be executed by Subcontractor
1.			
2.			
3.			
4.			
5.			

Signed.....

Date.....

Name.....

Position.....

Tenderer.....

T2.1 D SCHEDULE OF PLANT AND EQUIPMENT

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

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

Quantity	Description, size, capacity, etc.

Attach additional pages if more space is required.

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

Quantity	Description, size, capacity, etc.

Hired plant will be allocated 50% of the maximum points

Attach additional pages if more space is required

Signed..... Date.....

Name..... Position.....

Tenderer.....

T2.1 E SCHEDULE OF THE TENDERER'S EXPERIENCE

The following is a statement of similar work successfully executed by myself/ourselves in the last ten years:

Employer, contact person and telephone number	Description of contract	Value of work Inclusive of VAT (Rand)	CIDB Classification	Date Completed

NB.: Completion certificates, and appointment letters, to be attached for points to be scored.

Signed..... Date

Name..... Position.....

Tenderer.....

T2.1 F RECORD OF ADDENDA TO TENDER DOCUMENTS

We 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. *The onus lies with the tenderer to check if any addenda were issued before the closing date of the tender.*

	Date	Title of Details
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Attach additional pages if more space is required.

Signed..... Date

Name..... Position.....

Tenderer.....

T2.1 G DEVIATIONS OR QUALIFICATIONS BY THE TENDERER

Note: Tenderers will be declared to be non-responsive should any proposed deviation or qualification, in the employer's opinion:

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

PAGE	DESCRIPTION

SIGNED ON BEHALF OF TENDERER:

.....

T2.1 H CONTRACTOR’S ESTABLISHMENT ON SITE

The combined extended total tendered for Item 13.01 for the contractor’s General obligations;
i.e.

- (a) Fixed obligations
- (b) Value-related obligations
- (c) Time-related obligations

shall not exceed a maximum of **15 %** of the tender sum (excluding VAT).

Total tendered for Item B13.01 expressed as a percentage of the tender sum (excluding VAT):
.....% (insert percentage).

SIGNED ON BEHALF OF TENDERER

T2.1 I CERTIFICATE OF NON-COLLUSIVE TENDER

1 IN THE CASE OF A SINGLE CONSTRUCTION CONCERN:

I/We certify that this is a bona fide tender.

I/We also certify that I/We have not done and I/We undertake not to do any of the following at any time before the hour and date specified for the closure of submission of tenders for this contract.

- a) Fix or adjust the amount of this tender by or under or in accordance with any agreement or arrangement with any other person;
- b) communicate to a person other than the person calling for these tenders the amount or approximate amount of the proposed tender, except when the confidential disclosure of the approximate amount of the tender is necessary to obtain the insurance-premium quotations required for preparation of the tender;
- c) cause or induce any other person to communicate to me/us the amount or approximate amount of any rival tender for this contract;
- d) enter into any agreement or arrangement with any other person to induce him to refrain from tendering for this contract, or to influence the amount of any tender or the conditions of any tender to be submitted, nor cause or induce any other person to enter into any such agreement or arrangement;
- e) offer or pay or give or agree to pay or to give any sum of money or valuable consideration directly or indirectly to any person for doing or having done or causing or having caused to be done in relation to any tender or proposed tender for this contract, any action similar to those described above.

In this certificate the term "person" includes juristic or natural Thulamela Municipality persons , body of persons or association, whether corporate or not, and the term "agreement or arrangement" includes any agreement or arrangement, whether formal or informal and whether legally binding or not.

SIGNED ON BEHALF OF TENDERER:

I: CERTIFICATE OF NON-COLLUSIVE TENDER (continued)

2 IN THE CASE OF A CONSORTIUM OF CONSTRUCTION CONCERNS:

We certify that this is a bona fide tender.

We also certify that we have not done and we undertake not to do any of the following at any time before the hour and date specified for the closure of submission of tenders for this contract:

- a) Fix or adjust the amount of this tender by or under or in accordance with any agreement or arrangement with any person outside this consortium;
- b) communicate to a person outside this consortium other than the person calling for these tenders, the amount or approximate amount of the proposed tender, except when the confidential disclosure of the approximate amount of the tender is necessary to obtain insurance premium quotations required for preparation of the tender;
- c) cause or induce any person outside this consortium to communicate to us the amount or approximate amount of any rival tender for this contract.
- d) enter into any agreement or arrangement with any person outside this consortium to induce him to refrain from tendering for this contract, or to influence the amount of any tender or the conditions of any tender to be submitted, nor cause or induce any person outside this consortium to enter into any such agreement or arrangement;
- e) offer or pay or give or agree to give any sum of money or valuable consideration directly or indirectly to any person outside this consortium for doing or having done or causing or having caused to be done in relation to any tender or proposed tender for this contract, any action similar to those described above.

In this certificate the term "person" includes juristic or natural Thulamela Municipality persons , body of persons or association, whether corporate or not, the term "agreement or arrangement" includes any agreement or arrangement, whether formal or informal and whether legally binding or not, and the term "person outside this consortium" means, when the consortium is a partnership, a person other than a partner or an employee of a partner or the partnership, or when the consortium is a company, a person other than a person or company holdings shares in the consortium, or any employee of such a person, company or the consortium.

SIGNED ON BEHALF OF TENDERER:

**T2.1 J COMPLIANCE WITH OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 AND
CONSTRUCTION REGULATIONS, 2003**

The tenderer shall attach evidence that he is registered and in good standing with a compensation insurer who is approved by Department of Labour in terms of section 80 of the Compensation for Injury and Disease Act (COID)(Act 130 of 1993).

The tenderer is required to disclose, by also attaching documentary evidence, all inspections, investigations and their outcomes conducted by the Department of Labour into the conduct of the tenderer at any time during the 36 months preceding the date of this tender.

Attach a valid letter of good standing from the Compensation Commissioner or FEMA

SIGNED ON BEHALF OF THE TENDERER:

Note to tenderer:

Discovery that the tenderer has failed to make proper disclosure may result in THULAMELA MUNICIPALITY terminating a contract that flows from this tender on the ground that it has been rendered invalid by the tenderer's misrepresentation.

**T2.1 K REQUIREMENTS IN TERMS OF GOVERNMENT'S RECONSTRUCTION AND
DEVELOPMENT PROGRAMME**

K1 General

The employer requires the active participation of the contractor in this aspect of the contract.

Forms RDP 1 (E) to RDP 4 (E) applies to this section and must be completed and submitted with the tender.

The tenderer's submissions under this item will be taken into consideration when evaluating tenders received.

K2 Definitions

K2.1 Contract Participation Goal (CPG)

The value of goods, services and works, including VAT, for which the contractor proposes to engage labour

K2.2 Labour Maximisation

It is a requirement of this contract that participation in the contract must be granted to labour in order to maximize job creation as well as to maximize expenditure towards the unemployed.

The specified target value for labour expenditure is **10%** of the contract value. At least 60% of this labour content shall be from the LOCAL COMMUNITY where Local Community means those in the immediate vicinity of the project. The contractor's own skilled personnel will not be counted towards the said 60%. Labour is defined as hourly paid personnel including the CLO.

It is a requirement that the Contractor plan for achieving these targets and that a planned programme for achieving each of the targets is submitted at the start of the project together with the clause 12 programme of construction.

Penalties: The penalties for not reaching the required labour target values will be calculated at **300%** of the difference between the set target values and the actual target values achieved by the contractor at completion of the works. Penalties will be applied monthly, when the actual figures are less than **75%** of the planned accumulative monthly figures. No bonuses for achieving the set target values are applicable. In the event that penalties are reversed, no interest will be claimable on the value of the penalty.

K3 Contract Participation Performance (CPP)

K3.1 The Contractor's Participation Performance will be measured monthly in order to monitor the extent to which he is striving to reach the Contract Participation Goal (CPG) he proposed in his tender. Failure to reach the CPG will make the Contractor liable for penalties as described above.

K3.2 Monitoring of CPG

Regular returns will be required from the contractor, to be submitted with each payment certificate. The format should be confirmed with the Social Division of THULAMELA MUNICIPALITY at the time of site handover.

K4 Training

Provision is made in the SCHEDULE OF QUANTITIES for structured training to be provided by the contractor.

RDP1(E) SCHEDULE OF LOCAL LABOUR CONTENT

The Tenderer must complete the table below to reflect the labour force anticipated to be employed on this contract, including labour employed by sub-contractors.

The specified target value is **10%**.

Note: At least 60% of this labour content shall be from the LOCAL COMMUNITY where Local Community means firstly those who reside in Thohoyandou Block BA and secondly those who reside in the municipal ward where Thohoyandou Block BA falls under. The contractor's own skilled personnel will not be counted towards the said 60%.

Type of Labour	Man-hours	Minimum Wage Rate per Unit	Total Wage Cost (Excl VAT)
Temporary Labour (skilled and unskilled)		R200/day	
TOTAL COST			
PERCENTAGE			

Notes to Tenderer:

- (1) Labour is defined as hourly paid personnel including the CLO.
- (2) The penalty for non-compliance during the contract or for fraudulent disclosure is discussed in Section C3.3.3.4.8

SIGNED ON BEHALF OF THE TENDERER:

T2.1: L PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

1.1 Preferential Procurement Regulation, 2022

All municipal procurements shall be done in line with Preferential Procurement Regulation 2022 which came into effect on **16 January 2023**.

1.2 BID SPECIFICATION COMMITTEE

27(2)(F) must indicate each specific goal for which points may be awarded in terms of the points system set out in the Preferential Procurement Regulations 2022; and

27 (2) (h) must indicate each specific goals for which the points may be awarded in terms of preference points and preferential procurement policy 2022

51 CALCULATION OF POINTS FOR SPECIFIC GOALS

Points for specific goals must be awarded to a bidder in accordance with the table below and extensive explanation and proof to support claims for has been narrated under the table

MBD 6

2. GENERAL CONDITIONS

2.1 Quotations and formal written price quotations

18(e) offers below R30 000 (Vat included) except petty cash must be awarded based on the compliance with 80/20 preference points scoring system

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

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

2.3 The value of this bid is estimated to be below R50 000 000 (all applicable taxes included) and therefore the 80/20 system shall be applicable.

2.4 Preference points for this bid shall be awarded for:

(a) Price; and

(b) Points for specific goals must be awarded to a bidder in accordance with the table below and extensive explanation and proof to support claims for has been narrated under the table:

Specific Goals Categories	Number of Points (90/10 system)	Number of Points (80/10 system)
	10 Points breakdown	20 Points breakdown
5. 100% Black Ownership	4	10
6. 100% Woman Ownership	3	5
7. Youth Ownership	2	3
8. Disability Ownership	1	2

1. A maximum of 20 points may be awarded to a tenderer for the specific goal specified for the tender in the following manner:
 - a. 10 Points will be awarded to a company that is 100% owned by black people (CSD report of the bidder will be used to verify the race of the bidder)
 - b. 05 points will be awarded to a company that is 100% owned by women (a copy of the ID of the directors OR CSD report of the bidder will be used to verify the gender of the bidder)
 - c. 03 Points will be awarded to a company that is owned 100% by the youth (a copy of the ID's of director(s) or CSD report of the bidder will be used to verify the age of the director (s))
 - d. 02 Points will be awarded to a company that is owned by person/persons with disability (Medical certificate will be used to verify the disability status of the bidder)
2. A maximum of 10 points may be awarded to a tenderer for the specific goal specified for the tender in the following manner:
 - a. 4 Points will be awarded to a company that is 100% owned by black people (CSD report of the bidder will be used to verify the race of the bidder)
 - b. 03 points will be awarded to a company that is 100% owned by women (a copy of the ID of the directors OR CSD report of the bidder will be used to verify the gender of the bidder)
 - c. 02 Points will be awarded to a company that is owned 100% by the youth (a copy of the ID's of director(s) or CSD report of the bidder will be used to verify the age of the director (s))
 - d. 01 Points will be awarded to a company that is owned by

person/persons with disability (Medical certificate will be used to verify the disability status of the bidder)

2.5 Instances where the bidder who score the highest points will not be recommended for appointment.

The municipality shall apply these principles on competitive bids to be evaluated based on both 80/20 & 90/10 points scoring principle only.

2.6 Confirmation of bidding process for all bids in excess of R10 Million (all taxes applicable included)

In line with MFMA circular no 62, during the competitive bidding and adjudication process or before the award of a contract, accounting officer may, at his or her discretion, specifically request internal Audit function to carry out audit procedures and provide opinion on compliance of the bidding process with Municipal Supply Chain Management Regulations, Municipal Supply Chain Management, Preferential Procurement Regulation 2022 and all other applicable SCM legislations and MFMA circulars.

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

	POINTS
1.3.1.1 PRICE	80 Points
1.3.1.2 PREFERENCE POINT SYSTEM	20 Points

Total points for Price and Preference Points must not exceed : 100 Points

1.4 Failure on the part of a bidder to fill in and/or to sign this form and submit supporting documents for preference points claimed will be interpreted to mean that preference points are not claimed.

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

2. DEFINITIONS

2.1 **“all applicable taxes”** includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;

2.2 **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;

2.3 **“comparative price”** means the price after the factors of a non-firm price and all

unconditional discounts that can be utilized have been taken into consideration;

- 2.7 **“consortium or joint venture”** 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;
- 2.8 **“contract”** means the agreement that results from the acceptance of a bid by an organ of state;
- 2.9 **“EME”** means any enterprise with an annual total revenue of R5 million or less.
- 2.10 **“Firm price”** means the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax, which, in terms of the law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract;
- 2.11 **“functionality”** means the measurement according to predetermined norms, as set out in the bid documents, of a service or commodity that is designed to be practical and useful, working or operating, taking into account, among other factors, the quality, reliability, viability and durability of a service and the technical capacity and ability of a bidder;
- 2.12 **“non-firm prices”** means all prices other than “firm” prices;
- 2.13 **“person”** includes a juristic person;
- 2.14 **“rand value”** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties;
- 2.15 **“sub-contract”** means the primary contractor’s assigning, leasing, making out work to, or employing, another person to support such primary contractor in the execution of part of a project in terms of the contract;
- 2.16 **“total revenue”** bears the same meaning assigned to this expression in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act and promulgated in the *Government Gazette* on 9 February 2007;
- 2.17 **“trust”** means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person; and
- 2.18 **“trustee”** means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

3. ADJUDICATION USING A POINT SYSTEM

- 3.1 The bidder obtaining the highest number of total points will be awarded the contract.
- 3.2 Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts;.
- 3.3 Points scored must be rounded off to the nearest 2 decimal places.
- 3.4 In the event that two or more bids have scored equal total points, the successful bid must be the one scoring the highest number of preference points
- 3.5 However, when functionality is part of the evaluation process and two or more bids have scored equal points including equal preference points, the successful bid must be the one scoring the highest score for functionality.
- 3.6 Should two or more bids be equal in all respects, the award shall be decided by the drawing of lots.

4. POINTS AWARDED FOR PRICE

4.1 THE 80/20 PREFERENCE POINT SYSTEM FOR ACQUISITION OF GOODS OR SERVICES WITH RAND VALUE EQUAL TO OR BELOW R50 MILLION

The following formula must be used to calculate the points out of 80 for price in respect of an invitation for a tender with a Rand value equal to or below R50 Million inclusive of all applicable taxes:

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

Where

- P_s = Points scored for comparative price of bid under consideration
 P_t = Comparative price of bid under consideration
 P_{\min} = Price of lowest acceptable tender

2. A maximum of 20 preference points may be awarded to a tenderer for the specific goal specified for the tender in the following manner:

- a. 10 Points will be awarded to a company that is 100% owned by black people (CSD report of the bidder will be used to verify the race of the bidder)
- b. 05 points will be awarded to a company that is 100% owned by women (a copy of the ID of the directors OR CSD report of the bidder will be used to verify the gender of the bidder)
- c. 03 Points will be awarded to a company that is owned 100%

by the youth (a copy of the ID's of director(s) or CSD report of the bidder will be used to verify the age of the director (s)

- d. 02 Points will be awarded to a company that is owned by person/persons with disability (Medical certificate will be used to verify the disability status of the bidder)
- e. The points scored for the specific goal must be added to the points scored for price and the total must be rounded off to the nearest two decimal places

4.2 THE 90/10 PREFERENCE POINT SYSTEM FOR ACQUISITION OF GOODS OR SERVICES WITH RAND VALUE ABOVE R50 MILLION

The following formula must be used to calculate the points out of 80 for price in respect of an invitation for a tender with a Rand value equal to or below R50 Million inclusive of all applicable taxes:

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

Where

- P_s = Points scored for comparative price of bid under consideration
- P_t = Comparative price of bid under consideration
- P_{\min} = Price of lowest acceptable tender

- 1. A maximum of 10 points may be awarded to a tenderer for the specific goal specified for the tender in the following manner:
 - a. 04 Points will be awarded to a company that is 100% owned by black people (CSD report of the bidder will be used to verify the race of the bidder)
 - b. 03 points will be awarded to a company that is 100% owned by women (a copy of the ID of the directors OR CSD report of the bidder will be used to verify the gender of the bidder)
 - c. 02 Points will be awarded to a company that is owned 100% by the youth (a copy of the ID's of director(s) or CSD report of the bidder will be used to verify the age of the director (s)
 - d. 01 Points will be awarded to a company that is owned by person/persons with disability (Medical certificate will be used to verify the disability status of the bidder)
 - e. The points scored for the specific goal must be added to the points scored for price and the total must be rounded off to the nearest two decimal places

4.3 REMEDIES

If an organ of state is of the view that a tenderer submitted false information regarding a specific goal it must:

- a) Inform the tenderer accordingly: and
- b) Give the tenderer an opportunity to make representations within 14 days as to why the tenderer may not be disqualified or, if the tender has already been awarded to the tenderer, the contract should not be terminated in whole or in part

After considering the representations referred to above the organ of state may, if it concludes that such information is false:

- c) Disqualify the tenderer or terminate the contract in whole or in part: and
- d) If applicable, claim damages from the tenderer

9 DECLARATION WITH REGARD TO COMPANY/FIRM

9.1 Name of company/firm :

9.2 VAT registration number :

9.3 Company registration number :

9.4 TYPE OF COMPANY/ FIRM

☐ Partnership/Joint Venture / Consortium

☐ One person business/sole propriety

☐ Close corporation

☐ Company

☐ (Pty) Limited

[TICK APPLICABLE BOX]

9.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

.....

.....

.....

.....

9.6 COMPANY CLASSIFICATION

- ☐ Manufacturer
- ☐ Supplier
- ☐ Professional service provider
- ☐ Other service providers, e.g. transporter, etc.

[TICK APPLICABLE BOX]

9.7 Total number of years the company/firm has been in business?

9.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraph 7 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- (i) The information furnished is true and correct;
- (ii) The preference points claimed are in accordance with the General conditions as indicated in paragraph 1 of this form.
- (iii) In the event of a contract being awarded as a result of points claimed, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- (iv) If the PREFERENTIAL POINTS claimed on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) restrict the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, from obtaining business from any organ of state for a period not exceeding 10 years, after the audi alteram partem (hear the other side) rule has been applied; and
 - (e) forward the matter for criminal prosecution

WITNESSES:

1.

SIGNATURE(S) OF BIDDER(S)

3.

DATE:.....

ADDRESS:.....

.....

T2.2 OTHER DOCUMENTS REQUIRED FOR TENDER EVALUATION

T2.2 ADECLARATION OF GOOD STANDING REGARDING TAX..... **T51**

T2.2 B FINANCIAL DETAILS, STATEMENTS AND BANK REFERENCES.....**T52**

T2.2 C CONSTRUCTION INDUSTRIES DEVELOPMENT BOARD REGISTRATION....T53

T2.2 a DECLARATION OF GOOD STANDING REGARDING TAX

MBD 2

TAX CLEARANCE CERTIFICATE REQUIREMENTS

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

- 1 In order to meet this requirement bidders are required to complete in full the attached form TCC 001 "Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally. The Tax Clearance Certificate Requirements are also applicable to foreign bidders / individuals who wish to submit bids.
- 2 SARS will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.
- 3 The original Tax Clearance Certificate must be submitted together with the bid. Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be acceptable.
- 4 In bids where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate.
- 5 Copies of the TCC 001 "Application for a Tax Clearance Certificate" form are available from any SARS branch office nationally or on the website www.sars.gov.za.
- 6 Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

The following shall apply in terms of MFMA Circular No 90:

Where the recommended bidder is not tax compliant, the bidder should be notified of their non-compliant status and the bidder must be requested to submit to the municipality or municipal entity, within 7 working days, written proof from SARS of their tax compliance status or proof from SARS that they have made an arrangement to meet their outstanding tax obligations.

T2.2 B FINANCIAL DETAILS, STATEMENTS AND BANK REFERENCES

1. FINANCIAL STATEMENTS

I/We agree, to furnish a copy of the latest **3** years audited set of financial statement together with my/our Director's and Auditor's report for consideration by the THULAMELA MUNICIPALITY with this tender.

**2. DETAILS OF TENDERER'S BANK ACCOUNT
MUST BE COMPLETED BY TENDERER'S BANK**

- a) Account Holder Name:
- b) Name of Bank:.....
- c) Branch of Bank.....
- d) Town/city/suburb where bank is situated.....
- e) Contact Person at the Bank:
- f) Telephone number of Bank: Code: Number:
- g) Account Number:
- h) Bank rating:.....

SIGNED ON BEHALF OF THE BANK

NAME OF BANK OFFICIAL:.....

DESIGNATION:.....

SIGNATURE:.....

DATE:.....



BANK STAMP

- 3.** I/We hereby authorise the Employer to approach the above Bank for confirmation.

SIGNED ON BEHALF OF THE TENDERER:.....

DATE:.....

T2.2 C CONSTRUCTION INDUSTRIES DEVELOPMENT BOARD REGISTRATION

The tenderer is to attach either:

- Written proof of his registration with the CIDB with the relevant grade as indicated/specified in the tender document

Or

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

Note:

1. Failure to attach such documentation as prescribed to this page shall result in this tender not being further considered for the award of the contract.
2. Should this tender be considered for award of the contract, based on proof of submission of application for registration in the appropriate category with the CIDB, and should proof of such subsequent registration not be forthcoming to the employer by the time of award of the contract, then this tender will no longer be considered for the award of the contract.

T2.2 D COMPULSORY ENTERPRISE QUESTIONNAIRE

THE FOLLOWING PARTICULARS MUST BE FURNISHED IN THE CASE OF A JOINT VENTURE, SEPARATE ENTERPRISE QUESTIONNAIRES IN RESPECT OF EACH PARTNER MUST BE COMPLETED AND SUBMITTED OTHERWISE THE TENDER WILL BE DECLARED NON-RESPONSIVE

Section 1: Name of enterprise:
.....

Section 2: VAT registration number, if any:
.....

Section 3: CIDB registration number, if any:

Section 4: Particulars of sole proprietors and partners in partnerships

Name*	Identity Number *	Personal income tax number*

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

Section 5: Particulars of companies and close corporations

Company registration number

Close corporation number

Tax reference number

Section 6: Record in the service of the state

Indicate by marking the relevant boxes with a cross, if any sole proprietor, partner in a partnership or director, manager, principal shareholder or stake holder in a company or close corporation is currently or has been within the last 12 months in the service of any of the following:

- | | |
|--|---|
| <input type="checkbox"/> a member of any municipal council | <input type="checkbox"/> An employee of any provincial department |
| <input type="checkbox"/> A member of any provincial legislature | <input type="checkbox"/> national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999) |
| <input type="checkbox"/> A member of the National Assembly or the National Council of Province | <input type="checkbox"/> A member of an accounting authority of a national or provincial public entity |
| <input type="checkbox"/> A member of the board of directors of any municipal entity | <input type="checkbox"/> An employee of Parliament or a provincial legislature |
| <input type="checkbox"/> An official of any municipal or municipal entity | |

If any of the above boxes are marked, disclose the following:

Name of sole proprietor, partner, director, manager, principal shareholder or stakeholder	Name of institution, public office, board or organ of state and position held	Status of service (tick appropriate column)	
		Current	Within last 12 months

* Insert separate page if necessary

Section 7: Record of spouses, children and parents in the service of the state

Indicate by marking the relevant boxes with a cross, if any spouse, child or parent of a sole proprietor, partner in a partnership or director, manager, principal shareholder or stake holder in a company or close corporation is currently or has been within the last 12 months in the service of any of the following:

- | | |
|--|---|
| <input type="checkbox"/> a member of any municipal council | <input type="checkbox"/> an employee of any provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999) |
| <input type="checkbox"/> a member of any provincial legislature | <input type="checkbox"/> a member of an accounting authority of a national or provincial public entity |
| <input type="checkbox"/> a member of the National Assembly or the National Council of Province | <input type="checkbox"/> an employee of Parliament or a provincial legislature |
| <input type="checkbox"/> a member of the board of directors of any municipal entity | |
| <input type="checkbox"/> an official of any municipal or municipal entity | |

Name of spouse, child or parent	Name of institution, public office, board or organ of state and position held	Status of service (tick appropriate column)	
		Current	Within last 12 months

* Insert separate page if necessary

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

- i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my/our tax matters are 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
- v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed Date

Name Position

Enterprise name

DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state*.
2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest.

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

3.1 Full Name:

3.2 Identity Number:

3.3 Company Registration Number:

3.4 Tax Reference Number:

3.5 VAT Registration Number:

3.6 Are you presently in the service of the state* YES / NO

3.6.1 If so, furnish particulars.

.....

.....

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

3.7.1 If so, furnish particulars.

.....

.....

* MSCM Regulations: "in the service of the state" means to be –

(a) a member of –

- (i) any municipal council;
- (ii) any provincial legislature; or
- (iii) the national Assembly or the national Council of provinces;

(b) a member of the board of directors of any municipal entity;

(c) an official of any municipality or municipal entity;

(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);

(e) a member of the accounting authority of any national or provincial public entity; or

(f) an employee of Parliament or a provincial legislature.

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

3.8.1 If so, furnish particulars.

.....
.....

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

3.9.1 If so, furnish particulars

.....
.....

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

3.10.1 If so, furnish particulars.

.....
.....

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

3.11.1 If so, furnish particulars.

.....
.....

CERTIFICATION

I, THE UNDERSIGNED (NAME)

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.

I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

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

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

1 Are you by law required to prepare annual financial statements for auditing?

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

***YES / NO**

.....
.....

2 Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?

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

2.2 If yes, provide particulars.

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

* Delete if not applicable

***YES / NO**

3 Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of

such contract?

3.1 If yes, furnish particulars

.....
.....

***YES / NO**

4. Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?

***YES / NO**

4.1 If yes, furnish particulars

.....
.....

CERTIFICATION

I, THE UNDERSIGNED (NAME)

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.

I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

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:

$$Ps = 80 \left(1 - \frac{Pt - Pmin}{Pmin} \right) \text{ or } Ps = 90 \left(1 - \frac{Pt - Pmin}{Pmin} \right)$$

Where

Ps Points scored for price of tender under consideration

Pt Price of tender under consideration

Pmin = Price of lowest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

- 4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:
- 4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 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)

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:

.....

.....

.....

T2.2 G DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

MBD 8

(Note that in this document, the words bid and tender, bidder and tenderer, bidder's and tenderer's should be used interchangeably)

1. The bid of any bidder may be rejected if the bidder, or any of its directors have:
 - a. abused the THULAMELA MUNICIPALITY's supply chain management system or committed any improper conduct in relation to such system,
 - b. been convicted for fraud or corruption during the past five years:
 - c. wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (no 12 of 2004).
2. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

Item	Question	Yes	No
2.1	<p>Is the bidder or any of its directors listed on the National Treasury's database as companies or persons prohibited from doing business with the public sector?</p> <p>(Companies or persons who are listed on this database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the <i>audi alteram partem</i> rule was applied).</p> <p>The Database of Restricted Suppliers now resides on the National Treasury's website, www.treasury.gov.za and can be accessed by clicking on its link at the bottom of the home page</p>		
2.1.1	If so, furnish particulars:		
2.2	<p>Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No12 of 2004?)</p> <p>The Register for Tender Defaulters can be accessed on the National Treasury's website, www.treasury.gov.za by clicking on its link at the bottom of the home page</p>	Yes	No

2.2.1	If so, furnish particulars:		
2.3	Was the bidder or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years?	Yes	No
2.3.1	If so, furnish particulars:		
2.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the municipality/municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes	No
2.4.1	If so, furnish particulars:		
2.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes	No
2.5.1	If so, furnish particulars:		

CERTIFICATION

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

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

Signature

Position

Date

Name of Bidder

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

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

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

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

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description)

in response to the invitation for the bid made by:

(Name of Municipality / Municipal Entity)

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

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

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

- (d) the intention or decision to submit or not to submit, a bid;
 - (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
 - (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates
9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

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

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

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

**T2.3 RETURNABLE SCHEDULES THAT WILL BE INCORPORATED INTO
THE CONTRACT**

T2.3 A ORGANOGRAM AND CURRICULUM VITAE OF KEY PERSONNEL T.72

T2.3 B PROJECT PROGRAMME..... T.73

T2.3 C SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE T.74

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T2.3 A ORGANOGRAM AND CURRICULUM VITAE OF KEY PERSONNEL

Tenderer to supply an organogram for the management of the contract and include curricula vitae of key personnel. This curricula vitae shall provide evidence of relevant experience of the key staff in the organogram. The personnel included here shall be used on the project unless otherwise agreed to by the engineer.

T2.3 B PROJECT PROGRAMME

Tenderer to supply project programme, using acceptable software, in sufficient detail to cover the various facets of the work.

SIGNED ON BEHALF OF TENDERER:

Note to Tenderer

If a tenderer wishes to submit an alternative tender then this form, appropriately completed, shall be attached to the bill of quantities for the alternative proposal.

T2.3 C SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE

The tenderer shall state his estimated value of the work to be completed every month, based on his preliminary programme and his tendered unit rates, in the table below. The amounts for contingencies and contract price adjustment shall not be included.

MONTH	VALUE (INCLUDING VAT)	MONTH	VALUE (INCLUDING VAT)
1	R	10	R
2	R	11	R
3	R		
4	R		
5	R		
6	R		
7	R		
8	R		
9	R		
TOTAL: R..... (EXCLUDING CONTINGENCIES AND CONTRACT PRICE ADJUSTMENT (CPA))			

SIGNED ON BEHALF OF TENDERER:

T2.3 D RATES FOR SPECIAL MATERIALS

Only bitumen products will be dealt with as a special material in terms of subclause 6.8.3 of the General conditions of Contract. All bitumen products, as indicated in the contract data must be stated in the list below.

The rates and prices for the special materials shall be furnished by the contractor, which rates and prices shall exclude VAT but shall include all other obligatory taxes and levies.

The Base Month is *February 2023*.

SPECIAL MATERIALS	UNIT *	RATE OR PRICE FOR THE BASE MONTH

* Indicate whether the material will be delivered in bulk or in containers.

When called upon to do so, the contractor shall substantiate the above rates or prices with acceptable documentary evidence from the applicable refinery supplying the bitumen.

SIGNED ON BEHALF OF TENDERER:

THE CONTRACT

PART C1	AGREEMENT AND CONTRACT DATA
PART C2	PRICING DATA
PART C3	SCOPE OF WORKS
PART C4	SITE INFORMATION

PART C1: AGREEMENT AND CONTRACT DATA

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C1.1 FORM OF OFFER AND ACCEPTANCE

Offer

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

CONTRACT No. 37/2020/2021: THE APPOINTMENT OF CONSORTIUM OF CONTRACTORS FOR THE UPGRADE AND CONSTRUCTION OF ROADS, STORMWATER AS WELL AS LANDSCAPING AND STREETLIGHTS IN THE THULAMELA MUNICIPALITY ON AN AS AND WHEN REQUIRED BASIS FROM DATE OF AWARD FOR A PERIOD OF 36 MONTHS

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

By the representative of the tenderer, deemed to be duly authorized, signing this part of the Form of Offer and Acceptance, the tenderer offers to perform all of the obligations and liabilities of the contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

**THE OFFERED TOTAL OF THE PRICE INCLUSIVE OF VALUE ADDED TAX IS
(CONTRACT PRICE)**

.....
.....

Rand (in words); R (in figures)

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

For the Tenderer:

Signature(s)

Name(s)

Capacity

Name and address of organization

.....
.....

Signature and Name of Witness:

Signature.....

Name.....

Date.....

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Acceptance

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

The terms of the contract are contained in:

PART C1 Agreements and contract data, (which includes this agreement)

PART C2 Pricing data

PART C3 Scope of work

PART C4 Site information

PART C5 Annexures

and drawings and documents or parts thereof, which may be incorporated by reference into Parts C1 to C5 above.

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the tender schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule, which must be signed by the authorised representative(s) of both parties.

The tenderer shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

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

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For the Employer

Signature

Name

Capacity

Name and address of organization

.....

.....

.....

Signature and Name of Witness

Signature

Name

Capacity

Schedule of Deviations

Notes:

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

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

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

For the Tenderer:

For the Employer

.....	Signature	.....
.....	Name	.....
.....	Capacity	.....
Name and address of organisation:		Name and address of organisation
.....	
.....	
.....	
.....	Witness Signature	.....
.....	Witness Name	.....
.....	Date	.....

Confirmation of Receipt

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

the (day) of (month) 20..... (year)
at (place)

For the Contractor:

.....
Signature

.....
Name

.....
Capacity

Signature and name of witness:

.....
Signature

.....
Name

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C1.2 AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT 85 of 1993 AND APPOINTMENT AS MINE MANAGER IN TERMS OF SECTION 3(1)(a) OF MINE HEALTH AND SAFETY ACT 29 of 1996.

This AGREEMENT made at on this day of in the year between THE THULAMELA MUNICIPALITY (hereinafter called “the Employer” on the one part, herein represented by in his capacity as and delegate of the Employer and (hereinafter called “the Principal Contractor”) of the other part, herein represented by in his capacity as

WHEREAS the Employer is desirous that certain works be constructed, as stated for in Contract No THULAMELA MUNICIPALITY/.....For (description of contract).....

..... in theDistrict of Limpopo Province and has accepted a tender by the Principal Contractor for the construction, completion and maintenance of such works and whereas the Employer and the Principal Contractor have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Principal Contractor with the provisions of the Occupational Health and Safety Act 1993(Act 85 of 1993 and the Construction Regulation, July 2003):

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. The Principal Contractor shall execute the work in accordance with the contract documents pertaining to this contract.
2. This Agreement shall hold good from its commencement date, which shall be the date of a written notice from the employer or engineer requiring him to commence the execution of the Works, to either:
 - a) the date of the final certificate issued in terms of clause 49 of the General Conditions of Contract for Construction Works 2015 (Second Edition) as issued by the South African Institution of Civil Engineering (hereinafter referred to as “the GCC 2015”), as contained in the contract documents pertaining to this contract, or
 - b) the date of termination of the contract in terms of clause 9.1 9.2 or 9.3 of the GCC 2015.
3. The Principal Contractor declares himself to be conversant with the following:-
 - a) All requirements, regulations and standards of the Occupational Health and Safety Act (Act 85 of 1993), hereinafter referred to as “The Act”, together with its amendments and with special reference to the following Sections of The Act.
 - i. Section 8: General duties of employers to their employees.
 - ii. Section 9: General duties of employers and self-employed persons to persons other than employees

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- iii. Section 37: Acts or omissions by employees or mandatories and
 - iv. Sub-section 37(2) relating to the purpose and meaning of this Agreement.
 - v. Construction Regulations 2003, and other safety regulations, as applicable.
 - b) The procedures and safety rules of the employer as pertaining to the Principal Contractor and to his subcontractors.
- 4. The Principal Contractor is responsible for the compliance with the Act by his sub-contractors, whether or not selected and/or approved by the employer.
- 5. The Principal Contractor warrants that all his and his sub-contractors' employees (permanent and temporary) are covered in terms of the Compensation for Occupational Injuries and Diseases Act 1993 which cover shall remain in force whilst any such employees are present on site. The Principal Contractor shall submit a written report to this effect at each Progress Site Meeting.
- 6. The Principal Contractor undertakes to ensure that he and/or his sub-contractors and/or their respective employees will at all times comply with the following conditions:
 - a) The Principal Contractor shall assume the responsibility in terms of Section 16.1 of the Occupational Health and Safety Act. The Principal contractor shall not delegate any duty in terms of Section 16.2 of this Act without the prior written approval of the Employer. If the Principal contractor obtains such approval and delegates any duty in terms of Section 16.2 a copy of such written delegation shall immediately be forwarded to the Employer.
 - b) All incidents referred to in the Occupational Health and Safety Act shall be reported by the Principal Contractor to the Department of Labour as well as to the Employer. The Employer will further be provided with copies of all written documentation relating to any incident.
 - c) The Employer hereby obtains an interest in the issues of any formal enquiry conducted in terms of Section 32 of the Occupational Health and Safety Act into any incident involving the Principal Contractor and/or his employees and/or his sub-contractors.

Further to the abovementioned, where contracts involve quarries or borrow pits, the following shall be applicable:-

In terms of Section 3(1)(a) of the Mine Health and Safety Act of 1996, The client shall appoint a manager for its mine/s.

You are hereby appointed as the mine manager for
 with effect from
 until further notice.

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In terms of this appointment you are charged with the functions, duties and responsibilities imposed by the aforementioned Act and its regulations. Without derogating from the duties, functions and responsibilities imposed by this legislation, you are to:

- i) Control, manage and direct employees at the Mine (borrow pit or quarry).
- ii) Take all reasonable measures to ensure the health and safety of employees and proper discipline at the Mine.
- iii) Take all reasonable measures to ensure that the provisions of the Mine Health and Safety Act and its regulations (as may be amended from time to time) are implemented and adhered to at the Mine.
- iv) Ensure and maintain a healthy and safe mine environment for all persons.
- v) Ensure an adequate supply of health and safety equipment and facilities.
- vi) Staff the Mine, with due regard to health and safety.
- vii) Provide health and safety training as far as reasonably practicable to all employees.
- viii) Initiate, prepare and implement codes of practice, relating to health and safety.
- ix) Maintain an effective risk identification and management system.
- x) Ensure the effective maintenance of hazard identification and medical monitoring records.
- xi) Prepare and or review the Health and Safety Policy for the Mine.
- xii) Ensure that an annual medical report is compiled at the Mine, and forwarded to the owner or the appointed owner representative of the Mine.
- xiii) Ensure compliance with relevant environmental legislation.
- xiv) Assist with implementation and maintenance of the municipality's SHE Management Standards, the Contractor's Compliance Pack and operational procedures.
- xv) Enhance a culture of high performance in safety and health.

You are to appoint the prescribed persons to assist you in your duties and functions, and you are hereby authorised and obliged to take all reasonable measures to comply with legislative requirements. You are to ensure that an acting mine manager is appointed when you are to be absent, or on leave for a period longer than five (5) days.

Instructions and procedures are from time to time issued by the municipality, and it will be your responsibility to ensure the implementation and adherence to these instructions and procedures at the Mine.

You are further responsible to ensure that relevant environmental legislative requirements are complied with, including the implementation of all internal procedures and systems to ensure compliance with such legislation.

It would be the responsibility of yourself to report any shortcomings, in relation to the implementation of applicable legislation which you are unable to rectify, immediately in writing to the appointed owner representative.

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

**SIGNED FOR ON BEHALF OF THE EMPLOYER/SECTION
APPOINTEE**

.....

WITNESS: 1..... 2.....

NAME

(IN CAPITALS) 1..... 2.....

DATE:

SIGNED FOR AND ON BEHALF OF THE PRINCIPAL CONTRACTOR/MINE MANAGER

.....

WITNESS: 1..... 2.....

NAME

(IN CAPITALS) 1..... 2.....

DATE:

Copy to: The Chief Inspector - Department of Minerals and Energy

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**EXAMPLE FOR USE BY CONTRACTOR WHEN APPOINTING SUB-ORDINATES IN
TERMS OF THE MINE HEALTH AND SAFETY ACT (1996) AS AMENDED.**

(To be printed on Contractors letter head)

**APPOINTMENT IN TERMS OF SUB-ORDINATE MANAGER: REGULATION 2.6.1 IN
FORCE IN TERMS OF SCHEDULE 4 OF THE MINE HEALTH AND SAFETY ACT (ACT NO.
29 OF 1996) AS AMENDED BY THE HEALTH SAFETY AMENDMENT ACT (ACT NO. 72
OF 1997)**

I, in my capacity as, having been
appointed in terms of **Section 3(1)** of the Act (as amended), by the Executive Manager: Roads
Management who is our client, 'THULAMELA MUNICIPALITY' and owner of the Mine(s) to be
worked under the requirements of the above mentioned Acts hereby, in terms of **Regulation
2.6.1** of the Act as amended, appoint as Sub-Ordinate
Manager of the Contractor,

..... of address,
..... and contact number, on contract no.:

**for The Appointment of a Panel of Three Consortiums of Contractors for the
Construction of UIF to Shell garage internal Streets, Stormwater as well as
Landscaping and Streetlights in the Thulamela Municipality on an As and
When required basis from the date of award for a period of 36 Months.**

In accordance with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996),
you are also appointed in terms of Section 7(2) of the Mine Health and Safety Act, 1996 to
perform the following functions, assigned to the Mine Manager in terms of Section 7(1), 10(2)
(b) and (c) and 11 (1) in so far as your area of responsibilities are concerned:-

1. You must identify the hazards, assess the risk and record the hazards to health
and safety to which employees may be exposed while they are at work, and
2. To the extent that is reasonable, you must ensure that every employee is properly
trained:
 - a. In the measures necessary to eliminate, control and minimise those risks
to health and safety.
 - b. In the procedures to be followed to perform the employee's work.
3. To the extent that is reasonably practical, you must:-
Ensure that every employee becomes familiar with the work-related hazards and
risk and the measures that must be taken to eliminate, control and minimise those
hazards and risks.
4. To the extent that is reasonably practical, you must:-
Ensure that every employee under your control complies with the requirements of
the Act.
Institutes the measures necessary to secure, maintain and enhance health and
safety.

Considers and employees training and capabilities in respect of health and safety

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before assigning a task to that employee.

Ensure that work is performed under the General supervision of a person trained to understand the hazards associated with the work, and who has the authority to ensure that the precautionary measures laid down by the Manager are implemented.

You will be responsible for the control, management and direction of all the activities and employees connected with work and you are required to ensure that all such activities take place in accordance with the provisions of the Mine Health and Safety Act and the Regulations are complied with.

You are further required to inform the Manager..... as soon as practicable, of any breach of any provision of these Regulation, to enable him to inform the Principal Inspector of Mines, Department of Minerals and Energy, or take such steps as may be necessary.

Please acquaint yourself with the relevant Regulations, Standards and Procedures, which have a bearing on your appointment. You must ensure that you are fully conversant with the requirements of the Procedures for Reporting Accidents.

SIGNED:

DATE:

WITNESS: 1. 2.

NAME(Print):1. 2.

I,, having been appointed in terms of Regulation 2.6.1 of the act (as amended) to perform all functions entrusted to.....In terms of the Act (as amended) hereby accept the above appointment.

SIGNED:

DATE:

WITNESS: 1. 2.

NAME(Print):1. 2.

**EXAMPLE FOR USE BY CONTRACTOR WHEN APPOINTING SUB-ORDINATES IN
TERMS OF THE MINE HEALTH AND SAFETY ACT (1996) AS AMENDED.**

(To be printed on Contractors letter head)

**APPOINTMENT AS COMPETANT PERSON IN CHARGE OF MACHINERY IN TERMS OF
REGULATION 2.13.2 IN FORCE IN TERMS OF SCHEDULE 4 OF THE MINE HEALTH AND
SAFETY ACT (ACT NO. 29 OF 1996) AS AMENDED BY THE HEALTH AND SAFETY
AMENDEMENT ACT (ACT NO. 72 OF 1997)**

I, in my capacity as having been appointed in
terms of **Section 3(1)** of the Act (as amended), by the Executive Manger: Roads Management,
who is our client, 'THULAMELA MUNICIPALITY' and owner of the Mine(s) to be worked under
the requirements of the above mentioned Acts hereby, in terms of **Regulations 2.13.2** of the
Act as amended, appoint as Competent Person in
charge of machinery for the Contractor,
..... of address
and contact number, on all contracts in the Limpopo Province that are
undertaken by the contractor.

You are to report any accident to the mine manager immediately and personally visit the scene
of the accident without delay.

You must familiarise yourself with the Mine Health and Safety Act and the Minerals Act and
the Regulations and ensure that you have a copy in your possession and you must take all
reasonable measures to ensure that the provisions of this Act are complied with.

Your attention are further drawn to Regulation 2.13.4.1 as well as the requirements of Chapter
18,20 and 21.

Please confirm this appointment by signing at the bottom.

SIGNED: DATE:

NAME:

SIGNED: DATE:

NAME:

C1.3 ABSTRACTS OF THE MINE HEALTH AND SAFETY ACT No. 29 OF 1996 AND AMENDMENT ACT No. 72 OF 1997

DEFINITIONS:

Section 102 of the Mine Health and Safety Act refers.

“mine” means, when –

- (a) “used as a noun-
 - (i) any borehole, or excavation, in any tailing or in the earth, including the portion of the earth that is under the sea or other water, made for the purpose of searching for or winning a Mineral, whether is being worked or not, or
 - (ii) any other place where a Mineral deposit is being exploited, including the mining area and all buildings, structures, machinery, mine dumps, access roads or objects situated on or in that area that are used or intended to be used in connection with searching, winning, exploiting or processing of a Mineral, or for health and safety purposes. But, if two or more excavations, boreholes or places are being worked in conjunction with one another
 - (iii) a works; and
- b) used as a verb, the making of any excavation or borehole referred to in paragraph (a) (i), or the exploitation of any Mineral deposit in any other manner, for the purpose of winning a Mineral including prospecting in connection with the winning of a Mineral.
 - a) whether that substance is in solid, liquid or gaseous form;
 - b) that occurs natural Thulamela Municipality in or on the earth, in or under water or in tailings, and
 - c) that has been formed by or subjected to a geological process.

“processing” means the recovering, extracting, concentrating, refining, calcimining, classifying, crushing, milling, screening, washing, reduction, smelting or gasification or any Mineral, and “process” has a similar meaning

“works” means any place, excluding a mine, where any person carries out-

 - a) The transmitting and distributing to another consumer of any form of power from a mine, by the owner thereof, to the terminal point of bulk, to the power supply meter on any such other consumer’s premises, or
 - b) Training at any central rescue station, or
 - c) The making, repairing, re-opening or closing of any subterranean tunnel, or
 - d) Any operations necessary in connection with any of the operational listed in this paragraph.

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C1.4 PERFORMANCE GUARANTEE

“Guarantor” means:
.....

Physical address:
.....

“Employer” means:
.....

“Contractor” means:
.....

“Engineer” means:
.....

“Works” means:
.....

“Site” means:
.....

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

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

Amount in words:
.....

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

Amount in words:
.....

“Expiry Date” means:
.....

CONTRACT DETAILS

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

PERFORMANCE GUARANTEE

1. The Guarantor’s liability shall be limited to the amount of the Guaranteed Sum.
2. The Guarantor’s period of liability shall be from and including the date of issue of this Performance Guarantee and up to and including the Expiry Date 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.

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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 this Performance Guarantee is restricted to the payment of money.
4. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:
 - 4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Engineer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2;
 - 4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;
 - 4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.
5. Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:
 - 5.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or
 - 5.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and
 - 5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.
6. It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.
7. Where the Guarantor has made payment in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.
8. Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.
9. Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.
10. The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the

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- right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.
- 11. The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
 - 12. This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.
 - 13. This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.
 - 14. Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed _____ at _____

Date _____

Guarantor's _____ signatory (1)

Capacity.....

Guarantor's _____ signatory (2)

Capacity _____

Witness _____ signatory (1)

Witness _____ signatory (2)

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C1.5 CONTRACT DATA

C1.5.1 Contract Specific Data

The Conditions of Contract are the General conditions of Contract for Construction Works (2015) published by the South African Institution of Civil Engineering. (GCC).

Section 1: Data provided by the Employer

Clause	
1.1.1.5	Clause 1.1.1.5 of the GCC is replaced by the following: The "Commencement date" shall be the date the site is handed over to the Contractor.
1.1.1.15	The employer is the THULAMELA MUNICIPALITY .
1.1.1.15	The Consulting Engineer is KTN Consulting Engineers and Project Managers
1.1.1.16	The engineer representing the Consultant is Mr. K Mayayise .
1.2.1	The employer's address for receipt of communication is: The Thulamela Municipality, Private Bag X5066, THOHOYANDOU; 0950 Telephone: (015) 962 7500 Facsimile: (015) 962 4020 E-mail: mphagiag@thulamela.gov.za
1.2.1	The engineer's address for receipt of communication is: Telephone: 011 805 0981 Facsimile: 011 604 0039 e-mail: ktn@ktnconsulting.co.za Address: PO BOX 10841 VORNA VALLEY, 1686
3.2.3	The engineer is required in terms of his appointment with the employer to obtain the following specific approvals from the employer: 1. Approval of extension of time; 2. Approval of additional costs; 3. Approval of variation orders; 4. Approval from THULAMELA MUNICIPALITY for the utilization of any Contingencies 5. Approval of penalties

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4.3	The Health and Safety Plan shall be delivered and approved before the site hand-over/commencement date. Mail to ktn@ktnconsulting.co.za
5.3.1.	The Works are to be commenced within fourteen (14) Days of the Commencement Date taken as Date of Site Hand-over.
5.5.1	The Works shall be completed on a as and when needed basis over a period of 36 months and will be agreed with each contractor with the issue of a specific portion of the works as envisaged by the employer, measured from commencement/site hand-over date to due completion date. This period includes the Builder's Holidays.
5.6	The Works programme is to be delivered within fourteen (14) days of the Commencement Date taken as Date of Site Hand-over
5.8.1	<p>The non-working days are Sundays.</p> <p>The special non-working days are:</p> <ol style="list-style-type: none"> 1. Public holidays and voting days if published prior to the tender closing date. 2. The year end break commencing and ending on dates as specified by SAFCEC. <p>The 30 day period when the Construction work permit is awaited from the Department of Labour. (Note – no extension of time shall be applied for and approved during this waiting period. This period shall be deemed to be included in the contractor's programme.)</p>
5.13.1	The penalty for delay is R6000.00 per calendar day or part thereof.
5.14.5.2	The Defects Liability Period is twelve (12) calendar months after the date of the final certificate of completion .
5.16.3	The latent defect liability period is 10 years after the date of the final approval certificate
6.2.1.	The Guarantee is to contain the same wording as indicated in the document included as C1.3 under returnable documents
6.2.1.	The amount of the Guarantee is to be 10% surety of the Contract Price.
6.2.1.	The Guarantee is to be delivered twenty-one (21) days after the Letter of Acceptance. In the event of failure to submit the guarantee within the stipulated 21 days, the Municipality reserves the right to cancel the contract and award the Bid to the tenderer who scored the second highest points.
6.5.1.2.3	Daywork allowances as tendered in Section 1800 of the Bill of Quantities: Materials at cost plus 15%.

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6.8.2

The value of payment certificates is to be adjusted in accordance with the Contract Price Adjustment Schedule, where

The value of “x” is 0,150

The values of the co-efficients are:

$$(1-x) \left[\frac{aLt}{Lo} + \frac{bPt}{Po} + \frac{cMt}{Mo} + \frac{dFt}{Fo} - 1 \right]$$

CPA : Estimate more than R10 000 000 or a contract period of more than 6 months.

Projects predominantly:

	New Road Construction	Rehabilitation	Concrete Work (major structures only)
a =	0,20	0,20	0,15
b =	0,40	0,35	0,20
c =	0,25	0,35	0,55
d =	0,15	0,10	0,10

“L” is the “Labour Index” and shall be the “Consumer Price Index” for the urban area nearest to the Site as specified by the Engineer in the Appendix to the Tender and as published in the Statistical News Release, P0141, Table 7.1 (previously P0141.1 Table 21) of Statistics South Africa.

“P” is the “Plant Index” and shall be the “Civil Engineering Plant Index” as published in the Statistical News Release P0142.1, Table 12 (previously P0142.1 Table 16) of Statistics South Africa.

“M” is the “Materials Index” and shall be the “Civil Engineering Materials Index” as published in the Statistical News Release P0142.1, Table 11 (previously P0142.1 Table 15) of Statistics South Africa.

“F” is the “Fuel Index” and shall be the “Diesel at wholesale level – Coast/Witwatersrand Index” as published in the Statistical News Release P0142.1, Table 12 (previously P0142.1 Table 16) of Statistics South Africa.

The suffix “o” denotes the basic indices applicable to the base month, which shall be the month prior to the month in which the closing date for the tender falls.

The suffix “t” denotes the current indices applicable to the month in which the last day of the period falls to which the relevant payment certificate relates.

If any index relevant to any particular certificate is not known at the time when the certificate is prepared, the Engineer shall estimate the value of such index. Any correction, which may be necessary when the correct indices become known, shall be made by the Engineer in subsequent payment certificates. The urban area nearest the site **is Thohoyandou.**

The base month **is February 2023.** (the month prior to the month in which the closing date of the tender falls)

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6.8.3	<p>The following are special materials: Bitumen binder extracted from petroleum based products and used on site, including that used in asphalt, irrespective of whether it is produced and/or placed by the Contractor or an approved subcontractor.</p> <p>The rates and prices for the special materials shall be furnished by the contractor, which rates and prices ex refinery with the base date specified under 6.8.2 and shall exclude VAT but shall include all other obligatory taxes and levies on the basis specified in the contract price adjustment schedule (paragraph 4(i) and 4(ii)).</p>
6.10.1.5	<p>The percentage limit on materials not yet built into the Permanent Works is 80%. Proof of ownership is required and material on site must be used within three months after delivery.</p>

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6.10.3	The percentage retention is 10% of the certified work done (including VAT).
6.10.3	The limit of retention money is 10% of the certified work done (including VAT).
6.10.3	A Retention Money Guarantee is not permitted.
8.6.1.	The amount to be included in the sum insured to cover the value of:
8.6.1.1.2	a) Materials supplied by the employer for incorporation into the works is R nil.
8.6.1.1.3	b) Professional fees not included in the Contract Price is R nil.
8.6.1.2	The following additional and varied insurances are required: CAR & SASRIA.
8.6.1.3	The Limit of the liability insurance required should not be less than the contract amount.
9.2.1.3.2	Clause 9.2.1.3.2 is replaced by the following "Has failed to submit documentation or to commence the Works in terms of Clause 5.3, or has suspended the progress of the Works for fourteen (14) consecutive days after receiving from the Engineer written notice to proceed,"
10.5.1/2	Disputes are to be referred to a ad-hoc adjudication
10.5.3	The number of adjudication board members shall be 1
10.7	Disputes are to be referred for final settlement to arbitration.
Special Clause in terms of RDP	<p>Requirements in terms of government's reconstruction and development programme.</p> <p>Target values: In this project the minimum target values shall be as follows:</p> <ul style="list-style-type: none"> Labour Maximisation (Wages) :10%

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Payment for labour-intensive component of the works

Payment for works identified in the Scope of Works 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 payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict

Linkage of payment for labour-intensive component of works to submission of project data

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.

Section 2: Data provided by the Contractor

Clause	
1.1.1.9	The contractor is
1.2.1.2	The contractor's address for receipt of communication is: Telephone: Facsimile: e-mail:..... Address:..... .
5.5.1	The Works shall be completed within months as proposed by the tenderer.
6.5.1.2.3	The percentage allowances to cover all charges for the contractor's and subcontractor's profits, timekeeping, clerical work, insurance, establishment, superintendence and the use of hand tools is% (Maximum 15%).
6.8.3	The rate for special materials, exclusive of Value Added Tax is to be completed in Schedule T2.3 C.

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C1.5.2 Variations to the General Conditions of Contract

The following amendments of the General Conditions of Contract 2015 apply to this contract. The headings in these Special Conditions of Contract shall not be deemed to be part thereof nor be taken into consideration in the interpretation or construction thereof or of the Contract.

CLAUSE	Description
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4. CONTRACTOR'S GENERAL OBLIGATIONS

4.1 EXTENT OF OBLIGATIONS AND LIABILITY

Change the number of clauses 4.1.1 to 4.1.2 to read 4.1.2 and 4.1.3.

Add the following:

“4.1.1 Contractor deemed to have inspected the Site

The Contractor shall be deemed to have inspected and examined the Site and its surroundings and information available in connection therewith and to have satisfied himself before submitting his tender (as far as practicable) as to

- (a) the form and nature of the Site and its surroundings, including subsurface conditions,
- (b) the hydrological and climatic conditions.
- (c) the extent and nature of work and materials necessary for the execution and completion of the Works,
- (d) the means of access to the Site and the Accommodation he may require

and, in general, shall be deemed to have obtained all information (as far as is practicable) as to risks, contingencies and all other circumstances which may influence or affect his tender.

No subsequent claims by the Contractor arising from his lack of knowledge of perceptible conditions on the site or its surroundings or of information available in connection therewith shall be entertained.”

4.1.2 Extent of Contractor' obligations

Add the following to this sub-clause:

The Contractor shall, save in so far as it is legally or physically impossible,

- (a) design (to the extent provided in the Contract), execute and complete the Works and remedy any defects therein in accordance with the provisions of the Contract, and
- (b) provide all superintendence, labour, materials, Construction Equipment, Temporary Works, including the design thereof, all requisite transport and all other things, whether of a temporary or permanent nature, required in and for such design, execution and completion of the Works and for the remedying of any defects, so far as the necessity for providing the same is specified in or reasonably to be inferred from the Contract.
- (c) After award of the Contract, the Contractor shall be obligated to ensure that at least the Construction Equipment stated on the prescribed form in the Tender

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Documents, or Construction Equipment equivalent thereto, are on the site when required.”

4.3 LEGAL PROVISIONS

Add the following sub-sub clauses:

4.3.1.1 Mine Health and Safety Act, number 29 of 1996

The Employer shall obtain the Mining Authorisation for all sites where mining activities, as defined in the Mine Health and Safety Act, number 29 of 1996 as amended, are to be conducted.

4.3.1.2 Mineral Resources Petroleum Development Act, number 28 of 2002

The Contractor shall assume responsibility for the Environmental Management Programme (EMPR) in respect of the sites and shall ensure that the sites are rehabilitated at the conclusion of the contract.”

4.4. SUBCONTRACTING

Add the following sub-clauses:

“4.4.4 Nominated subcontractor

In terms of these special conditions, a Contractor is not under any obligation to employ a nominated subcontractor against whom he raises reasonable objection by written notice to the Engineer which may include:

- The subcontractor has insufficient competence, resources or financial strength; and
- The subcontract does not:
 - Require the subcontractor to indemnify the Contractor against negligence or misuse of goods; or
 - Specify that the nominated subcontractor undertake all obligations and liabilities to discharge the Contractor from obligations under the contract and indemnify the Contractor from all the consequences of any failure of the subcontractor to perform his obligations or fulfill his liabilities.

The conditions of contract empower the Engineer to request reasonable evidence before issuing a payment certificate that the nominated subcontractor has received all monies due in previous certificates. In the event that no reasonable evidence is provided, the Employer is permitted to pay the nominated subcontractor directly.

The consent or participation in the nominated subcontractor does not imply any contract between the employer and the subcontractor.

The Employer is however liable for all expense and loss suffered by the Contractor where the nominated subcontract is cancelled due to default or insolvency.

The Contractor may decide to cancel a subcontract where the nominated subcontractor is in default for whatever reason, but is responsible for the cost of

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carrying out and completing the selected subcontract works unless it was cancelled due to default by the Employer or his agents.

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“4.4.7 Continuing obligation extending beyond date of completion of the work

In the event of a Selected Subcontractor having undertaken to the Contractor, in respect of work executed or goods or materials supplied by such Selected Subcontractor, any continuing obligation extending beyond the date of completion of the work or the end of the Defects Liability Period, and Latent Defect Liability Period as the case may be, the Contractor shall at any time after such date cede to the Employer, at the Employer's request and cost, the benefit of such obligation for the unexpired duration thereof, whereupon the Employer shall have no further claim against the Contractor in respect of the said continuing obligation.

4.4.8 Convert the subcontract

If the contract shall have been cancelled in terms of clause 9.2, the Employer shall have the right, by written notice given to any Selected Subcontractor not later than 28 days after the said cancellation, to convert the subcontract concerned to a direct contract between the Employer and the Subcontractor.

Provided that:

- (a) the terms of the said direct contract shall mutatis mutandis be those of the subcontract concerned, and
- (b) the Employer shall have the said right, notwithstanding any breach of the subcontract by the Contractor, subject to his forthwith paying to the Subcontractor all amounts then owing to the Subcontractor by the Contractor and perform any obligation which the Contractor has failed to perform.”

4.9 CONSTRUCTION EQUIPMENT

Add the following: sub clauses:

“4.9.2 Preclude seizure of construction equipment

In order to preclude seizure by the owner of any constructional plant being held by the Contractor on a hire or hire-purchase agreement for the purposes of the contract, the Employer shall be entitled to pay any such owner the amount of any outstanding instalment or other sum owing under any hire or hire-purchase agreement and in the event of his doing so, any amount thus paid by him shall be a debt payable to the Employer by the Contractor and may be deducted by the Employer from any moneys owing or that may become owing to the Contractor in terms of the contract, or be recovered at law from the Contractor by the Employer.

4.9.3 Constructional plant brought to the site by the subcontractor

When entering into any subcontract agreement for the execution of any part of the works, the Contractor shall incorporate in such subcontract agreement, by reference or otherwise, the provisions of this clause in respect of construction equipment brought to the site by the subcontractor.”

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5. TIME AND RELATED MATTERS

5.4 ACCESS TO THE SITE

Add the following sub-clause:

- 5.4.4** "If the site is insufficient for the needs and requirements of the work, the Contractor shall arrange with the owners or tenants for the additional land required and pay all rent and costs in connection therewith. The Contractor shall be responsible for all damage to such land and property, and he shall indemnify the Employer and hold him harmless in respect of all claims, demands proceedings, damages, costs, including attorneys and client costs, charges and expenses arising in respect thereof."

5.16 APPROVAL

5.16.1 Final Approval Certificate

Delete the last sentence of this clause and replace with:

The payment of the retention money or the release of the retention money guarantee shall only be permitted after the Engineer has issued the Final Approval Certificate.

6. PAYMENT AND RELATED MATTERS

6.6 PROVISIONAL SUMS AND PRIME COST SUMS

6.6.1.2.1 In the first line after the word "sums" insert "excluding VAT"

6.6.1.2.2 In the fourth line after the word "amount" insert "excluding VAT"

6.11 VARIATIONS EXCEEDING 15 PER CENT

6.11.1 Second paragraph:

Change "15%" to "30%".

Add the following sub-clause:

"6.11.2 Variations exceeding 30% per cent

Where the decrease or increase in the quantity of work has not resulted from a written variation order (or an additional agreement) in terms of clause 5.11 but from the fact that the quantities are less or more than those given in the bill of quantities, the tendered rates or sums shall still apply, except in the case of a sub-item (or an item not subdivided into sub-items) in the bill of quantities, which covers work the value of which during the tender stage exceeds 7,5% of the value of the tender sum, and where the quantity of such sub-item or item, upon completion of the contract, deviates by more than 30% from the quantity given in the bill of quantities so that the scale of activities or the method of construction consequently changes to such an extent that the tendered rate or sum no longer applies. In such case the Engineer, should he deem it to be in the interest of the Employer or should the Contractor enter a claim, shall, considering the extent by which the deviation in respect of the quantity of the sub-item or item concerned exceeds 30%, determine a sum which will be equitable in

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the circumstances, and shall certify that such sum shall be deducted from or added to the sums owing to the Contractor.”

PART C2: PRICING DATA

C2.1	PRICING INSTRUCTIONS	107
C2.2	BILL OF QUANTITIES	C.111
D1	SUMMARY OF BILL OF QUANTITIES	
D2	CALCULATION OF TENDER SUM	

C2.1 PRICING INSTRUCTIONS

- 1 For the purposes of this bill of quantities, the following words shall have the meanings hereby assigned to them:

Unit: The unit of measurement for each item of work as defined in the standard specifications or the project specifications.

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

Rate: The payment per unit of work for which the tenderer tenders to do the work.

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

Lump Sum: An amount tendered for an item, the extent of which is described in the bill of quantities, the specifications or elsewhere, but of which the quantity of work is not measured in units.

- 2 This bill of quantities forms part of the contract documents and must be read in conjunction with all the other documents comprising the contract documents.

- 3 The quantities set out in the bill of quantities are only approximate quantities. The quantities of work finally accepted and certified for payment, and not the quantities given in the bill of quantities, will be used to determine payments to the contractor.

The validity of the contract shall in no way be affected by differences between the quantities in the bill of quantities and the quantities finally certified for payment. Work is valued at the rates or lump sums tendered, subject only to the provisions of sub-clause 1209 (a) of the standard specifications.

- 4 Rates and lump sums shall include full compensation for overheads, profits, incidentals, tax (other than VAT), etc, and for the completed items of work as specified, all in accordance with sub-clause 1209 (b) of the standard specifications. Full compensation for completing and maintaining, during the defects liability period, all the work shown on the drawings and specified in the standard specifications and project specifications and for all the risks, obligations and responsibilities specified in the General conditions of contract, special conditions of contract, standard specifications and project specifications shall be considered as provided for collectively in the items of payment given in the bill of quantities, except in so far as the quantities given in the bill of quantities are only approximate.

- 5 The tenderer shall fill in a rate or a lump sum for each item where provision is made for it even where no quantities are given. Items against which no rate or lump sum has been entered in the tender will not be paid for when the work is executed, as payment for such work will be regarded as being covered by other rates or lump sums in the bill of quantities.

The tenderer shall fill in a rate against all items where the words "rate only" appear in the amount column. Although no work is foreseen under such item and no quantities are consequently given in the quantity column, the tendered rate shall apply should work under this item actually be required. Tenders should note the provisions of paragraph 12 of this preamble.

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

The tendered lump sums and rates shall be valid irrespective of any change in the quantities during the execution of the contract.

- 6 The works executed are measured for payment in accordance with the methods described in the contract documents under the various payment items, notwithstanding any custom to the contrary. Attention is directed to the provisions of clause 1220 of the standard specifications regarding the measurements of quantities for payment. Except where specified otherwise than in clause 1220, the nett measurement or mass of the finished work in place shall be taken for payment, and any volume or mass of work in excess of that prescribed, shall be excluded.
- 7 The amount of work or the quantities of material stated in the bill of quantities shall not be considered as restricting or extending the amount of work to be done or quantity of material to be supplied by the contractor.
- 8 The statement of quantities of material or the amount of work in the bill of quantities shall not be regarded as authorisation for the contractor to order material or to execute work. The contractor shall obtain the engineer's detailed instructions for all work before ordering any materials or executing work or making arrangements in this regard.
- 9 The short descriptions of the payment items in the bill of quantities are only given to identify the items and to provide specific details. Reference shall, inter alia, be made to the drawings, standard specifications, project specifications, General conditions of contract and special conditions of contract for more detailed information regarding the extent of work entailed under each item.
- 10 The provisions of clause 6.6 of the General conditions of contract shall apply to provisional sums and prime cost sums.
- 11 Subject to the conditions stated in paragraph 12 below, the Tender Sum filled in by the tenderer in the bill of quantities shall be final and binding with regard to submitting the tender, and may not be adjusted should there be any mistakes in the extensions thereof and in the total sums appearing in the tender. Should there be any discrepancies between the Tender Sum and the correctly extended and totalled bill of quantities, the Tender Sum will be final and binding. The tenderer will be asked to clarify the error and rates will be changed without having any impact on the Tender Sum. In such an event the contractor will be consulted but, failing agreement between the parties, the decision of the employer shall be final and binding. No adjustment of the tender sum will take place. In their own interest tenderers must make doubly sure of the correctness of their tendered rates, the extensions and the tender sum.
- 12 A tender may be rejected if the unit rates or lump sums for some of the items in the bill of quantities are, in the opinion of the employer, unreasonable or out of proportion, and if the tenderer fails, within a period of seven (7) days of having been notified in writing by the employer to adjust the unit rates or lump sums for such items, to make such adjustments.

- 13 The units of measurement indicated in the bill of quantities are metric units

The following abbreviations are used in the bill of quantities:

mm	=	millimetre
m	=	metre
km	=	kilometre
km-pass	=	kilometre-pass
m ²	=	square metre
m ² -pass	=	square metre pass
ha	=	hectare
m ³	=	cubic metre
m ³ km	=	cubic metre kilometre
l	=	litre
kl	=	kilolitre
kg	=	kilogram
t	=	ton (1000 kg)
No	=	number
mn	=	meganewton
mn-m	=	meganewton-metre
%	=	per cent
kW	=	kilowatt
Kn	=	kilonewton
PC sum	=	prime cost sum
Prov sum	=	provisional sum

- 14 All rates and sums of money quoted in the bill of quantities shall be in rands and whole cents. Fractions of a cent shall be discarded.

- 15 The item numbers appearing in the bill of quantities refer to the corresponding item numbers in the standard specifications. Item numbers prefixed by the letter B refer to payment items described under part B of the project specifications, those with C to payment items described under part C, and so on for further parts of the project specifications.

Item numbers in schedule B of the bill of quantities are, in addition, preceded by the number of each separate part of schedule B of the bill of quantities, e.g. payment item 62.02 described in the standard specifications (clause 6210), when used in part 3 of schedule B of the bill of quantities, would be numbered 3/62.02, and if this payment item had been amended in part B of the project specifications, the payment item would be indicated as 3/B62.02.

16. Labour intensive items are highlighted in the bills of quantities for the payment items relating to labour intensive works.

16.1 Those parts of the contract to be constructed using labour intensive methods have been marked in the bills of quantities with the letters L in a separate column filled in against every item so designated. The works or part of the works so designated are to be constructed using labour intensive methods only. The use of plant to provide such works, other than plant

specifically provided for in the scope of work, is a variation to the contract. The letters marked with L are **not necessarily an exhaustive list** of all items which must be done by hand, and this clause does not override any of the requirements in the generic labour intensive specification in the Scope of Works.

16.2 Payment for items which are designated to be constructed using 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 work so constructed will not be certified for payment. If a contractor, through innovation on other activities, achieved the set L requirement, but he did not perform all L-marked activities through labour, he will not be penalized. However, if a contractor did not achieve the set L target and constructed a L-marked activity through other means, he **will not be paid** for that activity.

17. All cost for formal training to the targeted workforce (amongst others: allowances, wages, administration, transport, etc) shall be deemed to be included in the rates for Labour Intensive items.
18. **Those parts of the contract to be constructed using labour-intensive methods have been marked in the bill of quantities with the letters L in a separate column or as a prefix or suffix against every item so designated. The works, or parts of the works so designated are to be constructed using labour-intensive methods only. The use of plant to provide such works, other than plant specifically provided for in the scope of works, is a deviation from the contract. The items marked with the letters 'L' 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.**
19. **Where minimum labour intensity is specified by the design the contractor is expected to use their initiative to identify additional activities that can be done labour-intensively in order to comply with the set minimum labour intensity target.**
20. **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.**

C2.2 SCHEDULE OF QUANTITIES

SECTION 1200 GENERAL REQUIREMENTS AND PROVISIONS

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
	1200	SECTION 1200: GENERAL REQUIREMENTS AND PROVISIONS					
	12.01	The Contractor's obligations in respect of Local and othe Labourers:					
		(c) Provision of transport for Local Labourers - in excess of 1km of site camp	PC sum	1.0	45,000.00	45,000	00
		(c)(1) Contractor's charge to allow for handling costs and profit on (c) above	%	45,000.0			
		(d) Provision for Medical Examination for Local Labourers (Pre and Post Construction)	PC sum	1.0	40,000.00	40,000	00
		(d)(1)Contractor's charge to allow for handling costs and profit on (d) above	%	40,000.00			
	B12.0 2	Provision for a Community Liaison Officer					
		(a) Provisional sum for the payment of the Community Liaison Officer at R6000/month	PC sum	1.0	72,000.00	72,000	00
		(b)Contractor's charge to allow for handling costs and profit in respect of subitem 12.02(a)	%	72,000.00			
	C12.0 4	Training Courses					
		(a)Technical skills (Non-Accredited training)	Prov. Sum	1.0	450,000.00	450,000	00
		(a)(1)Contractor's charge to allow for handling costs and profit on (a) above	%	450,000.0			
		(b)Generic and Management Skills (Ceta Accredited)	Prov. Sum	1.0	250,000.00	250,000	00
		(b)(1)Contractor's charge to allow for handling costs and profit on (b) above	%	250,000.0			
		(c)Remuneration of workers undergoing training	Prov. Sum	1.0	50,000.00	50,000	00
		(c)(1)Contractor's charge to allow for handling costs and profit on (c) above	%	50,000.0			
	B12.0 5	Payment of Project Steering Committee Members					
		(a) Provisional sum for the payment of the PSC members R100/member/official site meeting	Prov. Sum	1.0	24,000.00	24,000	00
		(b) Handling costs and profit in respect of sub-item B12.05(a)	%	24,000.0			
	B12.0 6	(a) Excavation for the exposing of, or searching of utility services:					
		(a) 0.0 m up to 2.0 m					
Li		(i) Soft material	m³	1,000.0			
		(ii) Hard material	m³	100.0			
Total Carried Forward							

SECTION 1200 GENERAL REQUIREMENTS AND PROVISIONS

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
Brought Forward							
		(b)Extra over sub item (a) above for hand excavation by means of hand tools such as picks, crowbars and pneumatic tools in close vicinity of services or where no blasting or machine excavation is allowed					
		(i) Soft material	m³	1,000.0			
		(ii) Hard material	m³	100.0			
	B12.07	Backfilling					
Li		(a) Using the excavated material	m³	1,000.0			
Li		(b) Using imported selected material	m³	100.0			
	12.08	Supply and erection of contract sign boards	No	2.0			
	B12.09	Relocation of services					
		(a)Provisional sum for relocation protection of sewer	Prov. Sum	1.0	350,000.00	350,000	00
		(a)(1) Contractor's charge to allow for handling costs and profit on item above	%	350,000.0			
		(b)Provisional sum for protection or relocation of existing services as ordered by the Engineer	Prov. Sum	1.0	350,000.00	350,000	00
		(b)(1) Contractor's charge to allow for handling costs and profit on item above	%	350,000.0			
		(c)Provisional sum for protection or relocation of existing water mains or other services	Prov. Sum	1.0	350,000.00	350,000	00
		(c)(1) Contractor's charge to allow for handling costs and profit on item above	%	350,000.0			
		(d)Provisional sum for removal, save keeping and reinstatement of infrastructure	Prov. Sum	1.0	187,500.00	187,500	00
		(d)(1) Contractor's charge to allow for handling costs and profit on item above	%	187,500.0			
	B12.10	Student attachment for the engineer					
		(a) Remuneration	Prov sum	1.0	180,000.00	180,000	00
		(b)Contractor's handling costs, profit and all other charges in respect of Subitem B12.10(a)	%	180,000.0			
	B12.11	Miscellaneous item(s) as ordered by the engineer (Feature itmes, Specials, Instructions direct by Pre-approved Engineer Instruction(s) only)	Prov sum	1.0	120,000.00	120,000	
Total Carried Forward To Summary							

SECTION 1300 CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
	1300	SECTION 1300: CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS					
	B13.0 1	The Contractor's general obligations:					
		(a) Fixed obligations	Lump Sum	1.0			
		(b) Value-related obligations	Lump Sum	1.0			
		(c) Time-related obligations	month	12.0			
		The Contractor's general obligations: Items (a) to ('c) As a Percentage of Tender Sum (TOTAL SCHEDULE A in Summary), taking note of comment below NOTE : The combined total tendered for subitems (a), (b) and (c) should not exceed 15% of the Tender Sum (Excl. CPA, contingencies and VAT) i.e. TOTAL SCHEDULE A					
	Part C	Occupational Health and Safety Act Obligations					
		(Service provider to be selected and approved by Employer/Employer's Agent)					
	C1.1	(a) Contractors initial obligations in respect of the Occupational Health and Safety Act, and Construction Regulations	Lump Sum	1.0			
	C1.2	(b) Contractors time-related obligations in respect of the Occupational Health and Safety Act, and Construction Regulations	month	12.0			
	C1.3	(c) Submission of Health and Safety file	Lump Sum	1.0			
	C1.4	(d) Contractors obligation to supply Personal Protective Equipment to Local Workers branded as per EPWP requirements	Prov sum	1.0	100,000.00	100,000	00
	C1.5	(e)Contractor's handling costs and other charges on subitems C1.4 above	%	100,000.0			
	B13.0 4	Environmental Management Act and Obligations Monitoring					
		(a) Contractors initial obligations in respect of the Environmental Management Plan	Prov sum	1.0			
		(b) Contractors time-related obligations in respect of the Environmental Management Plan	month	12.0			
Total Carried Forward To Summary							

SECTION 1400 HOUSING, OFFICES, LABORATORIES AND GENERAL OBLIGATIONS

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
	1400	SECTION 1400: HOUSING, OFFICES AND LABORATORIES AND GENERAL OBLIGATIONS					
	14.01	Office and laboratory accommodation:					
		(a) Offices (interior floor space only) for the engineer	m²	30.0			
		(e) Ablution units	m²	4.0			
	14.02	Office and laboratory furniture:					
		(a) Chairs	No	8.0			
		(b) Draughtsman's stools	No				
		(d) Desks, complete with drawers and locks	No	4.0			
		(e) Drawing tables	No				
		(f) Conference tables 1.2m x 3m	No	1.0			
	B14.0 3	Office and laboratory fittings, installations and equipment:					
		(a) Items measured by number:					
	B14.0 3.(a)(i)	(i) 220/250 volt power points with power backup (battery and inverter to cover 4 hour load shedding)	No	2.0			
		(iii) Double 80 watt fluorescent-light fittings complete with ballast and tubes	No	2.0			
		(vi) Wash-hand basins complete with taps and drains	No	1.0			
		(x) Fire extinguishers, 9,0 kg all purpose dry powder type, complete mounted on wall with brackets	No	1.0			
		(xi) Air-conditioning units with 2.2kw minimum capacity mounted on wall with brackets	No	1.0			
		(xii) Heater, space-heating type, minimum capacity 1.5kW on wall with brackets	No	1.0			
		(xiv) General-purpose steel cupboards with shelves	No	1.0			
		(xv) Steel filing cabinets with drawers	No	1.0			
		(xvi) Refrigerators (210L)	No	1.0			
		(xx) Floodlights complete with poles and 500 watt minimum globes	No	2.0			
		(b) Prime-cost items and items paid for in a lump sum:					
		(i) Cell phone for the engineer Samsung S9 or better, including pro-rata line rentals, for calls in connection with contract administration and 5 Gig Data per month for 12 Months	PC sum	1.0	24,000.00	24,000	00
		(ii) Handling costs and profit in respect of sub-item B14.03(b)(i) above	%	24,000.0			
		(xiii) Internet connection Uncapped internet at site office (ADSL or mobile LTE) for email / virtual meeting connectivity	PC sum	1.0	12,000.00	12,000	00
Total Carried Forward							

SECTION 1400 HOUSING, OFFICES, LABORATORIES AND GENERAL OBLIGATIONS

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
Brought Forward							
		(xiv) Handling cost and profit in respect of sub- item B14.03(b)(xiii) above	%	12,000.0			
	14.04	Car-ports					
		Car ports as specified, at offices and laboratory buildings	No	2.0			
	14.08	Services:					
		(a) Services at offices and laboratories:					
		(i) Fixed costs	Lump Sum	1.0			
		(ii) Running costs	month	12.0			
		(c) Services for rented accomodation for the engineer	Lump Sum	1.0	120,000.00	120,000	00
		(1)Contractor's charge to allow for handling costs and profit on B14.08(c) above	%	120,000.0			
	B14.09	Rented accomodation for the engineer	Prov sum	1.0	240,000.00	240,000	00
		(1)Contractor's charge to allow for handling costs and profit on B14.09 above	%	240,000.0			
	14.10	(i) Printer/copier/scanner including full provision for providing and maintaining an approved photocopier(capable of making A3-sized copies) and its use, including all accessories such as paper, etc, for making a maximum number of 1 000 A4 copies per month.	month	12.0			
	B14.11	Provision and erection of security fencing (Including gate) at the site office	L/sum	1.0			
	B14.12	Light Delivery Vehicle for the Engineer					
		(a) Supply and maintain a Light Delivery Vehicle, Double Cab not older than 5 years with 2.5litre engine capacity and with air conditioning for the duration of the Contract for the sole use of the Employers Representative	Prov sum	1.0	240,000.00	240,000	00
		(a)(1) Contractor's handling costs, profit and all other charges in respect of item B14.12 (a) above	%	240,000.0			
		(b) Payment of fuel	PC sum	1.0	120,000.00	120,000	00
		(c) Contractor's handling costs, profit and all other charges in respect of item B14.12 (b) above	%	120,000.0			
Total Carried Forward To Summary							

SECTION 1500 ACCOMMODATION OF TRAFFIC

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
	1500	SECTION 1500: ACCOMMODATION OF TRAFFIC					
	B15.0 1	Accommodating traffic and maintaining temporary deviations					
		(a)On the Route	km	3.0			
		(b)On the cross roads	km	1.0			
	B15.0 3	Temporary traffic-control facilities					
Li		(a)Flagmen	man-d ay	1,440.0			
		(b) Portable STOP and GO-RY signs	No	4.0			
		(d)Amber flicker lights	No	4.0			
		(e)Road signs, R- and TR-series,					
		(i) 900mm diameter	No	40.0			
		(ii) 1200mm diameter	No	5.0			
		(f)Road signs, TW-series, (with distance board)	No	5.0			
		(ii) 1500mm diameter	No	5.0			
		(g)Road signs, STW-, DTG-, TGS- AND TG-series (excluding delineators and barricades)	m²	10.0			
		(n)Other traffic control measures ordered by the engineer					
		(i)Provision of other traffic control measures	Prov sum	1.0	150,000.00	150,000	00
		(ii)Handling costs and profit in respect of subitem B15.03(n)(i)	%	150,000.0			
	B15.0 8	Repairs, alterations and/or additions to existing roads used as temporary deviations	Prov sum	1.0	150,000.00	150,000	00
		(ii)Handling costs and profit in respect of subitem B15.08	%	150,000.0			
	B15.1 0	Accommodation of traffic where the road is constructed in half-widths	km	3.0			
	B15.1 6	Provision of traffic safety					
		(a) Traffic Safety Officer	month	12.0			
Total Carried Forward To Summary							

SECTION 1700 CLEARING AND GRUBBING

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
	1700	SECTION 1700: CLEARING AND GRUBBING					
	17.01	Clearing and grubbing					
Li		(a) By hand	m ²	4,000.0			
	17.02	Removal and grubbing of large trees and tree stumps					
Li		(a)Girth exceeding 1m up to and including 2m	No	10.0			
Li		(b)Girth exceeding 2m up to and including 3m	No	10.0			
Li	17.04	Clearing and grubbing at inlets and outlets of hydraulic structures	m ²	600.0			
	17.05	Cleaning out of hydraulic structures:					
Li		(a) Pipes with an internal diameter up to and including 750 mm	m ³	30.0			
Li		(b) Pipes with an internal diameter exceeding 750 mm	m ³	120.0			
	B17.0 7	Demolish and spoil material for structures, buildings, kerbs etc.					
Li		(a) 100mm thick un-reinforced concrete	m ²	1,960.0			
Li		(b) 150mm thick un-reinforced concrete	m ²	1,960.0			
Li		(c) 100mm thick reinforced concrete	m ²	820.0			
Li		(d) 150mm thick reinforced concrete	m ²	720.0			
Li	B17.0 8	Remove existing block paving by hand, clean from dirt and mud and deliver to stockpile within 5km radius	m ²	7,000.0			
	B17.0 9	Saw Cut and remove existing black top road surface by hand and spoil to commercial spoil site including haul	m ²	2,700.0			
	B17.1 0	Chemical cleaning of oil contaminated areas by approved specialists	Prov. Sum	1.0	75,000.00	75,000	00
		(e)Contractor's handling costs and other charges on subitems B17.10	%	75,000.0			
	B17.1 1	Jet Wash of existing sewer lines by approved specialists	Prov. Sum	1.0	45,000.00	45,000	00
		(e)Contractor's handling costs and other charges on subitems B17.11	%	45,000.0			
	B17.1 2	High Pressure Wash of existing Stormwater Pipes by approved specialists	Prov. Sum	1.0	145,000.00	145,000	00
		(e)Contractor's handling costs and other charges on subitems	%	145,000.0			
Total Carried Forward To Summary							

SECTION 1800 DAYWORKS

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
	1800	SECTION 1800: DAYWORKS					
	B18.0 1	Labourers					
Li		(i) Unskilled labour	hr	240.0			
		(ii) Semi-skilled labour	hr	240.0			
		(iii) Skilled labour	hr	240.0			
	B18.0 2	Foreman	hr	240.0			
	B18.0 3	Trucks					
		(i) 6m ³	hr	56.0			
		(ii) 10m ³	hr	56.0			
		(iii) 5 ton flat truck	hr	56.0			
	B18.0 4	TLB	hr	56.0			
	B18.0 5	Loader (0.5m ³ bucket)	hr	56.0			
	B18.0 6	Grader (CAT 140G or similar)	hr	56.0			
	B18.0 7	Vibratory roller	hr	56.0			
	B18.0 8	Grid roller	hr	56.0			
	B18.0 9	Pedestrian roller (Bomag BW90)	hr	56.0			
	B18.1 0	Water truck (16000l)	hr	56.0			
	B18.1 1	Chainsaw	hr	56.0			
	B18.1 2	Mechanical broom	hr	56.0			
	B18.1 3	Light delivery vehicle (1 ton capacity)	hr	56.0			
	B18.1 4	Recycler	hr	56.0			
	B18.1 5	Excavator	hr	56.0			
	B18.1 6	Supply of materials					
		(a) Supply building materials for the reinstatement of private property damaged with prior approval by the Engineer	PC sum	1.0	250,000.00	250,000	00
Total Carried Forward							

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SECTION 1800 DAYWORKS

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SECTION 2100 DRAINS

[illegible]

SECTION 2200 PREFABRICATED CULVERTS

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
	2200	SECTION 2200: PREFABRICATED CULVERTS					
	B22.0 1	Excavation:					
		(a) Excavating soft material situated within the following depth ranges below the surface level:					
Li		(i) 0m up to 1.5m	m³	1,300.0			
		(ii) Exceeding 1,5m and up to 3,0m	m³	380.0			
		(b) Extra over subitem 22.01(a) for excavation in hard material irrespective of depth	m³	330.0			
		(c) Extra over subitem B22.01(a)(1) for excavation by hand using hand tool	m³	1,300.0			
	22.02	Backfilling:					
Li		(a) Using the excavated material	m³	1,650.0			
		(c) Extra over subitems 22.02(a) for soil cement backfilling (2% cement)	m³	170.0			
	22.03	Concrete pipe culverts					
		(a) On Class B Bedding					
		(3) Type SC100 D-load pipes with ogee joints					
		(ii) 525 mm diameter	m	350.0			
		(iii) 600 mm diameter	m	90.0			
		(iv) 675mm diameter	m	260.0			
		(v) 750 mm diameter	m	30.0			
		(vi) 825 mm diameter	m	20.0			
		(vii) 900 mm diameter	m	10.0			
		(vii) 1050 mm diameter	m	10.0			
		(viii) 1200mm diameter	m	10.0			
	22.05	Portal and Rectangular Culverts					
		(a) Complete with prefabricated floor slabs					
		1) Strength 200S					
		(i) 450 mm by 450mm	m	10.0			
		(ii) 600mm by 450mm	m	10.0			
		(iii) 600 mm by 600mm	m	10.0			
		(iii) 750 mm by 750mm	m	5.0			
		(iii) 1200 mm by 750mm	m	5.0			
		(iv) 1200mm by 900mm	m	5.0			
Total Carried Forward							

SECTION 2200 PREFABRICATED CULVERTS

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
		Brought Forward					
		(v) 1200mm by 1200mm	m	5.0			
	22.07	Cast in situ concrete and formwork					
		(a) Screeds and the encasing for pipes, including formwork					
		(i) Class 15/19 concrete	m ³	27.0			
		(b) In floor slabs for portal or rectangular culverts including formwork, joints and class U2 surface finish					
		(i) Class 15/19 concrete	m ³	5.0			
		(ii) Class 20/19 concrete	m ³	5.0			
		(iii) Class 25/19 concrete	m ³	5.0			
	22.08	Concrete backfill for culverts					
		(a) Class 20/19 concrete	m ³	5.0			
	22.12	Removing existing concrete					
		(a) Plain concrete	m ³	5.0			
		(b) Reinforced concrete	m ³	6.0			
	22.17	Inlet Manholes, catchpits, precast inlet and outlet structures complete					
		(a) Inlet Kerb Inlet (standard depth 1.5m) at direction change of					
		(1) Standard Kerb Inlet 2.2m wide with 3m inlet transitions drawings to accommodate maximum pipe sizes within the following ranges					
		525mm diameter pipe	No	14.0			
		600mm diameter pipe	No	5.0			
		675mm diameter pipe	No	3.0			
		750mm diameter pipe	No	3.0			
		825mm diameter pipe	No	3.0			
		900mm diameter pipe	No	3.0			
		1050mm diameter	No	3.0			
		1200mm diameter	No	8.0			
		1350mm diameter	No	3.0			
		1500mm diameter	No	3.0			
		(2) Manhole 1,5m deep x 1.2 x 1.2 wide drawings to accommodate maximum pipe sizes within the following ranges					
		525mm diameter pipe	No	1.0			
		Total Carried Forward					

SECTION 2200 PREFABRICATED CULVERTS

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
		Brought Forward					
		600mm diameter pipe	No	1.0			
		675mm diameter pipe	No	2.0			
		750mm diameter pipe	No	1.0			
		825mm diameter pipe	No	1.0			
		900mm diameter pipe	No	1.0			
		1050mm diameter	No	1.0			
		1200mm diameter	No	1.0			
		1350mm diameter	No	1.0			
		1500mm diameter	No	1.0			
		1650mm diameter	No	1.0			
		1800mm diameter	No	1.0			
		(7) INLET AND OUTLET STRUCTURES					
		(a) Concrete outlet structures complete (excluding reno mattress) to accommodate maximum pipe sizes within the following ranges					
		525mm diameter pipe	No	1.0			
		600mm diameter pipe	No	1.0			
		675mm diameter pipe	No	1.0			
		750mm diameter pipe	No	1.0			
		825mm diameter pipe	No	1.0			
		900mm diameter pipe	No	1.0			
		1050mm diameter	No	1.0			
		1200mm diameter	No	1.0			
		1350mm diameter	No	1.0			
	22.18	Brickwork					
Li		(b) 230 mm thick with brickforce every 3rd layer	m ²	200.0			
Li	22.19	Plaster	m ²	200.0			
	22.2	Benching					
Li		Benching in strength concrete 25Mpa/19mm with 1:3 cement river sand rendering 150mm Average thick in bottom of chambers	m ²	15.0			
	22.23	Service ducts					
		(a) Unplasticised PVC pipes					
		(i) 110 mm dia	m	800.0			
		Total Carried Forward					

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SECTION 2200 PREFABRICATED CULVERTS

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2129 UIF TO SHELL**2129 UIF TO SHELL****2300 CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES, AND CONCRETE LININGS FOR OPEN DRAINS**

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
	2300	SECTION 2300: CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES, AND CONCRETE LININGS FOR OPEN DRAINS					
	23.01	Concrete kerbing with 25/19 concrete joint backin as shown on the drawings					
		(a) Precast kerbing in accordance with SANS 927					
Li		(a)(1) Figure 8c kerb 1000mm lengths	m	90.0			
Li		(a)(2) Figure 8c kerb 300m lengths (on curves)	m	22.0			
Li		(a)(3) Figure 7 kerb 1000mm lengths	m	1,700.0			
Li		(a)(4) Figure 7 kerb 300m lengths (on curves)	m	420.0			
Li		(a)(5) Figure 3 kerb 1000mm lengths	m	70.0			
Li		(a)(6) Figure 3 kerb 300m lengths (on curves)	m	70.0			
Li		(a)(7) Figure 5b kerb 1000m lengths	m	70.0			
Li		(a)(8) Figure 5b kerb 300m lengths (on curves)	m	70.0			
	23.05	Kerb transition and similar structures:					
Li		(a) 1000mm Transition from Fig 8C Kerb to Fig 7 Kerb with smooth finish Cast in-situ transition sections 30MPa/19mm concrete	m ³	6.0			
Li		(b) 1000mm Transition from Fig 7 Kerb to Fig 3 Kerb with smooth finish Cast in-situ transition sections 30MPa/19mm concrete	m ³	6.0			
Li		(c) 1000mm Transition from Fig 3 Kerb to Fig 8c Kerb with smooth finish Cast in-situ transition sections 30MPa/19mm concrete	m ³	2.0			
Li	B23.1 6	Demolition and removal of existing kerbs and dispose of site to commercial dump site including labour and transport	m	2,400.0			
	B23.1 7	Concrete Surface Bed: 200mm 30MPa/19 Concrete with 193 Mesh cast in 4m x 4m alternative blocks with construction joints, broom finish	m ²	2,850.0			
Total Carried Forward To Summary							

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SECTION 3300 MASS EARTHWORKS

[illegible]

SECTION 3400 PAVEMENT LAYERS OF GRAVEL MATERIAL

[illegible]

SECTION 3500 STABILIZATION

[illegible]

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SECTION 3900 BREAKING UP EXISTING PAVEMENT LAYERS

[illegible]

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SECTION 4100 PRIME COAT

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SECTION 4200 ASPHALT BASE AND SURFACING

[illegible]

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
	5600	SECTION 5600: ROAD SIGNS					
	B56.0 1	Road sign boards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class 1 retro-reflective material, where the sign board is constructed from:					
		(c) Prepainted galvanized steel plate (chromadek 1,6 mm thick or approved equivalent):					
		(i) Area not exceeding 2 m ²	m ²	30.0			
	B56.0 2	Extra over item 56.01 for using:					
		(a) Background of retro-reflective material of:					
		(i) Class I	m ²	30.0			
	56.03	Road sign supports (overhead road sign structures excluded):					
		(a) Steel tubing (76mm diameter and 2mm wall thickness)	t	0.5			
	56.05	Excavation and backfilling for road sign supports (n/a to kmposts)	m ³	7.0			
	56.06	Extra over item 56.05 for cement-treated soil backfill	m ³	7.0			
	56.08	Dismantling, storing and re-erecting road signs with a surface area of:					
Li		(i) Area not exceeding 2 m ²	m ²	10.0			
Li		(ii) Area exceeding 2 m ² but not 10 m ²	m ²	18.0			
Li		(iii) Area exceeding 10 m ²	m ²	12.0			
Total Carried Forward To Summary							

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SECTION 5700 ROAD MARKINGS

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SECTION 5900 FINISHING THE ROAD AND ROAD RESERVE

[illegible]

SECTION 7300 CONCRETE BLOCK PAVING FOR ROADS

[illegible]

SECTION 8100 TESTING MATERIALS AND WORKMANSHIP

[illegible]

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
	B8200	SECTION B8200 STREET LIGHTS					
	1	Cables					
		Supply and install the following PVC/SWA/PVC					
		cables in the position as indicated on the drawings					
	A	Cable Installed in trench					
	1.1	16mm ² 4 core	m	2,930.0			
	2	Earth Wire					
		Supply and install the following bare copper					
		earth wire with cables strapped to the cable at					
		intervals not exceeding 500mm					
	2.1	10mm ²	m	2,980.0			
	3	Cable Glands					
		Supply and install the following cable glands					
		complete with shrouds and cable lugs. The cost					
		must include the making off of the cable.					
	3.1	16mm ² 4 core	No	262.0			
	4	Sleeves					
		Supply and install the following PVC sleeves in the					
		position as indicated on the drawings					
	4.1	110mm dia	m	350.0			
	4.2	50mm dia	m	300.0			
	5	Danger Tape					
		Supply and install danger tape 300mm above					
		cables.					
	5.1	Danger tape	m	2,910.0			
	6	Draw Wire					
		Supply and install draw wire in all sleeves					
	6.1	Draw wire	m	660.0			
	7	Trenches - 450mm x 600mm deep					
		Excavation, smoothing out of bottom of trench,					
		install bedding and backfilling, compacting every					
		150mm and making good as specified.					
	7.1	Earth	m	2,940.0			
	Total Carried Forward						

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
		Brought Forward					
	7.2	Soft rock	m	1.0			
	7.3	Hard rock	m	1.0			
	7.4	Bedding material - 150mm thick	m	2,940.0			
	7.5	Concrete slab over cable 100mm thick 10MPa	m	2,940.0			
	8	Street Lights					
		Supply and install the following lights complete with pole and control gear as specified					
	8.1	T1 fitting with 6m galvanised pole (Heavy duty)	No	131.0			
	8.2	Plinth excavation	No	131.0			
	8.3	Back filling and compacting	No	131.0			
	8.3	Pole mounting plinth as per suppliers specification	No	131.0			
	9	Cable Markers					
		Supply and install cable markers as specified in the specification. The final position shall be determine on site					
	9.1	Cable markers	No	25.0			
	10	Streetlight Control					
		Supply and install streetlight control in the streetlight compartment of existing mini substations					
	10.1	Streetlight control circuit per mini substation	No	6.0			
		a)50A 3 pole CB 10kA					
		b) 4x20A 3 pole CB 10kA					
		c) 1x5A 1 pole CB 10kA					
		d) 4x20A 3 pole contactors, 220V coil					
		e) Day night sensor					
		f) 1xbypass switch 20A					
	10.2	2,5mm ² wiring of control circuit	Item	1.0			
	11	As Build Drawings and COC					
		Supply the engineer with one set of as build drawings as specified and a COC					
	11.1	As build drawings incl manuals	Item	1.0			
	11.2	COC - Electrical installation	Item	1.0			
		Total Carried Forward					

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SECTION B8200 STREET LIGHTS

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
Brought Forward							
Li	12	Existing Installation					
		Remove existing street lights complete with pole, back filling and making good					
	12.1	Remove existing street lights and remove from site	No	65.0			
	13	Existing Mini Substations					
		Replace all damage mini substations doors.					
		Measurement to be taken on site, paint as per manufactures specification, colour the match existing					
	13.1	Remove door (will be indicated on site)	No	5.0			
	13.2	Replace and re-install	No	5.0			
	14	New Mini Substations					
		Supply and install new mini substations in the position indicated on the drawing. The mini substation shall comply with SANS 1029; 780; 1874 & 1779.					
		The mini substation will be of modular design consisting of a HT compartment; Transformer compartment and LT compartment. The vector group will be Dyn 11. The RMU to be 350MVA 400A					
		The LT compartment to be equipped with a main CB					
	14.1	800kVA 11kV/400V mini substation	No	1.0			
	14.2	Pre cast concrete plinth	No	1.0			
	14.3	11kV terminations - indoor	No	1.0			
	15	High Mast					
		Supply and install a high mast in the position as indicated on the drawing.					
	15.1	Galvanized scissor type mast 10m	No	2.0			
15.2	Foundation design be a professional engineer	No	2.0				
15.3	Internal 20A 3 phase CB 5kA and wiring 2,5mm²	No	2.0				
15.4	Pole mounted LED flood light 100W	No	6.0				
Total Carried Forward To Summary							

SECTION B8300 SOFT AND HARD LANDSCAPING

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
	B8300	SECTION B8300 SOFT AND HARD LANDSCAPING					
	4.2	Site Preparation					
Li	4.2.1	Site Preparation Work for hard landscape works and sidewalks	m2	7,500.0			
	4.2.1.1	Remove topsoil to a depth of 150mm if ordered by the engineer and stockpile on site. The Employers Agent and Contractor are to agree upon a stockpile site for any topsoil that is to be removed and stockpiled. The costs for transporting, preparing the stockpile site, stockpiling and re-instating the topsoil elsewhere on site within 3km of the stockpile shall be deemed to be included in the rates.	m3	1,100.0			
	4.2.2	Site Preparation Work for soft landscape works					
Li	4.2.2.1	STRIPPING AND RE-INSTATING OF TOPSOIL: Remove topsoil to a depth of 300mm, stockpile on site and re-instate on site including all loading, plant and transport. The Employers Agent and Contractor are to agree upon a stockpile site for any topsoil that is to be removed and stockpiled. The costs for transporting, preparing the stockpile site, stockpiling and re-instating the topsoil elsewhere on site within 3km of the stockpile shall be deemed to be included in the rates.	m3	130.0			
Li	4.2.2.2	PREPARATION AND PLANTING - All planting areas shall be cultivated to a depth of 300mm, cleared and free of weeds, large stones, litter and rubble. Before planting, the following shall be forked into the top 150mm of topsoil unless otherwise specified. 0.15 kg superphosphate per m2 0.1 kg 2:3:2 (22)+Zn fertilizer per m2 , 5 litres of approved manure or compost / m² - claimed separately under item 5.3. Individual holes shall be dug to a depth and width as indicated or 50% larger than the container, spacing should be according to Plant List and Plant Plans.	m2	430.0			
	4.3	Rubble Removal					
Li	4.3.1	Removal of rubble from site to legal dump site after verification of quantities by Landscape Architect. Cost to include dumping cost and transport. Includes all rubble gathered to measurable heaps after grading and shaping. Final quantity to be determined on site.	m3	15.0			
	5.1	Grading and Final Shaping					
Li	5.1.1	Loosening, grading and shaping all landscaped areas to depth of 150mm (de-compaction).	m2	430.0			
	5.2	Import and Spread Topsoil Planting Material: Supply and deliver all material, labour, and equipment required for the installation of topsoil to detail:					
	5.2.1	Supply, deliver, spread and finish to specified levels (maximum 450mm), imported rubble free and uncontaminated loamy to sandy topsoil planting material mix.	m3	200.0			
	5.3	Import and Spread Compost: Supply and deliver all material, labour, and equipment required for the installation of compost to detail:					
Total Carried Forward							

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
Brought Forward							
	5.3.1	Supply, deliver, spread and finish to match levels, imported 50mm layer of compost for planting areas, to be well dug in and mixed into in-situ soil.	m3	22.0			
	5.4	Fertilisers: Supply and deliver all material, labour, and equipment required for the installation of fertilisers to detail:					
Li	5.4.1	Planting Areas and Lawn: Supply, spread and dig into soil mix bone meal at the rate of 150g per m2.	kg	65.0			
Li	5.4.2	Planting Areas and Lawn: Supply, spread and dig into soil mix all purpose organic (2:3:2) at the rate of 100g per m2.	kg	42.0			
	5.5	Mulch: Supply and deliver all material, labour, and equipment required for the installation of mulch to detail:					
Li	5.5.1	Planting Areas and Shrubs: Supply, deliver and spread by hand organic, weed free, course graded, uniform in colour, shredded hardwood mulch to a depth of 50mm	m3	21.0			
	6.1	Paving: Supply and deliver all material, labour, and equipment required for the installation of paving to detail:					
Li	6.1.1	Concor Technicrete Bond Brick 200x100x50mm stretcher bond colour Grey, laid in 60/40 mix with Slate pavers or similar approved, laid on 25mm riversand blinding on compacted base layer installed to engineer's specifications and including supply of jointing sand and vibrated after brushing jointing sand into gaps between pavers.	m2	4,386.0			
Li	6.1.2	Concor Technicrete Bond Brick 200x100x50mm stretcher bond colour Slate (Black) laid in 40/60 mix with Grey pavers or similar approved, laid on 25mm riversand blinding on compacted base layer installed to engineer's specifications and including supply of jointing sand and vibrated after brushing jointing sand into gaps between pavers.	m2	274.0			
Li	6.1.3	Concor Technicrete Bond Brick 200x100x50mm stretcher bond colour Terracotta or similar approved, laid on 25mm riversand blinding on compacted base layer installed to engineer's specifications and including supply of jointing sand and vibrated after brushing jointing sand into gaps between pavers.	m2	151.0			
Li	6.1.4	Concor Technicrete Bond Brick 200x100x50mm stretcher bond colour Slate or similar approved, laid on 25mm riversand blinding on compacted base layer installed to engineer's specifications and including supply of jointing sand and vibrated after brushing jointing sand into gaps between pavers.	m2	128.0			
Li	6.1.5	Concor Technicrete Bond Brick 200x100x50mm stretcher bond colour Grey or similar approved, laid on 25mm riversand blinding on compacted base layer installed to engineer's specifications and including supply of jointing sand and vibrated after brushing jointing sand into gaps between pavers.	m2	622.0			
Total Carried Forward							

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
		Brought Forward					
Li	6.1.6	Concor Technicrete Cobble Bond 200x100x80mm stretcher bond colour Grey and Slate mix or similar approved, laid on 25mm riversand blinding on compacted base layer installed to engineer's specifications and including supply of jointing sand and vibrated after brushing jointing sand into gaps between pavers.	m2	45.0			
Li	6.1.7	Concor Technicrete Cobble Bond 200x100x50mm stretcher bond colour Tan or similar approved, laid on 25mm riversand blinding on compacted base layer installed to engineer's specifications and including supply of jointing sand and vibrated after brushing jointing sand into gaps between pavers.	m2	95.0			
Li	6.1.8	Vanstone Jap Slab 600x300x60mm laid in designated areas, stacker bond colour Grey similar approved, laid on 25mm riversand blinding on compacted base layer installed to engineer's specifications and including supply of jointing sand and vibrated after brushing jointing sand into gaps between pavers.	m2	380.0			
	6.1.9	In situ cast brushed concrete panels 5000 x 5000 x 100mm cast on compacted base layer installed to engineer's specifications and including supply of jointing sand and vibrated after brushing jointing sand into gaps between pavers.	m2	50.0			
Li	6.1.10	Supply and place on site Quarry crusher 13-19mm 100mm thick	m3				
Li	6.1.11	Supply and place 'Weedguard' or similar approved geotextile under crusher stone to prevent weed growth	m3				
	6.1.12	Tactile Pavers directional 400x400x100mm and including supply of jointing sand and vibrated after brushing jointing sand into gaps between pavers.	ea	1,114.0			
	6.1.13	Tactile Pavers stop 400x400x100mm	ea	672.0			
Li	6.1.14	Supply and installation of bedding sand 25mm to all segmental block paving	m3	170.0			
Li	6.1.15	Install block paving which has been recovered from site from item 4.1.2 above laid on 25mm riversand blinding on compacted base layer installed to engineer's specifications and including supply of jointing sand and vibrated after brushing jointing sand into gaps between pavers.	m2	1,000.0			
	6.2	Planters and Retaining Walls: Supply and deliver all material, labour, and equipment required for the construction and installation of planters to detail: Option 1: Corobrik Country Classic FBS brick and mortar planters.					
	6.2.1	Planter 4500x2500x450mm built from Corobrik Country Classic FBS brick and mortar planters.					
	6.2.1.1	Planter Foundation: 15MPa In-situ cast concrete to detail, (including casting and testing of 3 concrete cubes) on layerworks to Engineer's specification	m3	30.0			
	6.2.1.2	Type R8 Foundation reinforcing to be supplied and bent and installed to detail	kg	169.0			
		Total Carried Forward					

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
		Brought Forward					
	6.2.1.3	Type Y10 Foundation reinforcing to be supplied and bent and installed to detail	kg	351.0			
	6.2.1.4	Planter walls constructed to detail - Stock bricks (inside skin of single brick wall), painted with paint-on waterproofing to manufacturer's specification	m2	220.0			
	6.2.1.5	Planter walls constructed to detail - Face bricks (outside skin of single skin wall)	m2	220.0			
	6.2.1.6	Planter walls constructed to detail - Modcon precast coping on Type 010 placed and fixed on brick wall with mortar	m	364.0			
	6.2.1.7	150mm Brickforce reinforcing every second course	m	8.0			
	6.2.2	Planter 3000x1500x450mm built from Corobrik Country Classic FBS brick and mortar planters.					
	6.2.2.1	Planter Foundation: 15MPa In-situ cast concrete to detail, (including casting and testing of 3 concrete cubes)	m3	18.0			
	6.2.2.2	Type R8 Foundation reinforcing to be supplied and bent and installed to detail	kg	240.0			
	6.2.2.3	Type Y10 Foundation reinforcing to be supplied and bent and installed to detail	kg	220.0			
	6.2.2.4	Planter walls constructed to detail - Stock bricks (inside skin of single brick wall)	m2	120.0			
	6.2.2.5	Planter walls constructed to detail - Face bricks (outside skin of single skin wall)	m2	120.0			
	6.2.2.6	Planter walls constructed to detail - Modcon precast coping on Type 010 placed and fixed on brick wall with mortar	m	225.0			
	6.2.3	Planter 1500x1000x450mm built from Corobrik Country Classic FBS brick and mortar planters.					
	6.2.3.1	Planter Foundation: 15MPa In-situ cast concrete to detail, (including casting and testing of 3 concrete cubes)	m3	2.0			
	6.2.3.2	Type R8 Foundation reinforcing to be supplied and bent and installed to detail	kg	70.0			
	6.2.3.3	Type Y10 Foundation reinforcing to be supplied and bent and installed to detail	kg	60.0			
	6.2.3.4	Planter walls constructed to detail - Stock bricks (inside skin of single brick wall)	m2	7.0			
	6.2.3.5	Planter walls constructed to detail - Face bricks (outside skin of single skin wall)	m2	7.0			
	6.2.3.6	Planter walls constructed to detail - Modcon precast coping on Type 010 placed and fixed on brick wall with mortar	m	14.0			
	6.3	Extra Over Item 6.2 for finish as per Option 2: Reinforced off-shutter concrete planters to detail including casting and testing of 3 concrete cubes per batch. Outsides of walls to be sanded down to a smooth finish with no obvious bumps or depressions					
		Total Carried Forward					

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
		Brought Forward					
	6.3.1	Planter 4500x2500x450mm	ea	26.0			
	6.3.2	Planter 3000x1500x450mm	ea	25.0			
	6.3.3	Planter 1500x1000x450mm	ea	7.0			
	6.4	Seating Walls: Supply and deliver all material, labour, and equipment required for the construction and/or installation of seating walls to detail complete with all fittings and fixtures required					
	6.4.1	In situ cast concrete seating walls 5500x500x450mm (internal radius 1250mm) including casting and testing of 3 concrete cubes per batch	ea	0.0			
	6.5	Street Furniture: Supply and deliver and install all material, labour, and equipment required for the construction/ installation of street furniture to detail complete with all fittings and fixtures required					
	6.5.1	Wilson Stone Chapman Bollard exposed aggregate 1200x300mm (base, 250mm top) or similar	ea	170.0			
	6.5.2	Precast concrete collar 600x600x50mm with 320mm opening exposed aggregate	ea	150.0			
	6.5.3	Wilson Stone Turin Bench 1500x450mm colour grey or similar	ea	40.0			
	6.5.4	Wilson Stone Modus 900 Large Bin 900x600mm (170l) colour grey or similar	ea	30.0			
	6.5.5	Wilson Stone Drinking Fountain 1200x300mm exposed aggregate or similar	ea				
	6.5.6	0.9m highx76mm diameter x2mm galvanized steel fence post with cap at top	ea	70.0			
	6.6	Supply and deliver and install all material, labour, and equipment required for the construction/ installation of Dump rock on western traffic circle					
Li	6.6.1	Supply and place beige dump rock on A2 bidim/"Weedguard" as per plan	m2	40.0			
Li	6.6.2	Supply and place grey dump rock on A2 bidim/"Weedguard" as per plan	m2	30.0			
Li	6.6.3	Supply and place boulders of average diameter 600mm	ea	9.0			
	6.7	Balustrading - supply, deliver and install galvanized Mentis ball and tube interlinked handrailing system to ramps, existing raised walkways and stairs complete with all fittings and fixtures required					
	6.7.1	Type MT90 tubular stanchions (spaced at 1m centres) - galvanized (on straight level sections)	ea	260.0			
	6.7.2	Type MST35 tubular stanchions (spaced at 1m centres) - galvanized (on stairs)	ea	30.0			
	6.7.3	34mm diameter tubular handrailing - galvanized (quantity includes bottom and top rail)	m	522.0			
		Total Carried Forward					

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
Brought Forward							
	6.7.4	34mm diameter tubular handrailing at 35o angle on stairs - galvanized (quantity includes bottom and top rail)	m	50.0			
	6.7.5	34mm diameter tubular handrailing bends from horizontal to 35o- galvanized (quantity includes bottom and top rail)	ea	32.0			
	6.7.6	34mm diameter tubular handrailing bends horizontal around 90o corners- galvanized (quantity includes bottom and top rail)	ea	6.0			
	6.7.7	2M ends (on level stretches and ramps)- galvanized	ea	23.0			
	6.7.8	3M ends (stairs)- galvanized	ea	20.0			
	6.8	Stairs - Supply and deliver all material, labour, and equipment required for the construction of stairs to detail					
Li	6.8.1	Allow for demolition of existing stairs where indicated, removal of all rubble, and making good of plaster along existing walkways and spoil to contractor own spoil site	m3	5.0			
	6.8.2	200mm 15MPa concrete foundation (on layerworks to engineer's spec)	m3	14.0			
	6.8.3	Doubleskin stock brick walls under stairs, including brickforce in every third course. Joints to be recessed	m2	110.1			
	6.8.4	Corobrick FBS bullnose header course (including one FBS under the header course, and half a FBS behind the header course)	m	240.0			
	6.8.5	Making good of plaster on existing raised walkway next to top step	m2	8.0			
	6.9	Ramps - Supply and deliver all material, labour, and equipment required for the construction of ramps to detail					
	6.9.1	200x400mm 15MPa concrete foundation for brick retaining wall (on layerworks to engineer's spec)	m3	6.0			
	6.9.2	Doubleskin brick wall (outer skin Corobrick FBS, inner skin stock brick, with brickforce every 3rd course). Joints to be recessed	m2	22.0			
	6.9.3	Corobrick FBS bullnose header course	m	75.0			
	6.9.4	G7 Backfilling underneath ramp, compacted in layers of 150mm to 95% ModASSTHO	m3	18.0			
	6.9.5	20Mpa concrete surface bed, brushed finish. Saw-cut joints at 3m intervals, and all joints (also at sides) to be filled with a polyurethane filler)	m3	100.0			
	6.9.6	Making good of plaster on existing raised walkway next to ramp	m2	22.0			
	6.9.7	Allow for demolition of existing ramps where indicated, removal of all rubble, and making good of plaster along existing walkways and spoil to contractor own spoil site	m3	5.0			
Total Carried Forward							

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
		Brought Forward					
		Purchase all plants from a registered SANA nursery. All plants to be purchased from a local nursery with similar climatic conditions as the site in question. Plants to have been hardened off for cold climatic conditions for at least one season prior to planting. All plants must be transported to site in trucks with closed canopies. Plants in transit may not be exposed to wind or any other harmful element. All plants are to be viewed and approved by the Landscape Architects before planting. The Landscape Architect retains the right to adjust specific species if plants are not available or of poor quality. The Contractor may not make any substitutions of plant species or sizes without the prior written approval of the Landscape Architect. Payment after planting. Supply all equipment and labour for planting of trees, shrubs and groundcovers. Plant 100 litre trees in 1.5mx1.5mx1m holes and 50 litre trees in 1mx1mx1m holes. All trees to be planted at least 2m from any service line. Backfill with soil, compost and fertilisers to specification and tramp down firmly. Level all surplus soil. Provide all necessary stakes and ties as specified below and secure tree firmly as per specifications. Form level bowl around trees and water well after planting. Keep plant material moist. PLANTING TO BE SET OUT AND/OR APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING COMMENCING					
	7.1	Supply and deliver and install all material, labour, and equipment required for the planting and/or installation of Trees					
	7.1.1	Street trees: 100L Bolusanthus speciosus	ea	70.0			
	7.1.2	Focal Trees in Traffic Circle: 200l Aloidendron barberae	ea	3.0			
		PREPARATION AND PLANTING - TREES Planting Holes for trees shall be trenched by hand - 1000mm x min. 1000mm x min. 1000mm in dimension unless otherwise specified, and shall be prepared as follows: 0.15 kg superphosphate per hole 3 x tablets (21 grams) per tree of "AgriForm" to manufacturer's specification or similar approved 15 litre container compost per hole (Claimed Separately) 0.3 kg bonemeal or bone phosphate per hole. The soil from each individual hole shall be removed from the hole prior to mixing the above additives well into the planting soil. All tree holes must be inspected by Landscape Architect prior to planting of the trees. The presence of any service line, cable, pipe etc. shall be checked by Contractor prior to planting. Services layout drawings will be available from the Civil Engineer. The actual position must be confirmed by digging test trenches. ALL digging in these areas will be done by hand and EVERY precaution must be taken to safeguard and protect the underground services. The bottom of the hole shall be forked over to break up the subsoil. The planting mix, as per above, must be returned into the hole to accommodate the root ball of each plant. The top of the root ball must be level with the finished ground level. The contractor shall install a 150mm x 63mm HDPE class 6 pipe tree protector around trees in lawn areas. After planting, the soil around the plant shall be well firmed down and thoroughly watered. The RATE per specified tree shall include all costs of purchase/supplying and transporting the plant to site, excavation of the holes, the preparation of the soil (5.2.1.1) the planting and staking of each plant, plus the establishment thereof during the 90 days defects liability period to the satisfaction of the LANDSCAPE ARCHITECT.					
		Total Carried Forward					

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
Brought Forward							
		Tree Stake: Wherever necessary, due to the structure and/or the shape of the plant, trees shall be staked at time of planting as follows: One (1) "Tanalith" treated stake, 3000mm x 40mm shall be placed in a prepared hole and driven into solid ground not less than 750mm or 1/3 of the length of the stake. Trees shall be planted as close as possible to stakes without root crowding. Stakes shall be of an equal length and tops shall be sawn off stakes once installed, where required. Request further detail if required.					
		Tree Ties: Ties to be adjustable plastic/nylon reinforced tree tie as approved by the South African Nurseryman's Association or 2mm wire in 20mm flexible hosepipe. Install 1 (one) tree ties per tree at approximately 300mm and 1000mm above the root ball. Mounting height not to exceed 2000mm above grade. Trees shall NOT be tied tightly to tree stakes, but shall be allowed at least 25mm free movement ALL ROUND the stem between tree tie and stem to allow the tree to develop its own strength. Ties are intended to provide support against falling over but not to be a 'second stem'.					
		The RATE for planting trees shall include all costs of supply, delivery, installation and supervision to ensure proper establishment and healthy growth according to the specifications above.					
	7.2	Supply and deliver and install all material, labour, and equipment required for the planting and/or installation of Goundcovers and Perennials					
		PREPARATION AND PLANTING - GROUNDCOVERS: Planting Rooted cuttings, "plugs" or "six packs" will only be acceptable where specifically stated in the Plant List. All planting areas shall be cultivated to a depth of 300mm, cleared and free of weeds, large stones and rubble. Before planting, the following shall be forked into the top 150mm unless otherwise specified. 0.15 kg superphosphate per m2 0.1 kg 2:3:2 (22)+Zn fertilizer per m2 5 litres of approved manure or compost / m² - claimed separately Individual holes shall be dug to a depth and width as indicated or 50% larger than the container, spacing should be according to Plant List and Plant Plans. After planting, all plants shall be firmed down and well watered. Plants shall be of the following minimum sizes: Size / Height : 4l / 300mm Six-packs / 75mm Cuttings / 50mm					
Li	7.2.1	Planting plants Carissa Macrocarpa 'Green Carpet' for planters, planter islands and pavement landscape areas	ea	2,600.0			
	8.1	Supply and deliver and install all material, labour, and equipment required for the installation of Irrigation mainline: Class 8, 63mm UPVC pipe complete inatalled with trencing and backfill as per details below:	m	750.0			
Total Carried Forward							

LI C	Item	Description	Unit	Quantity	Rate	Amount	
						R	c
		Brought Forward					
		Excavation of trenches - the width of the trench should be kept to a minimum but allowing sufficient working area for jointing and initial compaction around pipe. Trench depth should be such to allow a depth of cover from the bottom of the trench to the ground surface not less than 900mm for uPVC piping greater than 110mm, 600mm for HDPE/uPVC50mm-90mm piping and 450mm for smaller sizes 20mm-50mm lateral lines. If rock or other adverse conditions preclude the installation at the prescribed depth, the client's permission must be obtained for burial at shallower depth. Trench preparation - The trench bed shall be of uniform level and free from all stone and/or hard projections, which are likely to cause damage to the pipe. If deemed necessary by the designer, the trench shall be layered with a suitable bedding material as specified by the designer. Pipe laying - the pipeline must be laid directly on the prepared bedding, and any temporary supports or other foreign hard bodies must be removed. Ensure that the rubber ring of the joint or other fitting is clean and free of stone and grit. Both spigot and socket surfaces must be carefully cleaned and lubricated to manufacturer specification. Backfilling - The trench back fill material shall be free from all stone and/or hard projections, which are likely to cause damage to the pipe and cables. The simultaneous filling and even compaction of material on either side of the pipe should be done to prevent displacement of pipe. The backfill material shall be placed in even layers of 150mm in depth and compacted after each layer is placed. Compaction of trenches through hard surfaced areas to be to site engineer's specification for other civil works. That through planted areas to be to the same degree of compaction of the surrounding planting area, such that no subsidence occurs after backfilling. 80% MOD AASHTO in planting areas and 83% MOD AASHTO in Lawn areas. Services - The CONTRACTOR shall make every effort to acquaint himself with the positions of existing services. Any repairs to damage to such services and utilities shall be by the CONTRACTOR at his own expense.					
	8.2	Supply and deliver and install all material, labour, and equipment required for the installation of 63mm compression joints	ea	25.0			
	8.3	Supply and deliver and install all material, labour, and equipment required for the installation of 63mm compression elbows	ea	50.0			
	8.4	Supply and deliver and install all material, labour, and equipment required for the installation of 200mm green plastic valve boxes with lids	ea	35.0			
	8.5	Supply and deliver and install all material, labour, and equipment required for the installation of Turf Valve complete and shall be installed 100 mm below finished ground level in the planters where indicated on a 25mm standpipe fitted to a 63mm saddle with a 25mm ball valve all inside a 200mm diameter valve box with a the lid flush with the finished ground level.	ea	14.0			
	8.6	Connection to water point including provision for 110mm saddle, 63mm ball valve, 6 Bar pressure reducing valve, 300mm x 300mm manhole with steel cover and frame					
		Total Carried Forward					

2129 UIF TO SHELL
2129 UIF TO SHELL

SECTION B8300 SOFT AND HARD LANDSCAPING

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SUMMARY OF SECTIONS

Section	Description	Amount (Rand)
1	SECTION 1200 GENERAL REQUIREMENTS AND PROVISIONS
2	SECTION 1300 CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS	.....
3	SECTION 1400 HOUSING, OFFICES, LABORATORIES AND GENERAL OBLIGATIONS	.....
4	SECTION 1500 ACCOMMODATION OF TRAFFIC	.....
5	SECTION 1700 CLEARING AND GRUBBING	.....
6	SECTION 1800 DAYWORKS	.....
7	SECTION 2100 DRAINS	.....
8	SECTION 2200 PREFABRICATED CULVERTS	.....
9	2300 CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES, AND CONCRETE LININGS FOR OPEN DRAINS	.....
10	SECTION 3300 MASS EARTHWORKS	.....
11	SECTION 3400 PAVEMENT LAYERS OF GRAVEL MATERIAL	.....
12	SECTION 3500 STABILIZATION	.....
13	SECTION 3900 BREAKING UP EXISTING PAVEMENT LAYERS	.....
14	SECTION 4100 PRIME COAT	.....
15	SECTION 4200 ASPHALT BASE AND SURFACING	.....
16	SECTION 5600 ROAD SIGNS	.....
17	SECTION 5700 ROAD MARKINGS	.....
18	SECTION 5900 FINISHING THE ROAD AND ROAD RESERVE	.....
19	SECTION 7300 CONCRETE BLOCK PAVING FOR ROADS	.....
20	SECTION 8100 TESTING MATERIALS AND WORKMANSHIP	.....
21	SECTION B8200 STREET LIGHTS	.....
22	SECTION B8300 SOFT AND HARD LANDSCAPING	.....
	SUBTOTAL	.....
1	Add 10% CONTINGENCIES	.....
	SUBTOTAL	.....
2	Add 15% VAT	.....
Total Carried Forward To Summary Of Schedules	

THE CONTRACT

PART C3: SCOPE OF WORK

C3.1	Description of Works	T-114
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C3.1 DESCRIPTION OF WORKS

C3.1.1 Employer's Objectives

The employer's objectives are to deliver public infrastructure using labour intensive methods where possible in accordance with EPWP Guidelines

Labour-intensive works

Labour-intensive works shall be constructed/maintained using local workers who are temporarily employed in terms of this Scope of Work.

Labour-intensive competencies of supervisory and management staff

Contractors shall engage supervisory and management staff in labour-intensive works that have completed the skills programme including Foremen/Supervisors at NQF "National Certificate: Supervision of Civil Engineering Construction Processes" and Site Agent/Manager at NQF level 4 "Manage labour-intensive Construction Processes" or equivalent QCTO qualifications.

C3.1.2 Overview

The project consists of the upgrading of municipal streets and loading areas and sidewalks including stormwater and streetlights and street furniture and landscaping in the Thulamela CBD area.

Please note the scope of works detailed below is an indication and any part or parts of it or similar work to it may be allocated to any contractor who is appointed through this tender on a as-and when needed basis.

The scope of work described is not exhaustive and may be modified or additional tasks may be assigned to the contractor appointed through this tender process, as needed.

The general site which will be upgraded consists of the entire CBD area and may include any street(s) within the CBD area or closely related areas to the CBD.

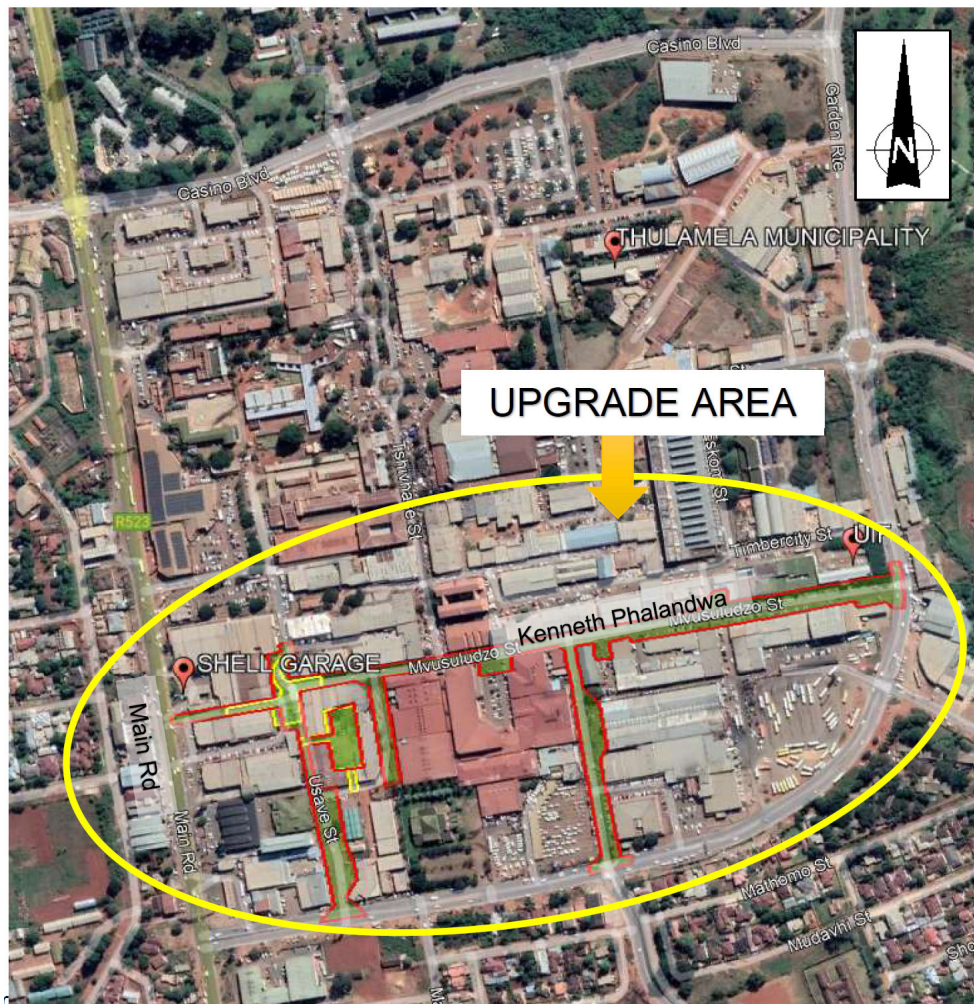
The following areas are among some of the areas to be upgraded:

- Upgrading of streets in the area of UIF to Shell Garage and other streets within the CBD general area
- The landscaping and walkway upgrades in the area.
- The area of the electrical street light upgrades in several streets.
- The area of the stormwater upgrade requirements in the road between the Shell Garage located in Main Road on the West and the UIF offices located in Garden Road on the East of the CBD and other areas in the CBD and surrounding areas
- Upgrades to roads and sidewalks in the CBD and surrounding areas

- Upgrades to roads and sidewalks on Samuel Muvango Street and surrounding areas
- Upgrade of loading areas located on northern side of CBD North west and South West of Samuel Muvango Street and the Samuel Muvango Street/Thulamela Municipality walkway corridor and surrounding areas

The centre of the site has the following approximate coordinates:

Latitude: 22°58'30.68"S Longitude: 30°27'32.82"E



Upgrading of Geometric Road improvements:

The geometric road upgrades for the upgrading of the intersection roundabout of Kenneth Phalandwa Street and George Ramudzuli Street and surrounding areas



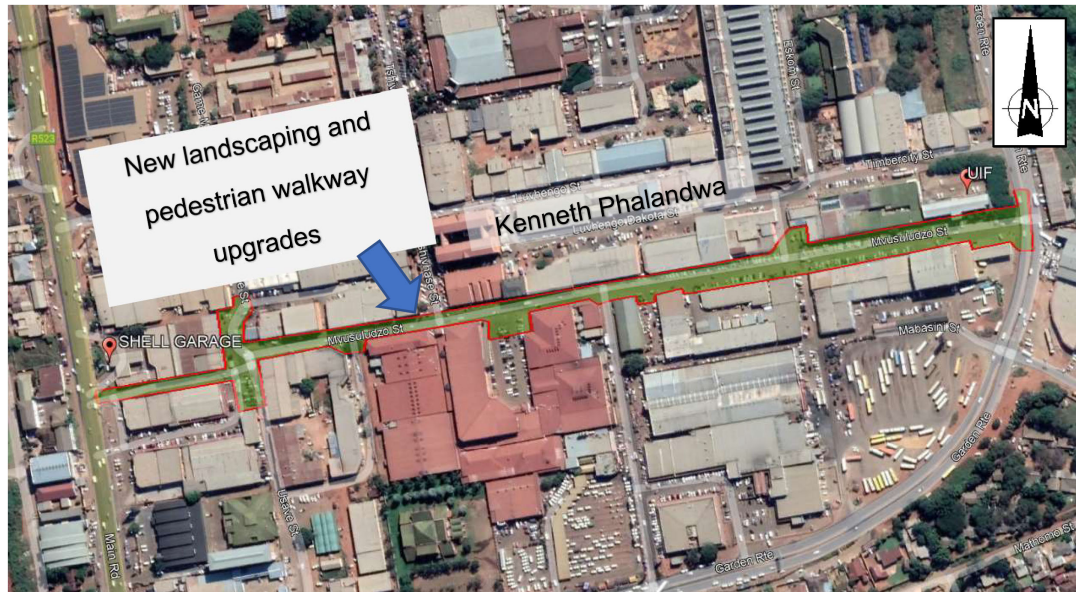
Upgrading of Loading areas:

The geometric upgrades for the construction of formal loading and off-loading areas located on the Southern side of the CBD, east of George Ramudzuli Street and surrounding areas

Upgrading of Landscaping and Pedestrian Walkways

The upgrading of landscaping and walkways in the area Kenneth Phalandwa Street from Main Road to Garden Road and surrounding areas

- a) Installation of widened paved walkways
- b) Installation of raised planters planted with groundcovers and indigenous trees
- c) Installation of informal trade stall markers
- d) Walkways: 3m paved pedestrian pathways
- e) Concrete litterbins spaced at 45m
- f) Concrete benches spaced at 45m

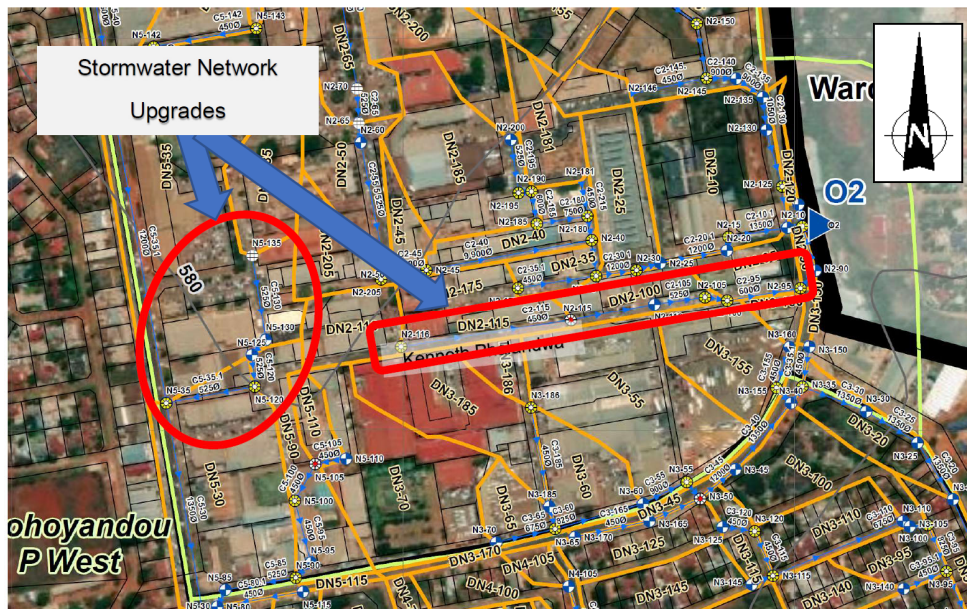


Upgrading of Stormwater Systems

The upgrading of stormwater infrastructure in the road between the Shell Garage located in Main Road on the West and the UIF offices located in Garden Road on the East of the CBD and surrounding areas

The upgrading measures include the following:

- ☐ Upgrading of existing undersized stormwater pipes.
- ☐ Replacing and construction of broken kerb inlets.
- ☐ Implementing additional kerb inlets at low points along the road.



UPGRADING OF LANDSCAPE AND PEDESTRIAN WALKWAYS

Upgrading of pedestrian walkways will be done in parallel with road geometric upgrades to ensure that the needs of pedestrians, informal traders and formal business are accommodated.

Installation of widened paved walkways:

The paved walkways are generally widened to a minimum 3 metres wide where possible to accommodate informal traders on the kerbside of the sidewalk, with a generous 2 metres wide walkway where possible between the traders and the shopfronts. This minimum is further widened at intersections and pedestrian crossings to provide gathering spaces while people wait to cross. This allows the formal businesses an unobstructed view of their shopfronts from the sidewalk and free access to their entrances.

A simple, easily repeatable paving pattern built with concrete unit pavers, which can be easily repaired in the event of excavations, construction activities or other disruptions to the paving patterns.

The Venda people are known for their intricate and colourful weaving patterns, which are often used in their traditional dress. These patterns are an important part of Venda culture and play a significant role in their daily lives and cultural practices. A simplified version of these patterns was used in the paving design.

Installation of raised planters planted with groundcovers and indigenous trees

The new trees and landscaping will be installed in 4 constructed planter types. The first two types will be raised 450mm off the sidewalk level and the planted area of the other two will be level with the sidewalk. The first group of planters (Types 1 and 2) provide shade for parked vehicles and pedestrians, seating for pedestrians, define the sidewalk space and provide protection from the potential dangers of the street to pedestrians. They also provide a large volume of soil for street trees to grow in, resulting in the trees being able to grow larger. These planters will also be fitted with a quick-coupling valve in a plastic valve box to provide the Municipality with a means of watering the street plantings and washing the sidewalks if required. The second group planters (Types 3 and 4) provide less soil volume, since the planting footprint is smaller, and its role is mainly that of shading the sidewalks and parked vehicles. Since they are smaller, these planters can be provided at more regular intervals and planter type 4 can be used between cars that are parked in parallel and in herringbone configuration. The construction material for these planters is off-shutter concrete with face-brick with a concrete coping.

Installation of concrete benches and concrete litter bins

This project requires the installation of street furniture such as concrete benches and litter bins as instructed by the engineer on site to suite the environment and functionality of the beneficial area. The final decision and specific placement of bins will be determined by the engineer, and not necessarily by any other individuals or parties

involved. The engineer will be the one responsible for instructing the precise location of the bins.

Installation of informal trade stall markers

The areas allocated to informal traders must be marked on the sidewalks. The markings must fulfil two functions, namely marking the extent of the trade area for each trader and indicate the stall number, since trade licenses will be issued to ensure traders are regulated and limited to their stall, but also to ensure by-law enforcement can take place.

The stalls will be marked in the following ways to be robust, practical and facilitate by-law enforcement:

1. Construction of a stall number marked on the paving blocks
2. Marking of the sidewalk paving with a different colour and/or texture demarcating the trade area.

UPGRADING OF STREETLIGHTS

The area of the electrical streetlights which may be allocated to any of the contractors appointed by this tender in full or in part and may include other streets not necessarily indicated in the list below.

No	Street Id	Length
1	Casino Boulevard	875
2	Garden Route (parts)	1245
3	MvusuludzoSt	830
4	Samuel Muvhango Street	615
5	TimberCitySt	475
6	Ndou MallSt	400
7	Taxi RankSt	387
8	LuvengoSt	372
9	Venda PlazaSt	345
10	TshibevhaSt	332
11	PoliceSt	325
12	Gym4USt	325
13	UsaveSt	310
14	GoldWagenSt	261
15	Matidza ComplexSt	248
16	GameSt	238
17	Usave backSt	210
18	J Jays St	192
19	ZubeSt	154
20	Mutsindo MallSt	152
22	MabasiniSt	120
24	Eskom St	203
25	Thulamela Taxi St	237
26	SparAbsaFnb St	156

	Approximate Total Length	9007
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There are currently limited streetlights in the CBD and very few of them is in a working condition and needs to be upgraded as per the layout plan.

New cabling will be installed 600mm under the natural or finished ground level and encased in concrete at specific locations as instructed by the engineer.

The streetlights are supplied from existing or new miniature substation in the area, or existing or new distribution kiosks in their vicinity.

Area lighting

High-mast lighting systems are a common solution for lighting large areas, such as loading zones. The installation of these systems will consist of a tall pole with several light fixtures mounted at the top, which will effectively illuminate a large area with a single installation. The installation of high-mast lighting systems in loading areas will help improve visibility and safety for workers and vehicles.

Extent of Asphalt Road Works

The project involves upgrading internal streets by widening in certain areas to asphalt road surface and improving layerworks to meet parking requirements. In areas where the street is severely damaged, the road may need to be rebuilt with new layerworks, surfacing, and kerbs.

ELECTRICAL SPECIFICATIONS

1.1 GENERAL TECHNICAL SPECIFICATION

1.1.1 GENERAL

The electrical sub-contractor must be approved by the Thulamela Local Municipality. A letter or certificate from the local Municipal St Supply Authority stating such approval must be submitted to the electrical engineer or project manager upon request. Electrical sub-contractors that are not approved by the Thulamela Local Municipality will be rejected.

The General Technical Specification is to be read in conjunction with the Detailed Technical Specification.

Where the Detailed Technical Specification differs from the General Technical Specification, the former shall apply to this contract.

1.1.2 COMPLIANCE WITH REGULATIONS

1.1.2.1 The installation shall be erected and carried out in compliance with:

- a) The SANS - 10142 Code of Practice for the Wiring of Premises as amended;
- b) The Occupational Health and Safety Act as amended.
- c) The local Municipal St Supply Authority By-Laws and Regulations.
- d) The local Fire Regulations.
- e) The Standard Regulations of any Government Department of public service company where applicable.

1.1.2.2 In addition, the Sub-Contractor shall issue all notices and pay all the required fees in respect of the installation to the local authorities, and shall exempt the Employer from all losses, costs or expenditures which may arise as a result of the Sub-Contractor 's negligence to comply with the requirements of the regulations enumerated in paragraph 1.2.

1.1.2.3 It shall be assumed that the Sub-Contractor is conversant with the above-mentioned requirements. Should any requirements, by-law or regulation which contradict the requirements of this document, apply or become applicable during erection of the installation, such requirement, by-law or regulation shall overrule this document and the Sub-Contractor shall immediately inform the Engineer of such a contradiction. Under no circumstances shall the Sub-Contractor carry out any variations to the installation in terms of such contradictions without obtaining the written permission to do so from the Engineer

1.1.3 ARRANGEMENTS WITH THE SUPPLY AUTHORITY

1.1.3.1 It shall be the responsibility of the Subcontractor to issue all notices and pay all monies that are due for the electrical builders / temporary supply connection, except where otherwise specified. If, according to the contract, these monies are reclaimable from the Employer, then these claims by the Sub-Contractor shall be substantiated with official receipts.

1.1.3.2 It shall be the responsibility of the Sub-Contractor to make the necessary arrangements at his own cost with the local supply authority and to supply the labour, equipment and means to inspect, test, commission and to hand over the installation.

1.1.3.3 The Sub-Contractor shall supply and install all notices and warning signs that are required by the appropriate laws, regulations and/or by this document.

1.1.4 CABLING

1.1.4.1 General

Unless otherwise specified, PVC-insulated, armoured copper cable shall be used.

Competence of Personnel

It is a definite requirement that the Sub-Contractor shall only instruct competent personnel to install and connect the various cable types.

Standards

All cables used shall conform to the relevant SANS specifications and shall be installed, protected and terminated according to approved methods in compliance with the manufacturer's requirements.

Cable Sizes

A minimum cable size of 10 mm² shall be used to link all streetlights and pedestrian lights. Cables connecting streetlight control kiosks to miniature substations or other electrical supplies shall have a minimum size of 25 mm².

Unarmoured Cables

No unarmoured cables shall be used in this installation, except in the following cases:

- Internal wiring in streetlight panels, which shall be coloured PVC stranded wires.

1.1.4.2 Voltage Ratings

All cables shall be suitable for the voltage to be applied between phases and between each phase and earth.

All cables to be used in systems with a system voltage between 50V and 600V shall have a voltage rating of 600/1000V.

The same group derating and ambient temperature correction factors stated in the SANS Code of Practice for PVC cables shall be applicable.

Cable ends shall be terminated strictly in accordance with manufacturer's specification to prevent tracking and contamination. The termination shall withstand the same test voltage as the rest of the cable.

1.1.4.3 Underground Cables

Precautions

The storage, transport, handling, and installation of underground cables shall be executed according to approved methods and the Sub-Contractor shall ensure that suitable labour and equipment is available. Only armoured cables may be installed along underground cable routes.

Installation Depth

Unless specified to the contrary, low voltage cables shall be installed at a depth of 600mm. Where cables are installed in layers the uppermost layer shall comply with the above and each additional layer shall be at least 300mm lower.

Trenching

The Sub-Contractor shall be responsible for all trenching unless specified to the contrary and shall take all necessary precautions and provide the necessary warning signs and/or lights to ensure that the public and/or employees on site are not endangered.

The Sub-Contractor shall ensure that the trenches will not endanger existing structures, roads, railways, or other property.

The Sub-Contractor shall verify the existence at all other services and ensure that they are not damaged during trenching operations.

Trenches between the points indicated shall be straight. Any deviations due to obstructions or existing services shall be approved by the Engineer.

Dimension of Trenches

Cable trenches shall not be less than 250mm wide at the lowest point where one or two cables are to be installed and the width shall be increased where more cables are to be installed so that cables can be installed at least one cable diameter apart throughout the run.

Unless specified to the contrary, dimensions of trenches will be as follows:

c.) Low Voltage Cable trenches (Service & Streetlight cable)

Width : 300mm

Depth : 600mm

Bedding

Cables shall be bedded in river sand or sifted soil (not clay). The bed shall extend 100 mm below and 100mm above the cable. Under no circumstances may stone bigger than 50mm mesh be allowed to come into contact with the cables.

Laying of Cables

Cables installed in the same trench shall be laid parallel to each other at least one cable diameter apart. The cable shall be removed from the drum in such a manner that no twisting, tension or mechanical damage is caused and must be adequately supported at short intervals during the whole installation operation. Cable rollers shall be used as far as possible. Where cables have to be drawn through pipes or ducts, a suitable cable sock shall be used, and particular care shall be exercised to avoid abrasion, elongation or distortion of any kind. Ends of all pipes and ducts shall be sealed with a non-hardening watertight compound.

Inspection of Trenches

Trenches may not be backfilled before the Engineer has inspected the cable and trenches. Should the Sub-Contractor ignore this requirement, trenches may be re-opened at the cost of the Sub-Contractor should the Engineer wish to carry out an inspection.

Concrete

A 100 mm thick layer of concrete should be poured along the length of all trenches starting at 100 mm above cables, to prevent vandalism and theft.

Backfilling

Backfilling shall be of earth of a proper grading to ensure settling without voids. The earth shall be compacted down after the addition of every 150 mm layer. Should the Sub-Contractor ignore this requirement, the Engineer may ask to Sub-Contractor to re-open the trenches and repeat the backfilling process to the correct specification at the cost of the Sub-Contractor.

The surface shall be made good to match the surrounding surface area.

Pipes

Where cables crossroads, railways or other service areas, the cables shall be installed in hard walled PVC sleeves.

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

1.1.4.4 Earth Conductor

Unless clearly specified to the contrary, earth continuity conductors shall be installed with all cables that form part of the low voltage distribution system.

The earth continuity conductor shall consist of a bare stranded copper conductor running in parallel with all conductor cables.

The cross-sectional area of the earth conductor shall be as determined from the SANS Code of Practice. A single conductor may be used where parallel cables supply the same load.

A single conductor may be installed serving several underground cable routes. Where branch circuits occur, an earth conductor shall be bolted and brazed to the main earth conductor.

The earth conductor shall be connected to the earth busbar of the switchboards to which the associated cables are connected. The earth conductor shall also be bonded to the cable armouring and lead sheath (if appropriate) at both ends and at all joints. The earth conductor shall be strapped to the cable with cable ties at intervals not exceeding 600mm

1.1.4.5 Identification of Cables

All cables shall be identified at both ends and at all joints and as otherwise specified according to a code or number system. These numbers shall appear on the as-built drawings.

Cables shall be marked with non-deteriorating labels.

1.1.4.6 Looping

Please note: No conductor jointing will be accepted.

1.1.4.7 Connections

The insulation of conductors shall only be removed over a portion of the conductors that enter the terminals of switches, plugs or other equipment. When more than one conductor enters a terminal, the strands shall be securely twisted together.

1.1.4.8 Earthing Conductors

When earth continuity conductors are looped between terminals of equipment, the looped conductor ends shall be twisted together and then be soldered or ferruled to ensure that earth continuity is maintained when the conductors are removed from a terminal.

1.1.4.9 Colours

The colours of conductor insulation for wiring purposes shall comply with the SANS Code of Practice. The colours for sub-circuits shall as far as possible correspond with the colour of the supply phase.

1.1.4.10. Single Pole Switches

Single pole switches shall be connected to the phase conductor and not to the neutral conductor.

1.1.5 EARTHING

1.1.5.1 Earthing of the installation

The installation shall be earthed properly in accordance with the SANS Code of Practice for the Wiring of Premises and with the by-laws of the Local Authority, All earth conductors shall be bare stranded copper conductors or stranded conductors with green P\VC-insulation.

1.1.5.2 Sub-Distribution Boards

A separate earth connection, consisting of bare stranded copper conductors and supplied along the same routes as the supply cables, shall be supplied between the earth busbar in each sub-distribution board and the earth busbar in the main switchboard.

If the supply connections consist of conductors in conduit, the earth conductors shall be drawn in the same conduit. The sizes of earth conductors shall be in accordance with the SANS Code of Practice for the Wiring of Premises.

1.1.5.3 Sub-Circuits

The earth conductors of all sub-circuits shall be connected to the earth busbar of the supply board.

1.1.5.4 Connections

Under no circumstances shall any connection points, bolts, screws, etc. used for earthing be utilised for any other purpose. It will be the responsibility of the Sub-Contractor to supply earth terminals or clamps where these are not provided by others. The ends of all bare earth conductors shall be tinned. All earth connections shall be tinned and fixed with approved ferrules. The entire connection shall then be soldered.

1.1.6 COMMISSIONING AND TESTING

The Sub-Contractor shall commission and test the entire installation at his own expense, including provision of all test equipment, such testing to be done in the presence of the Engineer, who shall have been notified of the dates and approximate duration of the tests sufficiently early to allow him to witness tests if necessary.

The Sub-Contractor shall properly test and call for inspection by the Engineer any work which is to be covered, concealed, built-in, otherwise closed up or rendered inaccessible, before such closing up takes place. The Engineer may require any work of this nature which he has not been called on to inspect before closing up, to be uncovered or made accessible to him entirely at the Sub-Contractor's expense, making good included.

It is in the interest of the Sub-Contractor to notify the Engineer when the installation reaches various stages of completion in order that the Engineer may inspect the installation and point out discrepancies. These inspections shall be considered informal and under no circumstances will they, in part or in whole, invalidate the requirements of the document. Any costs incurred in correcting discrepancies shall be to the Sub-Contractors account.

1.1.6.1 The Sub-Contractor shall keep full and proper written records of all tests conducted and commissioning information, such data to be properly indexed and submitted to the Engineer for his records.

1.1.6.2 The Sub-Contractor shall test electrical wiring for compliance with regulations and have the complete installation tested by the relevant authorities.

1.1.6.3 The Engineer reserves the right to inspect any item of equipment during manufacture or before delivery to site. The Sub-Contractor shall make available any item for such inspection. The Engineer shall also be furnished with manufacturer's test certificates whenever these are required by law or called for by the Engineer.

1.1.6.4 The Sub-Contractor shall commission the complete installation prior to inviting the Engineer to accept it.

1.1.7 LABELLING AND IDENTIFICATION

1.1.7.1 All equipment shall be labelled and identified. Where two similar items exist, they shall additionally be numbered for clarity in identification.

1.1.7.2 All equipment including metres, instruments, indicator lights, switches, pushbuttons, circuit breakers, fuses, etc, shall be identified. The function of the equipment and circuits shall be clearly identified. Flush mounted equipment within doors or front panels shall be identified with labels fixed to the doors or front panels respectively.

1.1.8 MAINTENANCE INSTRUCTIONS AND GUARANTEES

1.1.8.1 Retain copies of all maintenance instructions and guarantees delivered with components and equipment (failing which obtain), register with manufacturer as necessary and handover to the Employer on or before Practical Completion. Notify the Employer of telephone numbers for emergency services by Specialist Contractors and Suppliers after Practical Completion.

1.2 DETAILED TECHNICAL SPECIFICATION

1.2.1 SCOPE OF ELECTRICAL SUB-CONTRACT

The electrical sub-contract as measured in the attached bills of quantities comprises of:

- Installation of new light poles and fittings, as detailed in the attached drawings. The new fittings will be connected to new underground cables.
- Installation of new streetlights, cables, street light accessories including photo electric control unit and streetlighting panel as detailed in this specification and attached drawings. Trenching for all cabling is also included in the scope of the electrical sub-contractor.
- The removing of all existing streetlights from the site and handed over to the client
- General earthing.
- Testing and commissioning.
- Handover documentation pack as described later on in detailed specification, including as-built drawings.

1.2.2 NOTES TO TENDERERS

The electrical portion of this tender comprises:

- This detailed specification.
- A general specification
- A schedule/bill of quantities
- Layout drawings

Queries regarding the electrical tender should be addressed, preferably in writing, to the electrical Engineer:

1.2.3 GENERAL

To promote work creation in South Africa, the luminaire should preferably be manufactured within the Republic of South Africa and should have a local content of at least 50%.

If the luminaire offered is of foreign origin, full specification on technical performance and quality must be submitted and full reasons shall be given why the unit had to be imported.

A sample luminaire shall be provided for evaluation and approval by the Electrical Engineer and Client prior to installation.

Luminaire, associated equipment and control gear shall be new and unused and shall be supplied complete with lamps, control gear, diffusers, mounting brackets, etc. and shall be delivered to site in a protective covering.

All circuit breakers installed as part of this installation must be CE and UL certified.

1.2.4 STANDARDS

The following standard specifications (latest editions) shall apply to this luminaire specification:

SANS 10142: The wiring of premises

SANS 10098: Public lighting

SANS 60598-2-3: Luminaires for road and street lighting

CP_TSSPEC_012 Photoelectric Control Units

CP_TSSPEC_014 Street Lighting Luminaires

CP_TSSPEC_015 Post Top Luminaires

CP_TSSPEC_072 Pole-mounted Service Distribution Boxes for Public Lighting

CP_TSSTAN_030 Numbering Of Street Light Poles

CP_TSSTAN_036 Installation of Public Lighting Infrastructure

The requirements of the LOCAL SUPPLY AUTHORITY and any STATUTORY LAWS and BYLAWS.

Any standard referred to in the above standards.

1.2.5 PHYSICAL AND ENVIRONMENTAL REQUIREMENTS

AREAS OF APPLICATION: The luminaires are intended for exterior use.

ENVIRONMENTAL: Unless otherwise specified in the detail specification the luminaires shall be suitable for operation in ambient temperature between -10°C and +45°C. The luminaire shall have an ingress protection rating of IP65.

SAFETY: The luminaire shall bear the SANS 1464 safety mark.

1.2.7 LOCAL SUPPLY AUTHORITY

The electrical subcontractor shall maintain contact with the relevant persons at the supply authority when dealing with any isolations, disconnections, connections, access to electrical chambers, etc.

All removal and installation work must be co-ordinated with the representative from the local supply authority.

1.2.8 TECHNICAL INFORMATION

The Tenderer shall include full particulars regarding the luminaire offered with the tender. Where the term "equal or similar" is used in the description of luminaires, tenderers may offer alternative makes and describe these in full. A manufacturer's catalogue number quoted shall not imply that the luminaire complies with the specification. The decision whether or not these luminaires are in fact similar and equivalent to the specified equipment shall rest solely with the tenderer to prove, and the Engineer to approve or reject, that the luminaire complies with same standards as the specified equipment.

When the term "equal and similar" is not used in the specification, tenderers shall have no choice but to install the specific luminaires as specified.

Luminaires shall be delivered to site in a protective covering.

The mounting or installation positions of luminaires shall be verified on site. The layout as shown in the documents shall generally be adhered to, but any discrepancies and clashes with structural or other features must be referred to the Engineer, before commencing erection of the installation.

1.2.9 INSPECTIONS AND TESTS

The complete works shall be thoroughly tested at completion and during the course of the contract.

The luminaire supplier will be responsible for arranging all the tests specified at the appropriate times.

The luminaire supplier shall assist the Engineer and/or inspector of the relevant Authorities during their inspections and tests and shall supply all tools and instruments where required.

The luminaire supplier shall advise the Engineer of all tests so that he may be present during the tests if he so wishes. Certificates detailing the results of all tests shall be submitted to the Engineer for approval.

The luminaire supplier shall replace any portion of the works that does not comply with the specification. This shall be done free of charge.

The luminaire supplier will not be deemed complete until a clearance or compliance certificate for the works has been issued (where necessary).

Notwithstanding the above, the following tests, shop drawings and or inspections are to be done by the supplier and tests certificates issued:

- Technical data for all luminaires to be issued for approval by the Engineer.
- SANS photometric tests.
- Certificates of Compliance (in terms of SANS 0142 as amended).
- SANS factory tests

- Provide record drawings. Include the provision of relevant framed plasticised drawings in all electrical room.
- Three copies of all "AS BUILT" or "INSTALLED" record drawings, in print form are required to be handed to the Engineer before completion of the project. These shall have been previously submitted to the Engineer for comment and approval. The Electrical Engineer also requires copies of all record drawings to be made available on disk on AUTOCAD format. All "AS BUILT" or "INSTALLED" record drawings are to be prepared by the Electrical contractor in AUTOCAD format.

C3.1.3 Extent of Asphalt Road Works

The project will consist of the following:

The upgrading of internal streets from block paving to asphalt road surface including layerworks for two major sections of approximately 380m long and 300m long and varies in width according to the parking layout requirements of the various sections.

C3.1.4 Location of the Works

The project is located in the Thulamela Local Municipality, in the Vhembe District of the Limpopo Province. This project will be implemented in Thohoyandou CBD area which is a high traffic high pedestrian volume area.

C3.1.5 Temporary Works

All temporary works required by the contractor shall be removed after the complete construction.

C3.1.6 General Information

C3.1.6.1 Drawings

The reduced tender drawings that form part of the tender document shall be used for tender purposes only. Further detailed drawings are to be provided on an on-going basis by the engineer during construction.

Any information in the possession of the contractor, which the resident engineer requires to complete the as-built drawings, shall be supplied to the resident engineer before a certificate of completion will be issued.

Only figured dimensions shall be used and drawings shall not be scaled unless so instructed by the engineer. The engineer will supply all figured dimensions omitted from the drawings.

C3.1.6.2 Power, Water Supply and Other Services

The contractor shall make his own arrangements concerning the supply of electrical power and all other services. No direct payment will be made for the provision of electrical and other services. The cost of providing these services will be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.

C3.1.6.3 Contractor's Camp Site and Security

The contractor shall make his own arrangements regarding the establishment of a camp site and housing for his construction personnel and all regulations stipulated by the local authority shall be adhered to.

It is anticipated that the contractor's choice of a camp site will be influenced by the availability of telephone and electrical connections as well as the supply of potable water.

The contractor shall be responsible for the security of his personnel and constructional plant on and around the site of the works and for the security of his camp, and the employer will consider no claims in this regard.

C3.1.6.4 Additional Requirements for Construction Activities

C3.1.6.4.1 The contractor may not commence constructional activities before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual.

C3.1.6.4.2 The contractor shall submit proposals in connection with directional signs to the engineer for approval.

C3.1.6.5 Programme Requirements for Construction Activities

The contractor shall programme his activities to be suitable in terms of his resources to complete the contract inside the stipulated time period.

C3.1.6.6 Construction in Confined Areas

It may be necessary for the contractor to work in confined areas. In certain areas the width of the fill material and pavement layers may reduce to zero and the working space may be confined. The method of construction in these confined areas depends on the contractor's construction plant. However, the contractor must note that measurement and payment will be in accordance with the specified cross-sections and dimensions, irrespective of the method used to achieve these cross-sections and dimensions, and that the rates and amounts tendered will be deemed to include full compensation for any special equipment or construction methods or for any difficulty encountered in working in confined areas and narrow widths, and at or around obstructions, and that no extra payment will be made nor will any claim for payment be considered on account of these difficulties.

C3.1.7 Labour Regulations

C3.1.7.1 Applicable labour laws

The Ministerial Determination for Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in **Government Notice N° R949 in Government Gazette 33665 of 22 October 2010**, as reproduced below, shall apply to works described in the scope of work as being labour intensive and which are undertaken by unskilled or semi-skilled workers.

C3.1.7.2 Contractor's default in payment to Labourers and Employees

- (a) Any dispute between the Contractor and labourers, regarding delayed payment or default in payment of fair wages, if not resolved immediately may compel the Employer to intervene.
- (b) The Employer may, upon the Contractor defaulting payment, pay the moneys due to the workers not honoured in time, out of any moneys due or which may become due to the Contractor under the Contract.

C3.1.7.3 Provision of Handtools

- (a) The Contractor shall provide his labour force with hand tools of adequate quality, sufficient in numbers and make the necessary provisions to maintain the tools in good and safe working conditions

C3.7.1.7.4 Reporting

The Contractor shall submit monthly returns/reports as specified below:

- (a) Signed Muster rolls/pay sheets of temporary workers and permanent staff detailing the number, category, gender, rate of pay and daily attendance.
- (b) Copies of certified identity documents of workers
- (c) Number of persons who have attended training including nature and duration of training provided
- (d) Assets created, rehabilitated or maintained in accordance with indicators in the EPWP M&E framework
- (e) Plant utilization returns
- (f) Progress report detailing production output compared to the programme of works

C3.7.1.7.5 Employment Of Unskilled And Semi-Skilled Workers In Labour Intensive Works

Requirements for the sourcing and engagement of labour.

- C.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.
- C.1.2. The rate of pay for labourers will be a minimum of R200/day.
- C.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.
- C.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
- C.1.5. The Contractor shall, through all available community structures, inform the local community of the labour intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and / or who come from households:
 - 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) those who are not in receipt of any social security pension income

C.1.6. The Contractor shall endeavour to ensure that the expenditure on the employment of temporary 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.**

C3.2 ENGINEERING

C3.2.1 Design

- (a) The **Employer** is responsible for the design of the permanent Works as reflected in these Contract Documents unless otherwise stated.
- (b) The **Contractor** is responsible for the design of the temporary Works and their compatibility with the permanent Works.
- (c) The **Contractor** shall supply all details necessary to assist the engineer in the compilation of the as-built drawings.

C3.2.2 Employer's Design

- (a) Detail description of Works
The description of the works shall inter alia contain the following particulars regarding the work to be constructed and maintained under the contract.

C3.2.2.1 ROADWORKS

In terms of roads and SW the project comprises the construction of two sections of internal streets and the simulations upgrading of the stormwater system.

Roadworks

Accommodation of traffic during construction;
Clearing and Grubbing of Road Reserve;
Earthworks comprising cut & borrow to fill
Construction of in-situ roadbed;
Construction of selected layer (imported from commercial source);
Construction of stabilized subbase layer using imported natural gravel;
Construction of G2 basecourse;
Construction of Kerbs;
Construction of culverts with inlet & outlet structures;
Construction of sub soil drains (if required);
Surfacing using a 30mm Asphalt;
Erection of road signs;
Provide road markings;
Finishing of the road, road reserve & borrow areas.

Stormwater Drainage:

Accommodation of traffic during construction;
Earthworks for pipe culverts
Construction of box culverts/ pipe culverts
Finishing, and cleaning.

Re-locating of Services:

Accommodation of traffic during construction;
Communication with Service Provider i.e Municipality; Eskom; District Municipality;
Telkom; etc. on re-location and service specific specifications;
Earthworks for lowering or re-location of services;
Re-locate and lower service to required specifications;
Payment of any cost that might be agreed upon;
Inspect and test constructed service;
Completion; finishing and hand-over to Service Provider.

C3.3 CONSTRUCTION

C3.3.1 STANDARD SPECIFICATIONS

- (a) The following specifications shall apply for the construction of the Works.
- (i) The COLTO Standard Specifications for Road and Bridge Works for State Road Authorities (1998).

The contractor may purchase copies of Volume (i) from the South African Institution of Civil Engineers.

SAICE
Waterfall Park / Postnet Suite 81
Howick Gardens / Private Bag X65
Vorna Valley / Halfwayhouse
Becker Street / 1685
Midrand
Tel : (011) 805-5947
Fax : (011) 805-5971
Contact Person : Angeline Aylward

- (b) SABS or BS Specifications and Codes of Practice

Wherever any reference is made to the South African Bureau of Standards (SABS) and the British Standards Specification (BSS) in either these Bill of Quantities or the Specification of Materials and Methods to be Used (OOG-001E), this reference shall be deemed to read "SABS or equivalent standard" and BS or equivalent standard" respectively.

- (c) Various other specifications specified in the COLTO Standard Specifications or the Project Specifications.
- (d) Latest **Sabita Manual**, Manual 25 entitled "*Quality Management in the Handling and Transport of Bituminous Binders*".

C3.3.2 PROJECT SPECIFICATIONS RELATING TO STANDARD SPECIFICATIONS

C3.3.2.1 General Conditions of Contract Referred to in the Standard Specifications

The references to the General Conditions of Contract appearing in the COLTO Standard Specifications refer to the COLTO General Conditions of Contract which is superseded in this contract by the General Conditions of Contract for Construction Works 2015. The corresponding clause in the latter document pertaining to the reference in the COLTO Standard Specifications is listed in the table below.

Clause No. in the Standard Specifications	Clause No. in COLTO General Conditions	Equivalent Clause No. in General Conditions of Contract 2015
1204	15	5.6.1
1206	14	Deleted
1209	52	6.10.2
1210	54	5.1.1
1212(1)	49	6.10.1
1215	45	5.12.1
1217	35	8.2.1
1303	49	6.8
1303	53	6.11
1303	12	5.6
1303	45	5.12.1
1403	40(1)	6.4.1
1505	40	6.4
31.03	40	6.4
3204(b)	40	6.4
3303(b)	2	3
5803(c)	40	6.4
5805(d)	40	6.4
6103(c)	40	6.4
Item 83.03	22	5.15
ALL SECTIONS	48	6.6

C3.3.2.2 Amendments to the Standard Specifications

The following amendments to the Standard Specifications as issued by the Committee of Land Transport Officials (COLTO 1998).

C3.3.2.3 Project Specifications Relating to Standard Specifications

This part of the project specifications deals with matters relating to the standard specifications. Where reference is made in the standard specifications to the project specifications this part shall also contain the relevant information e.g. the requirements where a choice of materials or construction methods are provided for the standard specifications.

In certain clauses the standard specifications allow a choice to be specified in the project specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of

such alternatives or additional requirements applicable to this contract are contained in this part of the project specifications. It also contains some additional specifications and amendments of the standard specifications required for this particular contract.

The number of each clause and each payment item in this part of the project specifications consists of the prefix B followed by a number corresponding to the number of the relevant clause or payment item in the standard specifications. The number of a new clause or a new payment item, which does not form part of a clause or a payment item in the standard specifications and is included here, is also prefixed by B followed by a new number. The new numbers follow on the last clause or item number used in the relevant section of the standard specifications.

Clauses and pay items referring to labour intensive methods are prefixed by L in the project specifications.

Clauses and pay items referring to emerging contractors are prefixed by E in the project specifications.

SECTION 1200 : GENERAL REQUIREMENTS AND PROVISIONS

B1202 SERVICES

Add the following to the fifth paragraph:

“Provision is made in the bill of quantities for payment for searching and exposing of known or unknown services as well as the relocation and/or protection of existing services. Any moving of existing services which may be required within the proclaimed road reserve will be undertaken by the relevant service authorities or by a selected subcontractor if so ordered by the engineer. The contractor shall be responsible to ensure they have applied for all wayleaves and received the wayleaves before working close to any existing service”

B1204 PROGRAMME OF WORK

(a) General requirements

Amend the word “network” in the fourth line of the first paragraph to read as “bar (Gantt) chart”.

Add the following after the third paragraph:

“The bar-chart programme to be provided by the contractor shall show the various activities in such detail as may be required by the engineer. Progress in terms of the programme shall be updated monthly by the contractor in accordance with the progress made by the contractor.

In compiling the programme of work, the contractor shall indicate and make due allowance for the following, as specified elsewhere in the contract documents:

- The requirements regarding the accommodation of traffic and areas that may be occupied at any time for construction purposes (as indicated on the drawings and specified in Section 1500 of the specifications)
- Requirements regarding the training of labourers and Emerging Contractors (EC's).
- The requirements for work to be undertaken by labourers and work to be undertaken by EC's.

(b) Programme of work for rehabilitation work

Amend the word “network” in the fourth line of the second paragraph to read as “bar (Gantt) chart”.

Insert the following after the first sentence of the second paragraph:

“The programme shall include the following details:

- i) A work breakdown structure that identifies all major activities.
- ii) Scheduled start and end dates for each activity.
- iii) Linkages between activities that clearly identify sequence, floats and critical path.
- iv) Intended working hours and resource allocations (plant and labour).
- v) Monthly cashflow projections.
- vi) Key dates in respect of information required or due delivery.”

B1205 WORKMANSHIP AND QUALITY CONTROL

Add the following after the title:

"The contractor shall implement a quality assurance system in accordance with ISO 9002 and appoint a quality manager who shall ensure that members of the contractor's staff comply with the requirements of the quality system. The quality system and the methods used to implement it shall be described in a quality plan produced by the contractor.

The quality manager shall be resident on site full time. No construction activities shall take place on site before the engineer approves the quality plan".

Delete the second, third, fourth and fifth paragraphs and replace with the following:

"The contractor shall submit the quality assurance system he proposes using to the engineer, for his approval, within two weeks of the site handover. Once accepted by the engineer the contractor shall not deviate from it unless written notification of proposed changes have similarly been submitted and approved. The system shall record the lines and levels of responsibility and indicate the method by which testing procedures will be conducted."

Add the following to the third paragraph:

"The engineer may, however, undertake acceptance control tests for the judgement of workmanship and quality, without accepting any obligations vested with the contractor in terms of the contract with specific reference to quality of materials and workmanship. Such acceptance control test done by the engineer shall not relieve the contractor of his obligations to maintaining his own quality control system."

Add the following at the end of this clause:

"The engineer may, for the purpose of acceptance control on products and workmanship, assess test results and measurements in accordance with the provisions of **section 8300** of the standard specifications. Where small quantities of work are involved, a lot shall mean a full day's production for a specific item of work subject to acceptance control testing."

Insert the following paragraph

Laboratory facilities on site is mandatory, should the contractor choose to establish an on-site laboratory it will be for his own cost, however testing should be done by an accredited laboratory and the results should be made available to the engineer for acceptance control.

B1206 THE SETTING-OUT OF THE WORK AND PROTECTION OF BEACONS

Add the following:

"The contractor shall be responsible for the true and proper setting out of the Works and for the correctness of the position, levels, dimensions and alignment of all parts of the Works and for the provision of all necessary instruments, appliances and labour in connection therewith."

The Contractor shall take care that property beacons, trigonometrical survey beacons or setting-out beacons are not displaced or destroyed without the consent of the Engineer. Property beacons and trigonometrical survey beacons that have been displaced or destroyed shall be replaced by a registered land surveyor, who shall certify such replacement.

The cost of replacing all beacons displaced or destroyed during the course of the Contract without the consent of the Engineer shall be borne by the Contractor."

B1209 PAYMENT

(b) Rates to be inclusive

Add the following:

"VAT shall be excluded from the rates and provided for as a lump sum in the Summary of Bill of Quantities".

(e) Materials on the site

Add the following:

"In addition, the engineer may at his sole discretion also allow payments under "Materials on Site" in respect of any construction materials if stored off-site providing that:

- (a) The site selected for this purpose is approved by the engineer
- (b) Such land is physically separated from any production plant or operation
- (c) Only materials for use under this contract is stockpiled on such land
- (d) The contractor has provided proof of an agreement with the owner of such land that the owner has no claim whatsoever on any materials stockpiled on such land
- (e) Materials obtained by the contractor for or on behalf of emerging subcontractors (SMME's) shall remain the responsibility of the contractor after payment has been made in respect of materials on site."

B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL

Add the following after the first paragraph of this clause:

"For the purposes of this contract, extension of time resulting from abnormal rainfall or other forms of inclement weather shall be determined according to the requirements of Method ii (critical-path method)."

Method (ii) (Critical path method)

Delete "(based on a five-day working week)" in the fifth and sixth lines of the second paragraph of the description of this method.

Delete the last sentence of the second paragraph of the description of this method and replace with the following:

"The value of "n" shall be taken as five (05) working days per calendar month.

If normal rainy or inclement weather, resulting in delays, occurs for less than five (05) working days in any calendar month, the difference between the five (05) working days and the actual number of working days on which normal rain or inclement weather occurred, shall be ignored and not accumulated for the duration of the contract period for the purposes of determining an extension of time due to normal rainy weather, nor due to any other reason.

Items of work on the critical path of the programme of work which are subject to climatic limitations shall also be considered for extension of time if such items of work are delayed by e.g. cold weather, high winds or other inclement weather conditions.

In this regard, reference shall be made to weather limitations specified for the application of various bituminous products. However, for months during which seal-work cannot be undertaken in terms of the specifications, no extension of time shall be claimed for.

Rainfall records for rainfall station No 067 7834 6 (Vhembe District - Hospital) for the period 1900 to 2002.

MONTH	AVERAGE RAINFALL (mm)	RAIN DAYS (per month)
JANUARY	119.2	3

MONTH	AVERAGE RAINFALL (mm)	RAIN DAYS (per month)
FEBRUARY	144.5	2.6
MARCH	57.1	1.9
APRIL	24	0.7
MAY	14.8	0.5
JUNE	11.8	0.3
JULY	11.5	0.3
AUGUST	6.1	0.2
SEPTEMBER	12.8	0.3
OCTOBER	37.2	1.2
NOVEMBER	74.3	2.5
DECEMBER	88.6	2.7

The Contractor shall erect an effective rainfall gauge on the site and record the daily rainfall figures in a book. Such book shall be handed to the employer's representative for his signature no later than 12 days after rain that is considered to justify an extension of time occurs.

B1217 PROTECTION OF THE WORKS AND REQUIREMENTS TO BE MET BEFORE CONSTRUCTION OF NEW WORK ON TOP OF COMPLETED WORK IS COMMENCED

Add the following subclause:

"(h) No concrete kerbing or concrete drains directly adjoining the bituminous surfacing shall be constructed prior to the completion of the bituminous surfacing."

B1222 USE OF EXPLOSIVES

Add the following subclause:

"(h) Where blasting operations are undertaken in close proximity of temporary deviations, the contractor shall implement all such safeguarding measures as may be required and instructed by the engineer."

B1224 THE HANDING-OVER OF THE ROAD RESERVE

Add the following:

"The total length of the road reserve between the specified limits of construction will be handed over to the contractor on the commencement date. Reference shall, however, be made to the requirements of section 1500 of these specifications where limitations in respect of work-areas are specified. In the event of the non-adherence by the contractor in terms of the mentioned specifications, the engineer shall withdraw such sections of the road reserve as may be justified to ensure suitable progress of the works or safe passage of traffic."

B1229 SABS CEMENT SPECIFICATIONS

Replace the last paragraph of this clause with the following:

"Where reference is made in this specification or the standard specifications to the cement specifications, eg. SABS 471: Portland cement and rapid hardening Portland cement, it shall be replaced with the new specification:

SABS ENV 197-1: Cement-composition, specifications and conformity criteria.

Part 1: Common cements.

Furthermore, where reference is made in this specification or the standard specifications to the different cement types, the following new names/types shall apply:

Typical new product nomenclature	
Cement type	Cement strength class
CEM I	32,5
CEM I	32,5R
CEM I	42,5
CEM I	42,5R

Typical new product nomenclature		
Cement type		Cement strength class
No provision made		No provision made
CEM II/A-S		32,5
CEM II/A-S		32,5R
CEM II/A-S		42,5
CEM II/A-V		32,5
CEM II/A-V		32,5R
CEM II/A-W		32,5
CEM II/A-W		32,5R
CEM II/A-V		42,5
CEM II/A-V		42,5R
CEM II/A-W		42,5
CEM II/A-W		42,5R
CEM III/A		32,5
CEM III/A		32,5R
CEM II/B-V		32,5
CEM II/B-W		32,5
	CEM II/B-S	32,5R
	CEM II/B-S	42,5
	CEM III/A	32,5R
	CEM III/A	42,5

CEM I 32,5, CEM II A-S 32,5, CEM II/A-V 32,5, or CEM III A may be used for the manufacture of reinforced concrete members.”

Add the following new clauses:

“B1230: IN-SERVICE AND STRUCTURED TRAINING

The contractor shall in addition to the structured (accredited) training as provided for in Part C of this document implement an in-service training programme, from the commencement of the contract, in which the various skills required for the execution and completion of the works are imparted to the labourers engaged thereon, in a programmed and progressive manner. Labourers shall be trained progressively throughout the duration of the contract, in the various stages of a particular type of work.

(a) Details of in-service and structured training

(i) The contractor shall attach to form RDP 1(E) basic details of his proposed in-service training programme, which details shall inter alia include the following:

- the details of training to be provided
- the manner in which the training is to be delivered

- the number and details of trainers to be utilised.
- (ii) The in-service training programme shall be submitted with the initial works programme. The progress in relation to this programme will be recorded monthly and attached to the site meeting minutes and payment certificate.
- (iii) The contractor shall provide on-site, sufficient skilled and competent trainers to train all labourers engaged on the contract, in the various skills required for the execution and completion of the works.
- (iv) All labourers shall be remunerated in respect of all time spent undergoing training.
- (v) Every worker engaged on the contract shall on the termination of his participation on the contract, be entitled to receive from the contractor, a certificate of service in which the following information shall be recorded:
- the name of the contractor
 - the name of the employee
 - the name of the project/contract
 - the nature of the work satisfactorily executed by the worker and the time spent thereon
 - the nature and extent of training provided to the worker
 - the dates of service.

The cost of the above obligations shall be deemed to be covered by the sums and rates tendered for items B13.01(a), (b) and (c) in the bill of quantities. The performance of the contractor in providing in-service training, shall be taken into consideration should the contractor fail to reach his CPG at the completion of the project.

(b) Lead time for training

The training of labour as specified shall, as far as possible, take place before commencement of each activity and the contractor shall take into account in his programme the lead-time he requires for such training. All training herein specified shall be deemed to be a construction activity and a non-negotiable condition of the contract”.

B1231 COMMUNITY LIAISON OFFICER (CLO)

The contractor or his appointed agent will appoint a Community Liaison Officer (CLO) after consultation with the local communities, the engineer and the employer. The contractor shall direct all his liaison efforts with the local communities through the appointed officer. The contractor shall, however, accept the appointed as part of his management personnel.

(a) Duties of the Community Liaison Officer

The Community Liaison Officer's duties will be:

- (i) To be available on site daily between the hours of 07:00 and 17:00 and at other times as the need arises. His/her normal working

day will extend from 07:00 in the morning until 17:00 in the afternoon.

- (ii) To determine, in consultation with the contractor, the needs of the temporary labour for relevant skills training. He will be responsible for the identification of suitable trainees and will attend one of each of the training sessions.
- (iii) To communicate daily with the contractor and the engineer to determine the labour requirements with regard to numbers and skill, to facilitate in labour disputes and to assist in their resolution.
- (iv) To assist in and facilitate in the recruitment of suitable temporary labour and the establishment of a "labour desk".
- (v) To attend all meetings in which the community and/or labour are present or are required to be represented.
- (vi) To assist in the identification, and screening of labourers from the community in accordance with the contractor's requirements.
- (vii) To inform temporary labour of their conditions of temporary employment and to inform temporary labourers as early as possible when their period of employment will be terminated.
- (viii) To attend disciplinary proceedings to ensure that hearings are fair and reasonable.
- (ix) To keep a daily written record of his interviews and community liaison.
- (x) To attend monthly site meetings to report on labour and RDP matters.
- (xi) All such other duties as agreed upon between all parties concerned.
- (xii) To submit monthly returns regarding community liaison as illustrated in Part C5.1 of this document (form RDP 12(E)).

(b) Payment for the community liaison officer

A special pay item is incorporated in section 1200 of the bill of quantities relating to payment of the liaison officer on a prime cost sum basis. This payment shall only be made for the period for which the duties of the liaison officer are required. The remuneration of the CLO shall be determined by the Employer in terms of the Sectorial determination 2: Civil Engineering Sector (Task grade 3) or as specified by the client.

(c) Period of employment of the community liaison officer

The period of employment of the community liaison officer shall be as decided upon jointly by the contractor, engineer and employer at a maximum period of a six months basis, but with the option of renewal.

B1232 SUBCONTRACTORS

Over and above the stipulations of the General Conditions of Contract, regarding subletting of part of the works, it is a condition of the contract that an approved subcontractor shall not sublet

part of his work, covered in his appointment by the main contractor, to another subcontractor without the consent and approval of the engineer. Subletting shall in all cases be critically considered by the engineer.

In addition to the provisions of the general conditions of contract regarding subcontracting of the works, it is a requirement of this contract that an approved subcontractor shall not further subcontract work subcontracted to him by the main contractor, to another subcontractor without the consent and approval of the engineer. Subcontracting shall in all cases be critically considered by the engineer. The engineer reserves the right to limit the extent or the volume of work subcontracted by the contractor, should he deem it necessary in terms of progress or quality of workmanship.

B1233 WORKMEN'S COMPENSATION ACT

All labour employed on the site shall be covered by the Compensation for Occupational Injuries and Deceases Act (COIDA). The contractor shall pay in full, including the payment of the necessary levies, such amounts, as are due in terms of the Act. The contractor at the commencement of the contract shall resolve the manner in which Workmen's Compensation will be handled. Amounts paid by the contractor shall not be included in the wage rates but shall be covered by the Contractor to be deemed as included in his General Obligations rates in Section 1300 of the Bill of Quantities.

Add the following clause:

B1234 MINE HEALTH AND SAFETY ACT 1996, ACT 29 OF 1996

(a) Introduction

The main objective of this Act is to protect the health and safety of persons at mines. This specification is therefore aimed at promoting health and safety specifically at borrow pits. Borrow pits are classified as mines.

(b) General Provisions

The contractor shall be responsible for controlling his operations at every borrow pit where material is being excavated to ensure compliance with all the requirements of the Mine Health and Safety Act, 1996. The contractor shall also ensure that the works, shaping and finishing off of the borrow pit are done in accordance with the provisions as specified in section 3100 of the COLTO Standard Specifications and this Act. The contractor shall also comply to the requirements as set out in C3.4.3.2 Environmental Management Plan.

The minimum requirements for operations at borrow pits are:

- Borrow pits are worked in such a way that the health and safety of employees and the public will not be endangered.
- A monthly report shall be submitted to the engineer on health and safety aspects at the borrow pits.
- The contractor shall appoint a manager to manage the borrow pits in accordance with the Mine Health and Safety Act.
- The contractor shall take the necessary steps to ensure that the work area of the borrow pits are safe at all times. This shall include items such as the provision of

fencing and security guards.

(c) Duties of the Manager

The minimum duties of the manager supervising the activities at borrow pits shall be:

- Maintain a healthy and safe borrow pit environment.
- Identify hazards and related risks to which persons and employees are exposed.
- Establish a health and safety policy that
 - o Describes the organisation of work.
 - o Contains aspects concerning the protection of the employees and other persons' health and safety.
 - o Contains a risk analysis.
- Supply and erect the necessary safety and warning signs.

Add the following pay items and change the clause number.

B12.35 MEASUREMENT AND PAYMENT

Add the following items:

ITEM	UNIT
B12.02 Provision for a Community Liaison Officer	
a) Provisional sum for the payment of the Community Liaison Officer at R6000/month	Provisional Sum
b) Handling costs and profit in respect of sub-item B12.04(a)	Percentage (%)

Expenditure of the above item shall be made in accordance with the general conditions of contract.

The tendered percentage is a percentage of the amount actually spent under the sub-item B12.02 (a), which shall include full compensation for the handling costs of the contractor, and the profit in connection with providing the community liaison officer."

ITEM	UNIT
B12.05 Payment of Project Steering Committee Members	
a) Provisional sum for the payment of the PSC members R100/member/official site meeting	Provisional Sum
b) Handling costs and profit in respect of sub-item B12.06(a)	Percentage (%)

Expenditure of the above item shall be made in accordance with the general conditions of contract.

The tendered percentage is a percentage of the amount actually spent under the sub-item

B12.05 (a), which shall include full compensation for the handling costs of the contractor, and the profit in connection with providing the community liaison officer.”

(L)B12.06 Excavation

Excavating material within the following depth ranges below ground level for the exposing of/or searching for services

- | | | |
|-----|---|------------------|
| (a) | 0m to 2m | |
| | (i) soft material | cubic metre (m³) |
| | (ii) hard material | cubic metre (m³) |
| (b) | Extra over item (a) above for excavation by means of hand tools such as picks, crowbars and pneumatic tools or mechanical breakers in close vicinity of services where no machine excavation is permitted | |
| | (i) soft material | cubic metre (m³) |
| | (ii) hard material | cubic metre (m³) |

Measurement and payment shall be as specified for item 22.01 in the standard specifications.

ITEM	UNIT
-------------	-------------

(L)B12.07 Backfilling

- | | | |
|-----|----------------------------------|------------------|
| (a) | Using the excavated material | cubic metre (m³) |
| (b) | Using imported selected material | cubic metre (m³) |

Measurement and payment shall be as specified for item 22.02 in the standard specifications.

ITEM	UNIT
-------------	-------------

B12.09 Relocation of existing services

- | | | |
|-----|--|-----------------|
| (a) | Provisional sum for the relocation of sewer | provisional sum |
| (b) | Provisional sum for protection or relocation of existing services as ordered by the engineer | provisional sum |
| (c) | Provisional sum for protection or relocation of existing water mains or other services | provisional sum |
| (d) | Provisional sum for removal, save keeping and reinstatement of infrastructure | provisional sum |
| (e) | Handling costs and profit in respect of subitem B12.09(a), (b), (c) and (d) | percentage (%) |

Measurement and payment shall be in accordance with the general conditions of contract.”

ITEM	UNIT
B12.10 Student attachment for the engineer	
(a) Remuneration	provisional sum
(b) Handling costs and profit in respect of subitem B12.10	percentage (%)

The student shall be nominated by the Employers Agent and shall report to the Employers Agent, however he/she shall be appointed by the contractor and paid by the contractor in compliance with all statutory requirements

SECTION 1300: CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS

B1302 GENERAL REQUIREMENTS

(a) Camps, constructional plant and testing facilities

Add the following:

"The contractor shall, at each area where work is being undertaken, provide on a daily basis at least one (1) portable chemical latrine unit per thirty (30) workers for use by construction workers employed on the project. The latrine units shall be serviced daily and kept in a hygienic and orderly state to the satisfaction of the engineer. No separate payment shall be made for this requirement and shall be deemed to be included in the rates tendered for the contractor's time-related obligations."

B1303 PAYMENT

ITEM	UNIT
B13.01 The contractor's general obligations	(As specified)

Add the following after the fifth paragraph:

"The combined total tendered for sub-items (a), (b) and (c) shall not exceed 15% of the tender sum, excluding VAT.

Should the contractor be of the opinion that 15% is inadequate to cover his costs in terms of section 1300, he shall indicate separately with his tender where such costs have been allowed for in his tender. If no such indication is given, the contractor shall not at any stage during the contract for any reason whatsoever claim additional compensation under this item."

**SECTION 1400 : HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S
SITE PERSONNEL**

B1402 OFFICES AND LABORATORIES

(a) General

Add the following:

"The facilities to be provided for the engineer in terms of these specifications shall be fenced off by a two metre high veranda type security fence with diamond mesh on the vertical portion and barbed wire on the overhang. A security gate shall be provided in the fence which shall be guarded at all times by an acceptable watchman provided by the contractor.

The engineer's establishment may be incorporated within the contractor's establishment provided that the preceding requirements are met to the satisfaction of the engineer.

Separate payment shall be made for the provision and erecting of the security fence and gate as indicated on the drawings, but the cost in respect of the provision of a watchman at all times by the contractor shall be deemed to be included in the contractor's tendered rate for item B13.01(c)."

(b) Offices

Add the following new sub-sub-clause:

"(xviii) The engineer's site supervisory staff shall be provided with cellular telephones by the contractor for site communication purposes. Provision is made in the bill of quantities for separate payment of the supply and operating costs of such cellular phones."

B1403 HOUSING

(c) Rented accommodation for the engineer

Add the following:

"The engineer may arrange for the obtaining of rented accommodation for his supervisory personnel on site. Payment of such rent shall be made under the provisional sum in sub-item B14.09 and shall be expended on a monthly basis by the contractor as ordered by the engineer."

ITEM

UNIT

B14.11 Provision and erection of security fencing (Including gate) metre (m)

The unit of measurement shall be the metre of security fence supplied and erected as indicated on the drawings and/or ordered by the engineer. The tendered rate shall include full compensation for procuring and furnishing of all material, including one vehicle gate, labour and equipment required to erect the specified security fence and maintain it for the duration of the contract."

General: Method of payment

Add the following:

"The tendered rates under this section of the bill of quantities shall also include full

compensation for the dismantling and removal from site of all offices, laboratories and other facilities provided for the engineer's supervisory staff at the completion of the contract."

ITEM

UNIT

B14.12 Light Delivery Vehicle for the Engineer

Supply and maintain a Light Delivery Vehicle not older than 5 years with 2.5litre engine capacity and with air conditioning for the duration of the Contract for the sole use of the Engineer and Payment of Fuel for the duration of the contract

General: Method of payment

Add the following:

"The tendered rates under this section of the bill of quantities shall also include full compensation for the maintenance and insurance of the LDV provided for the engineer's supervisory staff for the duration of the contract."

"ITEM

UNIT

B14.12 (a) Supply and maintain a Light Delivery Vehicle, Double Cab not older than 5 years with 2.5litre engine capacity and with air conditioning for the duration of the Contract for the sole use of the Employers Representative

Lump Sum

SECTION 1500 : ACCOMMODATION OF TRAFFIC

B1502 GENERAL REQUIREMENTS

(e) Access to properties

Add the following:

“Where the alignment of the new road coincides with the alignment of the existing road, a number of accesses to private properties will have to be operational and maintained during the constructional period. No separate payment will be made for providing acceptable and safe access across the new road at all times during construction of the road.”

(i) Traffic safety officer

Add the following after subclause (viii):

“(ix) be responsible for contacting all the relevant authorities in the event of an accident on the site of the Works

(vi) arrange for the removal of broken down vehicles that obstruct the normal traffic flow

The Contractor shall provide the traffic safety officer with all the necessary resources to carry out his duties as specified, inter alia, light delivery van (LDV), personnel, warning signs and revolving amber flashing lights. A warning sign with the words “CONTRACTOR TRAFFIC CONTROL” and/or “AANNEMER VERKEERSBEHEER” in clearly legible letters shall be mounted on the vehicle at least 1,5m above ground level to be clearly visible. The vehicle shall be equipped with two revolving amber-coloured flashing lights with a minimum intensity of 55W. The flashing lights shall be switched on and the warning sign be displayed at all times when the vehicle is used on the site.

No separate payment will be made for the traffic safety officer, his vehicle, personnel and equipment and the cost thereof shall be included in the Contractor’s cost for his establishment and general obligations (Section 1300).”

Add the following new subclauses:

“(j) Handing over the site

The total extent of the site between the limits of construction as described in this document and indicated on the drawings will be handed over to the contractor at the commencement of the contract period. The engineer however reserves the right to adjust this arrangement should progress or safe passage of traffic warrant such a change.

(k) Use of explosives in close proximity of temporary deviations

The contractor shall arrange all necessary traffic control and other requirements to safeguard the traffic on temporary deviations during blasting operations.

(l) Land taken up for deviations

Negotiations with landowners to obtain the land taken up by temporary deviations will be undertaken by the employer. A prime cost sum is allowed in the bill of quantities for payment of compensation to affected landowners. All other negotiations regarding temporary access to properties, land-use, fencing requirements etc. shall be dealt with by the contractor in conjunction with the engineer and be confirmed in writing and be kept on record by the contractor.

“(m) Maximum lengths of construction areas

A temporary deviation, where the proposed road follows the existing route shall be constructed along the length of existing road. Traffic shall generally be accommodated as follows:

On a two-way two lane gravel deviation (Class 1) constructed partially outside or adjacent to the existing road reserve boundaries of road.

- (i) On one-way single lane gravel deviation (Class 2) constructed inside the existing road reserve boundaries and on either side of road. In this instance special cognisance shall be taken to accommodate traffic to private properties.

A maximum length of one section of approximately 5,0km or two sections of 3,0km each of deviation (Class 1 or 2) shall be operational at a time and no relieve of this limitation shall be considered by the engineer except where the programme necessitates such at the construction of bridges.”

B1503 TEMPORARY TRAFFIC CONTROL FACILITIES

Add the following after the first paragraph:

“All temporary road signs, devices, sequences, layouts and spacing shall comply with the requirements of the Road Traffic Act, 1996 (Act 93 of 1996), the National Road Traffic Regulations, 2000, the South African Road Traffic Signs Manual, the requirements of the relevant road authority and the drawings. All temporary traffic control facilities shall comply with the guidelines set in SA Road Traffic Signs Manual, Volume 2, Chapter 13: Roadworks Signing, (SARTSM, June 1999, obtainable from the Government Printer, Pretoria).”

(b) Road signs and barricades

Add the following:

“All the temporary road signs are to be mounted on posts as specified in section 5600 of the specifications. Provision shall be made for the supply and erection of the signs and the maintenance of the signs during the construction period. Provisions shall also be made for the removal of the temporary road signs on completion of the construction work when such signs are no longer required.

Temporary road signs and channelization devices shall be manufactured in accordance with the latest edition of the South African Road Traffic Signs Manual (June 1999) and placed as shown on the drawings and in Road Signs Note 13. Delineators shall be manufactured from a non-metal material and shall be mounted on a base section also manufactured of non-metal material. Single as well as back-to-back mounted delineators are required.

The obligation to arrange safe passage of traffic shall always be vested with the contractor

regardless what is indicated on the drawings of the engineer.”

(c) Channelization devices and barricades

Add the following:

“Drums shall not be used as channelization devices.

TW 401 and TW 402 delineators shall comply with the following requirements:

- a) It shall be manufactured from a flexible material and shall comply with SABS 1555. The blade portion of the delineator shall be positively affixed to a base unit which in turn shall be stable on its own or be stabilized by means of sandbags when used on the road.
- ii) The blade shall be retro-reflectorized, with class 1 yellow sheeting on the side facing oncoming traffic..
- iii) It shall nominally be 1000mm high x 250mm wide and the bottom edge of the delineator shall not be more than 200mm above the road surface.
- iv) It shall be subject to the approval of the Engineer.

The maximum spacing between centres of delineators shall be as shown on the drawings or as directed by the Engineer.”

(e) Warning devices

Add the following:

“It is a requirement of this contract that all construction vehicles and plant used on the works will be equipped with rotating amber flashing lights and warning boards as specified in the standard specifications. Construction vehicles travelling outside the limits of construction areas shall however, not operate the warning lights.

The warning lights shall have a base diameter of at least 170mm and the amber bulb cover a height of a least 150mm high. It shall be a requirement that the contractor also provides the engineer’s site personnel with warning lights for their vehicles (a maximum of two lights are required) without any payment applicable.

B1514 TEMPORARY FENCING AND GATES

Replace the contents of this clause with the following:

“Where temporary fencing is ordered by the engineer, it shall be paid for under item 55.06 of the standard specifications. The temporary fencing shall be new fencing material, which shall subsequently be dismantled and removed and erected at an alternative position as directed by the engineer. When ordered by the engineer, temporary fences and gates shall be moved to new locations or either left in place or when no longer required be dismantled and removed from site if so directed. Allowance is made in the bill of quantities for moving existing fences and gates.”

Add the following clause:

B1517 RETRO-REFLECTIVE MATERIAL

“Retro-reflective material for temporary signs shall comply with the requirements of SABS 1519-1 for weathered material. Tests shall be carried out with a field retro-reflectometer and the testing procedure and classification are described in Clause B 8118. The value of the coefficient of Retro-Reflection shall be at least 60% of the values indicated in Table B 8118/1.”

B1518 MEASUREMENT AND PAYMENT

Renumber item 15.01 as B15.01 and add the following:

“The tendered rate shall also include for all measures necessary to safeguard traffic on temporary deviations during blasting operations as well as all temporary traffic-control facilities for temporary deviations.”

Delete all references to half width construction under payment item 15.01. Half width construction will be measured under payment item 15.10.

Renumber item 15.03 as B15.03 and add the following

“This sections provides only for additional traffic-control facilities as and when required on instruction by the Engineer and does not provide for facilities already included under payment item B15.01”

Add the following sub-item:

“ITEM	UNIT
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B15.03 Temporary traffic control facilities	
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(n) Provision of high visibility safety jackets and safety hats	number (No)
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The unit of measurement shall be the number of safety jackets supplied to the supervisory staff.

The tendered rate shall include full compensation for providing and maintaining hats and the jackets equipped with high visibility retro-reflective and/or fluorescent CONSORTIUMs in red, yellow and white for the duration of the contract”.

ITEM	UNIT
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B15.10 Accommodation of traffic where the road is constructed	
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in half-widths	kilometre (km)
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In the second paragraph delete from the third line the expressions “flagmen”, “guards”, and “lights”.

Add the following paragraphs:

“Half-width construction is defined as construction work on the shoulder and one lane and only where 2-way traffic cannot be accommodated. Also, no slurry, seal and asphalt overlay works

shall in any circumstances be measured under this item and shall be included in item B15.01 for the payment thereof. Cognisance should be taken that for the specified construction sections controlled by temporary traffic signals for half-width construction, payment shall be made once only and payment for the changeover of the trafficked lanes shall not be made.

Where payment is made for a section of road in item B15.10, payment shall not be made under item B15.01."

ITEM	UNIT
B15.16 Provision of traffic safety	
(a) Traffic Safety Officer	Month
The unit of measurement shall be the period in months that the approved traffic safety officer(s) is employed, irrespective of the number of traffic safety officers employed and one assistant as well as for additional traffic safety officers.	

SECTION 1700: CLEARING AND GRUBBING

B1702 DESCRIPTION OF WORK

a) Clearing

Add the following:

“Clearing shall include the removal of material to a thickness of up to 150mm in-situ material as ordered by the engineer. No payment shall be made for temporary stockpiling of topsoil material in the case where this material is applied as topsoil after completion of road side slopes.

Should the required depth exceed 150mm, the total volume of material removed shall either be classified as “temporary stockpiling of topsoil” or “unsuitable roadbed material” or “cut to spoil” whichever is applicable as allowed for in the standard specifications. In these cases no payment shall be made for clearing and grubbing.

Clearing as described shall in all cases be undertaken in such a manner that the topsoil is preserved and not contaminated with other debris or rubbish. Cross-sections for the determination of earthworks quantities shall be taken after clearing (topsoil or unsuitable roadbed material) and roadbed preparation if applicable.

Payment for gabion boxes and mattresses which have to be removed and the material sorted and stacked shall be made under section 5200”

B1703 EXECUTION OF WORK

(a) Areas to be cleared and grubbed

Add the following:

“Apart from normal clearing and grubbing, the fill embankments of the existing roads are also to be cleared and grubbed over the areas where the new horizontal alignment coincides with the alignment of the existing road, or where repairs are required to the fill embankments of the approaches of bridges. Provision is made for separate payment for clearing and grubbing of the existing fill embankments where conventional machinery might be suitable to undertake the work due to the steep side slopes of the embankments. An additional pay-item is allowed for in the bill of quantities for this type of clearing and grubbing which may have to be undertaken by hand or similar manner.”

B1704 MEASUREMENT AND PAYMENT

Change item 17.01 to read as follows:

ITEM	UNIT
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B17.07	Demolish and spoil material for structures, buildings, kerbs etc.
---------------	--

The unit of measurement for items shall bem2

The contractor shall constantly liaise and agree with the engineer as to the areas and kerbs to be removed. The quantity shall be determined by the engineer.

The rates tendered shall include for the excavation, breaking out and spoil to contractors own spoil site and include all labour plant and transport and spoil fees.

B17.08	Remove existing block paving by hand clean from dirt and mud and deliver to stockpile within 5km radius
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The unit of measurement for items shall bem2

The contractor shall constantly liaise and agree with the engineer as to the areas to be removed. The quantity shall be determined by the engineer.

The rates tendered shall include all labour plant and transport in addition to above

B17.09	Saw Cut and remove existing black top road surface by hand and spoil to commercial spoil site including haul
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The unit of measurement for items shall bem2

The contractor shall constantly liaise and agree with the engineer as to the areas to be removed. The quantity shall be determined by the engineer.

The rates tendered shall include for the saw cut excavation, breaking out and spoil to contractors own spoil site and include all labour plant and transport and spoil fees.

B17.10	Chemical cleaning of oil contaminated areas by approved specialists
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The unit of measurement for items shall beProvisional Sum

The contractor shall obtain a written quote for approval by the engineer of a specialist approved by the engineer. The quantity and area to be cleaned shall be determined by the engineer.

B17.11 Jet Wash of existing sewer lines by approved specialist

The unit of measurement for items shall beProvisional Sum

The contractor shall obtain a written quote for approval by the engineer of a specialist approved by the engineer. The quantity and area to be cleaned shall be determined by the engineer.

B17.12 High Pressure Wash of existing Stormwater Pipes by approved specialists

The unit of measurement for items shall beProvisional Sum

The contractor shall obtain a written quote for approval by the engineer of a specialist approved by the engineer. The quantity and area to be cleaned shall be determined by the engineer.

SECTION 1800 : DAYWORK SCHEDULE

Note: This is a new section added to the Standard Specifications.

Add the following:

B1801 SCOPE

This section covers the listing of daywork items for use in determining payment for work which cannot be quantified in specific pay item "units" in the bill of quantities or work ordered by the engineer during the construction period which was not foreseen at tender stage for which no applicable rate exists in the schedule or for work of a special or different character warranting special payment as decided by the engineer.

B1802 ORDERING OF DAYWORK

No daywork shall be undertaken unless specific written authorisation is obtained from the engineer.

B1803 MEASUREMENT AND PAYMENT

The engineer may order the following daywork items:

ITEM	DESCRIPTION	UNIT
B18.01	Labourers:	
	(i) Unskilled	Hour (h)
	(ii) Semi-skilled	Hour (h)
	(iii) Skilled	Hour (h)
B18.02	Foreman	Hour (h)
B18.03	Trucks:	
	(i) 6m3	Hour (h)
	(ii) 10 m3	Hour (h)
	(iii) 5ton flat truck	Hour (h)
B18.04	TLB	Hour (h)
B18.05	Loader	Hour (h)
B18.06	Grader (CAT 140G or similar)	Hour(h)
B18.07	Vibrator roller	Hour (h)
B18.08	Grid roller	Hour(h)
B18.09	Pedestrian roller (Bomag BW90)	Hour(h)
B18.10	Water truck (min 16000 l)	Hour(h)
B18.11	Chainsaw	Hour(h)
B18.12	Mechanical Broom	Hour(h)
B18.13	Light delivery vehicle (1 ton capacity)	Hour(h)
B18.14	Recycler	Hour(h)
B18.15		

B18.16	<p>Excavator 40tons</p> <p>Supply of materials</p> <p>a) Supply building materials for the reinstatement of private property damaged with prior approval by the Engineer</p> <p>b) Contractor's handling costs, profit and all other charges in respect of sub-item B18.16(a)</p>	<p>Hour(h)</p> <p>Prov Sum</p> <p>Percentage(%)</p>
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The unit of measurement shall be the actual number of hours worked by labourers or foremen or an item of plant.

The tendered rates shall include full compensation for all cost items including overheads, head-office expenses and profits as described in subclause 6.5 of the general conditions of contract and shall be subject to contract price adjustment as provided for in the contract.

The mark-ups on daywork items in accordance with the Appendix to the Tender shall not be applicable on daywork items listed in the bill of quantities in terms of the above specifications. In the event of new daywork rates being requested for items not appearing in the bill of quantities, then the provisions of the general conditions of contract and the Appendix to the Tender shall apply.

Prior to the commencement of any work by the labourers described under item B18.01, the contractor must obtain written consent from the engineer regarding the classification and composition of all labourers in terms of "unskilled" and "skilled" labourers required for the work as ordered by the engineer."

SECTION 2100 : DRAINS

B2101 SCOPE

Amend the first paragraph to read:

“This section covers all work both rehabilitative and new work in connection with the excavation and construction of open drains, subsoil drainage and banks and dykes at the locations and to the sizes, shapes, grades and dimensions as shown on the drawings or as directed by the engineers, and the test flushing of subsoil drains.”

B2104 SUBSOIL DRAINAGE

(a) Materials

(i) Pipes

Delete the last sentence of the fifth paragraph and substitute it with the following:

“Perforation for 100mm pipes shall be spaced in two rows, one on each side of the vertical centre line of the pipe, and at one third of the circumference. The perforation for the 150mm pipes shall be spaced in four rows, two as described for 100mm pipes, and the other two rows at two thirds of the circumference.”

(ii) Synthetic-fibre filter fabric

Add the following:

“All filter fabric shall be a non-woven needle punched type material and must be approved by the engineer. Filter fabrics shall have a minimum co-efficient of permeability of 3×10^{-3} m per second.”

ITEM

UNIT

B21.04 Impermeable backfilling to subsoil drainage systems

(a)G5 material stabilised with 4% stabilising agent

cubic metre (m3)”

B2107 MEASUREMENT AND PAYMENT

Change item 21.09 to read as follows:

ITEM

UNIT

B21.09 Bidim Type A4 or similar, approved material for lining of subsoil draining systems square metre (m²)

Measurement and payment shall be as specified for item 21.09 in the standard specifications.”

Add the following new items:

2200 : PREFABRICATED CULVERTS

B2201 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

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.

HAND EXCAVATABLE MATERIAL

Hand excavatable material is material:

- a) granular materials:
 - i) whose consistency when profiled may in terms of table 1 be classified as very loose, loose, medium dense, or dense; or
 - ii) where the material is a gravel having a maximum particle size of 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 insitu 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° with respect to the horizontal) into the material being used.

Table 1: Consistency of materials when profiled

GRANULAR MATERIALS		COHESIVE MATERIALS	
CONSISTENCY	DESCRIPTION	CONSISTENCY	DESCRIPTION
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in 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 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.

Trench excavation

All hand excavateable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

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.

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.

Add the following:

“All rectangular culverts with spans from 0,9m up to and including 2,4m shall be constructed with precast units.

The attention of the contractor is drawn to the fact that information given on the plans, longitudinal sections or drainage schedules may have to be altered to suit actual site conditions and, therefore, the contractor shall only construct these culverts after the engineer has verified the information on the drawings from detail surveys taken on site by the contractor as directed by the engineer.

Precast units shall be ordered by the contractor from actual measurements of length acquired on the site and not from lengths stated in the drainage schedule or from the bill of quantities.

No precast units shall be ordered until the engineer has satisfied himself that the proposed units have been manufactured to the required tolerances and loading standards. The engineer must be given the opportunity to load test units if he considers this necessary”.

B2203 MATERIALS

(f) Skewed Ends

Delete the second and third paragraphs and substitute with the following:

“Precast portal and rectangular culverts placed on a skew shall be supplied with cast in situ skewed ends as shown on the drawings. In situ skew ends are to be constructed simultaneously with the wingwalls and headwalls”.

B2204 CONSTRUCTION METHODS

Add the following:

“In all cases where soft founding materials is classified as suitable for culvert bedding construction, the in situ material shall be ripped, moistened and compacted to 90% or 93% modified AASHTO density. The depth of preparation and compaction of founding material shall be as indicated on the drawings or as specified by the engineer. Allowance for measurement and payment for this work is made in the bill of quantities under this section.”

The Generic Labour-intensive specification below is the same as SANS 1921-5, Construction and management requirement for works contracts- Part 5: Earthworks activities which are to be performed by hand and should be included in the scope of works without amendment or modification as set out below.

(c) Excavation by hand

Where circumstances prevent the use of mechanical excavators and material can be removed only by hand tools, the engineer shall authorise the supplementary payment to the contractor for such work at the tendered rates for excavation by hand should he be satisfied that the contractor had been unable to prevent the necessity for excavation by hand by proper planning and precautionary measures. The supplementary rate for excavation by hand shall not apply to minor finishing or clearing jobs in excavations which are otherwise being done by mass excavation plant.

Payment for hand excavation shall be an "extra over" payment to normal excavation as allowed for in item 22.01.”

B2205 EXCAVATION FOR CONSTRUCTION BY TRENCH METHOD

Add the following subclauses:

"(c) Excavation by hand

Where circumstances prevent the use of mechanical excavators and material can be removed only by hand tools, the engineer shall authorise the supplementary payment to the contractor for such work at the tendered rates for excavation by hand should he be satisfied that the contractor had been unable to prevent the necessity for excavation by hand by proper planning and precautionary measures. The supplementary rate for excavation by hand shall not apply to minor finishing or clearing jobs in excavations which are otherwise being done by mass excavation plant.

Payment for hand excavation shall be an "extra over" payment to normal excavation as allowed for in item 22.01.

(d) Drainage of excavations

The contractor shall apply suitable, effective drainage and dewatering methods for preventing the ingress of water into the excavation and to keep them dry.

Drainage measures, with the exception of pumping, shall be maintained until the backfilling has been completed. Between various construction stages, pumping may be interrupted in consultation with the engineer.

Any draining or pumping of water shall be done in a manner as will preclude the concrete or materials or any part thereof from being carried away.

Allowance for measurement and payment for dewatering and keeping dry of culvert excavations is made in the schedule in this section".

B2210 LAYING AND BEDDING OF PREFABRICATED CULVERTS

B2210(b)(i) Cast in situ invert slabs

Replace with the following:

"In accordance with the drawings, transverse construction joints are required in cast in situ concrete invert slabs for portal culverts. In addition, longitudinal construction joints as shown on the drawings between the invert slabs of each of the barrels of multiple culverts are required. Allowance for measurement and payment for a Class F1 surface finish and soft board in these joints is made in the bill of quantities. No payment shall be made for formwork on the outside edges of invert slabs (closest to excavated face).

All culverts (precast as well as in situ) shall be constructed with an in situ reinforced concrete floor laid on a 75mm concrete screed".

Delete subclause B.2210(b)(ii) : "Prefabricated floor slabs."

B2211 BACKFILLING OF PREFABRICATED CULVERTS

Change the last sentence in the fourth paragraph to read "90% or 93% as shown on the drawings or as directed by the engineer."

B2212 INLET AND OUTLET STRUCTURES, CATCHPITS AND MANHOLES

(b) Concrete work

Add the following:

“The type of surface finish for in situ concrete in the culverts shall be as indicated on the drawings. Generally all exposed faces shall be of Class F2 formwork and faces covered by backfill shall be Class F1. The top of parapet walls and wingwalls shall be finished to a Class U2 surface finish.”

(h) Prefabricated inlet and outlet structures

Add the following:

“The use of precast concrete inlets and outlets as described in clause 2212(h), shall not be allowed under any circumstances. Cast in situ concrete wingwall type inlets and outlets shall be constructed as indicated on the drawings and shall be in accordance with section 6000 of the Standard Specifications. Allowance for measurement and payment for wingwall type inlets and outlets is made in the schedule in this section.”

B2218 MEASUREMENTS AND PAYMENT

Add the following:

“ITEM	UNIT
B22.01 (c) Extra over subitem B22.01(a)(1) for excavation by hand using hand tool	cubic metre (m³)

Measurement shall be as specified for pay item 22.01 of the standard specifications.

The tendered rate shall include full compensation for carrying out the excavations by hand where circumstances prevent the use of mechanical excavators.

SECTION 2300 : CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES AND CONCRETE LININGS FOR OPEN DRAINS

B2301 SCOPE

Add the following:

“The position and length of the following types of concrete kerbs and channels are indicated on the geometric layout plans, typical drawings and on the drainage plans.

Type A	:	In situ concrete channel, 0,8m wide on fills
Type B	:	Precast concrete kerbing, semi-mountable (SABS 927-1969)
Type C	:	In situ concrete kerbing at intersections
Edge beam	:	In situ concrete kerbing at farm access and bus stops
Type E, F1 & F2	:	In situ concrete “V”-shaped channels in side drains and open drains.”

B2302 MATERIAL

Add the following new subclauses:

(e) Metal pipes

“Metal pipes down side slopes shall comply with the requirements of clause 2203 of the standard specifications.”

B2304 CONSTRUCTION

(d) Slip form kerbing

Add the following:

“Slip-form kerbing shall under no circumstances be allowed.”

(e) Cast in situ kerbs and channels

Add the following:

“Forming and templates used to form joints between alternate sections shall be of steel plate of which the thickness shall not be less than 5mm.”

Add the following new subclauses:

(i) Construction sequence

Replace paragraphs (i), (ii) and (iii) with the following:

“In all cases where kerbing and/or channelling adjoin the bituminous surface of the road, the kerbing and/or channelling may only be constructed after the bituminous surface has been completed.

Before commencing with the kerbing and/or channelling, the surfacing and the base, shall be accurately cut to line with a mechanical saw to a minimum depth of 75mm. After excavation the concrete shall then be cast against the cut surface without formwork. All material outside the cut line must be carefully removed to the required thickness of concrete without damaging the edge before commencing with the casting of the concrete. No payment shall be made for repair work as instructed by the engineer to damage caused by the cutting/excavating process of surfacing and base layers. Any concrete spilt onto the surfacing shall immediately be removed and cleaned. Where so required by the engineer, the contractor shall, without any additional compensation, paint emulsion over the stained surface.

Add the following subclause:

(k) Formwork and finish

“Formwork and finish of concrete kerbs shall comply with the requirements of section 6200. All visible edges on the sides or at joints of cast in situ concrete kerbs or channels shall be rounded with a rounding tool.”

“ITEM

UNIT

B23.16(Li) Demolition and removal of existing kerbs and dispose of site to commercial dump site including labour and transport

(300mm maximum size) cubic metre (m³)

The unit of measurement shall be the cubic metre (m³) of material measured in situ before demolition or excavation.

The tendered rate shall include full compensation for breaking up the existing concrete or reinforced concrete to a specified maximum size, removal from site to an approved spoil site, clearing the excavation of all loose debris and to backfill the excavation where new concrete is not required. Overhaul will be paid under item B16.02.

"ITEM	UNIT
B23.17 Concrete Surface Bed: 200mm 30MPa/19 Concrete with 193 Mesh cast in 4m x 4m alternative blocks with construction joints, broom finish	

The unit of measurement shall be per meter square of concrete surface bed constructed complete as constructed, measured by the engineer

The tendered rate shall include full compensation for the additional costs involved in setting out, preparing and constructing as specified

SECTION 3100 : BORROW MATERIALS

B3102 NEGOTIATIONS WITH OWNERS AND AUTHORITIES

Add the following to sub-clause 3102(a):

"Arrangements regarding the access to borrow pits shall be made between the contractor and the owners of the land on which borrow pits are situated and must be confirmed in writing by the contractor. All costs involved with such negotiations as well as the requirements contained in clause 3102 and clause 1225 of the specifications shall be borne entirely by the contractor."

B3103 OBTAINING BORROW MATERIALS

(a) General

Add the following:

"The expropriation and compensation for land from which borrow materials is obtained shall be negotiated and paid for by the contractor. The employer will not pay for any compensation to the owners of the land."

(b) Use of borrow materials

Add the following to the second paragraph of this subclause:

"Compensation to owners and arrangements with owners for taking material from alternative borrow pits proposed by the contractor shall be the contractor's responsibility and entirely at his own expenses."

B3104 OPENING AND WORKING BORROW PITS AND HAUL ROADS

(c) Excess overburden

Add the following:

"All excess overburden removed at borrow pits shall be replaced over the entire area of the

borrow pit after initial shaping has been undertaken in an even layer. Payment for this requirement shall be deemed to be included in pay item 31.01

(f) Protecting borrow pits

Add the following:

"It is a requirement of the contract that each borrow pit or pits shall be provided with fencing around the perimeters, including a access gate, of the borrow areas, including the supply of danger warning signage fixed to the fencing, visible at all sides approaching the borrow pit area. The fencing shall be erected prior to entering the land for borrowing purposes and shall on final finishing of the borrow areas as specified by the employer, be dismantled and removed or left in-place as instructed by the employer. Payment for fencing around borrow pits shall be made in accordance with the stipulations of section 5500 in these specifications."

In addition to fencing, Security Guards shall be supply on a 24 hour, 7 days a week basis, with full time communication to the Site Manager or site camp for the duration of the contract and activities at the borrow pits."

Add the following new subclause:

“(h) Haul roads

Haul roads to designated borrow pits along the road shall be constructed along alignments as instructed by the engineer and shall be maintained at the contractor's own cost to the satisfaction of the engineer."

B3105 FINISHING-OFF BORROW AREAS AND HAUL ROADS

Add the following to this clause:

"Should the employer, engineer or any other authority approved by the engineer, require a higher standard of shaping and finishing off of borrow pits than specified in the standard specifications, measurement and payment for such extra work shall be made using daywork items as scheduled under this section."

SECTION 3200 : SELECTION, STOCKPILING AND BREAKING-DOWN THE MATERIAL FROM BORROW PITS, CUTTINGS AND EXISTING PAVEMENT LAYERS, AND PLACING AND COMPACTING THE GRAVEL LAYERS

B3204 BREAKING-DOWN THE MATERIAL

(a) Initial breaking-down of the material in cuttings, borrow pits and existing pavement layers

Add the following to the table in the second paragraph of this subclause:

"Pioneer layers - 500mm maximum dimension

Not more than 20% of pioneer layer material shall pass through the 2,0mm sieve."

(b) Further breaking-down of pavement material

Add the following:

"Material used for the construction of selected, and wearing course layers shall be broken down by means of normal grid-rolling or additional normal grid-rolling to such an extent that the compacted pavement layer shall contain material of which 95% of the aggregate size shall not exceed 65mm. All oversize material, after breaking-down, shall be removed".

B3209 PLACING AND COMPACTING THE MATERIALS IN LAYER THICKNESSES IN EXCESS OF 200mm AFTER COMPACTION

Add the following new subclause:

(d) Pioneer layer

"The maximum size rock used in pioneer layers shall be 500mm and the layer thickness before compaction shall not be more than one-and-a-half times the maximum actual size of the rock. Not more than 20% of pioneer layer material shall pass through the 2,0mm sieve. Pioneer layer processing and compaction shall be as specified in subclause 3307(c) of the standard specifications".

SECTION 3300 : MASS EARTHWORKS

B3305 TREATING THE ROADBED

(a) Removing unsuitable material

Add the following to the third paragraph:

"For the purpose of this contract, excavation and removal of in-situ clayey material over areas where the road is in a fill condition, shall be classified as removal of unsuitable material, irrespective of the stability or moisture condition of the in-situ material".

Quality Control Procedure

The following quality control procedure shall be followed:

1) Dynamic Cone Penetration (DCP) Tests

2m DCP testing shall be conducted before compaction commences and after it is completed. The testing shall be done on a 25m grid and standard method TMH 6:1984 method ST6.

DCP testing shall furthermore be done in areas shown to be relative weak as indicated by the Continuous Impact Response measurement system.

(3) Relative density testing

Density testing shall be done according to TMH1: A10 after compaction has been completed. Density positions shall be tested to depths of 0-300mm and 300-600mm on a 50m grid. Moisture corrections shall be done according to TMH1:A17. Sufficient modified AASHTO dry density samples shall be sampled and tested in order to determine the relative density.

(3) Project report

A project report shall be presented to the engineer detailing the tests results obtained during compaction operations."

B3307 FILLS

(c) Constructing a pioneer layer

Add the following to the first paragraph:

"For the purpose of this contract, pioneer layers shall be completed by means of eight-pass roller compaction using vibratory rollers as specified in subclause 3304(b) of the standard specifications."

(d) Benching

Add the following:

"Benching of fill and pavement layer material is required to be undertaken into the existing fill embankments and pavement layers. No additional payment shall be made over and above the normal pay items applicable to earthworks and pavement layers where benching is required for widening of the existing road formation. Benching shall be undertaken as shown on the drawings.

It is a requirement that benching shall always be started at the bottom of the existing fill progressing to the top of the formation. The dimensions and details of benching are shown on the drawings."

"ITEM	UNIT
B33.01	Fill from commercial sources, including all haulage

(ii) G5 Material Compacted to 95% of modified AASHTO density:

The unit of measurement is the cubic metre of material measured in the compacted fill.

SECTION 3400: PAVEMENT LAYERS OF GRAVEL MATERIAL

B3402 MATERIALS

(a) General

Add the following:

"Material requirements for gravel pavement layers are in accordance with TRH4 and shall be indicated on the drawings."

Add the following at the end of the second paragraph:

"For chemically stabilised layers the material shall conform to the requirements in table B3402/5.

For bitumen stabilised layers the material shall conform to the requirements in table B3402/6.

For cold in situ recycled layers the target grading shall be as indicated in table B3402/7"

Add the following after the second paragraph:

“Distinction shall be made between crushed and natural G4, G5 and G6 materials. Where the crushing and/or screening of these materials has been specified, the combined grading shall conform to the grading limits specified for G4 class material in Table B3402/1.

The same shall apply for all materials obtained from commercial sources.”

Replace the grading section in Table 3402/1 with:

Grading	Nominal aperture size of sieve (mm)	Percentage passing through sieve by mass			The percentage by mass passing the 2,00mm sieve shall not be less than 20% not more than 70%
		Crushed material		Uncrushed material	
		Nominal max size			
		37,5 mm	28 mm		
	53			100	
	50			95 - 100	
	37,5	100		85 – 100	
	28	86 - 95			
	20	73 - 86	87-96	61 - 91	
	14	61 - 76	73–86		
	5	37 - 54	43-61	31 - 66	
	2	23– 40	27–45	20 – 50	
0,425	11– 24	13–27	10 – 30		
0,075	4 - 12	5 - 12	5 - 15		

Note:

Refer to standard COLTO table for COLTO grading if required

Replace Table 3402/5 with:

"TABLE B3402/5: REQUIREMENTS FOR CHEMICALLY STABILISED LAYERS

Classification	C1	C2	C3	C4
Material before treatment	At least G2 quality	At least G4 quality	At least G5 quality	At least G6 quality
PI after treatment	Non-plastic	Non-plastic	6 max. *(1)	6 max. *(1)
UCS (MPa) *(2)	6 min.	4 min.	1,5 min	0,75 min.
ITS (kPa) *(3)	-	-	250 min.	200 min.
WDD (% loss)	5 max.	10 max.	20 max.	30 max.

Note:

- * (1) For materials derived from the basic crystalline rock group, the Plasticity Index after stabilisation shall be non-plastic.
- * (2) Unconfined Compressive Strength @ 100% Mod. AASHTO density
- * (3) Indirect tensile Strength @ 100% Mod. AASHTO density (Rapid Curing)
- * (4) Wet/Dry Durability according to Method B 8110"

Add the following tables after table B3402/5:

"TABLE B3402/6: REQUIREMENTS FOR BITUMEN STABILISED LAYERS (BSM)

Test	Specimen Diameter (¹)	Classification (²)		
		BSM1	BSM2	BSM3
ITS _{dry}	100mm	>225 kPa	175 – 225 kPa	125 – 175 kPa
ITS _{wet}	100mm	>100 kPa	75 – 100 kPa	50 – 75 kPa
ITS _{equil}	150mm	>175 kPa	135 – 175 kPa	95 – 135 kPa
ITS _{soaked}	150mm	>150 kPa	100 – 150 kPa	60 – 100 kPa

Note:

- * (1) Specimen diameter appropriate to design level as per TG2 shall apply. In the case of constructed layers only 150mm diameter specimens shall be used.

* (2) Classification of bitumen stabilised material in terms of the latest TG2 guidelines.

TABLE B3402/7: TARGET GRADING ENVELOPE FOR COLD IN SITU RECYCLED PAVEMENT LAYERS

Sieve Size (mm)	Percent Passing	
	Cement / Lime	BSM-Emulsion
50	100	100
37.5	87 – 100	87 – 100
28	82 – 100	82 -100
20	72 - 100	72 - 100
14	60 -90	60 -90
10	51 - 77	51 - 77
7	42 -65	42 -65
5	36 - 57	36 - 57
0.425	12 – 26	10- 24
0.075	4 - 10	2 - 9

b) Compaction requirements

Amend the compaction requirements as follows:

“Lower selected layer: 93%
Upper selected layer: 93%
Subbase: 95%
Base: 98%
Shoulder & wearing course: 93%”

B3403 CONSTRUCTION

Add the following subparagraph:

“(f) Cold in situ recycling and mixing

Where the in situ layer consisting of granular or cemented layers, which may include asphalt or bituminous surfacing above granular or cemented support layer is to be recycled, with or without any make-up material, the layer must be constructed according to the method described in B2512.”

B3405 CONSTRUCTION TOLERANCES

(e) Cross-section

Delete the second paragraph and replace with the following:

"The normal crossfall of the road wearing course where the road is in a straight horizontal alignment, is specified as 4% as shown on the drawings.

At any cross-section the measured crossfall between any two points shall at least be 3,8% and not more than 4,5%. At any cross-section the actual level at any point shall not be higher than 10mm above the computed level from the cross-section as specified and the actual level, if lower than the computed level, shall not be lower by more than that derived from the specifications for longitudinal grade and crossfall deviations."

(f) Surface regularity

Add the following:

"Where transverse construction joints in base layers are made between newly and previously constructed sections, the contractor shall exercise level control at such joints by installing level poles at 5m intervals on either side of the joint of the layer covering at least a 30m length into the newly constructed section."

B3406 QUALITY OF MATERIALS AND WORKMANSHIP

Add the following:

"Test results and measurements shall be assessed by the engineer according to the provisions of Section 8300 of the standard specifications".

“ITEM

UNIT

B34.01 Pavement layers constructed from gravel taken from commercial source including all ball

m³

The unit of measurement is the cubic metre of material measured in the compacted fill.

B34.14 Provisional sum for sampling and testing of materials for stabilisation design:

m³

The unit of measurement is a provisional sum as approved by the engineer.

SECTION B3500:

SECTION STABILISATION

B3502 MATERIALS

(a) Chemical stabilising agents

Delete subclauses (ii) Ordinary Portland cement and (iii) Portland blast-furnace cement and replace with the following:

"Cement shall comply with the relevant requirements of SANS 50197-1;2000. The use of strength classes greater than CEM 32,5 shall not be permitted."

The nominal rate of application for tender purposes as a percentage of the mass of the material to be stabilized and compacted to the required modified AASHTO density shall be as follows:

C3 material	:	3,5% on a G5 material
C4 material	:	3,0% on a G6 material

The engineer may instruct the contractor to amend the percentage and possibly the type of stabilizing agent if necessary after tests on the site during construction."

(e) Water

Add the following before the first paragraph:

"Water used in the compaction and curing of stabilised layers shall comply with the requirements of Water Quality Code H3 as specified in table B1219."

B3503 CHEMICAL STABILISATION

(d) Mixing in the stabilizing agent

Add the following:

"The contractor shall prepare a trial section for each type of material without any extra payment to demonstrate his proposed mixing process before extensive mixing commences. The cost of the trial section shall be deemed to be included in the rates tendered.

After approval has been obtained, the mixing process and equipment shall remain unaltered unless otherwise instructed by the engineer.

The fact that the engineer has approved the mixing process shall not relieve the contractor of his obligations in respect of the mixing specified elsewhere in the Specifications. It will serve only as a guideline to ensure that the specified mixing requirements can actually be met."

(h) Curing the Stabilised work

Add the following to paragraph (ii):

"The covering material shall be placed by end-tipping, and compaction of this covering layer shall be delayed until the underlying layer has cured for 7 days."

Add the following to paragraph (i):

"Method (iii) and (iv) shall not be applicable."

(i) Construction limitations

Add the following:

"No stabilisation shall be done with falling air temperatures when the air temperature falls to below 7°C, or during rising air temperatures, when the air temperature is below 3°C.

Moisture content tests shall not be undertaken more than one day in advance of in-situ stabilisation operations. Care shall be taken to ensure that samples are representative of the in-situ material. Checks shall be conducted when wet weather occurs between initial testing and work commencing on any section."

The surface temperature of a compacted stabilized layer shall not be allowed to fall below 1 °C during the first three (3) days after stabilization. The contractor shall be responsible for taking the necessary measures in this connection, and especially to refrain from stabilizing when such temperatures become probable. When a sudden unforeseen temperature drop to a level below this limit occurs, the stabilized layer shall be covered with the material required for the next layer to be constructed.

All stabilized layers damaged by frost or by the formation of ice in the layer shall be removed and replaced by the contractor at his own expense.

The contractor shall make allowance for these requirements in his construction programme, and no claims in this connection will be considered."

In Table 3503/1, delete 8 hours for ordinary Portland cements and cement blends and replace with:

"6 hours"

Add the following subclause:

"(j) General

Any biscuit layers or bowls, identified by the hollow sound caused when a chain is dragged over the stabilized layer, shall be removed and repaired prior to surfacing. The repairs shall be for the account of the contractor. Before surfacing is allowed, ball penetration tests shall be carried out."

B3506 TOLERANCES

(b) Uniformity of mix (chemical stabilisation)

Add the following:

"The coefficient of variation shall not exceed 0,3 (30%) for mixing in place and 0,2 (20%) for plant-mixed material, calculated as follows:

$$\frac{S_n}{X_n} \times 100$$

where:

X_n is the average, and

S_n is the standard deviation of stabilizer."

B3507 CONSTRUCTION OF TRIAL SECTION

Add the following to the last paragraph:

"The fact that the engineer has approved the mixing process shall not relieve the contractor of his obligations in respect of the mixing specified elsewhere in the specifications. It will serve only as a guideline to ensure that the specified mixing requirements can actually be met."

B3509 QUALITY OF MATERIALS AND WORKMANSHIP

Add the following after the second paragraph:

"The test results and measurements will be judged in accordance with the provisions of Section 8200."

Add the following to the fourth paragraph:

"The stabilized material sampled from the layer for the compaction of modified AASHTO briquettes, shall be prepared according to TMH1 Method A16T; i.e. discard material coarser than a 37,5 mm test sieve, and compacted according to TMH1 Method A7."

Add the following paragraphs:

"The engineer shall be notified in good time to enable him to conduct tests himself.

Stabilization strength shall be determined by means of the Rapid Cure Method as described in clause B8110.

Where the stabilizing agent is to be spread by hand, pockets of the stabilizing agent shall be placed on the layer at regular intervals. However, spreading shall only commence when the engineer is satisfied that the correct quantity of stabilizing agent has been placed on the layer and has given permission that the stabilizing agent may be spread."

B3510 MEASUREMENT AND PAYMENT

B35.01 Chemical stabilization extra over unstabilised compacted layers

Replace the first paragraph with the following:

"The unit of measurement shall be the cubic metre of stabilized material, the quantity of which shall be determined in accordance with the final in-situ authorised dimensions of the layers treated as instructed by the engineer. Additional material preshaped to allow for finishing by cutting only will not be included in the measurement."

B35.02 Chemical stabilizing agent

Replace the third paragraph with the following:

"Subject to the provisions of clause 1220, the quantity of stabilizer will be determined in accordance with the authorised rate of application and layer dimensions. Extra stabilizer added for wastage and higher preshaping levels will not be included in the quantity and the cost thereof shall be deemed to be included for in the rates."

B3513 PROTECTION AND MAINTENANCE

(a) Trafficking the completed layer

(i) Cementitious stabilisation

Under no circumstance shall traffic be allowed to travel on layers of cement stabilised material.

(ii) Bituminous stabilisation

(1) Where bitumen emulsion is applied as the stabilising agent

Traffic shall not be allowed to travel on the completed layer for a period of 24 hours. The moisture content of the layer shall then be checked and, provided it is below 80% of OMC, the new layer may be opened to traffic.

(2) Where foamed bitumen is applied as the stabilising agent

The moisture content of the layer shall be checked and, provided it is below 80% of OMC, the new layer may be opened to traffic. As soon as the surface of the layer has dried (normally within 24 hours under favourable weather condition), the section shall be closed to traffic to allow for the application of a fog spray. The section shall be reopened to traffic after two hours or as soon as the emulsion has broken.

Where the surface was slushed with a diluted emulsion and a fog spray applied as part of the finishing process, the section shall remain closed to traffic for a minimum of two hours after completion or until the emulsion at the surface has broken.

(b) Maintenance of the stabilised layer

Until the surfacing is applied, the contractor shall maintain the surface integrity of the new layer by deploying staff on a daily basis to visually monitor all sections under traffic and take immediate action as soon as signs of ravelling are detected. Such action shall include the local application of dilute emulsion (applied by hand using a large paint brush) or the application of a further fog spray.

Where damage occurs as a consequence of the surfacing not being applied within the time limits specified in clause B3513 (c) below, the engineer shall have the right to summarily reject the affected layer and the contractor will have no recourse for the costs he incurs in removing the layer and replacing it with fresh stabilised material.

(c) Application of surfacing

To prevent environmental degradation and/or abrasion damage, new base layers shall be surfaced as soon as the moisture content at all positions within the layer is below 50% of optimum moisture content according to TMH 1, Method A7.

The maximum time delay between completing a new base layer and applying the surfacing shall be 14 days (with due allowance made for inclement weather)."

SECTION

SECTION B3900: PATCHING AND REPAIRING EDGE BREAKS

"ITEM

UNIT

B39.05 Asphalt layer constructed for rehabilitation purposes in accordance

(b) Surfacing, inlay, or overlay constructed with new asphalt

(i) Continuously graded (using Class A-E2 modified binder) m³

The unit of measurement is the cubic metre of material measured in the compacted fill.

SECTION

SECTION B4100: PRIME COAT

B4102 MATERIALS

(b) Aggregate for blinding

Add the following sentence:

"Blinding of the primed surface with aggregate shall only be permitted to facilitate vehicular access to adjoining properties"

B4104 WEATHER AND OTHER LIMITATIONS

Replace paragraph (g) with the following:

“(g) When the moisture content of the upper 50mm of the layer is higher than 50% of the optimum moisture content determined according to TMH 1, Method A7”

B4106 APPLICATION OF THE PRIME COAT

Add the following to paragraph (c)

“The nominal application rate of the prime shall be 0,8 l/m². Unless directed otherwise by the engineer or indicated on the drawings, the edges of the primed surface shall be 150mm wider than the edges of the surfacing.”

Add the following subclause

“(j) Application in areas treated by reworking and construction of a new base shall be primed using a mechanical distributor complying with subclause 4103(a). The edges of the previously constructed or existing surfacing shall be adequately protected by approved means to ensure that an overlap of prime not exceeding 50mm is sprayed onto the previously constructed or existing surfacing.”

B4108 TOLERANCES

Replace the first paragraph with the following:

"The actual spray rates measured at spraying temperature shall not deviate by more than 8.0% from that ordered by the engineer. The engineer may, at his discretion, conditionally accept application rates falling outside this tolerance at reduced payment in accordance with Table B4108/1.

Table B4108/1

Payment Reduction Factors for Conditionally Accepted Prime Coat

Deviation specified spray rate at spraying temperature. (%)	Payment reduction factor of tendered rate.
±8,0	1.00
±9,0	0.97
±10,0	0.95
±11,0	0.90
±12,0	0.85
±13,0	0.80

Any deviation outside these limits shall not be paid for, however, the engineer shall have the right to instruct the contractor to make up any deficiency, or blind excessive prime without additional payment. Where so instructed, the material for blinding shall consist of approved, screened 4,75mm nominal single size aggregate. The use of crusher dust for blinding shall not be permitted. If under-spraying occurs, and it is accepted by the engineer, only the actual quantities applied shall be paid for."

B4109 TESTING

Add the following

"No payment will be made if this condition is not adhered to. The contractor shall provide, at his cost, representative samples of every batch of prime delivered onto site."

SECTION B4200: ASPHALT BASE AND SURFACING

B4202 MATERIALS

a) Bituminous binders

(i) Conventional binders

Add the following:

"The binders to be used shall be as follows:

- (a) Continuously graded surfacing course: 60/70 penetration grade bitumen
- (b) Continuously graded base: 60/70 penetration grade bitumen".
- (ii) Non-homogeneous (heterogeneous) modified binders

Replace the last sentence with the following:

"The bitumen-rubber binder shall be manufactured according to the guidelines contained in "Technical Guideline: The use of Modified Bituminous Binders in Road Construction (TG 1-2007): Asphalt Academy"

(2) Rubber

Delete "Table 4202/1" in the last sentence and replace with "Table B4202/1".

Table B4202/1: Requirements for Rubber Crumbs

Sieve Analysis		Test Method
Sieve size (mm)	% Passing by mass	
1	100	MB-14

Sieve Analysis		Test Method
Sieve size (mm)	% Passing by mass	
0.600	40-70	
0,075	0-5	
Other requirements	Limits	Test Method
Natural rubber hydrocarbon content (%)	25 min	Thermo Gravimetric Analysis
Fibre length (mm)	6 max	
Bulk Density (g/cm ³)	1,10 – 1,25	MB 16

Note: Refer to standard COLTO table for COLTO grading if required

(3) *Extender oil*

Delete "Table 4202/2" in the first sentence and replace with "Table B4202/2"

Table B4202/2: Requirements for Extender Oil

Property	Limits
Flash Point	180°C (min)
Percentage by mass of saturated hydrocarbons	25% (max)
Percentage by mass of aromatic unsaturated hydrocarbons	55% (min)

(4) *Bitumen rubber blend*

Delete "Table 4202/3" in the second paragraph and replace with "Table B4202/3"

Table B4202/3: Bitumen-Rubber Compositional and Blending Limits

Property	Limits
Percentage of rubber by mass of total blend	18-24
Percentage of extender oil by mass of total blend	4(max)(*1)

Property	Limits
Percentage of diluent/cutter by mass of total blend	5 (max) ^{*1}
Blending/reaction temperature	170°C – 210°C
Reaction time (reaction time commences when all the rubber crumbs have been added to the blend)	0,5 – 4,0 hours ^{*2}

* Notes:

1. The addition of a diluent is not recommended in bitumen-rubber for use in hot mix asphalt applications.
2. The reaction time for the product is highly influenced by the composition of the base bitumen and the particle size of the rubber crumbs, and it may remain acceptable for up to 6 hours.

Delete “Table 4202/4” in the second last paragraph and replace with “Table B4202/4”:

Table B4202/4: Properties of Bitumen-Rubber for use in Asphalt

Property	Unit	Test Method	Binder Class A-R1
Compression Recovery: 5 minutes	%	MB-11	>80
Compression recovery: 1 hour	%	MB-11	>70
Softening point (R&B) ^{*1}	°C	MB-17	55 - 65
Resilience @ 25°C	%	MB-10	13-40
Flow	mm	MB-12	10 -50
Dynamic Visc. (Haake @ 190°C)	DPa.s	MB-13	20 - 50

* Notes:

1. The prescribed test method is based on not using stirrers although it has been reported that the use of stirrers has shown no difference in test results. For referencing purposes no stirrers should be used.

(iii) Homogeneous modified binders

Replace the last sentence with:

“The modified binder to be used on this project shall be A-E2

The homogeneous modified binder shall be manufactured according to the guidelines contained in "Technical Guideline: The use of Modified Bituminous Binders in Road Construction (TG 1-2007): Asphalt Academy". The base bitumen shall conform to SANS 4001-BT1:2012, or a blend of SANS 4001-BT1:2012 grades. The type as well as percentage of modifier is not prescribed, however the contractor shall indicate in the Pricing Schedule what polymer he shall be using. The properties of the homogeneous modified binder shall comply with the relevant requirements for binder class A-E2 as listed in table B4202/12.

Table B4202/12: Properties of polymer-modified binder for hot-mix asphalt

Property	Unit	Test Method	Binder Class
			A-E2
Softening Point ¹	°C	MB-17	65-85
Dynamic Viscosity@165°C	Pa.s	MB-18	≤0.6
Force Ductility @ 5°C	N	EN 13703	Report*3
Elastic Recovery @ 15°C	%	MB-4	>60
Storage Stab @ 160°C)	°C	MB-6	≤5
Flash Point	°C	ASTM: D93	≥230
Creep Stiffness	MPa	AASHTO:TP1	Report
Properties after ageing (RTFOT)			
Diff in Softening Point	°C	MB-17	-2 to +8
Elastic Recovery @ 15°C	%	MB-4	>50
Mass change	%	MB-3	≤1.0
Dynamic Viscosity @ 165°C	Pa.s	MB-18	Report*2

* Notes:

1. The prescribed test method is based on not using stirrers although it has been reported that the use of stirrers has shown no difference in test results. For referencing purposes no stirrers should be used.
2. No limits are given and the values should be recorded for reporting purposes only as they may be used in future specifications.
3. No values given but the test can be used to rank various binders according to their low temperature cohesion properties

b) Aggregates

Add the following paragraph to the introductory description:

“Asphalt mixes shall be manufactures using different individual single size coarse aggregates fractions and crushed fine aggregates blended to conform to the specified grading requirements. The use of natural sands shall only be permitted if approved by the engineer and shall be limited to a maximum of 5% for continuously graded mixes. All aggregate in excess of 5mm shall consist of individual nominal single sized aggregate. For stone mastic asphalt mixes all aggregate fractions in excess of 2mm shall consist of individual single size fractions. The Contractor shall note that commercial suppliers may not be able to supply all the required single size aggregates, in which instance arrangements will have to be made for additional on site screening. No additional payment shall be made for screening aggregate. The use of run of crusher type materials shall not be permitted.”

(v) Absorption

Add the following sentence:

“In addition, the total binder absorption of the combined coarse and fine aggregate blend shall not exceed 0,5%”

(viii) Grading

Delete the second paragraph commencing with "The target grading..." and add the following paragraphs.

The grading limits for the combined aggregate grading for the asphalt surfacing shall be as specified in table 4202/7: Continuously graded medium grade.

(x) Rolled-in chippings

Replace Table 4202/11 with:

TABLE B4202/11

Sieve size (mm)	Chip size - Percentage passing by mass	
	20 mm	14 mm
20,0	100	
14,0	0 – 20	100
10,0	0 – 5	0 – 20
7	0 – 1	0 – 5
0,425	0,5 max	0,5 max

Note:

Refer to standard COLTO table for COLTO grading if required

Add the following new sub-item:

“(xi) Moisture content

The moisture content of aggregates, sampled from the cold feed belt, shall not exceed the following limits at the time that it is introduced into the mix:

- Coarse aggregate 2%
- Fine aggregate 4%”

c) Fillers

Delete the second last sentence of the first paragraph and replace with:

“With the exception of stone mastic asphalt, in no instance shall more than 2% by mass of active filler be used in the mixes.”

Add the following after the last paragraph:

“For tender purposes the active filler shall be hydrated lime”

h) General

Add the following after the second paragraph:

“Sufficient aggregate for a minimum of 3 days production shall be separately stockpiled and tested for conformance and uniformity prior to use. The test results shall be presented to the engineer”

B4203 COMPOSITION OF ASPHALT BASE AND SURFACING MIXTURES

In the first paragraph, third last line, after “or active filler content” add:

“or aggregate content”

Replace the fifth paragraph with the following:

“The design of the asphalt mixes shall be in accordance with “Interim Guidelines For The Design Of Hot-Mix Asphalt In South Africa (June 2001)”, and appropriate research results. The mix properties and requirements shall be as specified in the project specifications”

The relevant asphalt mixes for the base and surfacing layers shall comply with the requirements in table B4203/1.

Replace Table 4202/6 with:

TABLE B4202/6

	Sieve size (mm)	Maximum nominal size (mm)			
		Semi-gap		Continuously graded	
		37,5	28	37,5	28
		Percentage passing sieve by mass			
	37,5	100		100	
	28	87 – 100	100	86 – 95	100
	20	77 – 96	93 – 100	73 – 86	87 - 96
	14		83 – 94	61 – 76	73 - 85
	10	61 – 81	73 – 88	52 - 68	64 - 79
	7		62 – 77		
	5	46 – 61	51 – 65	37 – 54	43 – 61
	2	39 – 51	39 – 51	23 - 40	28 - 44
	1	35 - 46	35 – 46	17 - 32	20 - 35
	0,600	32 – 42	32 – 42		15 – 30
	0,300	22 – 35	22 – 35	9 – 21	11 – 24

	0,150	10 – 20	10 – 20	6 – 17	8 – 19
	0,075	4 - 10	4 – 10	4 - 12	5 - 12
Nominal Mix Proportions by Mass when Bitumen is Used	Aggregate	93,5%		95%	94,5%
	Bitumen (grade according to project specifications)	5,5%		4%	4,5%
	Active filler*	1,0%		1,0%	1,0%

* Active filler for tender purposes to be hydrated lime.

Notes: 1. For recycled asphalt the nominal mix ratios of recovered asphalt, new aggregate, new bituminous binders, and active mineral filler to be used for tender purposes, shall be as specified in the project specifications.

2. Refer to standard COLTO table for COLTO grading if required

Replace Table 4202/7 with:

TABLE B4202/7 PART 1

	Sieve size (mm)	Mix Type				
		Gap graded			Semi-gap graded	
		Stone content			Maximum stone size	
		High	Intermediate	Low	28 mm	20 mm
PERCENTAGE THROUGH SIEVE BY MASS	28				100	
	20	100	100	100	93 – 100	100
	14	78 – 100	78 – 100	78 – 100	83 – 94	83 – 94
	10	67 – 87	71 – 91	71 – 91	73 – 88	74 – 87
	5	52 – 62	61 – 71	66 – 76	51 – 65	46 – 61

	2	45 – 55	53 – 63	60 – 70	39 – 51	39 – 51
	1	45 – 55	53 - 63	60 - 70	35 - 45	35 - 45
	0,600	36 – 52	45 - 63	55 - 70	32 - 42	32 - 42
	0,300	25 - 45	35 - 55	45 - 65	22 - 35	22 – 35
	0,150	12 - 32	15 - 35	20 - 40	10 - 20	10 - 20
	0,075	5 - 12	5 – 12	5 - 12	4 - 10	4 - 10
NOMINAL PROPORTIONS BY MASS	AGGREGATE	92,0%	92,0%	92,0%	93%	93%
	BITUMEN (GRADE ACCORDING TO PROJECT SPECIFICATION S)	7,0%	7,0%	7,0%	6,0%	6,0%
	ACTIVE FILLER	1,0%	1,0%	1,0%	1,0%	1,0%

Note:

Refer to standard COLTO table for COLTO grading if required

TABLE B4202/7 PART 2

		Continuously graded			Semi-open graded
		Coarse	Medium	Fine	
PERCENTAGE THROUGH SIEVE BY MASS	28	100			
	20	88 – 100			100
	14	73 – 86	100		75 – 100
	10	64 – 77	85 – 100	100	53 – 85
	5	44 – 62	56 – 77	66 – 89	20 – 41
	2	27 – 45	33 – 48	42 – 59	7 – 20

	1	21 - 35	25 - 40	31 - 51	4 - 13
	0,600	16 – 28	18 – 32	24 – 40	3 – 10
	0,300	12 – 20	11 – 23	16 – 28	3 – 8
	0,150	8 – 15	7 – 16	10 – 20	2 – 6
	0,075	4 - 10	4 - 10	4 - 12	1 - 4
NOMINAL PROPORTIONS BY MASS	AGGREGATE	93,5%	93,5%	93,0%	90,5%
	BITUMEN (GRADE ACCORDING TO PROJECT SPECIFICATIONS)	5,5%	5,5%	6,0%	8,5%
	ACTIVE FILLER	1,0%	1,0%	1,0%	1,0%

Note:

Refer to standard COLTO table for COLTO grading if required

Replace Table 4202/8 with:

TABLE B4202/8

Sieve size (mm)	Continuously graded	
	Maximum stone size	
	14 mm	20 mm
20		100
14	100	86 - 97
10	83 – 100	72 – 86
5	53 – 72	47 – 64
2	30 - 47	26 – 43
1		17 - 30
0,600	13 – 25	13 – 25

Sieve size (mm)	Continuously graded	
	Maximum stone size	
	14 mm	20 mm
0,300	8 – 18	10 – 18
0,150		6 – 13
0,075	4 - 8	4 - 10
Nominal mix proportions		
Aggregate	91%	91%
Modified binder	7%	7%
Active filler	2%	2%

Note:

Refer to standard COLTO table for COLTO grading if required

Replace Table 4202/9 with:

TABLE B4202/9

Sieve size (mm)	Open graded asphalt mixes			
	14 mm nominal			10 mm maximum
	Type 1	Type 2	Type 3	
20	100	100		
14	91 – 100	74 – 100	100	
10	38 – 58	53 – 83	56 – 74	100
5	11 – 22	17 – 34	22 – 32	15 – 30
2	8 - 14	9 - 21	5 - 14	5 - 14
0,600		6 – 13		
0,300			3 – 8	
0,075	2 – 6	3 - 6	2 - 5	2 - 6

Binder type	Road grade	Polymod	Bitumen rubber	Bitumen rubber	Bitumen rubber	As 13,2 mm Type mixes for mm 1
Aggregate	94,5%	94%	93,5%	93,5%	93,5%	
Binder	4,5%	5%	5,5%	5,5%	5,5%	
Active filler	1%	1%	1%	1%	1%	

Note:

Refer to standard COLTO table for COLTO grading if required

Replace Table 4202/10 with:

TABLE B4202/10

Sieve size (mm)	Maximum stone size		
	14 mm	10 mm	7 mm
14	100		
10	72 – 91	100	
7	45 – 69	57 – 83	100
5	31 – 52	33 – 59	82 – 100
2	20 – 31	21 – 31	31 – 41
1	16 - 26	16 - 26	22 - 32
0,600	14 – 24	14 – 23	18 – 30
0,300	11 – 23	11 – 22	13 – 25
0,150	9 – 17	9 – 19	9 – 19
0,075	7 - 12	7 - 12	7 - 12
Binder type	Road grade bitumen	Ploymer mod binder	Bitumen rubber
Aggregate	93,5%	93,5%	93,5%
Binder stabilizer	0,35% - 0,5%	0,35% - 0,5%	0,35% - 0,5%

(cellulose fibres)			
Binder content	6,5%	6,5%	6,5%

Note:

Refer to standard COLTO table for COLTO grading if required

Replace Table 4203/1 with:

Table B4203/1: Asphalt mix requirements: Base and Surfacing

Property	Continuously graded base mixes	Continuously graded surfacing mixes	Stone mastic asphalt mixes	Semi-gap graded surfacing mixes
Marshall Stability (kn)	8 – 18	8 – 18	-	8-18
Marshall Flow (mm)	2 – 6	2 – 6	-	2-6
Stability /Flow (kN/mm)	>2,5	> 2,5	-	>2,5
VMA (%)	> 14	> 15	> 17	>15
VFB (%)	65 – 75	65 – 75		65-75
Air voids (%)	4 – 6	4 – 6	3 – 5	4-7
Indirect tensile strength @ 25°C (kPa)	> 1000	> 1000	> 400	>800
Dynamic Creep Modules @ 40°C (MPa)	> 20	> 20	-	>15
Modified Lottmann @ 7% voids (TSR)	> 0,7	> 0, 8	> 0,7	>0,8
Air permeability @ 7% voids (cm ²)	< 1 x 10 ⁻⁸	< 1 x 10 ⁻⁸	<1 x 10 ⁻⁸	<1x10 ⁻⁸

Property	Continuously graded base mixes	Continuously graded surfacing mixes	Stone mastic asphalt mixes	Semi-gap graded surfacing mixes
Binder film thickness (microns)	5,5 – 8,0	5,5 – 8,0	-	5.5 – 8,0
Filler bitumen ratio	1 – 1,5	1 – 1,5	-	1-1,5
Immersion index (%)	-	-	-	>75

B4204 PLANT AND EQUIPMENT

(f) Vehicles

Replace the second paragraph with the following:

“To minimize temperature loss all vehicles used for transporting asphalt to the site shall be fitted with thermal asphalt covers (canvas covers not acceptable) irrespective of the prevailing climatic conditions or distance of transport.”

Add the following subclause:

“(h) Transfer of mix to paver

Asphalt shall be transferred from the haul trucks to the paver by means of a materials storage and transfer vehicle (“shuttle buggy”) and no material shall be transferred directly from the haul vehicle into the paver.

The material storage and transfer vehicle must be able to store and transfer hot-mixed asphalt material from a truck to a paver to ensure continuous paving. It must contain an anti-segregation auger which remixes materials just before they are delivered to the asphalt paver.”

B4205 GENERAL LIMITATIONS AND REQUIREMENTS AND THE STOCKPILING OF MIXED MATERIAL

b) Moisture

Amend the last paragraph as follows:

Insert “and/or primed base” after “surfacing” in the third line of the first sentence.

Replace the last sentence with “In such case the base shall be allowed to dry out to meet the above moisture content requirement prior to placing the surface layer.”

c) Surface Requirements

(iii) Tack Coat

Add the following paragraph:

“Hand spraying shall only be permitted on areas approved by the engineer. The binder distributor shall be capable to apply the binder evenly over the full area. The equipment shall comply with clause 4103. Tack coat shall be applied to all transverse and longitudinal joints by hand utilizing a paint brush.”

B4206 PRODUCING AND TRANSPORTING THE MIXTURE

b) Production of the mixture

(ii) Using drum-type mixer plants

Add the following:

“Pre-blending of aggregate fractions shall not be permitted and the contractor shall ensure that sufficient cold-feed bins are installed to accommodate each individual aggregate fraction, including the filler.”

c) Transporting the mixture

Delete the second sentence in this paragraph.

Add the following sub-clause:

“f) Approval of asphalt mixture

Before any asphalt is placed on the road, the engineer shall approve the mix design. The approval process shall be as follows:

The contractor shall prepare and submit a laboratory design mix with test results at four different bitumen contents. The design mix shall be submitted on the prescribed form D3 of TMH 10: “Instruction for the Completion of As-Built Materials Data Sheets” with all the necessary test results completed. In addition, the proposed asphalt mixture shall be subjected to gyratory testing. All the expenses in preparing and submitting the laboratory design mix shall be to the contractor’s cost.

Samples of all aggregate and bitumen shall be submitted with the laboratory design mix to enable the engineer to carry out check design testing as necessary. The above design and aggregate shall be submitted to the engineer at least six weeks before it is intended to commence with any asphalt production.

After approval is obtained for the laboratory design mix, a plant mix at varying binder contents of approximately 5 to 10 tons each shall be produced. The purpose of the plant mix is for the contractor to prove that the laboratory design mix can be produced successfully. The engineer shall conduct the necessary testing on the plant mix. The plant mix shall not be placed on the road. During the production of the plant mix, the engineer shall be afforded the opportunity to inspect the asphalt plant.

After the plant mix is approved, permission shall be given for laying a trial section at varying binder contents in accordance with the requirements of section 4211 of the specifications. The engineer may require that the mix be further assessed by means of CSIR Wheel Tracking or MMLS testing, the cost of which will be borne by the Employer. Mass production of asphalt shall only commence after approval of the trial section, which should be given within a maximum of ten days.

The engineer may instruct the contractor at any time to halt his paving process and to review the whole or part of the above process should a change of aggregate properties occur, the specified asphalt requirements not being met and/or a consistent asphalt mixture not be produced.”

B4208 JOINTS

Add the following to this clause:

“Where the difference in level between the new work and the existing road surface exceeds 25mm, joints shall be treated as follows:

Transverse steps at the end of a day’s work shall be tapered off at a slope of 1 vertical to 20 horizontal (1:20) to tie in with the existing surface. The tapered section shall be removed before surfacing is recommenced and a joint formed in accordance with clause 4208 of the specification.

Longitudinal joints exposed to traffic shall be provided with a taper of compacted asphalt material over the full length of the exposed joint. The width of the taper shall be at least 5 times the difference in level between the old and new work.

All costs involved in the provision and removal of these temporary ramps shall be deemed to have been included in the rates tendered for the relevant asphalt pay item.”

B4209 PRE-COATED CHIPPINGS FOR ASPHALT SURFACING

Replace the first sentence of the fifth paragraph with the following:

“The pre-coated chippings used shall be 14mm size aggregate.”

In the last sentence of the fifth paragraph, delete “between 0,6 and 1,0mm” and replace with:
“minimum 0,8mm”.

B4211 LAYING OF TRIAL SECTION

Add the following to the end of the first paragraph:

“As the purpose is not to calibrate any equipment, etc., the contractor shall calibrate the equipment and refine the mix design at his own cost.”

B4213 CONSTRUCTION TOLERANCES AND FINISH REQUIREMENTS

(c) Gradings

Replace Table 4213/1 with:

TABLE B4213/1: AGGREGATE GRADING TOLERANCES

Size of aggregate passing Sieve size (mm)	Permissible deviation from target grading (%)
28	± 5
20	± 5
14	± 5
10	± 5
7	± 5
5	± 4
2	± 4
1	± 4
0,600	± 4
0,300	± 3
0,150	± 2
0,075	$\pm 1^*$

* When statistical methods are applied the permissible deviation for the 0,075 fraction is $\pm 2\%$.

B4214 QUALITY OF MATERIAL AND WORKMANSHIP

b) Coring of asphalt layers

Add the following:

"A suitable coring machine shall be available on a daily basis when asphalt paving is taking place. Cores shall only be drilled, when the road temperature is 20°C or less. Core holes shall be filled with hot mix asphalt and compacted, all within 24 hours of the core being drilled. Coring shall be carried out within 48 hours after the paving has been completed and supplied to the engineer. The test results of cores shall be submitted to the engineer within 24 hours after coring."

c) Routine inspection and tests

Add the following paragraphs:

"The contractor shall keep accurate records of:

- (i) The position where every truckload of asphalt is paved (chainage, lane, time and date).
- (ii) The temperatures of the asphalt in the trucks both at the mixing plant and at the paving equipment immediately prior to discharging the load.
- (iii) The truck and load number from which control samples are taken. All samples taken shall be appropriately numbered.

Test results and measurements will be assessed in accordance with the provisions of section 8200."

Add the following sub-clause:

d) Special tests

n-Heptane-Xylene Equivalent (Spot test) (AASHTO-T102)

If the engineer suspects that bitumen or asphalt has been overheated, he may order that the bitumen, or the bitumen recovered from the asphalt, be subjected to the Spot Test. Recovery of binder for use in the Spot Test shall be carried out according to an approved method.

Any bitumen having an n-Heptane-Xylene equivalent in excess of 36, or in excess of the manufacturers test result on the dispatched stock, shall be considered to have been overheated and shall be deemed to be rejected unless proven otherwise."

B4215 MEASUREMENT AND PAYMENT

Amend the following payment item:

Item	Unit
B42.08 100mm cores in asphalt paving	number (no)

Amend the 1st sentence by adding the following after the word "drilled....":

"irrespective of depth of core."

SECTION 5600 : ROAD SIGNS

B5601 SCOPE

"This section also covers the supply and erection of permanent danger plates at culverts and bridges at the locations indicated on the drawings or as directed by the engineer."

B5603 MANUFACTURING OF ROAD SIGN BOARDS AND SUPPORTS

(a) Road signboards

Add the following:

"The contractor shall make every effort to ensure that signboards are correct in all respect and before dispatching the boards from the manufacturer's factory shall provide the Engineer with a 100mm x 150mm colour photograph of each sign face for approval of the correctness of the legend. Such approval will not imply final acceptance of the board. If the Contractor is in any doubt as to the correctness of the sign detail, the sign designer shall be contacted for verification."

(a) (ii) Steel profile road signboards

Add the following:

"Where the letter or legends cross the horizontal joints of the sign CONSORTIUMs, the letter shall be cut on the joint and both ends folded around the radius.

Retro-reflective material to adjoining Chromadek CONSORTIUMs on a sign shall be practical visual match of the specified colour."

B5604 ROAD SIGN FACES AND PAINTING

Add the following new subclause:

"(e) Application of retro-reflective material

All sign faces shall be faced with class 1 grade retro-reflective material. Painted front sign faces shall not be used.

Where applied to Chromadek sections, retro-reflective material shall be applied as specified for aluminium section in Clause 5603(d) of the Standard Specification, and of Clause B5603(a)(ii) of this project Specification. All sign lettering and symbols are to be class 1 retro-reflective material with the exception of direction signs which is to be Class III retro-reflective material.

For W405, W406, R1 and W409 signs, the sign faces shall be Class III retro-reflective material and the lettering and symbols shall be Class III retro-reflective material."

B5605 STORAGE AND HANDLING

Add the following:

"The following shall not be allowed on the sign face:

Drilling of holes, except for the fastening of overlays

Application of any form of adhesive

Cleaning with any chemicals that are not specifically approved by the manufacturer of the retro-reflective material

Covering the sign face with an impermeable material that does not allow free circulation of

air.”

B5606 ERECTING ROAD SIGNS

(c) Erection

Add the following:

“After erection the signboard shall be thoroughly cleaned with a cleaning agent approved by the retro-reflective material’s manufacturer.

All vegetation obstructing the new or replaced sign board shall be removed and disposed of as instructed by the Engineer.”

B5608 DISMANTLING, STORING AND RE-ERECTING EXISTING ROAD SIGNS

Add the following:

“Existing overhead and ground mounted road signs that are being replaced by new signs shall be dismantled and disposed of by the Contractor. Where possible the dismantling of the signs shall not be before the replacement sign is erected and displayed. Where dismantling of the sign is required before erection of the replacement sign, the dismantling shall not take place until immediately before work is to commence on the replacement, and the replacement shall be completed and the new sign displayed as soon as possible thereafter (within 72 hours).

Dismantling shall include sign CONSORTIUMs and ground mounted sign supports.

Ground mounted sign supports shall be cut off just below ground level. Material excavated for removal of buried poles shall be replaced, and any depression made good using excess material from excavation for new signs.

Pay items are provided in the Bill of Quantities. Payment will differentiate between different types of sign CONSORTIUMs.”

B5609 MEASUREMENT AND PAYMENT

ITEM	UNIT
------	------

B56.01	Road sign boards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class 1 retro-reflective material, where the sign board is constructed from:
--------	--

Amend the last two lines of the second paragraph to read:

“completion, delivery, installation of the road sign board complete as specified, and the removal and disposal of all vegetation obstructing the motorists’ view of the new or replaced sign board.

ITEM	UNIT
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B56.02	Extra over item 56.01 for using:
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(a) Background of retro-reflective material of:

(i) Class I	m2
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SECTION 5700 : ROAD MARKINGS

B5706 SETTING OUT THE ROAD MARKINGS

Add the following:

“Where road markings are to be replaced after milling/overlay seal, it is essential that all existing barrier lines and other road marking lines be accurately referenced before commencement of milling or other operations which will obliterate the existing road markings. The position of barrier lines shall be re-assessed on site by the Engineer before the Contractor commences with the road marking.”

B5707 APPLYING THE PAINT

Add the following:

“The Contractor’s establishment on site and general obligation shall be deemed to fully include the establishment of the road-marking team, irrespective of the number of times the road-marking team is required to be onsite or is required to move within the site.”

B5711 GENERAL

Insert the following into the last sentence of the last paragraph between “black paint” and “or chemical paint remover”:

“, bituminous emulsion, slurry”

Add the following to the last paragraph:

“Where black paint is used, it shall be matt.”

Add the following new clause:

“B5715 REMOVAL OF EXISTING ROAD STUDS

The existing road studs shall be removed from the road surface prior to milling.”

B5714 MEASUREMENT AND PAYMENT

ITEM	UNIT
B57.06 Setting out and pre-marking the lines (excluding traffic island markings, lettering and symbols)	

Add the following:

“Referencing of existing barrier lines and other road marking lines prior to milling and other operations, shall be included in the tendered rate for setting out and pre-marking.”

ITEM	Unit
B57.07 Re-establishing the painting unit on instruction of the Engineer during the construction period	number (No)

The unit of measurement shall be lump sum for painting on site on instruction of the Engineer once after the first application.

The Contractor's establishment on site and general obligation shall be deemed to fully include the establishment of the road-marking team, irrespective of the number of times the road-marking team is required to be on site or is required to move within the site.

The tendered rate shall include full compensation for re-establishing the complete painting unit on the site and the subsequent removal of all special equipment, personnel, etc., for painting the road-traffic markings during the construction period."

SECTION 5900 : FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS

B5902 FINISHING THE ROAD AND ROAD RESERVE

Add the following to the first paragraph:

"The contractor shall pay special attention to the collection and removal of all waste materials originating from the construction activities. All materials trimmed or excavated from the road shall be collected and removed from the road reserve to the satisfaction of the engineer.

This requirement shall be deemed to be incorporated in the tendered rates for item 59.01 of the bill of quantities or such other items as the contractor may decide upon.

The engineer may order additional finishing of the road reserve which will entail the collection and disposal of loose rocks etc. Payment for this work will be made under daywork items included in section 5900 of the bill of quantities as described in section 1800 of these project specifications."

SECTION 8100 : FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS

B8108 DETERMINING THE TOTAL APPROXIMATE DRY BULK RELATIVE DENSITY AND THE APPARENT DENSITY

Add the following at the end of this clause:

"For materials where the total water absorption, when determined according to TMH1 Methods B14 and B15, is in excess of 1,5%, the Apparent Density shall be calculated in accordance to the following formula:

$$\frac{(b - a)}{(d - a) + \{ (w - 1.0)/100 \times (b - a) \} - (c - b)}$$

This formula shall be used as an alternative to note (5) regarding soaking period, when so instructed by the engineer."

B8110 TESTS RELATING TO CHEMICAL STABILISATION

Add the following sub-clause:

“d) The Wet-Dry Durability Test for cement and/or lime-treated materials using the hand-brush method

1. Scope

This method covers the procedure for determining the soil-cement losses obtained by repeated wetting, drying and hand brushing of hardened soil-cement specimens (see 5.4).

2. Apparatus

- 2.1 A moisture curing room capable of maintaining a relative humidity of 95 to 100 percent and a temperature of 22 to 25°C, or suitable plastic bags capable of holding specimens and carriers in an air tight condition in a water bath as described in 2.2 below.
- 2.2 A suitable water bath with thermostatic control capable of maintaining a temperature of 22 to 25°C.
- 2.3 A balance to weigh up to 10kg, accurate to 0.5g.
- 2.4 A drying oven capable of maintaining temperatures of $71 \pm 3^{\circ}\text{C}$ and $110 \pm 5^{\circ}\text{C}$.
- 2.5 A wire scratch brush made of 50mm by 1.6mm flat 26 gauge wire bristles assembled in 50 groups of 10 bristles and mounted to form five longitudinal rows and 10 transverse rows on a 200 by 65mm wooden block.

3. Method

3.1 *Preparation of specimens*

Prepare specimens in accordance with the procedure described in the Appendix to method A19 in the TMH 1 with the following exceptions:

Use the material passing the 37.5mm sieve and discard the material remaining on the sieve.

Use the apparatus and compaction method as described in TMH 1 method A7 (100% Modified AASHTO at predetermined OMC).

3.2 *Curing of specimens*

Rapid cure the specimens (see 5.6). Alternatively, and where instructed by the engineer, the specimens may be cured for seven days at a relative humidity of 95% to 100% and a temperature of

22°C to 25°C in a suitable curing room or in plastic bags and a suitable water bath.

3.3 *Wetting, drying and brushing*

After curing, remove the specimens from the curing room or plastic bags, allow to cool and submerge them in water at room temperature for a period of five hours. Remove the specimens from the water and place them in an oven at 71°C for 42 hours.

Remove the specimens from the oven. Give each specimen two firm strokes over the full surface area with the wire scratch brush. The brush must be held parallel to the long axis of the specimen or parallel to the ends as required to cover all areas of the specimen. Apply these strokes to the full height and width of each specimen with a firm stroke corresponding to approximately 13.5 kN force (see note 5.5).

3.4 *Determination of soil-cement losses*

After 12 cycles, dry the specimens to constant mass at 100°C and determine the oven dry mass of the specimens. The data collected will permit the calculation of the soil-cement losses of the specimens after the prescribed 12-cycle test.

4. Calculations

- 4.1 Calculate the soil-cement loss of the specimens as a percentage of the original oven-dry mass of the specimens as follows:

$$L = \frac{W - N}{W} \times 100$$

Where

L = soil-cement loss (%)

W = original calculated oven-dry mass (g) (calculated according to paragraph 3.5 in the Appendix to method A19 in the TMH 1).

N = final oven-dry mass (g).

- 4.2 The percentage loss shall be calculated and reported to the nearest 0.1 percent. The results are normally required for stabilisation design purposes and should be reported graphically against relevant cement contents.

5. Notes

- 5.1 Mass determinations of the specimens before and after brushing are usually made at the end of each cycle during research or special investigations.

- 5.2 Care is required when assessing results obtained on very coarse graded materials as "plucking" out of the aggregate pieces during the brushing process could result in very high losses of material, which may however not be truly indicative of its potential erosion resistance.
- 5.3 If it not possible to run the cycle continuously because of Sundays or holidays, or for any other reason, the specimens should be held in the oven during the layover period.
- 5.4 The test was originally developed to determine wet-dry durability of cement-treated material. It can, however, be used with equal success on material tested with other chemical stabilizers, for example lime, or mixes of lime and milled blast furnace slag, or cement and milled blast furnace slag.
- 5.5 The pressure of the brushing stroke is determined as follows:
Clamp a specimen in a vertical position on the edge of a platform scale and zero the scale. Apply vertical brushing strokes to the specimen and note the force necessary to register approximately 1.36kg.
- 5.6 Rapid curing:
Seal each specimen airtight in a suitable container or plastic bag. Carefully place the briquettes on suitable holders or in pans and place in the oven at the relevant temperature and period given below:

Stabilizing agent	Temp (°C)	Time (Hours)
Cement	70 – 75	24 ±0.5
PBFC	70 - 75	24 ±0.5
Lime	60 ±2	45 ±1
Lime / FA	60 ±2	45 ±1
Lime / MBFS	60 ±2	45 ±1

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Add the following new sub-clause:

“c) Other Tests:

i. Thickness (mm):

The thickness of the material shall be specified by the contractor (or supplier).

Thickness and compressibility tests shall be carried out in accordance with Code of Practice SABS 0221:1988. The Testing of Geo-textile, to check that the material supplied conforms to the thickness specified by the contractor.

ii. Mass per unit area (g/m^2):

Testing shall be carried out in accordance with Code of Practice SABS 0221.

iii. Tensile strength (kN/m):

Testing shall be carried out in accordance with Code of Practice SABS 0221.

iv. Penetration load (kN):

Testing shall be carried out in accordance with Code of Practice SABS 0221.

v. Puncture resistance (mm):

Testing shall be done in accordance with test procedures laid down by CSIR, Pretoria.

vi. Permeability (l/s/m^2):

Testing shall be carried out in accordance with Code of Practice SABS 0221."

C3.3.3 PROJECT SPECIFICATIONS: ADDITIONAL SPECIFICATIONS

CONTENTS

- C3.3.3.1 REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT REGULATIONS
- C3.3.3.2 ENVIRONMENTAL MANAGEMENT PLAN
- C3.3.3.3 PROVISION OF STRUCTURED TRAINING
- C3.3.3.4 PROVISION OF THE TEMPORARY WORKFORCE

C3.3.3.1 OCCUPATIONAL HEALTH AND SAFETY ACT 1993 : HEALTH AND SAFETY SPECIFICATION

CONTENTS

C3.3.3.1.1 INTRODUCTION

C3.3.3.1.2 SCOPE

C3.3.3.1.3 GENERAL OCCUPATIONAL HEALTH AND SAFETY PROVISIONS

C3.3.3.1.4 OPERATIONAL CONTROL

ANNEXURE 1: MEASURING INJURY EXPERIENCE

ANNEXURE 2: EXECUTIVE SHE RISK MANAGEMENT REPORT

ANNEXURE 3: LIST OF RISK ASSESSMENTS

C3.3.3.1.1 Introduction

In terms of the Construction Regulation 4(1) (a) of the Occupational Health and Safety Act, No. 85 of 1993, THULAMELA MUNICIPALITY, as the Client, is required to compile a Health & Safety Specification for any intended project and provide such specification to any prospective tenderer.

The Client's further duties are as in C3.5.1.3.1.1. below and in the Construction Regulations, 2014.

This specification has as objective to ensure that Principal Contractors entering into a Contract with the THULAMELA MUNICIPALITY achieve an acceptable level of OH&S performance. This document forms an integral part of the Contract and Principal and other Contractors should make it part of any Contracts that they may have with Contractors and/or Suppliers.

Compliance with this document does not absolve the Principal Contractor from complying with minimum legal requirements and the Principal Contractor remains responsible for the health & safety of his employees and those of his Mandataries.

C3.3.3.1.2 Scope

Development of a health & safety specification that addresses all aspects of occupational health and safety as affected by the abovementioned contract work.

The specification will provide the requirements that Principal Contractors and other Contractors will have to comply with in order to reduce the risks associated with the abovementioned contract work that may lead to incidents causing injury and/or ill health, to a level as low as reasonably practicable.

C3.3.3.1.3 General Occupational Health & Safety Provisions

(a) Hazard Identification & Risk Assessment (Construction Regulation 7)

(i) Risk Assessments

Annexure 3 contains a list of Risk Assessment headings that have been identified by THULAMELA MUNICIPALITY as possibly applicable to the abovementioned contract work. It is, by no means, exhaustive and is offered as an assistance to Contractors intending to tender.

Based on the Risk Assessments, the Principal Contractor must develop a set of site-specific OH&S rules that will be applied to regulate the OH&S aspects of the construction.

The Risk Assessments, together with the site-specific OH&S rules must be submitted to the THULAMELA MUNICIPALITY before mobilisation on site commences.

Despite the Risk Assessments listed in Annexure 3, the Principal Contractor is required to conduct a baseline Risk Assessment and the aforesaid listed Risk Assessments must be incorporated into the base-line Risk Assessment. The baseline Risk Assessment must further include the Standard Working procedures (SWP) and the applicable Method Statements based on the Risk Assessments

All out-of-scope work must be associated with a Risk Assessment.

(ii) Review of Risk Assessments

The Principal Contractor is to review the Hazard Identification, Risk Assessments and SWP's at each Production Planning and Progress Report meeting as the Contract work develops and progresses and each time changes are made to the designs, plans and construction methods and processes.

The Principal Contractor must provide the Client, other Contractors and all other concerned-parties with copies of any changes, alterations or amendments as contemplated in above.

(b) Legal Requirements

All Contractors entering into a Contract with the client shall, as a minimum, comply with the

- Occupational Health & Safety Act and Regulations (Act 85 of 1993). A current, up-to-date copy of the OHS Act must be available on site at all times
- Compensation for Occupational Injuries & Diseases Act (Act 130 of 1993). The principal Contractor will be required to submit a letter of Registration and "good-standing" from the Compensation Insurer before being awarded the Contract. A current, up-to-date copy of the COID Act must be available on site at all times.
- Where work is being carried out on mines' premises the Contractor will have to comply with the Mine Health & Safety Act and Regulations (Act. 29 of 1996) and any other OH&S requirements that the mine may specify. A current, up-to-date copy of the OHS Act must be available on site at all times.

(c) Structure and Responsibilities

(i) Overall Supervision and Responsibility for OH&S

- * It is a requirement that the Principal Contractor, when he appoints Contractors (Sub-contractors) in terms of Construction Regulations 5(3), (5), (9), (10) and (12) he includes an OHS Act Section 37(2) agreement: "Agreement with Mandatary" in his agreement with such Contractors.
- * Any OH&S Act (85/1993), Section 16(2) appointee/s as detailed in his/her/their respective appointment forms

(ii) Further (Specific) Supervision Responsibilities for OH&S

The Contractor shall appoint designated competent employees and/or other competent persons as required by the Act and Regulations. Below is a list of identified appointments and may be used to select the appropriate appointments for the current contract:

	Ref. Section/Regulation in OHSAct
Batch Plant Supervisor	(Construction Regulation 6(1))
Construction Vehicles/Mobile Plant/Machinery Supervisor	(Construction Regulation 21)
Demolition Supervisor	(Construction Regulation 12)
Drivers/Operators of Construction Vehicles/Plant	(Construction Regulation 21)
Electrical Installation and Appliances Inspector	(Construction Regulation 22)
Emergency/Security/Fire Coordinator	(Construction Regulation 27)
Excavation Supervisor	(Construction Regulation 11)
Explosive Powered Tool Supervisor	(Construction Regulation 19)
Fall Protection Supervisor	(Construction Regulation 8)
First Aider	(General Safety Regulation 3)
Fire Equipment Inspector	(Construction Regulation 27)
Formwork & Support work Supervisor	(Construction Regulation 10)
Hazardous Chemical Substances Supervisor	(HCS Regulations)
Incident Investigator	(General Admin Regulation 29)
Ladder Inspector	(General Safety Regulation 13A)
Lifting Equipment Inspector	(Construction Regulation 20)
Materials Hoist Inspector	(Construction Regulation 17)
OH&S Committee	(OHS Act Section 19)
OH&S Officer	(Construction Regulation 6(6))
OH&S Representatives	(OHS Act Section 17)
Person Responsible for Machinery	(General Machinery Regulation 2)
Scaffolding Supervisor	(Construction Regulation 14)
Stacking & Storage Supervisor	(Construction Regulation 26)
Structures Supervisor	(Construction Regulation 9)
Suspended Platform Supervisor	(Construction Regulation 15)
Tunneling Supervisor	(Construction Regulation 13)
Vessels under Pressure Supervisor	(Vessels under Pressure Regulations)
Working on/next to Water Supervisor	(Construction Regulation 24)
Welding Supervisor	(General Safety Regulation 9)

The appointments must be in writing and the responsibilities clearly stated together with the period for which the appointment is made. This information must be communicated and agreed with the appointees.

Copies of appointments must be submitted to the client together with concise CV's of the appointees. All appointments must be officially approved by the client. Any changes in appointees or appointments must be communicated to the client forthwith.

The Principal Contractor must, furthermore, provide the client with an organogram of all Contractors that he/she has appointed or intends to appoint and keep this list updated on a weekly basis.

In addition the client may require that a Traffic Safety Officer be appointed for any project.

(iii) Designation of OH&S Representatives (Section 18 of the OHS Act)

OH&S Representatives have to be designated in writing and the designation must include the area of responsibility of the person and term of the designation.

(iv) Duties and Functions of the OH&S Representatives (Section 19 of the OHS Act)

The Principal Contractor must ensure that the designated OH&S Representatives conduct a minimum monthly inspection of their respective areas of responsibility using a checklist and report thereon to the Principal Contractor

OH&S representatives must be included in accident/incident investigations

OH&S representatives must attend all OH&S committee meetings.

(v) Appointment of OH&S Committee (Section 20 of the OHS Act)

The Principal Contractor must establish an OH&S Committee consisting of all the designated OH&S Representatives together with a number of management representatives that are not allowed to exceed the number of OH&S representatives on the committee and a representative of the Client who shall act as the chairman without a vote. The members of the OH&S committee must be appointed in writing.

The OH&S Committee must meet minimum monthly and consider, at least, the following Agenda:

1. Opening & Welcome
2. Present/Apologies/Absent
3. Minutes of previous Meeting
4. Matters Arising from the previous Minutes
5. OH&S Reps Reports
6. Incident Reports & Investigations
7. Incident/Injury Statistics
8. Other Matters

9. Endorsement of Registers and other statutory documents by a representative of the Principal Contractor
10. Close/Next Meeting

(d) Administrative Controls and the Occupational Health & Safety File

(i) The OH&S File (Construction Regulation 5 (7))

As required by Construction Regulation 5(7), the Principal Contractor and other Contractors will each keep an OH&S File on site containing the following documents as a minimum:

- * Notification of Construction Work (Construction Regulation 3.)
- * Copy of OH&S Act (updated) (General Administrative Regulation 4.)
- * Proof of Registration and good standing with a COID Insurer (Construction Regulation 4 (g))
- * OH&S Programme agreed with the Client including the underpinning Risk Assessment/s & Method Statements (Construction regulation 5 (1))
- * Copies of OH&S Committee and other relevant Minutes
- * Designs/drawings (Construction Regulation 5 (8))
- * A list of Contractors (Sub-Contractors) including copies of the agreements between the parties and the type of work being done by each Contractor (Construction Regulation 9)
- * Appointment/Designation forms as per (a)(i) & (ii) above.
- * Registers as follows:
 - * Accident/Incident Register (Annexure 1 of the General Administrative Regulations)
 - * OH&S Representatives Inspection Register
 - * Asbestos Demolition & Stripping Register
 - * Batch Plant Inspections
 - * Construction Vehicles & Mobile Plant Inspections by Controller
 - * Daily Inspection of Vehicles. Plant and other Equipment by the Operator/Driver/User
 - * Demolition Inspection Register
 - * Designer's Inspection of Structures Record
 - * Electrical Installations, -Equipment & -Appliances (including Portable Electrical Tools)
 - * Excavations Inspection
 - * Explosive Powered Tool Inspection, Maintenance, Issue & Returns Register (incl. cartridges & nails)

- * Fall Protection Inspection Register
- * First Aid Box Contents
- * Fire Equipment Inspection & Maintenance
- * Formwork & Support work Inspections
- * Hazardous Chemical Substances Record
- * Ladder Inspections
- * Lifting Equipment Register
- * Materials Hoist Inspection Register
- * Machinery Safety Inspection Register (incl. machine guards, lock-outs etc.)
- * Scaffolding Inspections
- * Stacking & Storage Inspection
- * Inspection of Structures
- * Inspection of Suspended Platforms
- * Inspection of Tunnelling Operations
- * Inspection of Vessels under Pressure
- * Welding Equipment Inspections
- * Inspection of Work conducted on or Near Water
- * All other applicable records

The client will conduct an audit on the OH&S file of the Principal Contractor from time-to-time.

- (e) OH&S Goals & Objectives & Arrangements for Monitoring & Review of OH&S Performance

The Principal Contractor is required to maintain a CIFR of at least 8 (See Annexure 1. to this document: "Measuring Injury Experience) and report on this on a monthly basis

- (f) Notification of Construction Work (Construction Regulation 3.)

The Principal Contractor must, where the Contract meets the requirements laid down in Construction Regulation 3, within 5 working days, notify the Department of Labour of the intention to carry out construction work and use the form (Annexure A in the Construction Regulations) for the purpose. A copy must be held on the OH&S File and a copy must be forwarded for record keeping purposes.

- (g) Training, Awareness and Competence

The contents and syllabi of all training required by the Act and Regulations are to be included in the Principal Contractor's OH&S Plan.

- (i) General Induction Training

All members of Contractor's Site management as well as all the persons appointed as responsible for OH&S in terms of the Construction and other Regulations will be required to attend a general induction session by the Client

All employees of the Principal and other Contractors to be in possession of proof of General Induction training.

(ii) Site Specific Induction Training

The Principal Contractor will be required to develop Contract work project specific induction training based on the Risk Assessments for the Contract work and train all employees and other Contractors and their employees in this.

All employees of the Principal and other Contractors to be in possession of proof of Site Specific OH&S Induction training at all times.

(iii) Other Training

All operators, drivers and users of construction vehicles, mobile plant and other equipment to be in possession of valid proof of training.

All employees in jobs requiring training in terms of the Act and Regulations to be in possession of valid proof of training as follows:

OH&S Training Requirements: (as required by the Construction Regulations and as indicated by the OH&S Specification & the Risk Assessment/s):

- * General Induction (Section 8 of the Act)
- * Site/Job Specific Induction (also visitors) (Sections 8 & 9 of the Act)
- * Site/Project Manager
- * Construction Supervisor
- * OH&S Representatives (Section 18 (3) of the Act)
- * Training of the Appointees indicated above
- * Operators & Drivers of Construction Vehicles & Mobile Plant (Construction Regulation 21)
- * Basic Fire Prevention & Protection (Environmental Regulations 9 and Construction regulation 27)
- * Basic First Aid (General Safety Regulations 3)
- * Storekeeping Methods & Safe Stacking (Construction Regulation 26)
- * Emergency, Security and Fire Co-coordinator

(iv) Awareness & Promotion

The Principal Contractor is required to have a promotion and awareness scheme in place to create an OH&S culture in employees. The following are some of the methods that may be used:

- Toolbox Talks
- OH&S Posters
- Videos
- Competitions
- Suggestion schemes
- Participative activities such as OH&S Safety circles.

(v) Competence

The Principal Contractor shall ensure that his and other Contractors personnel appointed are competent and that all training required to do the work safely and without risk to health, has been completed before work commences

The Principal Contractor shall ensure that follow-up and refresher training is conducted as the contract work progresses and the work situation changes.

Records of all training must be kept on the OH&S File for auditing purposes.

(h) Consultation, Communication and Liaison

OH&S Liaison between the Client, the principal Contractor, the other Contractors, the Designer and other concerned parties will be through the OH&S committee as contemplated in above.

In addition to the above, communication may be directly to the Client or his appointed Agent, verbally or in writing, as and when the need arises.

Consultation with the workforce on OH&S matters will be through their Supervisors, OH&S Representatives, the OH&S committee and their elected Trade Union Representatives, if any.

The Principal Contractor will be responsible for the dissemination of all relevant OH&S information to the other Contractors e.g. design changes agreed with the Client and the Designer, instructions by the Client and/or his/her agent, exchange of information between Contractors, the reporting of hazardous/dangerous conditions/ situations etc.

The Principal Contractor will be required to do Site Safety Walks with the client at least on a basis to be determined between the two parties.

The Principal and other Contractors will be required to conduct Toolbox Talks with their employees on a weekly basis and records of these must be kept on the OH&S File. Employees must acknowledge the receipt of Toolbox Talks which record must, likewise be kept on the OH&S File.

The Principal Contractors most senior manager on site will be required to attend all THULAMELA MUNICIPALITY OH&S meetings and

a list of dates, times and venues will be provided to the Principal Contractor by THULAMELA MUNICIPALITY.

(i) Checking, Reporting and Corrective Actions

(i) Monthly Audit by Client (Construction Regulation 1(d))

THULAMELA MUNICIPALITY will be conducting a Monthly Audit to comply with Construction Regulation 4(1)(d) to ensure that the principal Contractor has implemented and is maintaining the agreed and approved OH&S Plan.

(ii) Other Audits and Inspections by THULAMELA MUNICIPALITY:

THULAMELA MUNICIPALITY reserves the right to conduct other ad hoc audits and inspections as deemed necessary. This will include Site Safety Walks.

(iii) Conducting an Audit

A representative of the Principal Contractor must accompany THULAMELA MUNICIPALITY on all Audits and Inspections and may conduct his/her own audit/inspection at the same time. Each party will, however, take responsibility for the results of his/her own audit/inspection results.

(iv) Contractor's Audits and Inspections

The Principal Contractor is to conduct his own monthly internal audits to verify compliance with his own OH&S Management system as well as of with this specification.

(v) Inspections by OH&S Representative's and other Appointees

OH&S Representatives must conduct weekly inspections of their areas of responsibility and report thereon to their foreman or supervisor whilst other appointees must conduct inspections and report thereon as specified in their appointments e.g. vehicle, plant and machinery drivers, operators and users must conduct daily inspections before start-up.

(vi) Recording and Review of Inspection Results

All the results of the abovementioned inspections to be in writing, reviewed at OH&S committee meetings, endorsed by the chairman of the meeting and placed on the OH&S File.

(vii) Reporting of Inspection Results

The Principal Contractor is required to provide the Client with a monthly report in the format as per the attached Annexure 2: "SHE Risk Management Report"

(j) Incident Reporting and Investigation

Reporting of Accidents and Incidents (Section 24 and General Administrative Regulation 8 of the OHS Act)

The Principal Contractor must report all incidents where an employee is injured on duty to the extent that he/she:

- * dies
- * becomes unconscious
- * loses a limb or part of a limb
- * is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed

OR where:

- * a major incident occurred
- * the health or safety of any person was endangered
- * where a dangerous substance was spilled
- * the uncontrolled release of any substance under pressure took place
- * machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
- * machinery ran out of control

to THULAMELA MUNICIPALITY within two days and to the Provincial Director of the Department of Labour within seven days (Section 24 of the Act & General Administrative Regulation 8.) EXCEPT that, where a person has died, has become unconscious for any reason or has lost a limb or part of a limb or may die or suffer a permanent physical defect, the incident must be reported to both THE MUNICIPALITY and the Provincial Director of the Department of Labour forthwith by telephone, telefax or E-mail.

The Principal Contractor is required to provide THULAMELA MUNICIPALITY with copies of all statutory reports required in terms of the Act within 7 days of the incident occurring.

The Principal Contractor is required to provide THULAMELA MUNICIPALITY with copies of all internal and external accident/incident investigation reports including the reports contemplated below within 7 days of the incident occurring.

Accident and Incident Investigation (General Administrative Regulation 9)

The Principal Contractor is responsible for the investigation of all accidents/incidents where employees and non-employees were injured to the extent that he/she/they had to be referred for medical treatment by a doctor, hospital or clinic

The results of the investigation to be entered into the Accident/Incident Register listed in above.

The Principal Contractor is responsible for the investigation of all minor and non-injury incidents as described in Section 24 (1) (b) & (c) of the Act and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

The Principal Contractor is responsible for the investigation of all road traffic accidents and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

The THULAMELA MUNICIPALITY reserves the right to hold its own investigation into an incident or call for an independent external investigation.

C.3.3.3.1.4 Operational Control

(a) Emergency Preparedness, Contingency Planning and Response

The Principal Contractor must appoint a competent person to act as Emergency Controller/Coordinator.

The Principal Contractor must conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that THULAMELA MUNICIPALITY may have in place.

The Principal Contractor and the other Contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarise employees with them.

(b) First Aid (General Safety Regulation 3)

The Principal Contractor must provide First Aid equipment (including a stretcher) and have qualified First Aider/s as required by General Safety Regulation 3 of the OHS Act.

The Contingency Plan of the Principal Contractor must include the arrangements for speedily and timeously transporting injured/ill person/s to a medical facility or of getting emergency medical aid to person/s that may require it.

The Principal Contractor must have firm arrangements with his other Contractors in place regarding the responsibility of the other Contractors injured/ill employees

(c) Security

The Principal Contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must include the rule that non-employees will not be allowed on site unaccompanied.

The Principal Contractor must develop a set of Security rules and procedures and maintain these throughout the construction period

(d) Fall Protection (Working in Elevated Positions (Construction regulation 8.)

A pre-emptive Risk Assessment will be required for any work to be carried out above two metres from the ground or any floor level and will be classified as "Work in Elevated Positions".

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 a single belt with lanyard that will be worn to prevent the person falling from the platform, ladder or other device utilised. This safety belt will be, as far as is possible, secured to a point away from the edge over which the person might fall and the lanyard must be of such a length that the person will not be able to move over the edge.

Alternatively any platform, slab, deck or surface forming an edge over which a person may fall may be fitted with guard rails at two different heights as prescribed in SABS 085: Code of Practice for the Design, Erection, Use and Inspection of Access Scaffolding.

Where the requirement in is not practicable, the person will be provided with a full body harness that will be worn and attached above the wearer's head at all times and the lanyard must be fitted with a shock absorbing device OR the person must be attached to an approved, by THULAMELA MUNICIPALITY, fall arrest system.

Where the requirements are not practicable, a suitable catch net must be erected.

Workers working in elevated positions must be trained to do this safely and without risk to health

Where work on roofs is carried out, the Risk Assessment must take into account the possibility of persons falling through fragile material. Skylights and openings in the roof.

C3.3.3.1.5 Measurement and Payment

Payment for the contractor's obligations in respect of the Occupational Health and Safety act and Construction Regulations shall be made through three payment items described below. The three payment items together shall include full compensation for all personnel (including a dedicated full time Construction Safety Officer), cost and incidentals in respect of compliance with the enforcement of the Health and Safety Specifications, which shall include for the compilation, presentation, implementation and maintenance of the Health and Safety Plan as contemplated. In tendering rates for the three items the contractor shall ensure that the sum of the amounts for the three items shall not be less than one percent (1%) of the Tender Amount.

Item	Unit
C1.1 Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Provisional Sum

(Service provider to be selected and approved by Employer/Employer's Agent)

The full amount will be paid in one instalment only once:-

- (a) The contractor has notified the Provincial Director of the Department of Labour in writing of the project.

- (b) The contractor has made the required initial appointments of employees and sub-contractors.
- (c) The client has approved the contractor's Health and Safety Plan.
- (d) The contractor has set up his Health and Safety File.

C1.2 Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations

Month

The tendered monthly amount shall represent full compensation for that part of the contractor's general obligations in terms of the Occupational Health and Safety Act and the Construction Regulations which are mainly a function of time. This includes inter alia payment of all costs for the appointment of all staff contemplated in the construction regulations and the transport of employees on site. Payment will be monthly only after payment for Item **C1.1** has been made.

Item

Unit

C1.3 Submission of the Health and Safety File

Lump Sum

The tendered lump sum shall represent full compensation for the contractor meeting all his obligations in respect of the Occupational Health and Safety Act and the Construction Regulations and for the preparation and submission of his Health and Safety File complete as envisaged on this specification to the Client's satisfaction.

This amount will be paid only once the contractor has met all his obligations in respect of the Occupational Health and Safety Act and the Construction Regulations and has submitted his Health and Safety File complete as envisaged on this specification to the Client's satisfaction.

Item

Unit

C1.4 Contractors obligation to supply Personal Protective Equipment to Local Workers branded as per EPWP requirements

Prov Sum

The provisional sum shall be for compensation for the contractor for meeting all his obligations in respect of the EPWP PPE requirements complete as envisaged on this specification to the Client's satisfaction.

This amount will be paid the contractor for actual costs to the Client's satisfaction.

C1.5 Markup item C1.4

%

The contractor to receive a markup for handling and facilitating item C1.4 above

C3.3.3.1.6 Project/Site Specific Requirements

See Annexure 3

Annexure 1: Measuring Injury Experience

Annexure 2: SHE Risk Management Report

Annexure 3. Project Baseline Risk Assessment

ANNEXURE 1: MEASURING INJURY EXPERIENCE

Injury experience has traditionally been measured by the use of a disabling injury frequency rate, the so-called “DIFR”. The DIFR is calculated by multiplying the number of disabling injuries by 1 million and dividing by the number of man-hours worked.

Lately the DIFR has been replaced internationally with a DIIR: disabling injury incidence rate. The only difference between the two rates are that the 10 million in the calculation is replaced with 200 000. (200 000 purported to be the number of hours and average person works in a lifetime.)

The use of the two rates above has proved to be somewhat problematical as they are open to manipulation and disabling injuries are often “hidden” by returning the injured employee to the workplace so as not to lose a shift and therefore having to register a disabling injury.

The Construction Industry recently decided to promote the use of a new frequency rate based on the number of compensation injury claims as these are more difficult to hide or manipulate because the reporting of compensable injuries is a legal requirement.

The industry is hoping that adoption of this new measurement of injury experience will enable the industry to monitor itself as far as work related injuries are concerned.

Below follows an explanation of this new rating system.

COMPENSATION INCIDENCE FREQUENCY RATE (CIFR)

FORMULA

No. of Compensation Claims X 200 000 /

*220 man hours X No. of Employees

DEFINITIONS

No. of Compensation

Claims: **The number of claims lodged with the COID insurer for the period under review**

200 000: The fixed factor to align the rate with other rates used internationally

Manhours Worked

Include: * Hourly Paid Employees
 * Sub-contactors (No. of Employees X *220 each)
 * Staff (No. of Employees X *220 hours each)

220 manhours: The *average number of hours worked by one employee in one month in the Construction industry.

* Overtime, absence on leave or sick leave, unrecorded after hours time worked by senior and middle management factored into this average.

No. of Employees: The actual or average number of employees employed
for the period under review.

2002/03CIFRSystem

ANNEXURE 2: EXECUTIVE SHE RISK MANAGEMENT REPORT

The SAFCEC OH&S committee recently developed the following report in an attempt to standardise on reporting and assist contractors in obtaining a clear picture of their SHE Risk Management performance. It is hoped that clients will also accept this standardised report. Your comments/suggestions for improvement is invited.

EXAMPLE ONLY: ALL INFORMATION IS FICTITIOUS

XYZ construction

*SHE RISK MANAGEMENT REPORT

PERIOD JANUARY TO MARCH 2002

*(SHE = Safety, Health & Environment)

1. Introduction

We hope that this new format of quarterly SHE Risk Management reporting will provide a clear picture of the company's performance as far as occupational health & safety is concerned.

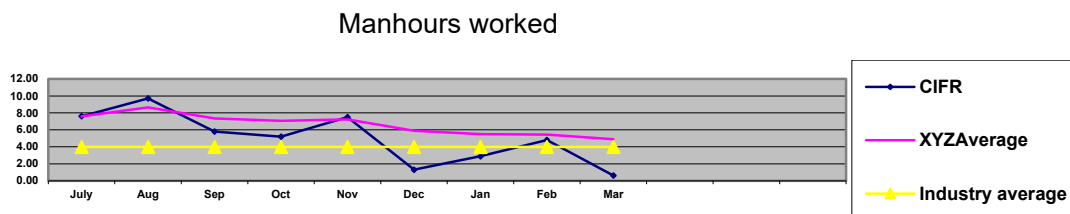
The first quarter of 2002 generally reflected an improvement in injury experience and shows a decline in the number of injuries. Although Building was the only division where there was an increase in compensation claims, figures are still well down from the average 2001 figures. A sub-contractor experienced one fatality.

All divisions are eagerly awaiting the final implementation in May of the new electronic SHE Management system that will make the tools to implement the SHE programme available to all management and supervisory staff.

2. Incident Statistics

Compensation Incident Frequency Rate (CIFR)

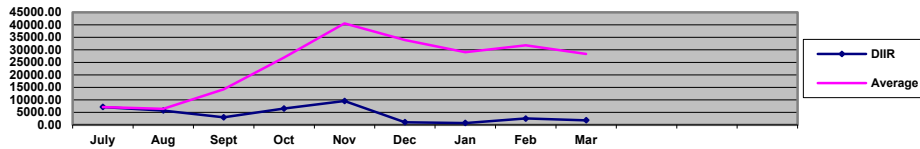
$\text{CIFR} = \frac{\text{Total No. of Claims against the Workmen's Compensation Fund}}{\text{Manhours worked}} \times 200\,000$



2.2.

Disabling Injury Incidence Rate (DIIR)

$$\text{DIIR} = \frac{\text{No. Disabling Injuries} \times 200\,000}{\text{Manhours worked}}$$



2.3. Other Major Incidents

Three other major incidents were experienced in the period under review:

- 2.3.1. A major trench collapsed at Job. 00123: XYZ Head Office, Bochum: No personnel injured, extensive damage to foundations: 3 days delay.
- 2.3.2. A concrete dumper ran away when its brakes failed. It smashed into the glass façade of the building on Job 00332: McDonalds, Polokwane. The driver jumped off and was not injured. Cost of damage to façade: R45 000.
- 2.3.3. A storage hut on Job 00567: BP Petrol Station, Swartruggens was demolished by fire when the night watchman made a fire inside the storage hut which contained concrete vibrators and levelling machines. Cost of replacing the hut and machines: R30 000

3. RISK AREAS

The following items of concern need priority consideration by management:

- 3.1. New employees must undergo pre-employment medical examinations to:
 - protect XYZ from claims at a later stage
 - ensure that only healthy persons are employed
 - prevent injuries and illness in the workplace
 - enhance XYZ image
- 3.2. Vehicle drivers and plant operators must be instructed to inspect their vehicles daily before start-up using the prescribed checklists to ensure that these are safe to operate and in good condition.

4. AUDITS

Three SHE audits were conducted in February and March:

- 4.1. Job 00432: Gillooly's Mall Compliance: 56%(*)

Job 00786: Cullinan Head Office

Compliance: 83%(****)

Job 00589: Cleveland Station

Compliance: 76%(***)

5. TRAINING

One hundred and forty two employees, representing 7% of employees, attended nine training courses. *Our objective is to train 5,5% of employees quarterly.

Month	No. of Employees Trained	Course	Source
January	26	Induction	Internal
	15	OH&S Reps	Consultant
	3	Crane Drivers	External
February	23	Induction	Internal
	17	OH&S Reps	Consultant
March	43	Induction	Internal
	9	OH&S Reps	Consultant
	3	Bomag Rollers	Supplier
	3	First Aiders	St. John's

6. LEGAL ISSUES

- 6.1. An inspector of the Department of Labour issued an improvement notice on Job 00987: Gillooly's Mall. The notice requires that all scaffolding comply with the SABS standards for the Erection and Maintenance of Access Scaffolding (SABS 085). This is currently being attended to and the inspector will return on 15 April 2002 to ascertain if the notice has been complied with.

8. OCCUPATIONAL AND OTHER HEALTH MATTERS

8.1. HIV Aids

The proposed SAFCEC clinic will soon be operational and we will then be able to send our employees who have tested positive to the clinic for counselling and eventual treatment when necessary

The mobile clinic saw and tested fifty employee volunteers at 3 sites this month. Eighteen of them tested positive.

8.2. Tuberculosis

The mobile clinic will be calling at Gillooly's Mall and Cleveland Station on 15 and 16 October respectively to screen employees for TB.

8.3. Noise

All suspected noise pollution areas have been tested and the results are awaited. Employees working in areas testing over 85dBa will be issued with suitable hearing protectors.

9. ENVIRONMENTAL MEASURES

Inspectors from the Botswana Department of the Environment visited Djwaneng and inspected the site and yard. They gave it a "clean bill of health" and advised that we should increase the dust control measures by spraying roads three times per day instead of the present twice per day.

10. ACHIEVEMENTS/AWARDS

10.1. The client at Djwaneng (Job 00786) awarded the XYZ site first position in the housekeeping competition conducted bi-monthly by the client's SHE managers. The project manager and his team are to be congratulated for this sterling effort.

10.2. Job 0987: Refurbishment of Pretoria Main Railway Station has just completed 1million compensation claim free days. This was no easy achievement if we consider the conditions being worked under after the extensive fire that caused major damage.

SHE Risk Manager

2002.09.27

ANNEXURE 3: EXAMPLE OF BASELINE RISK ASSESSMENTS



Project Baseline Risk assessment THULAMELA MUNICIPALITY

UPGRADING OF MUKUMBANI ACCESS ROAD

Date:

Contract Number: 04/2015/2016

RISK ASSESSMENT DEVELOPED BY:					REVIEWED BY THE FOLLOWING PERSONNEL:				
No	Name	Signature	Position	Date	No	Name	Signature	Position	Date
1					1				
2					2				
3					3				
4					4				

Approved by:		Designation:		Signature:	
--------------	--	--------------	--	------------	--

To be discussed with all concerned prior to work!			
P.P.E REQUIREMENTS	PLANT, EQUIPMENT & TOOLS FOR JOB	Tagging and Signage	PERMITS & INSTRUCTION
Safety Harness <input checked="" type="checkbox"/>	Ladder <input checked="" type="checkbox"/>	Men Working Above <input checked="" type="checkbox"/>	MSDS's <input checked="" type="checkbox"/>
Static Line <input type="checkbox"/>	Hand Tools <input checked="" type="checkbox"/>	Barrier Mesh <input checked="" type="checkbox"/>	Working on Heights Permit <input type="checkbox"/>
Steel Capped Boots <input checked="" type="checkbox"/>	Shovel <input checked="" type="checkbox"/>	Danger Tape <input checked="" type="checkbox"/>	Hot Work Permit <input type="checkbox"/>
Hard Hat <input checked="" type="checkbox"/>	Pick <input checked="" type="checkbox"/>	Flagging <input checked="" type="checkbox"/>	Excavation Entering Permit <input checked="" type="checkbox"/>
Tinted Safety Glasses <input checked="" type="checkbox"/>	Welding Machine <input checked="" type="checkbox"/>	Lock-out Tags <input type="checkbox"/>	Concrete Pouring Permit <input checked="" type="checkbox"/>
Clear Safety Glasses <input checked="" type="checkbox"/>	Compactor <input checked="" type="checkbox"/>	Safe for use <input checked="" type="checkbox"/>	Shutter Stripping Permit <input checked="" type="checkbox"/>
Mono goggles <input type="checkbox"/>	Drill <input checked="" type="checkbox"/>	Not Safe for Use <input checked="" type="checkbox"/>	Confined Space Permit <input type="checkbox"/>
Face Shield <input type="checkbox"/>	Angle Grinder <input checked="" type="checkbox"/>	Falling Objects <input checked="" type="checkbox"/>	DSTI/DSWP <input checked="" type="checkbox"/>
Sun Screen <input type="checkbox"/>	Scaffold <input checked="" type="checkbox"/>		Scaffold Checklist <input checked="" type="checkbox"/>
Hearing Protection <input checked="" type="checkbox"/>	Earthworks Plant <input checked="" type="checkbox"/>		
Respirator <input type="checkbox"/>	Extension Leads <input checked="" type="checkbox"/>		
Gloves – PVC <input checked="" type="checkbox"/>	Power Source <input type="checkbox"/>		
Gloves – Leather <input checked="" type="checkbox"/>	Lifting Equipment <input checked="" type="checkbox"/>		
Dust Mask <input checked="" type="checkbox"/>	Chemicals <input checked="" type="checkbox"/>		

Identify the job hazards and assess the RISK personnel may be exposed to before safeguards are implemented:

Electrical <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Vehicles <input type="checkbox"/> N/A <input type="checkbox"/> Low <input checked="" type="checkbox"/> Med <input type="checkbox"/> High	High Pressure <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Inclement Weather <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Radiation (Hot Work / Sun) <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Heat <input type="checkbox"/> N/A <input type="checkbox"/> Low <input checked="" type="checkbox"/> Med <input type="checkbox"/> High	Asbestos <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High
Chemicals <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Height <input type="checkbox"/> N/A <input type="checkbox"/> Low <input type="checkbox"/> Med <input checked="" type="checkbox"/> High	Access <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Bacteria <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Fumes <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Dehydration <input type="checkbox"/> N/A <input type="checkbox"/> Low <input checked="" type="checkbox"/> Med <input type="checkbox"/> High	Engulfment <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High
Tools <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Depth <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Vibration <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Dust <input type="checkbox"/> N/A <input type="checkbox"/> Low <input checked="" type="checkbox"/> Med <input type="checkbox"/> High	Moving Equipment <input type="checkbox"/> N/A <input type="checkbox"/> Low <input type="checkbox"/> Med <input checked="" type="checkbox"/> High	Extreme Cold <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Manual Handling <input type="checkbox"/> N/A <input type="checkbox"/> Low <input checked="" type="checkbox"/> Med <input type="checkbox"/> High
Gasses <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Weight <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Low <input type="checkbox"/> Med <input type="checkbox"/> High	Noise <input type="checkbox"/> N/A <input type="checkbox"/> Low <input checked="" type="checkbox"/> Med <input type="checkbox"/> High	Slip/Trip <input type="checkbox"/> N/A <input type="checkbox"/> Low <input checked="" type="checkbox"/> Med <input type="checkbox"/> High	Lifting Equipment <input type="checkbox"/> N/A <input type="checkbox"/> Low <input type="checkbox"/> Med <input checked="" type="checkbox"/> High	Overhead Hazards <input type="checkbox"/> N/A <input type="checkbox"/> Low <input type="checkbox"/> Med <input checked="" type="checkbox"/> High	

RISK SCORE CALCULATOR						
Use the Risk Score Calculator to Determine the Level of Risk of Each Hazard						
What would the SEVERITY Of an occurrence be?	What is the LIKELIHOOD of an occurrence?					Hierarchy of Control Ranking
	Almost Certain	Very Likely	Likely	Unlikely	Very Unlikely	
Disaster Fatality/ Multiple Fatalities	High 25	High 20	High 15	Medium 10	Medium 5	Can the hazard be Eliminated or removed from the work place?
Very Serious Major illness or injury, disability	High 20	High 16	High 12	Medium 8	Low 4	Can the product or process be substituted for a less hazardous alternative?
Serious Serious but non-permanent injury or ill health Work days lost	High 15	High 12	Medium 9	Medium 6	Low 3	Can the hazard be engineered away with guards or barriers?
Substantial Medical attention needed. No work restrictions.	Medium 10	Medium 8	Medium 6	Low 4	Low 2	Can Administration Controls be adopted I.e. procedures, job rotation etc.
Minor Minor cuts & bruises or sickness	Medium 10	Medium 5	Low 3	Low 2	Low 1	Can Personal Protective Equipment & Clothing be worn to safe guard against hazards?

Please Note the Following! This risk assessment must be produced/developed following the "Hierarchy of Controls Measures" (HOC) below.

1. E=Eliminate
2. S=Substitute
3. ENG=Engineering Control,
4. A=Administration Controls
5. PPE. (the last resort)

The intent of using the Hierarchy of Control Measures, is to reduce the risk of harm occurring to as low as reasonably practicable. Taking into account the three P's Plant, Procedure, People

No	Activity Steps What you do, NOT how you do it	Hazards identified What can go wrong?	Risks Identified What damage, hurt or illness can occur?	Raw Risk Score	Control Measures (Safe Work Procedure)	Residual	HOC Ranking selected	Action By
						Risk New score after control measures		
1	Discussing task specific risk assessment, toolbox talk, daily safe task instruction and safe working procedure.	Employees not inducted DSTI not discussed to employees, Employees not familiar with the risk associated with the task.	General body injuries, minor, serious injuries to employees. Financial implications.	M6	1. All employees before starting work on site shall undergo site induction, and also have on the job training. 2. Ensure all task specific risk assessment, toolbox talk, daily safe task instruction, safe working procedure has been discussed with all the employees, and they understand the hazards associated with the task. 3. Employees who attended task specific risk assessment, toolbox talk, daily safe task instruction and safe working procedure shall sign on the attendance register. 4. Task specific risk assessment, toolbox talk, and daily safe task instruction, safe working procedure shall be discussed with any employee who arrived late or who was not present during the discussion.	L1	A	Safety Officer & Construction Manager.
2	Emergency preparedness, contingency planning and response.	Inadequate emergency preparedness, contingency planning and response could result in the inability to effectively respond to emergencies.	This could impact negatively on the health and safety of employees and other persons.	L4	1. THULAMELA MUNICIPALITY will appoint a competent person to act as emergency controller and/or coordinator. 2. They will conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that the Client may have in place. 3. THULAMELA MUNICIPALITY and the other contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarise employees with them.	L1	A	Safety Officer & Construction Manager.

No	Activity Steps What you do, NOT how you do it	Hazards identified What can go wrong?	Risks Identified What damage, hurt or illness can occur?	Raw Risk Score	Control Measures (Safe Work Procedure)	Residual	HOC Ranking selected	Action By
						Risk <small>How score after control measures</small>		
3	Security	Inadequate site access control.	Inadequate security arrangements could result in unauthorised access by members of the public that could pose a risk to employees working on this site or could also result in the illegal removal of equipment and/or material from the site or injuries to these members of the public	M9	1. We will establish site access rules and implement and maintain these throughout the construction period. Access control must, amongst other, include the rule that non-employees will not be allowed on site unaccompanied. 2. We will develop a set of project applicable security rules and procedures and maintain these throughout the construction period.	L4	A	Safety Officer & Construction Manager.
4	Accommodation of traffic	Inadequate traffic control.	Inadequate traffic accommodation pose a potential risk to employees as well as road users and could not only result in injuries and subsequent medical and other costs to employees, but also injuries to road users and damages to vehicles with subsequent claims against us and the client	H12	1. We will ensure that appropriate and a sufficient number of road signs be posted as per 's minimum specification in this regard be utilised and then also be actively maintained to protect employees against traffic and to warn road users of the presence of construction activities and related risks next to and in the road surface. These signs should be repeated as actual construction work and risk are approached. 2. The maintenance of the road signs including after hour's management should also be actively managed.	M9	ENG	Traffic Safety Officer & Construction Manager.
5	Lifting equipment	The use of unsafe lifting equipment could result in loads being lifted to fail and fall	injuries or even fatalities as well as asset damages that will result in claims		Lifting equipment to be designed and constructed in accordance with the manufactures/designers specifications as well as generally accepted technical			

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(i)

C3.3.3.2 ENVIRONMENTAL MANAGEMENT PLAN

CONTENTS

C3.3.3.2.1	SCOPE
C3.3.3.2.2	DEFINITIONS
C3.3.3.2.3	IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS
C3.3.3.2.4	LEGAL REQUIREMENTS
C3.3.3.2.5	ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS
C3.3.3.2.6	TRAINING
C3.3.3.2.7	ACTIVITIES/ASPECTS CAUSING IMPACTS
C3.3.3.2.8	ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES
C3.3.3.2.9	RECORD KEEPING
C3.3.3.2.10	COMPLIANCE AND PENALTIES
C3.3.3.2.11	MEASUREMENT AND PAYMENT

C3.3.3.2.1 SCOPE

This environmental management programme (EMP) sets out the methods by which proper environmental controls are to be implemented by the contractor. The duration over which the contractor's controls shall be in place cover the construction period of the project as well as the limited time after contract completion defined by the General Conditions of Contract, and the project specifications, as the defects notification period (maintenance period).

The provisions of this EMP are binding on the contractor during the life of the contract. They are to be read in conjunction with all the documents that comprise the suite of documents for this contract. In the event that any conflict occurs between the terms of the EMP and the project specifications or Record of Decision, the terms herein shall be subordinate.

The EMP is a dynamic document subject to similar influences and changes as are brought by variations to the provisions of the project specification. Any substantial changes shall be submitted to the THULAMELA MUNICIPALITY in writing for approval.

The EMP identifies the following:

Construction activities that will impact on the environment.

Specifications with which the contractor shall comply in order to protect the environment from the identified impacts.

Actions that shall be taken in the event of non-compliance.

C3.3.3.2.2 DEFINITIONS

Alien Vegetation: alien vegetation is defined as undesirable plant growth which shall include, but not be limited to, all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to

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be alien shall be those plant species that show the potential to occupy in number, any area within the defined construction area and which are declared to be undesirable.

Construction Activity: a construction activity is any action taken by the contractor, his subcontractors, suppliers or personnel during the construction process as defined in the National Roads Act, 1998 (Act No. 7, 1998)

Environment: environment means the surroundings within which humans exist and that could be made up of -

- the land, water and atmosphere of the earth;
- micro-organisms, plant and animal life;
- any part or combination of (i) and (ii) and the interrelationships among and between them; and
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

Environmental Aspect: an environmental aspect is any component of a contractor's construction activity that is likely to interact with the environment.

Environmental Impact: an impact or environmental impact is the change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.

Record of Decision: a record of decision is a written statement from the Limpopo Department of Economic Development, Environment and Tourism, that records its approval of a planned undertaking to improve, upgrade or rehabilitate a section of road and the mitigating measures required to prevent or reduce the effects of environmental impacts during the life of a contract.

Road Reserve: the road reserve is a corridor of land, defined by co-ordinates and proclamation, within which the road, including access intersections or interchanges, is situated. A road reserve may, or may not, be bounded by a fence.

Road Width: for the purposes of the EMP, the road width is defined as the area within the road reserve i.e. fence line to fence line, but also includes all areas beyond the road reserve that are affected by the continuous presence of the road, e.g. a reach of a water course.

C3.3.3.2.3 IDENTIFICATION OF ENVIRONMENTAL ASPECTS AND IMPACTS

The contractor shall identify likely aspects before commencing with any construction activity. Examples of environment aspects include:

- waste generation
- stormwater discharge
- emission of pollutants into the atmosphere
- chemical use operations
- energy use operations
- water use operations
- use of natural resources
- noise generation

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Thereafter the contractor shall programme his work in such a way that each cause and effect of a construction activity is also identified and the activity planned so as to prevent any impact from happening. If prevention is not practicable, or in the event of mishap or misapplication, the contractor shall provide plans and measures for the engineer's approval, which will limit and contain the magnitude, duration and intensity of the impact. The contractor shall demonstrate that he/she is capable of carrying out any repair and reinstatement of the damaged environment. These requirements shall be concurrent with the time constraints to produce an approved construction programme according to subclause 8.3 as amended by Particular Condition of the general conditions of contract and clause B1204 of these project specifications.

Listed below are some environmental impacts that could adversely alter an aspect of the environment through usual construction activities:

Pollution of atmosphere, soil or water

Destruction or removal of fauna and flora and effect on biological diversity

Deformation of the landscape

Soil erosion

Destruction of historical/heritage sites

Effect on the built environment

Effect on agricultural land and wetlands

General good construction practice will play an important role in avoiding the occurrence of an Impact. The contractor's attention is drawn, in this regard, to C1008. Environmental Management of Construction Activities

C3.3.3.2.4 LEGAL REQUIREMENTS**a) General**

Construction will be according to the best industry practices, as identified in the project documents. This EMP, which forms an integral part of the contract documents, informs the contractor as to his duties in the fulfilment of the project objectives, with particular reference to the prevention and mitigation of environmental impacts caused by construction activities associated with the project. The contractor should note that obligations imposed by the EMP are legally binding in terms of environmental statutory legislation and in terms of the additional conditions to the general conditions of contract that pertain to this project. In the event that any rights and obligations contained in this document contradict those specified in the standard or project specifications then the latter shall prevail.

b) Statutory and other applicable legislation

The contractor is deemed to have made himself conversant with all legislation pertaining to the environment, including provincial and local government ordinances, which may be applicable to the contract.

C3.3.3.2.5 ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS**a) Appointment of a Designated Environmental Officer (DEO)**

For the purposes of implementing the conditions contained herein, the contractor shall submit to the engineer for approval the appointment of a nominated representative of the contractor as the DEO for the contract. The request shall be given, in writing, at least fourteen days

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before the start of any work clearly setting out reasons for the nomination, and with sufficient detail to enable the engineer to make a decision. The engineer will, within seven days of receiving the request, approve, reject or call for more information on the nomination. Once a nominated representative of the contractor has been approved he/she shall be the DEO and shall be the responsible person for ensuring that the provisions of the EMP are complied with during the life of the contract. The engineer will be responsible for issuing instructions to the contractor where environmental considerations call for action to be taken. The DEO shall submit regular written reports to the engineer, but not less frequently than once a month.

The engineer shall have the authority to instruct the contractor to replace the DEO if, in the engineer's opinion, the appointed officer is not fulfilling his/her duties in terms of the requirements of the EMP or this specification. Such instruction will be in writing and shall clearly set out the reasons why a replacement is required.

There shall be an approved DEO on the site at all times.

b) Administration

Before the contractor begins each construction activity the DEO shall give to the engineer a written statement setting out the following:

The type of construction activity.

Locality where the activity will take place.

Identification of the environmental aspects and impacts that might result from the activity.

Methodology for impact prevention for each activity or aspect.

Methodology for impact containment for each activity or aspect.

Emergency/disaster incident and reaction procedures.

Treatment and continued maintenance of impacted environment.

The contractor may provide such information in advance of any or all construction activities provided that new submissions shall be given to the engineer whenever there is a change or variation to the original.

The engineer may provide comment on the methodology and procedures proposed by the DEO, but he shall not be responsible for the contractor's chosen measures of impact mitigation and emergency/disaster management systems. However, the contractor shall demonstrate at inception and at least once during the contract that the approved measures and procedures function properly.

c) Good Housekeeping

The Contractor shall undertake "good housekeeping" practices during construction as stated in clause 1217 of the COLTO Standard Specifications for Roads and Bridges and subclauses 4.3.1 and 4.3.2 of the General Conditions of Contract. This will help avoid disputes on responsibility and allow for the smooth running of the contract as a whole. Good housekeeping extends beyond the wise practice of construction methods that leaves production in a safe state from the ravages of weather to include the care for and preservation of the environment within which the site is situated.

C3.3.3.2.6 TRAINING

The designated environmental officer (DEO) must be conversant with all legislation pertaining to the environment applicable to this contract and must be appropriately trained in

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environmental management and must possess the skills necessary to impart environmental management skills to all personnel involved in the contract.

The contractor shall ensure that adequate environmental training takes place. All employees shall have been given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees. The environmental training should, as a minimum, include the following:

- The importance of conformance with all environmental policies
- The environmental impacts, actual or potential, of their work activities;
- The environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of the municipality's environmental management systems, including emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures;
- The mitigation measures required to be implemented when carrying out their work activities.

In the case of permanent staff the contractor shall provide evidence that such induction courses have been presented. In the case of new staff (including contract labour) the contractor shall inform the engineer when and how he/she intends concluding his environmental training obligations.

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C3.3.3.2.7 ACTIVITIES/ASPECTS CAUSING IMPACTS

A list of possible causes of environmental impacts that occur during construction activities is given in Table 7/1: Aspects or Activities that Cause Environmental Impacts during Construction Activities, which is to be found at the end of this part. This list is not exhaustive, and shall be used for guideline purposes only.

C3.3.3.2.8 ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES

a) Site Establishment

i) Site Plan

The contractor shall establish his construction camps, offices, workshops, staff accommodation and testing facilities on the site in a manner that does not adversely affect the environment. However, before construction can begin, the contractor shall submit to the engineer for his approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the contractor proposes to put in place.

The plans shall detail the locality as well as the layout of the waste treatment facilities for litter, kitchen refuse, sewage and workshop-derived effluents. The site offices should not be sited in close proximity to steep areas, as this will increase soil erosion. Preferred locations would be flat areas along the route. If the route traverses water courses, streams and rivers, it is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course as possible. Regardless of the chosen site, the contractor's intended mitigation measures shall be indicated on the plan. The site plan shall be submitted not later than the first site meeting. Detailed, electronic colour photographs shall be taken of the proposed site before any clearing may commence. These records are to be kept by the engineer for consultation during rehabilitation of the site. Read with COLTO Specification 1302(a), 1402 (e).

ii) Vegetation

The contractor has a responsibility to inform his staff of the need to be vigilant against any practice that will have a harmful effect on vegetation.

The natural vegetation encountered on the site is to be conserved and left as intact as possible. Vegetation planted at the site shall be indigenous and in accordance with instructions issued by the engineer. Only trees and shrubs directly affected by the works, and such others as may be indicated by the engineer in writing, may be felled or cleared. In wooded areas where natural vegetation has been cleared out of necessity, the same species of indigenous trees as were occurring, shall be re-established.

The project specification for the rehabilitation of the grass cover shall be strictly adhered to. Any proclaimed weed or alien species that propagates during the contract period shall be cleared by hand before seeding. (Read in conjunction with COLTO Specification 5801(b), 5802(b), (c), (d) and (e), 5804, 5805, 5806 and 5807). Fires shall only be allowed in facilities or equipment specially constructed for this purpose. A firebreak shall be cleared and maintained around the perimeter of the camp and office sites.

iii) Rehabilitation

The area where the site offices were erected will require rehabilitation at the end of the

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contract. All construction material, including concrete slabs and braai areas shall be removed from the site on completion of the contract.

iv) Water for human consumption

Water for human consumption shall be available at the site offices and at other convenient locations on site.

All effluent water from the camp / office sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water sources (streams, rivers, pans dams etc). Only domestic type wastewater shall be allowed to enter this drain.

v) Heating and Cooking fuel

The contractor shall provide adequate facilities for his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

b) Sewage treatment

Particular reference in the site establishment plan shall be given to the treatment of sewage generated at the site offices, site laboratory and staff accommodation and at all localities on the site where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of project management, the local authorities and legal requirements.

Safe and effective sewage treatment will require one of the following sewage handling methods: septic tanks and soak-aways, dry-composting toilets such as “enviro loos”, or the use of chemical toilets which are supplied and maintained by a subcontractor. The type of sewage treatment will depend on the geology of the area selected, the duration of the contract and proximity (availability) of providers of chemical toilets. Should a soak-away system be used, it shall not be closer than 800 metres from any natural water course or water retention system. The waste material generated from these facilities shall be serviced on a regular basis. The positioning of the chemical toilets shall be done in consultation with the engineer. Read with COLTO Specifications 1402(g) and 1404(a).

Toilets and latrines shall be easily accessible and shall be positioned within walking distance from wherever employees are employed on the works. Use of the veld for this purpose shall not, under any circumstances, be allowed.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. The toilets shall also be placed outside areas susceptible to flooding. The contractor shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such latrines in a clean, orderly and sanitary condition to the satisfaction of the engineer.

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c) Waste Management

The contractor's intended methods for waste management and waste minimisation shall be implemented at the outset of the contract. All personnel shall be instructed to dispose of all waste in the proper manner.

i) Solid Waste

Solid waste shall be stored in an appointed area in covered, tip proof metal drums for collection and disposal. A refuse control system shall be established for the collection and removal of refuse to the satisfaction of the engineer. Disposal of solid waste shall be at a Department of Water Affairs and Forestry (DWAF) licensed landfill site or at a site approved by DWAF in the event that an existing operating landfill site is not within reasonable distance from the site offices and staff accommodation. No waste shall be burned or buried at or near the site offices, nor anywhere else on the site, including the approved solid waste disposal site. Read with COLTO Specification 1404(a).

ii) Litter

No littering by construction workers shall be allowed. During the construction period, the facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter.

Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. At all places of work the contractor shall provide litter collection facilities for later safe disposal at approved sites. (Read with COLTO Specification 1302(b)).

iii) Hazardous waste

Hazardous waste such as bitumen, tar, oils etc. shall be disposed of in a Department of Water Affairs and Forestry approved landfill site. Special care shall be taken to avoid spillage of tar or bitumen products such as binders or pre-coating fluid to avoid water-soluble phenols from entering the ground or contaminating water.

Under no circumstances shall the spoiling of tar or bituminous products on the site, over embankments, in borrow pits or any burying, be allowed. Unused or rejected tar or bituminous products shall be returned to the supplier's production plant. Any spillage of tar or bituminous products shall be attended to immediately and affected areas shall be promptly reinstated to the satisfaction of the engineer.

d) Control at the workshop

The contractor's management and maintenance of his plant and machinery will be strictly monitored according to the criteria given below, regardless whether it is serviced on the site (i.e. at the place of construction activity or at a formalised workshop).

i) Safety

All the necessary handling and safety equipment required for the safe use of petrochemicals and oils shall be provided by the contractor to, and used or worn by, the staff whose duty it is to manage and maintain the contractor's and his subcontractor's and supplier's plant, machinery and equipment.

ii) Hazardous Material Storage

Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. All hazardous materials e.g. tar or bitumen binders shall be stored in a secured,

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appointed area that is fenced and has restricted entry. Storage of tar or bituminous products shall only take place using suitable containers to the approval of the engineer.

The contractor shall provide proof to the engineer that relevant authorisation to store such substances has been obtained from the relevant authority. In addition, hazard signs indicating the nature of the stored materials shall be displayed on the storage facility or containment structure. Before containment or storage facilities can be erected the contractor shall furnish the engineer with details of the preventative measures he proposes to install in order to mitigate against pollution of the surrounding environment from leaks or spillage. The preferred method shall be a concrete floor that is bunded. Any deviation from the method will require proof from the relevant authority that the alternative method proposed is acceptable to that authority. The proposals shall also indicate the emergency procedures in the event of misuse or spillage that will negatively affect an individual or the environment.

iii) Fuel and Gas Storage

Fuel shall be stored in a secure area in a steel tank supplied and maintained by the fuel suppliers.. An adequate bund wall, 110% of volume, shall be provided for fuel and diesel areas to accommodate any leakage spillage or overflow of these substances. The area inside the bund wall shall be lined with an impervious lining to prevent infiltration of the fuel into the soil. Any leakage, spillage or overflow of fuel shall be attended to without delay.

Gas welding cylinders and LPG cylinders shall be stored in a secure, well-ventilated area.

iv) Oil and Lubricant Waste

Used oil, lubricants and cleaning materials from the maintenance of vehicles and machinery shall be collected in a holding tank and sent back to the supplier. Water and oil should be separated in an oil trap. Oils collected in this manner, shall be retained in a safe holding tank and removed from site by a specialist oil recycling company for disposal at approved waste disposal sites for toxic/hazardous materials. Oil collected by a mobile servicing unit shall be stored in the service unit's sludge tank and discharged into the safe holding tank for collection by the specialist oil recycling company.

All used filter materials shall be stored in a secure bin for disposal off site. Any contaminated soil shall be removed and replaced. Soils contaminated by oils and lubricants shall be collected and disposed of at a facility designated by the local authority to accept contaminated materials.

e) Clearing the Site

In all areas where the contractor intends to, or is required to clear the natural vegetation and soil, either within the road reserve, or at designated or instructed areas outside the road reserve, a plan of action shall first be submitted to the engineer for his approval.

The plan shall contain a photographic record and chainage/land reference of the areas to be disturbed. This shall be submitted to the engineer for his records before any disturbance/stockpiling may occur. The record shall be comprehensive and clear, allowing for easy identification during subsequent inspections.

The contractor shall be responsible for the re-establishment of grass within the road reserve boundaries for all areas disturbed during road construction. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for, or from, road construction has to be stored temporarily or otherwise within the road reserve, or

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at designated or instructed areas outside the road reserve. This responsibility shall extend until expiry of the defects notification period.

f) Soil Management

i) Topsoil

Topsoil shall be removed from all areas where physical disturbance of the surface will occur and shall be stored and adequately protected. The contract will provide for the stripping and stockpiling of topsoil from the site for later re-use. Topsoil is considered to be the natural soil covering, including all the vegetation and organic matter. Depth may vary at each site. The areas to be cleared of topsoil shall include the storage areas. All topsoil stockpiles and windrows shall be maintained throughout the contract period in a weed-free condition. Weeds appearing on the stockpiled or windrowed topsoil shall be removed by hand. Soils contaminated by hazardous substances shall be disposed of at an approved Department of Water Affairs and Forestry waste disposal site. (Read with COLTO Specifications 3104(a), 5802(a), (g), 5804(a), (b) and (c)). The topsoil stockpiles shall be stored, shaped and sited in such a way that they do not interfere with the flow of water to cause damming or erosion, or itself be eroded by the action of water. Stockpiles of topsoil shall not exceed a height of 2m, and if they are to be left for longer than 6 months, shall be analysed, and if necessary, upgraded before replacement. Stockpiles shall be protected against infestation by weeds.

The contractor shall ensure that no topsoil is lost due to erosion – either by wind or water. Areas to be topsoiled and grassed shall be done so systematically to allow for quick cover and reduction in the chance of heavy topsoil losses due to unusual weather patterns. The contractor's programme shall clearly show the proposed rate of progress of the application of topsoil and grassing. The contractor shall be held responsible for the replacement, at his own cost, for any unnecessary loss of topsoil due to his failure to work according to the progress plan approved by the engineer. The contractor's responsibility shall also extend to the clearing of drainage or water systems within and beyond the boundaries of the road reserve that may have been affected by such negligence.

ii) Subsoil

The subsoil is the layer of soil immediately beneath the topsoil. It shall be removed, to a depth instructed by the engineer, and stored separately from the topsoil if not used for road building. This soil shall be replaced in the excavation in the original order it was removed for rehabilitation purposes.

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g) Drainage

The quality, quantity and flow direction of any surface water runoff shall be established prior to disturbing any area for construction purposes. Cognisance shall be taken of these aspects and incorporated into the planning of all construction activities. Before a site is developed or expanded, it shall be established how this development or expansion will affect the drainage pattern. Recognised water users / receivers shall not be adversely affected by the expansion or re-development. No water source shall be polluted in any way due to proposed changes.

Streams, rivers, pans, wetlands, dams, and their catchments shall be protected from erosion and from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous or tar products.

The contractor shall submit to the engineer his proposals for prevention, containment and rehabilitation measures against environmental damage of the identified water and drainage systems that occur on the site. Consideration shall be given to the placement of sedimentation ponds or barriers where the soils are of a dispersive nature or where toxic fluids are used in the construction process. The sedimentation ponds must be large enough to contain runoff so that they function properly under heavy rain conditions.

h) Earthworks and Layerworks

This section includes all construction activities that involve the mining of all materials, and their subsequent placement, stockpile, spoil, treatment or batching, for use in the permanent works, or temporary works in the case of deviations. Before any stripping prior to the commencement of construction, the contractor shall have complied with the requirements of sections C1008 (e) and C1008 (g). In addition, the contractor shall take cognisance of the requirements set out below.

i) Quarries and borrow pits

The contractor's attention is drawn to the requirement of the Department of Minerals and Energy, that before entry into any quarry or borrow pit, an EMP for the establishment, operation and closure of the quarry or borrow pit shall have been approved by the Department. It is the responsibility of the contractor to ensure that he is in possession of the approved EMP or a copy thereof, prior to entry into the quarry or borrow pit. The conditions imposed by the relevant EMP are legally binding on the contractor and may be more extensive and explicit than the requirements of this specification. In the event of any conflict occurring between the requirements of the specific EMP and these specifications the former shall apply. The cost of complying with the requirements shall be deemed to be included in existing rates in the Bill of Quantities. (Read with COLTO Specification 3100 and 3200).

ii) Excavation, hauling and placement

The contractor shall provide the engineer with detailed plans of his intended construction processes prior to starting any cut or fill or layer. The plans shall detail the number of personnel and plant to be used and the measures by which the impacts of pollution (noise, dust, litter, fuel, oil, sewage), erosion, vegetation destruction and deformation of landscape will be prevented, contained and rehabilitated. Particular attention shall also be given to the impact that such activities will have on the adjacent built environment. The contractor shall demonstrate his "good housekeeping", particularly with respect to closure at the end of every

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day so that the site is left in a safe condition from rainfall overnight or over periods when there is no construction activity. (Read with COLTO Standard Specification clauses 1217 and 3309)

iii) Spoil sites

The contractor shall be responsible for the safe siting, operation, maintenance and closure of any spoil site he uses during the contract period, including the defects notification period. This shall include existing spoil sites that are being re-entered. Before spoil sites may be used proposals for their locality, intended method of operation, maintenance and rehabilitation shall be given to the engineer for his approval. The location of these spoil sites shall have signed approval from the affected landowner before submission to the engineer. No spoil site shall be located within 500m of any watercourse. A photographic record shall be kept of all spoil sites for monitoring purposes. This includes before the site is used and after re-vegetation.

The use of approved spoil sites for the disposal of hazardous or toxic wastes shall be prohibited unless special measures are taken to prevent leaching of the toxins into the surrounding environment. Such special measures shall require the approval of the relevant provincial or national authority. The same shall apply for the disposal of solid waste generated from the various camp establishments. The engineer will assist the contractor in obtaining the necessary approval if requested by the contractor.

Spoil sites will be shaped to fit the natural topography. These sites shall receive a minimum of 75mm topsoil and be grassed with the recommended seed mixture. Slopes shall not exceed a vertical: horizontal ratio of 1:3. Only under exceptional circumstances will approval be given to exceed this ratio. Appropriate grassing measures to minimise soil erosion shall be undertaken by the contractor. This will include both strip and full sodding. The contractor may motivate to the engineer for other acceptable stabilising methods. The engineer may only approve a completed spoil site at the end of the defects notification period upon receipt from the contractor of a landowner's clearance notice and an engineer's certificate certifying slope stability (Read with COLTO standard Specifications clause 1214). The contractor's costs incurred in obtaining the necessary certification for opening and closing of spoil sites shall be deemed to be included in the tendered rates for spoiling.

iv) Stockpiles

The contractor shall plan his activities so that materials excavated from borrow pits and cuttings, in so far as possible, can be transported direct to and placed at the point where it is to be used. However, should temporary stockpiling become necessary, the areas for the stockpiling of excavated and imported material shall be indicated and demarcated on the site plan submitted in writing to the engineer for his approval, together with the contractor's proposed measures for prevention, containment and rehabilitation against environmental damage.

The areas chosen shall have no naturally occurring indigenous trees and shrubs present that may be damaged during operations. Care shall be taken to preserve all vegetation in the immediate area of these temporary stockpiles. During the life of the stockpiles the contractor shall at all times ensure that they are:

- Positioned and sloped to create the least visual impact;
- Constructed and maintained so as to avoid erosion of the material and contamination of surrounding environment; and
- Kept free from all alien/undesirable vegetation.

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After the stockpiled material has been removed, the site shall be re-instated to its original condition. No foreign material generated / deposited during construction shall remain on site. Areas affected by stockpiling shall be landscaped, top soiled, grassed and maintained at the contractor's cost until clearance from the engineer and the relevant Authority is received.

Material milled from the existing road surface that is temporarily stockpiled in areas approved by the engineer within the road reserve, shall be subject to the same condition as other stockpiled materials. Excess materials from windrows, in-situ milling or any detritus of material from road construction activities may not be swept off the road and left unless specifically instructed to do so in the contract drawing or under instruction from the engineer

In all cases, the engineer shall approve the areas for stockpiling and disposal of construction rubble before any operation commences and shall approve their clause only when they have been satisfactorily rehabilitated. (Read with COLTO Specification 3203 and 4306).

v) Blasting activities

Wherever blasting activity is required on the site (including quarries and/or borrow pits) the contractor shall rigorously adhere to the relevant statutes and regulations that control the use of explosives. In addition, the contractor shall, prior to any drilling of holes in preparation for blasting, supply the engineer with a locality plan of the blast site on which shall be shown the zones of influence of the ground and air shock-waves and expected limits of fly-rock. The plan shall show each dwelling, structure and service within the zones of influence and record all details of the dwellings/structures/services including existing positions, lengths and widths of cracks, as well as the condition of doors, windows, roofing, wells, boreholes etc. The contractor, alone, shall be responsible for any costs that can be attributed to blasting activities, including the collection of fly-rock from adjacent lands and fields. The submission of such a plan shall not in any way absolve the contractor from his responsibilities in this regard. The contractor shall also indicate to the engineer the manner in which he intends to advertise to the adjacent communities and/or road users the times and delays to be expected for each individual blast.

i) Batching sites

Asphalt plants are considered scheduled processes listed in the second schedule to the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965). Should the use of an asphalt plant be considered on site, the contractor shall be responsible to obtain the necessary permit from the Department of Environmental Affairs and Tourism, regardless of where they are sited.

Crushing plants and concrete batching plants, whether sited inside or outside of defined quarry or borrow pit areas, shall be subject to the requirements of the Department of Minerals and Energy legislation as well as the applicable industrial legislation that governs gas and dust emissions into the atmosphere. Such sites will be the subject of regular inspections by the relative authorities during the life of the project. In addition, the selection, entry onto, operation, maintenance, closure and rehabilitation of such sites shall be the same as for those under section C1008(h)(iii), with the exception that the contractor shall provide additional measures to prevent, contain and rehabilitate against environmental damage from toxic/hazardous substances. In this regard the contractor shall provide plans that take into account such additional measures as concrete floors, bunded storage facilities, linings to drainage channels and settlement dams. Ultimate approval of these measures shall be from the relevant national

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authority, as shall approval of closure. The engineer will assist the contractor in his submissions to the relevant authority.

Effluent from concrete batch plants and crusher plants shall be treated in a suitable designated sedimentation dam to the legally required standards to prevent surface and groundwater pollution. The designs of such a facility should be submitted to the engineer for approval.

The contractor shall invite the relevant department to inspect the site within 2 months after any plant is commissioned and at regular intervals thereafter, not exceeding 12 months apart

j) Spillages

Streams, rivers and dams shall be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and tar or bituminous products. In the event of a spillage, the contractor shall be liable to arrange for professional service providers to clear the affected area.

Responsibility for spill treatment lies with the contractor. The individual responsible for, or who discovers a hazardous waste spill must report the incident to his/her DEO or to the engineer. The Designated Environmental Officer will assess the situation in consultation with the engineer and act as required. In all cases, the immediate response shall be to contain the spill. The exact treatment of polluted soil / water shall be determined by the contractor in consultation with the DEO and the engineer. Areas cleared of hazardous waste shall be re-vegetated according to the engineer's instructions

Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice will be sought for appropriate treatment and remedial procedures to be followed. The requirement for such input shall be agreed with the engineer. The costs of containment and rehabilitation shall be for the contractor's account, including the costs of specialist input.

k) Areas of Specific Importance

Any area, as determined and identified within the project document as sensitive or of special interest within the site shall be treated according to the express instructions contained in these specifications or the approved EMP. The contractor may offer alternative solutions to the engineer in writing should he consider that construction will be affected in any way by the hindrance of the designated sensitive area or feature. However, the overriding principle is that such defined areas requiring protection shall not be changed. Every effort to identify such areas within the site will have been made prior to the project going out to tender. The discovery of other sites with archaeological or historical interest that have not been identified shall require ad hoc treatment.

i) Archaeological Sites

If an artefact on site is uncovered, work in the immediate vicinity shall be stopped immediately. The contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the engineer of such discovery. The South African Heritage Research Agency (SAHRA) is to be contacted who will appoint an archaeological consultant. Work may only resume once clearance is given in writing by the archaeologist. (Read with COLTO General Condition of Contract Subclause 4.24 as amended by Particular Condition).

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ii) Graves and middens

If a grave or midden is uncovered on site, or discovered before the commencement of work, then all work in the immediate vicinity of the graves/middens shall be stopped and the engineer informed of the discovery. SAHRA should be contacted and in the case of graves, arrangements made for an undertaker to carry out exhumation and reburial. The Employer will be responsible for attempts to contact family of the deceased and for the site where the exhumed remains can be re-interred. (Read with COLTO General Conditions of Contract Subclause 4.24 as amended by Particular Condition).

l) Noise Control

The contractor shall endeavour to keep noise generating activities to a minimum. Noises that could cause a major disturbance, for instance blasting and crushing activities, should only be carried out during daylight hours. Compliance with the appropriate legislation with respect to noise, shall be mandatory.

Should noise generating activities have to occur at night the people in the vicinity of the drilling shall be warned about the noise well in advance and the activities kept to a minimum.

m) Dust Control

Dust caused by strong winds shall be controlled by means of water spray vehicles. Dust omission from batching plants shall be subject to the relevant legislation and shall be the subject of inspection by the relevant office of the Department of Minerals and Energy.

n) Alien Vegetation

The contractor shall be held responsible for the removal of alien vegetation within the road reserve disturbed during road construction. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for or from road construction has been stored temporarily or otherwise within the road reserve. This responsibility shall extend for the duration of the defects notification period.

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C3.3.3.2.9 RECORD KEEPING

The engineer and the DEO will continuously monitor the contractor's adherence to the approved impact prevention procedures and the engineer shall issue to the contractor a notice of non-compliance whenever transgressions are observed. The DEO should document the nature and magnitude of the non-compliance in a designated register, the action taken to discontinue the non-compliance, the action taken to mitigate its effects and the results of the actions. The non-compliance shall be documented and reported to the engineer in the monthly report.

Copies of any record of decision or EMP's for specific borrow pits or quarries used on the project shall be kept on site and made available for inspection by visiting officials from the employer or relevant environmental departments.

C3.3.3.2.10 COMPLIANCE AND PENALTIES

The contractor shall act immediately when such notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. This record shall be submitted with the monthly reports and a verbal report given at the monthly site meetings.

Any avoidable non-compliance with the above-mentioned measures shall be considered sufficient ground for the imposition of a penalty

The following penalties shall apply for environmental violations:

a) Unnecessary removal or damage to trees

- | | | |
|---|---|------------------|
| • 2600mm girth or less | : | R 5 000 per tree |
| • Greater than 2600mm, but less than 6180mm girth | : | R10 000 per tree |
| • Greater than 6180mm girth | : | R30 000 per tree |

b) Serious violations:

- | | | |
|--|---|-------------------------------|
| • Hazardous chemical/oil spill and/or dumping in non-approved sites. | : | R10 000 per incident |
| • General damage to sensitive environments. | : | R 5 000 per incident |
| • Damage to cultural and historical sites. | : | R 5 000 per incident |
| • Uncontrolled/unmanaged erosion (plus rehabilitation at contractor's cost). | : | R1 000 to R5 000 per incident |
| • Unauthorised blasting activities. | : | R 5 000 per incident |
| • Pollution of water sources. | : | R 10 000 per incident |

The engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final.

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c) Less serious violations:

• Littering on site.	:	R1 000 per incident
• Lighting of illegal fires on site.	:	R1 000 per incident
• Persistent or un-repaired fuel and oil leaks.	:	R1 000 per incident
• Excess dust or excess noise emanating from site.	:	R1 000 per incident
• Dumping of milled material in side drains or on grassed areas:		R1 000 per incident
• Possession or use of intoxicating substances on site. :		R 500 per incident
• Any vehicles being driven in excess of designated speed limits.	:	R 500 per incident
• Removal and/or damage to flora or cultural or heritage objects on site, and/or killing of wildlife.	:	R2 000 per incident
• Illegal hunting.	:	R2 000 per incident
• Urination and defecation anywhere except in designated areas.	:	R 500 per incident

The engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final. The calculation shall include allied construction activities in the same way as the calculation of reduced payments under section 8200. The imposition of such a penalty shall not preclude the relevant provincial or national authority from applying an additional penalty in accordance with its statutory powers. Any non-compliance with the agreed procedures of the EMP is a transgression of the various statutes and laws that define the manner by which the environment is managed.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression, as it deems fit.

C3.3.3.2.11 MEASUREMENT AND PAYMENT

The cost of complying to this specification shall be deemed to be included in the rates tendered for this project.

Table 1: Mechanisms that Cause Environmental Impacts during Construction Activities

SECTION	CONTENTS	ENVIRONMENTAL IMPACTS				
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
1300	Camp Establishment	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
1400	Housing, Offices and laboratories	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
1500	Accommodation of Traffic	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas Maintenance of windrows	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
1600	Overhaul	Spillage Storage Noise/lights Dust control Exhaust fumes Washing waste	Turning circles Parking areas	Restrict access to sensitive areas	Protection of indigenous vegetation Preserve topsoil	

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SECTION	CONTENTS	ENVIRONMENTAL IMPACTS				
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
1700	Clearing and grubbing	Waste treatment Hazardous waste Water supply Noise /lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Protection of indigenous vegetation Preserve topsoil	
2100 2400	- Drainage	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
3100	Borrow pits	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
3200	Stockpiling	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
3300	Mass Earthworks	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
3400 3900	- Pavement layers	Waste treatment Hazardous waste Water supply	Selection of site Preserve indigenous vegetation	Selection of site	Preserve indigenous vegetation	

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SECTION	CONTENTS	ENVIRONMENTAL IMPACTS				
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
		Spillage Storage Noise / lights Dust control	Preserve topsoil Demarcate sensitive areas Maintenance of windrows	Preserve indigenous vegetation Preserve topsoil	Preserve topsoil Management of weeds	
4100	Asphalt works / sealing operations	Waste treatment Hazardous waste Water supply Spillage Storage Noise / lights Dust control Smoke control Storage of materials	Selection of site Preserve indigenous vegetation Preserve topsoil Turning circles Parking areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil	
5000	Ancillary roadworks	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
6000	Structures	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
7000	Concrete pavements etc	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	

C3.3.3.3 PROVISION OF STRUCTURED TRAINING

CONTENTS

C3.3.3.3.1 SCOPE

C3.3.3.3.2 GENERIC TRAINING

C3.3.3.3.3 ENTREPRENEURIAL SKILLS TRAINING

C3.3.3.3.4 MEASUREMENT AND PAYMENT

C3.3.3.3.1 SCOPE

This specification covers the requirements for the provision of structured training to be arranged by the contractor over the period of this contract.

C3.3.3.3.2 GENERIC TRAINING

C3.3.3.3.2.1 The contractor shall, from the commencement of the contract, implement a structured progressive training programme.

C3.3.3.3.2.2 Training shall be at or by an approved accredited organisation and shall be delivered by suitably qualified and experienced trainers.

C3.3.3.3.2.3 The contractor shall be responsible for the provision of everything necessary for the delivery of the generic training programme, including the following:

- (a) A suitable venue with sufficient furniture, lighting and power.
- (b) All necessary stationery consumables and study material.
- (c) Transport of the students (as necessary).

C3.3.3.3.2.4 Generic training courses shall commence within one month of possession of site and be completed before the end of the contract period. The Training Schedule should form part of the section 12 programme to be approved by the Engineer at the start of the project.

C3.3.3.3.2.5 The contractor's training programme shall be subject to the approval of THE MUNICIPALITY and the contractor shall if so instructed by THE MUNICIPALITY alter or amend the programme and course content if a need is identified once the contract commences.

C3.3.3.3.2.6 The contractor shall keep comprehensive records of the training given to each student and whenever required shall provide copies of such records to the engineer. At the successful completion of each course each student shall be issued with a certificate indicating the course contents as proof of attendance and completion.

In addition to the above, a monthly return shall be submitted by the contractor. An example of the form is illustrated in Part C5 of this document (form RDP 11 (E))

C3.3.3.3.3 ENTREPRENEURIAL SKILLS TRAINING

C3.3.3.3.3.1 Small contractors, subcontractors and the Project Steering Committee (PSC) will be entitled to receive a structured training programme, which will comprise both management skills as well as business development skills.

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C3.3.3.3.3.2 The contractor shall closely monitor the performance of all small subcontractors in the execution of their contracts and shall identify all such subcontractors who, in his opinion, display the potential to benefit from structured training as may be provided for in the contract and where required by the engineer, shall make recommendations in this regard. The final list of candidates will be decided between the contractor and the engineer.

C3.3.3.3.3.3 The training will be delivered by trainers who are accredited by the Civil Engineering Training Scheme (CEITS) or other institutions recognised by the Department of Labour. Accredited training refers to both the trainers as well as to the training material.

C3.3.3.3.3.4 The contractor shall facilitate in the delivery thereof, by instructing and motivating the subcontractor regarding attendance and participation therein.

C3.3.3.3.3.5 The contractor shall further make all reasonable efforts to co-ordinate the programming of the subcontractor's work with that of the delivery of the structured training.

C3.3.3.3.3.7 The contractor shall be responsible for the provision of everything necessary for the delivery of the entrepreneurial training programme, including the following:

- (a) A suitably furnished venue (if required) with lighting and power.
- (b) All necessary consumables, stationery and study material.
- (c) Transport of the subcontractors (as necessary).

C3.3.3.3.3.7 All entrepreneurial training shall take place within normal working hours.

C3.3.3.3.3.8 The contractor's training programme shall be subject to the approval of THE MUNICIPALITY and the contractor shall if so instructed by THE MUNICIPALITY alter or amend the programme and course content if a need is identified once the contract commences.

C3.3.3.3.3.10 The contractor shall keep comprehensive records of the training given to each subcontractor and whenever required shall provide copies of such records to the engineer. At the successful completion of each course each subcontractor shall be issued with a certificate indicating the course contents as proof of attendance and completion.

In addition to the above, a monthly return shall be submitted by the contractor. An example of the form to be used is illustrated in Part C5 of this document, (form RDP 12 (E)).

C3.3.3.3.4 MEASUREMENT AND PAYMENT

ITEM

UNIT

C12.04 Provision for accredited training

(a) Technical skills

Provisional sum

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(b)	Generic and Management skills	Provisional sum
(c)	Remuneration of workers undergoing training	Provisional sum
(d)	Handling cost and profit in respect of sub-item	
	C12.4 (a), (b) and (c) above	percentage (%)

The provisional sums are provided to cover the actual costs for attendance of accredited training courses as agreed with the engineer. The tendered percentage in sub-item C12.04 (d) is a percentage of the amount actually spent under sub-items C12.04(a),(b) and (c) which shall include full compensation for the contractor's handling cost, profit, mentoring, record keeping, reporting and all other costs in connection therewith.

Payment of the provisional sums will be made after the provision of all the accredit training, issuing of all certificates and submission of all records as specified in the document.

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C3.3.3.4 PROVISION OF THE TEMPORARY WORKFORCE

CONTENTS

C3.3.3.4.1 SCOPE

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C3.3.3.4.6 TRAINING OF THE TEMPORARY WORKFORCE

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C3.3.3.4.9 LABOUR RELATIONS AND WORKER GRIEVANCE PROCEDURES

C3.3.3.4.10 THE SUBCONTRACTORS' WORKFORCES

C3.3.3.4.11 MEASUREMENT AND PAYMENT

C3.3.3.4.1 SCOPE

This Specification covers the provisions and requirements relating to the provision of the temporary workforce. Reference is also made to the Basic Conditions of Employment Act (Act 75 of 1997) with specific reference to the Sectoral Determination 2: Civil Engineering Sector

C3.3.3.4.2 INTERPRETATIONS

C3.3.3.4.2.1 Supporting documents

The Tender Rules, Conditions of Contract, Standard and Project Specifications, Drawings and statutory minimum requirements relating to the employment and remuneration of labour shall *inter alia* be read in conjunction with this Specification.

C3.3.3.4.2.1.2 Definitions and abbreviations

For the purposes of this specification, the definitions given in the Conditions of Contract, the Standard Specifications and the Project Specifications, together with the following additional definitions shall, unless the context dictates otherwise, apply:

- (a) "Key Personnel" means all contracts managers, site agents, materials and survey technicians, trainers, supervisors, foremen, skilled plant operators, artisans and the like, and all other personnel in the permanent employ of the Contractor or Subcontractor who possess special skills and/or who play key roles in the Contractor's or Subcontractor's operation
- (b) "Project Committee" means a committee consisting of the Employer, the Engineer, the Contractor, (or their nominated representatives) as well as representatives of the temporary workforce, which is convened from time to time at the discretion of the Engineer, for the purposes of acting as an avenue for effective communication and liaison between all the parties referred to, in all matters pertaining to the Contract

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- (c) "Subcontractor" means any person or group of persons in association, or firm, or body corporate (whether formally constituted or otherwise) not being the Contractor, to whom specific portions or aspects of the Works are sublet or subcontracted by the Contractor in accordance with the provisions of the Contract
- (d) "Worker" for the purposes of this Specification means any person, not being one of the Contractor's key personnel, nor any key personnel of any Subcontractor, who is engaged by the Contractor, a Subcontractor or the Employer to participate in the execution of any part of the Contract Works and shall include unskilled labour, semi-skilled and skilled labour, clerical workers and the like
- (e) "Workforce" means the aggregate body comprising all workers and shall, unless the context dictates otherwise, include the workforces of the Contractor and all Subcontractors
- (f) "Project Steering Committee (PSC)" means a committee comprising mainly of representatives (to a maximum of 10) of the affected communities with additional members from THE MUNICIPALITY, the Contractor, Consultants and the Municipality. The PSC convenes at least once a month as well as when the need so dictates, for the purpose of recruiting labour for the project, to address community issues and for acting as an avenue for effective communication and liaison between all the parties.
- (g) "Liaison Officer" means a local representative of the temporary workforce, duly appointed through the PSC processes, to act on behalf of the workers and through whom all matters pertaining to the temporary workforce can be channelled.

C3.3.3.4.2.1.3 Status

Where any provisions or requirements of this Specification are in conflict with anything elsewhere set out in the Contract, the provisions and requirements of this Specification shall take precedence and prevail.

C3.3.3.4.3 PERMITTED SOURCES OF TEMPORARY WORKERS

The Contractor shall as far as possible make optimum use of the human resources outside his own workforce and the workforces of all subcontractors. The temporary workforce that is to be used in the execution of the Works in terms of Part C3 may consist of the workers of local communities, and shall not be bound to one particular community.

C3.3.3.4.4 EMPLOYMENT RECORDS TO BE PROVIDED

- (a) The Contractor shall maintain accurate and comprehensive records of all workers engaged on the Contract and shall provide the Engineer at monthly intervals from the commencement of the Contract, with interim records substantiating the actual numbers of employment opportunities that shall have been generated to date and the amounts actually paid in respect thereof. Such interim records shall be in a THE MUNICIPALITY approved format. An example of the forms to be used is illustrated in Part C5 of this document, (forms RDP 9 and 10 (E)).
- (b) The Contractor shall, on completion of the Contract, and as a pre-requisite event to the release of any retention money in terms of the Conditions of Contract, provide the Engineer with copies of the Terms of Employment as well as independently audited

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documentary evidence of the total number of temporary and permanent employment opportunities actually generated during the Contract.

C3.3.3.4.5 VARIATIONS IN WORKER PRODUCTION RATES

Notwithstanding anything to the contrary as may be stated in or inferred from any other provision of this Contract, the Contractor shall not be entitled to any additional payment or compensation whatever, in respect of any differences as may result between the production rates actually achieved by workers in the course of the execution of the Contract Works and those production rates on which he has based his tender.

C3.3.3.4.6 TRAINING OF THE TEMPORARY WORKFORCE

- (a) Selected members of the workforce are to be provided with structured training in accordance with the provisions of Part C3.4.3.3.
- (b) The Contractor shall make all necessary allowances in his programme of work to accommodate and facilitate the delivery of such structured training and shall comply fully with the requirements of Part C3.4.3.3.
- (c) The provision of structured training as described in Part C3.4.3.3. shall not relieve the Contractor of any of his obligations in terms of the Conditions of Contract and the Contractor shall remain fully liable for the provision, at his own cost, of all training of the workforce, additional to that as provided for in Part C3.4.3.3, as may be necessary to achieve the execution and completion of the works strictly in accordance with the provisions of the Contract.

C3.3.3.4.7 RECRUITMENT AND SELECTION PROCEDURES

C3.3.3.4.7.1 The Project Steering Committee, though the assistance of the Social Facilitator and the Contractor, shall be responsible for the recruitment and selection of the Community Liaison Officer and the workers to constitute the temporary workforce.

C3.3.3.4.7.2 The Contractor shall advise the Engineer in writing of the numbers of each category of temporary worker which he requires, together with the personal attributes which he considers desirable that each category of worker shall possess (taking due cognisance of the provisions of the Contract relating to training).

C3.3.3.4.7.3 The Social Facilitator shall take the necessary actions to advertise within the affected local communities comprising the personnel resources, the fact that temporary employment opportunities exist and the time and place where recruiting will occur

C3.3.3.4.7.4 The Social Facilitator shall record in writing, the details of all persons applying for employment, including *inter alia*:

- (a) Name, Identity Number, Date of Birth, age and sex
- (b) Marital status and number of dependants
- (c) Qualifications and previous work experience (whether substantiated or not)
- (d) On the job training programmes attended
- (e) Period since last economically active
- (f) Preference for type of work or task.

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C3.3.3.4.7.5 The selection of workers from amongst the applicants should take into cognizance the Contractor's requirements for the workforce and the provisions of the contract in regard to the provision of training to the workforce and in accordance with the following principle:

- (a) No potential temporary worker shall be precluded from being employed by the Contractor on the execution of the Works, by virtue of his lack of skill in any suitable operation forming part of the Works, unless -
 - (i) all available vacancies have been or can be filled by temporary workers who already possess suitable skills, or
 - (ii) the Time for Completion allowed in the Contract, or the remaining portion of the Contract Period (as the case may be) is insufficient to facilitate the creation of the necessary skills.
- (b) Preference shall be given to the unemployed and single heads of households.
- (c) The Contractor shall, in so far as is reasonably practicable, give priority to accommodating the applicants' expressed preferences regarding the types of work for which they are selected.
- (d) The selection process shall not be prejudicial to youth (over the age of fifteen years) and women. The Contractor should strive to achieve the participation target for employment set for this project which is 60% female and 20% youth.

C3.3.3.4.7.6 After making the selection, the Social Facilitator shall forward the list in writing and without undue delay, to the Engineer for record keeping.

C3.3.3.4.7.7 The provisions of this clause shall apply *mutatis mutandis* in respect of the selection of additional or replacement members of the workforce as may be necessary from time to time during the Contract.

C3.3.3.4.7.8 The Contractor shall, after appointing his temporary workforce, arrange at his own cost for the appointment of the Liaison Officer as representative of the workforce to act on their behalf with regards to all matters pertaining to the workforce.

C3.3.3.4.8 TERMS AND CONDITIONS PERTAINING TO THE EMPLOYMENT OF THE TEMPORARY WORKFORCE

C3.3.3.4.8.1 All temporary workers engaged in accordance with the provisions of Part A of the Project Specifications, shall be employed on the terms and conditions of employment as are consistent with those as set out in this Contract. The Contractor shall implement and adhere strictly to such terms and conditions relating to the employment of the temporary workforce, and subject only to the provisions of this Contract, shall not employ any temporary worker on terms and conditions which are less favourable to the worker or inconsistent with the standards and norms generally applicable to temporary workers in the Civil Engineering Industry and applicable to the particular area. Refer to the Contract of Employment drafted/published by Department of Labour.

C3.3.3.4.8.2 RATE OF REMUNERATION. The Contractor shall pay to all workers engaged in terms of the contract, not less than the applicable gazetted minimum rate of remuneration in terms of the Sectorial Determination 2: Civil Engineering Sector.

The remuneration of the CLO shall be paid monthly at the rate of R6000/month

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Compensation to the members of the Project Steering Committee shall be made at a rate of R100/official site meeting.

C3.3.3.4.8.3 NON-PAYMENT OF LABOURERS. Under this contract it is expected of the Main Contractor to ensure that all labourers are paid in time on a monthly basis, whether they are employed by him/her directly or by any of his/her subcontractors. In the event of non-compliance, the employer reserves the right to use any remedies available at its disposal.

C3.3.3.4.9 LABOUR RELATIONS AND WORKER GRIEVANCE PROCEDURES

C3.3.3.4.9.1 The Contractor, as the Employer of the workforce, shall be fully responsible for the establishment and maintenance at his own cost, of satisfactory labour relations on site and the resolution of all grievances of temporary workers as may occur. Refer to Disciplinary Procedures for Small Business drafted/published by Department of Labour.

C3.3.3.4.9.2 The Contractor shall at all times adhere to the accepted norms and standards of labour relations prevailing generally in the Civil Engineering Construction Industry and shall conduct himself in a fair and reasonable manner, within the constraints as may be imposed upon him by the terms of the Contract.

C3.3.3.4.9.3 In the event of any temporary worker engaged by the Contractor in terms of the Contract, being aggrieved with regard to his Terms of Employment, working conditions and training, he shall have the right, at his discretion, to be supported in any inquiry or disciplinary hearing or investigation instituted by the Contractor in terms of Subclause C3.4.3.4.9.2 above, by one member of the temporary workforce and one member of the Project Committee, which persons shall be nominated by the worker.

C3.3.3.4.9.4 In the event of any grievance not being satisfactorily resolved through the application of normal dispute resolution procedures in accordance with Sub clauses C3.3.3.4.9.2 and C3.4.3.4.9.3, then either the Contractor or the worker concerned may require that the matter be referred to the Project Committee for further consideration, with a view to facilitate the resolution thereof.

C3.3.3.4.10 THE SUBCONTRACTORS' WORKFORCES

C3.3.3.4.10.1 The provisions of this Part C shall apply *mutatis mutandis* to the workforces employed by all subcontractors engaged by the Contractor and the Contractor shall be fully responsible for ensuring, at his own cost, that the terms of every subcontract agreement entered into are such as to facilitate the application of these provisions in respect of the workforces of all subcontractors.

C3.3.3.4.10.2 The Contractor shall at his own cost and to the extent necessary, assist and monitor all subcontractors in the application of the provisions of this Specification, and shall, in terms of the Conditions of Contract, remain fully liable in respect of the acts, omissions and neglects of all subcontractors, in respect of the application of the provisions of this Specification.

C3.3.3.4.11 MEASUREMENT AND PAYMENT

The Contractor will not be separately reimbursed or compensated in respect of the provision of the workforce and creation of temporary employment opportunities and all the Contractor's

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costs associated with compliance with the provisions of this part of the Project Specifications shall, except to the extent provided for in Part C3.4.3.3. as relevant, be deemed to be included in the rates tendered for the various items of work listed in the Schedule of Quantities.

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C3.4 MANAGEMENT

C3.4.1 MANAGEMENT MEETINGS

The following meetings will be required as minimum for the management of the contract.

- (a) Monthly client site meeting (using standard agenda for management control).
- (b) Technical meetings as required for each phase of the work.
- (c) Monthly safety meetings in terms of the OHS requirements.
- (d) Weekly progress meetings

C3.4.2 QUALITY CONTROL

Contractor to supply details of quality plan and procedures. These shall include:

- Accommodation of traffic.
- Inspection and test plans.
- Approval process.
- Hold-points.
- Milestones.

PART C4: SITE INFORMATION

C4.1 SITE INFORMATION 269

C4.2 LOCALITY PLAN: TEST PITS..... 271

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C4.1 SITE INFORMATION**C4.1.1 General**

From desktop review of the 1:250 000 geological series map, 2230 Messina, it is evident that the site is underlain by Basalt and minor quartzites of the Sibasa formation within the Soutpansberg Group. Observation made on site suggest that the site underlined by fill material which blankets the transported soils which is alluvium in nature. Residual soils were only observed in Tp6 as per the Geotechnical report attached.

FILL

The fill material was observed in the majority of trial holes from an average depth of 0.02m to a maximum depth of 700mm. This horizon has been depicted as a slightly moist, reddish to greyish brown, general consistency of loose to medium dense, silty sandy clay and scattered gravels and cobble.

Laboratory tests were conducted particularly on the fill material, and the results suggest that the material exhibit a plastic nature with a plasticity index of between 9% and 17%. The material has a grading modulus of between 0.90 and 1.60, and thus it is reasonable fine to coarse grained in texture.

CBR test results suggest that this material classify between >G9 and G6 in terms of COLT classification.

ALLUVIUM

The transported soils were observed in all trial holes from surface to a maximum depth of 700mm. This horizon has been depicted as a slightly moist, reddish brown, general consistency of medium stiff to stiff, silty sand clay.

Laboratory results suggests that these soils exhibit a plastic heave potential with a plasticity index of between 15%. The alluvium soils are reasonable fine to coarse grained in texture with a grading modulus of between 0.0 and 1.50.

CBR test results suggest that this material classify between >G9 in terms of COLT classification

RESIDUAL BASALT

The residual soils were observed in only TP06 from 600mm to a maximum depth of 2m. This horizon has been depicted as a slightly moist, Reddish, general consistency of medium stiff to stiff, clayey silty sand and occasional rounded to subrounded cobbles.

Laboratory results suggests that these soils exhibit a plastic heave potential with a plasticity index of 7%, and these residual soils are reasonable coarse in texture with a grading modulus of 1.60.

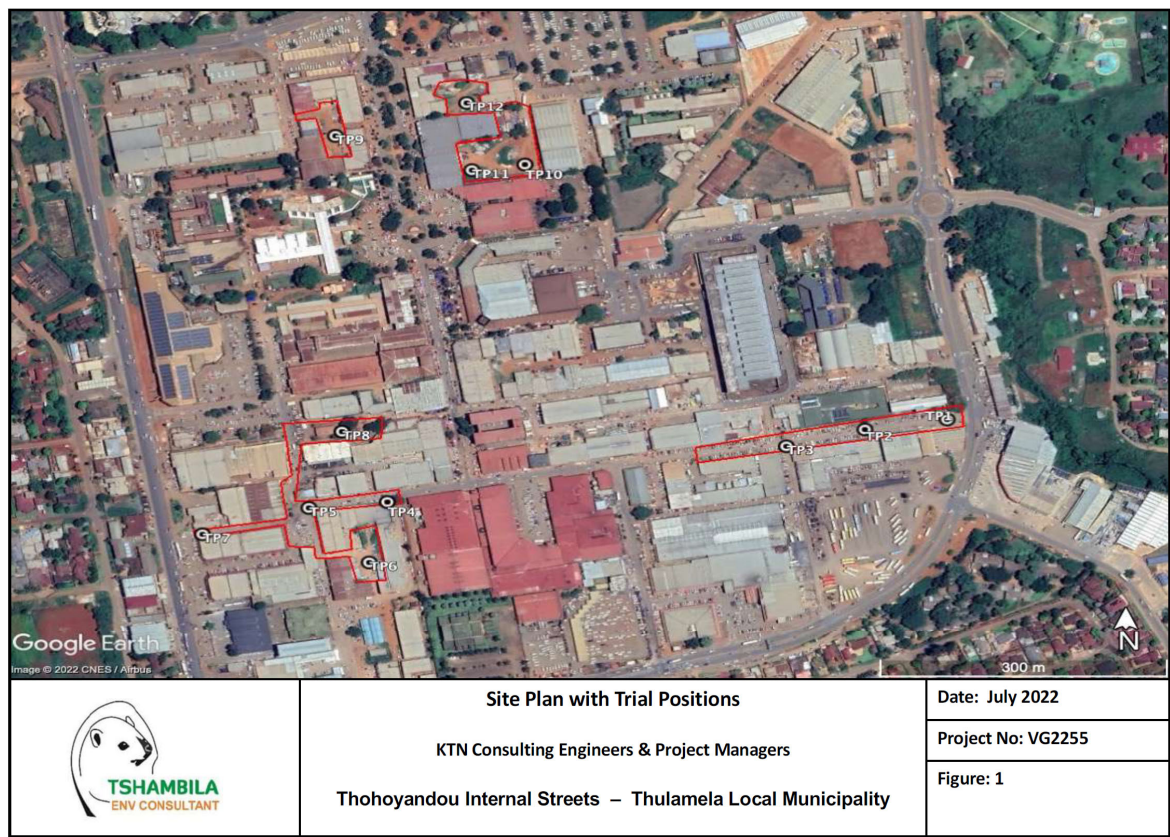
Ground water conditions

Little to no test pits has indicated any sign of wet subgrade conditions and therefore the installation of subsoil may not be required.

C4.1.2 Materials Investigation

Refer to Geo-technical report

C4.2 LOCALITY PLAN: TEST PITS



PART C5: ANNEXURES

C5.1 PROFORMA DOCUMENTS..... 273

C5.2 TENDER DRAWINGS..... 284

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C5.1 PROFORMA DOCUMENTS

The following is a list of proforma documents and examples that are required to be completed by the successful tenderer.

C5.1.1	RETENTION MONEY GUARANTEE PROFORMA	274
C5.1.2	EXAMPLE OF SMME DECLARATION AFFIDAVIT	276
C5.1.3	FORM RDP 9(E) : CONTRACT EMPLOYMENT REPORT	278
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C5.1.8	FORM RDP 14(E) : COMMUNITY LIAISON MEETING REPORT	283

C5.1.1 RETENTION MONEY GUARANTEE PROFORMA

EXAMPLE

THULAMELA MUNICIPALITY
Private Bag X5066
Thohoyandou
0950

FOR INFORMATION ONLY:
This Guarantee is not to be
completed and signed by the
Guarantor.
A separate form will be issued
to the successful Tenderer

Notes to Tenderer

1. This pro forma is for information only. The successful tenderer's guarantor will need to reproduce it without amendment, omission or addition for completion and lodgement with the Employer.
2. The tenderer's guarantor must provide letterheads indicating the contact details of the guarantor, including the name of the guarantor, the name of the board of directors, guarantee number and the company name.

CONTRACT No.
FOR
UPGRADING OF THOHOYANDOU BLOCK J INTERNAL STREET (MULEDANE PHASE 1)

The guarantee is issued on behalf of

Registration No
(hereinafter referred to as "the Contractor") in connection with the above mentioned contract
(hereinafter referred to as "the Contract").

Whereas you have agreed that the Contractor may provide a guarantee in lieu of the retention monies provided for under the Contract.

Now therefore we, the undersigned, being duly authorised to represent the.....

.....
(full name of guarantor) registration number.....

undertake to pay you such amounts as you may from time to time demand from us, immediately upon receipt of a written demand from you.

1. Each demand shall be in writing and delivered to us at
or such other address as we shall in writing notify to you.
2. Our liability to make the payments herein referred to shall be unconditional and not be affected or diminished by any disputes, claims or counterclaims between you and the Contractor.
3. Our aggregate liability under this guarantee is limited to.....
(R.....) and is restricted to payment of monies only.
4. This guarantee shall expire on the date on which the last of the retention monies, which but for this guarantee would have been retained by you, becomes payable

to the Contractor.

5. This guarantee is neither negotiable nor transferable and must be returned to us against final payment of our aggregate liability or on the date of the expiry of the guarantee in terms of Clause 4 (above), whichever is the earlier.

Signed at for and on behalf of
on this the day of in the year

GUARANTOR:

AS WITNESS:

1.

N/A

NAME(Print): NAME(Print):

ADDRESS ADDRESS

.....

.....

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C5.1.2 EXAMPLE OF SMME DECLARATION AFFIDAVIT

1. Name of SMME firm :
- Postal address :
- Physical address of Head Office:
- Telephone no. : Fax no
 - Cell no :
 - Contact person :
 - VAT registration no. :

2. Type of firm (tick as appropriate)
 - Partnership.....
 - One person business/sole trader.....
 - Close corporation: registration no.....
 - Date of registration.....
 - Company: registration no.....
 - Pty Ltd: registration no.....

[ATTACH LATEST CIPRO PRINTOUT TO PROVE ABOVE INFORMATION]

3. Principal Business Activities :
4. Service/work to be performed on this contract:
5. CIDB registration no (if applicable):

[ATTACH LATEST CIDB INFORMATION AS PROOF]

5. SMME status (mark the appropriate category)
 - 5.1. Total full time equivalent of paid employees:
 - 5.2. Total Annual turnover:
 - 5.3. Total gross asset value (fixed property excluded):

[ATTACH CONFIRMATION LETTER OF AUDITER OR INCOME STATEMENT TO SUBSTANTIATE AND PROVE ABOVE INFORMATION]

8. Declaration

I,
being duly authorised to sign on behalf of the firm, affirm that the SMME status as
stated above and the information as furnished is true and correct.

Signature

Name (print)

Date

Signed on behalf of (print name).....

Address

Telephone no.

Commissioner of Oath

Date

Note: In the case of a Company a certificate of authority for signatory must be provided.

EXAMPLE

C5.1.3 FORM RDP 9(E) : CONTRACT EMPLOYMENT REPORT

CONTRACT NO......

REPORT ON EMPLOYMENT ON THE ABOVE CONTRACT FOR THE MONTH OF _____ 2011										
NAME OF COMPANY OR FIRM AND VENDOR NUMBER	AGE OF COMPANY OR FIRM	EMPLOYMENT GROUP	EMPLOYMENT							
			MALE	FEMALE	TOTAL	PERSON/HOURS			VALUE (RAND)	
						MALE	FEMALE	TOTAL	MALE	FEMALE
		Unskilled (US)								
		Semi-Skilled (SS)								
		Skilled (SK)								
		Lab.Tech (LT)								
		Surveyor (SUR)								
		Eng. Tech (ET)								
		Engineer (EN)								
		Admin (AD)								
		Others (o)								
TOTALS										
GRAND TOTALS										

EXAMPLE

C5.1.4 FORM RDP 10(E) : EMPLOYMENT OF SUPERVISORY STAFF REPORT

CONTRACT NO.....

REPORT ON THE EMPLOYMENT OF SUPERVISORY STAFF ON THE ABOVE CONTRACT FOR THE MONTH OF _____ 2011				
POSITION HELD	NAME	PDI	NON-PDI	TOTAL
Site Agent				
Senior Materials Technician				
Senior Surveyor				
Earthworks Surveyor				
Compaction Supervisor				
Surfacing Supervisor				
Structures Supervisor				
Others: - List				
TOTALS				

EXAMPLE

C5.1.5 FORM RDP 11(E) : GENERIC TRAINING REPORT

CONTRACT NO.....

REPORT ON GENERIC TRAINING ON THE ABOVE CONTRACT FOR THE MONTH OF										2011	
DATES OF TRAINING COURSES		EMPLOYER OF TRAINEE		NAME OF TRAINING INSTITUTE OR IF IN-HOUSE WRITE IH	ATTENDANCES				TOTAL COST OF TRAINING PER TYPE OF TRAINING		
					NUMBER ATTENDING		CERTIFICATES AWARDED				
START	FINISH	NAME	VENDOR NO.		MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
TOTAL											
TOTAL ALL TRAINEES											

C5.1.6 FORM RDP 12(E) : ENTREPRENEURIAL TRAINING REPORT

CONTRACT NO.....

[illegible]

EXAMPLE

C5.1.7 FORM RDP 13(E) : ENGINEERING TRAINING REPORT

CONTRACT NO.....

REPORT ON ENGINEERING TRAINING ON THE ABOVE CONTRACT FOR THE MONTH OF										2011	
DATES OF TRAINING COURSES		EMPLOYER OF TRAINEE		NAME OF TRAINING INSTITUTE OR IF IN-HOUSE WRITE – IH	ATTENDANCES				TOTAL COST OF TRAINING PER TYPE OF TRAINING		
START	FINISH	NAME	VENDOR NO.		NUMBER ATTENDING		CERTIFICATES AWARDED		MALE	FEMALE	
					MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	
TOTAL											
TOTAL ALL TRAINEES											

EXAMPLE

C5.1.8 FORM RDP 14(E) : COMMUNITY LIAISON MEETING REPORT

CONTRACT NO.....

REPORT ON COMMUNITY LIAISON MEETINGS ON THE ABOVE CONTRACT FOR THE MONTH OF 2011						
DATE OF MEETING	COMPANY/FIRM OR ORGANISATION RESPONSIBLE FOR ARRANGING THE MEETING		NUMBER OF COMMUNITY MEMBERS PRESENT	DURATION OF MEETING (hours)	TOTAL COST OF THE MEETING	COMMENTS
	NAME	VENDOR NO.				

C5.2 TENDER DRAWINGS

The following tender drawings is included in the tender document for tender purposes only and actual work may include all areas of the CBD area.

Bidders must note that this bid may be awarded to more than one bidder. Municipality is not bound to accept the lowest Bid and reserves the right to accept any part of a Bid and issue work on an As and When required basis.