



Province of the
EASTERN CAPE
TRANSPORT

TENDER NO: SCMU10-23/24-0001

FOR

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR
THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA
CLARKEBURY (20KM) PHASE 1**

VOLUME 3

COMPULSORY BRIEFING: 24 MAY 2023 AT 10H00

TENDER CLOSING: 13 JUNE 2023 AT 11H00

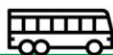
Eastern Cape Department of Transport
32 Cowan Close
Stellenbosch Park Building
Schornville
King William's Town
5601

Name of Tenderer:

.....

CRS No.

CSD No.



An efficient, safe, sustainable, affordable and accessible transport system

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THE TENDER PART 1 (OF 2): TENDERING PROCEDURES

- T1.1 TENDER NOTICE AND INVITATION TO TENDER**
- T1.2 TENDER DATA**

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T1.1 TENDER NOTICE AND INVITATION TO TENDER

A. TENDER INVITATION:

The Department of Transport of the Province of Eastern Cape hereby invites tenders from experienced civil engineering Contractors for:

Contract No. SCMU10-23/24-0001

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF
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Tenderers must be registered with the CIDB and have a valid CIDB contractor grading designation of **GRADE 9CE or higher** for a Civil Engineering class of construction work.

To be considered for a Contract in terms of this Tender, the tenderer must be able to demonstrate the completion of at least **two (2)** similar SURFACED ROAD UPGRADING PROJECTS in the past ten (10) years to the value of at least R 150 000 000 (One Hundred and Fifty Million Rand), within the South African Development Community (SADC) region.

Refer to T1.2: TENDER DATA of the document for the tender specific definition of a similar BITUMINOUS SURFACED ROAD UPGRADING PROJECT(S).

To be considered for a Contract in terms of this Tender, the tenderer must have in its employment or intend to employ, for the duration of the contract the following key personnel who comply with the minimum requirements as referred to T1.2: TENDER DATA of the document:

- Construction Manager with minimum of ten (10) years' experience in surfaced road upgrading project(s) as a Construction Manager and is professionally registered.
- Construction Health and Safety Officer to manage the contractor's health and safety obligations on site with minimum of five (5) years' experience on road projects and professionally registered.

Tender documents will be available as from Friday **12 May 2023** from the DoT Website (www.ectransport.gov.za) and Department of National Treasury eTender Publication website <https://etenders.treasury.gov.za/www.etenders.gov.za>.

A compulsory clarification meeting will be held at **Mbhashe Local Municipality (TRC Hall)** on the **24th May 2023 at 10:00 am**. No tender documents will be available at the clarification meeting.

Attendees who are 20 minutes late to the Briefing will not be permitted to sign the Attendance Register and therefore will be prohibited from tendering as per clause F.2.7.

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Tenderers may seek clarification from the Employer in terms of this tender within **14 days** from the date of advert and the last day for accepting questions will be the **30th MAY 2023**.

Tenderers are required to download any addenda issued by the Employer from the Eastern Cape Department of Transport Website www.ectransport.gov.za . The addenda will also be emailed to the contractors that attended the compulsory briefing. Addenda will only be issued up to 7 (seven) days before the Tender Closing date, **ONLY** addenda critical to the evaluation will be issued. **NB: The notice of the addenda will be issued on eTender portal of the Provincial Treasury.**

The Contract period is 36 months.

Furthermore, as a Condition of Contract the Contractor will be required to achieve minimum Employer's contract participation goals in terms of:

- 30% on Targeted subcontractors employed by the Contractor, for the execution of portions of construction works, in the performance of the Contract; and
- 10% on Targeted suppliers employed by the Contractor, subcontractor(s) and targeted subcontractors, for supplying materials, goods or services, in the performance of the Contract; and
- 10% on Targeted labour employed by the Contractor, subcontractor(s) and targeted subcontractors in the performance of the Contract.

Completed tender documents (Volume 3 and any supporting documentation), placed in a sealed envelope and clearly **marked "CONTRACT NO.: SCMU10-23/24-0001 APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1"** **must** be deposited in the Tender Box, located on the Ground Floor, Stellenbosch Park, Schornville, 32 Cowan Close, King William's Town, not later than **11:00am on the 13th June 2023** when tender offers will be opened in public.

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

B. TENDER EVALUATION

This tender will be evaluated in two (2) phases as follows:

Phase One: Compliance and Eligibility in terms of tender rules and conditions, thereafter.

Phase Two: Responsive tenders will be evaluated in terms of Method 1 (Price and specific goals).

Eligibility Criteria

The tenderer must be able to demonstrate the completion of at least **two (2)** similar SURFACED ROAD UPGRADING PROJECTS in the past ten (10) years to the value of at least **R 150 000 000 (One Hundred and Fifty Million Rand)**, within the South African Development Community (SADC) region; similar projects are as per the clause F2.1.4.3. **NB: Each of the two (2) similar projects must have a minimum construction value of R150 000 000 for a bidder to be eligible.**

Details of roads related projects and supporting information must be entered in Form C in the Returnable Schedule. Copies of Completion Certificates, appointment letters and reference letters from the client must be attached to qualify for this tender. **See Clause F2.1.4.3 defining what clearly should be done by tenderer as measure of confirming that a R150 000 000 project has been done completely.**

The Tenderer must have in its employment the following **key personnel** who comply with the following minimum requirements:

- A suitably qualified and experienced **Construction Manager/Site Agent** who will be the single point accountable and responsible person for the full time management of the construction works on site, who is registered with ECSA as a Professional Engineer (Pr Eng.) or Professional Engineering Technologist (Pr Tech Eng) or Registered with SACPCMP as Professional Construction Manager (Pr CM) and has a minimum of ten (10) years' experience in surfaced road upgrading project(s).
NB: ONLY the experience as Construction Manager for road upgrading projects will be considered, not the overall key person's experience in other positions.
- A suitably qualified and experienced full time **Construction Health and Safety Officer** to manage the Contractor's health and safety obligations on site who is registered with SACPCMP as a Professional Construction Health and Safety Agent (Pr CHSA) or Professional Construction Health and Safety Manager (Pr CHSM) or Professional Construction Health and Safety Officer (Pr CHSO) and has a minimum of five (5) years in surfaced road construction projects.

Details of key personnel and their relevant information must be entered in **Form J** of the Returnable Schedules. Certificates of qualifications and professional registration must be attached to qualify for this tender.

C. PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT (PPPFA) POINTS WILL BE AWARDED AS FOLLOWS:

Maximum points on price	-	90 points
Maximum points for specific goals	-	10 points
Maximum points	-	100 points

The points for specific goals will be distributed as per the table below.

PREFERENTIAL SPECIFIC GOALS POINTS TABLE		
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 claimed (90/10 system)
Historically Disadvantaged Individuals		
Black ownership	5	% ownership as per CIPC / CSD
Locality:-		
(a) Preferred address on the CSD in the Eastern Cape in the last 3 years.	5	
b) Alternative address on the CSD in the Eastern Cape in the last 3 years	3	
(c) Outside Eastern Cape no satellite office in Eastern Cape: (i) including preferred address less than 3 years. (ii) Alternative address less than 3 years	2	

➤ **Historically Disadvantaged Individual (HDI): Black Ownership**

Means a South African Citizen: who, due to the apartheid policy that had been in place, had no franchise in national elections

Central Supplier Database (CSD) report will be used.

It is the onus of the bidder to provide proof of ownership equity status

➤ **Locality:**

Locality shall mean' Fully functional office within the Province of the Eastern Cape. Satellite shall mean an office with minimum staff of not more than 3 personnel running the office on fulltime.

Locality Points will be allocated for proof of local office operations in Eastern Cape. The primary address on CSD and proof of ownership under the bidding company will be used for choice Locality.

• **TENDER SPECIFICATIONS, CONDITIONS AND RULES**

The minimum specifications, eligibility and other tender conditions and rules are detailed in the bid document.

Note: Tender Validity Period is **90 days**.

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D. TENDER SUBMISSIONS:

The completed tender document as well as any supporting documentation shall be placed in a sealed envelope clearly marked “**TENDER NO: SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**” and deposited in the Tender Box at the Department of Transport, 32 Cowan Close, Stellenbosch Park, Schornville, King William's Town, not later than **11H00 am on the 13th June 2023** when tenders will be opened in public.

SCM RELATED ENQUIRIES

Name: Mr P. Ngikashe
Tel No:
Cell No: 0674198001
Fax No.: N/A
Email Address: philasande.ngikashe@ectransport.gov.za

TECHNICAL ENQUIRES

Name: Mr. S. Dlanjwa
Cell No: 060 870 3206
Email Address: Sonwabile.dlanjwa@ectransport.gov.za; **OR**

Name: Mr U Dyubula
Cell No.: 0793441736
Email Address: unathi.dyubula@ectransport.gov.za

FOR COMPLAINTS, FRAUD, & TENDER ABUSE:

Call: 0800 701 1701

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T1.2: TENDER DATA

The tender conditions are the Standard Conditions of Tender as contained in Annexure F of the CIDB Standard for Uniformity in Construction Procurement as per CIDB **Board Notice 136 of 2015 in Government Gazette No. 38960 of 10 July 2015** and as amended from time to time. (see www.cidb.org.za).

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

Each item of data given below is cross-referenced to the clause marked "F" in the above-mentioned Standard Conditions of Tender.

No	Clause	Wording
1	F.1.1	The employer is the Department of Transport, Province of the Eastern Cape
2	F.1.2	The following documents form part of this tender: VOLUME 1: The General Conditions of Contract for Construction Works [3rd Edition] 2015 are published by the South African Institution of Civil Engineering. This publication is available and tenderers must obtain copies at their own cost from the South African Institution of Civil Engineering [SAICE], Private Bag x200, Halfway House 1685, Tel: [011] 805 5971, email: civilinfo@saice.org.za VOLUME 2: The Standard Specifications for Road and Bridge Works for State Road Authorities prepared by the Committee of Land Transport Officials. This publication is available and tenderers must obtain copies at their own cost from the South African Institution of Civil Engineering [SAICE], Private Bag x200, Halfway House 1685, Tel: [011] 805 5947, Fax [011] 805 5971, email: civilinfo@saice.org.za VOLUME 3: The Tender Document issued by the employer, which comprises: <u>THE TENDER</u> PART T1: TENDERING PROCEDURES T1.1: Tender Notice and Invitation to Tender.....(White) T1.2: Tender Data.....(Pink) PART T2: RETURNABLE DOCUMENTS T2.1: List of Returnable Documents.....(Yellow) T2.2: Returnable Schedules.....(Yellow)

No	Clause	Wording
		<u>THE CONTRACT</u> PART C1: AGREEMENTS AND CONTRACT DATA C1.1: Form of Offer and Acceptance.....(Yellow) C1.2: Contract Data.....(Yellow) C1.3: Performance Guarantee (pro forma).....(Yellow) C1.4: Occupational Health and Safety Act, Act 85 Of 1993 Contractors 37.2 Agreement.....(Yellow) C1.5: Application for Permit to do Construction Work (pro forma).....(Yellow) PART C2: PRICING DATA C2.1: Pricing Instructions.....(Yellow) C2.2: Pricing Schedule / Bill of Quantities.....(Yellow) PART C3: SCOPE OF WORKS C3.1: Description of the Works.....(Blue) PART C4: SITE INFORMATION C4: Site Information.....(Green) Volume 3: Tender Document duly completed, in accordance with F 2.13.3, and returned to the employer before the closing time for receipt of tenders, shall constitute the submission of a tender offer. VOLUME 4: Roadworks Drawings VOLUME 5: Structural Drawings VOLUME 6: Material Investigation Report VOLUME 7: Environmental Management Programme
3	F.1.4	The Employer's agent is: The Employer's Agent is SMMMS-Deedscon Consult JV Name: Mr G. Dambudzo Address: 8 Tyrell Road Berea East London 5241 Tel: 043 726 8075 E-mail: deedscon@deedscon.co.za The language for communications is English.
4	F.1.5.1	a) The employer may accept or reject any variation, deviation, tender offer, or alternative tender offer, and may cancel the tender process and reject all tender offers at any time before the formation of a contract. The employer shall not accept or incur any liability to a tenderer for such cancellation and rejection but will give written reasons for such action upon written request to do so.

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No	Clause	Wording
		b) It is a condition of this contract that the Employer reserves the right to limit the expenditure on the works due to possible budget restraints. Should the tender sum exceed the budgeted amount, the scope of works may be reduced at any time, before or during the contract period, to ensure that the final contract amount does not exceed the budgeted amount. c) It is condition of this contract that, if the lowest bidder items of price happen to be the bidder that had contract that was terminated by any sphere of government or by the employer and or should the lowest bidder be the bidder that has contract with the department and yet declared not performing as per the General condition of a contract, the employer therefore reserves a right not award the contract to such a bidder. d) Should these conditions be applied, such adjustments or limitations shall be deemed to be a variation of the form or quantity of the works or any part thereof in terms of Clause 6.3 of the General Conditions of Contract. The validity of the tender, the individual rates or sums tendered shall not be influenced by any such adjustments or limitations and no claim will be considered based on such adjustments or limitations in terms of Clause 6.11 of the General Conditions of Contract. e) The successful Tenderer will be required to submit a valid and certified copy of their Letter of Good Standing from the Compensation Commissioner or FEMA within 21 days of receipt of their Letter of Award for this Tender. f) The successful Tenderer will be required to submit a valid and certified copy of their Letter of Good Standing from Bargaining Council for Civil Engineering Industry (BCCEI), within 21 days of tender award. g) Where it is found that a specific tenderer is eligible for the award of more than one contract, the employer reserves the right not to award more than one contract to such a tendering entity. Only if the Tenderer has submitted separate suitable Key Personnel for each tender/project, may an additional contract be considered for award to a single tendering entity. The two contracts involved are: 1. SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE1. 2. SCMU10-23/24-0002: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08125 FROM N2 TO SIPETU HOSPITAL, BETWEEN KM 10 AND KM 24 (14KM) PHASE 4A
5	F.2.1	ELIGIBILITY
	F2.1.1	Delete the clause and replace with the following: Tenderers must submit a tender offer that complies in all aspects to the conditions as detailed in this document. Only those tenders that comply in all aspects with the tender conditions, specifications, pricing instructions and contract conditions will be declared responsive.
	F2.1.3	Add the following after F.2.1.2: Only those tender submissions from which it can be established that a clear and unambiguous offer has been made to Employer, by whom the offer has been made and what the offer constitutes, will be declared responsive.
	F2.1.4	Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:

No	Clause	Wording
	F2.1.4.1	[a] CIDB registration Registered with the CIDB prior to the award of the tender, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 [1B] or 25 [7A] of the Construction Industry Development Regulations, for a CE class of construction work. Note that in terms of CIDB Act 38 of 2000 a registered contractor must apply for renewal of registration three months before the existing registration expires. 1) Joint ventures are eligible to submit tenders provided that: a) every member of the joint venture is registered with the CIDB and in the CE class of work. b) the combined contractor grading designation calculated in accordance with the Construction Industry Development Board Regulations is equal to or higher than a contractor grading designation Grade 9 CE Class of Construction works. c) a signed Joint Venture Agreement must be attached with the tender. 2) Tenderers must submit copy of Certificates of Qualifications and Professional Registration; otherwise, they will be non-responsive. 3) Failure to comply with the above eligibility criteria will cause the tender to be deemed non-responsive.
	F2.1.4.2	Compliance with requirements of Employer's SCM Policy and procedures a. Only those tenders that are compliant with the requirements below will be declared responsive: Full name of entity submitting tender to be provided b. Identification number or company or other registration number to be provided; c. Tax reference number to be provided; d. VAT registration number (if any) to be provided; e. A completed returnable schedule SBD 1: INVITATION TO BID AND TERMS AND CONDITIONS FOR BIDDING to be provided. Failure to provide or comply with any of the particulars of this schedule may render the tender nonresponsive; f. A completed returnable schedule SBD 4: BIDDER'S DISCLOSURE to be provided. In the case of a joint venture (JV), a separate schedule is to be completed and provided by each JV member. Non-compliance with the requirements of the applicable returnable schedule will render the tender nonresponsive. Furthermore, should the declaration prove to be false the Employer may reject or act against the tenderer in terms of clause F.3.7 of the Conditions of Tender; g. A completed returnable schedule P: COMPULSORY ENTERPRISE QUESTIONNAIRE to be provided. In the case of a joint venture (JV), a separate schedule is to be completed and provided by each JV member; h. A completed CERTIFICATE OF AUTHORITY FOR SIGNATORY to be provided and attached to returnable schedule B: CERTIFICATE OF AUTHORITY FOR SIGNATORY. Compliance with the requirements of the applicable returnable schedule is deemed a material responsiveness criterion. i. A completed returnable schedule H: REGISTRATION ON NATIONAL TREASURY CENTRAL SUPPLIER DATABASE to be provided, including attached printed copy of the Active Supplier Listing on the National Treasury Central Supplier Database. In the case of a joint venture (JV), the tenderer shall provide printed copies of the Active Supplier Listing on the National Treasury Central Supplier Database for each member of the JV; j. In the case of a tender submission by a joint venture (JV). The tenderer must attach a signed copy of the JV Agreement to returnable schedule G: JOINT VENTURE AGREEMENT DISCLOSURE; k. The tenderer or any of its directors is not listed in the Register of Tender Defaulters or the List of Restricted Suppliers managed by the National Treasury

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No	Clause	Wording
		(www.treasury.gov.za) in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; l. The tenderer has not abused the Employer's Supply Chain Management System; m. The tenderer has not failed to perform on any previous contract with the Employer; n. The tenderer's tax matters with SARS are in order. o. The tenderer has provided a completed and signed Form of Offer in terms of C1.1.1 of PART C1: AGREEMENTS AND CONTRACT DATA, deemed as a material responsiveness criteria.
	F2.1.4.3	Company Experience in Roads Contract Management Tenderer must have completed two (2) surface road upgrade project of at least to the value of <u>R150 000 000.00</u> and above each, in the last 10 years. 1. Bulk earthworks operations 2. Road layer works and bituminous surfacing 3. Operation of quarry/source material 4. Stormwater drainage (major and minor culverts) 5. Targeted subcontractor management / development. All such projects shall be located within the SADC (South African Development Community) region. A completed returnable schedule D: SIMILAR PROJECT(S) COMPLETED BY THE TENDERER to be provided. To demonstrate completion of a similar projects as defined in this clause, submit for each project listed a completed returnable schedule D (A): SIMILAR PROJECT COMPLETED VERIFICATION FORM (respondent's stamp is critical). Furthermore, submit for each project listed a COMPLETION CERTIFICATE. Details of roads related projects & supporting information must be entered in Form D of the Returnable Schedules. Copies of Completion Certificates and reference letter from the client must be attached, in order to qualify for this tender. NB: The reference letter is required to check the overall performance of the tenderer. Failure to comply with the requirements or to complete Form D will render the tender non-responsive. Failure to provide the Client or respondent's stamp in all two (2) projects submitted will render the tender non responsive. If the stamp is provided for one project the tenderer will be declared non responsive.
	F2.1.4.4	Key Personnel To be considered for a Contract in terms of this Tender, the tenderer must have in its employment or intend to employ, for the duration of the contract the following key personnel who comply with the following minimum requirements: 1. A suitably qualified and experienced Construction Manager (GCC 2015 term for Site Agent) who will be the single point accountable and responsible person for the full-time management of the construction works on site, who: a) is registered with ECSA as a Professional Engineer (Pr Eng) or Professional Engineering Technologist (Pr Tech Eng) - OR b) is registered with SACPCMP as a Professional Construction Project Manager (Pr CPM) or Professional Construction Manager (Pr CM); AND c) has a minimum of ten (10) years' experience in bituminous surfaced road upgrading project(s) as a Construction Manager.

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No	Clause	Wording
		2. A suitably qualified and experienced full time Construction Health and Safety Officer(s) to manage the contractor's health and safety obligations on site who: i. is registered with SACPCMP as a Professional Construction Health and Safety Agent (Pr CHSA) or Professional Construction Health and Safety Manager (Pr CHSM) or Professional Construction Health and Safety Officer (Pr CHSO); AND ii. has a minimum of five (5) years' experience as a Construction Health and Safety Officer on surfaced road construction projects. A completed returnable schedule E: TENDERER'S KEY PERSONNEL to be provided. Attach to each schedule proof of indicated professional registration with the specified professional body. Where the key personnel are no longer available to undertake the necessary work after the Award of the Tender, the then Contractor shall within a period of fourteen (14) working days replace the key personnel listed in returnable schedules E with personnel with equivalent competencies, subject to approval by the Employer. Such approval shall not be unreasonably withheld if compliant in terms of the requirements of this clause Failure to comply with the requirements of this clause and applicable returnable schedule will render the tender offer non-responsive.
	F.2.1.4.5	Construction Equipment To be considered for a Contract in terms of this Tender, the tenderer must be able to demonstrate his ability to provide (either by means of his own construction equipment or ability to hire construction equipment from others) construction equipment exclusively intended for the execution of the works as specified in the tender document. To demonstrate his ability, the tenderer is required to provide a completed signed declaration in terms of returnable schedule F: DECLARATION IN RESPECT OF CONSTRUCTION EQUIPMENT.
6	F.2.1.4.6	Local Content Tenders are required to complete and sign returnable schedule SBD 6.2: DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS. For this tender the stipulated minimum threshold(s) for local production and content for "Steel Products and Component for Construction" is 100%. A completed returnable schedule SBD 6.2: DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS including applicable Annexures to be provided.
	F.2.1.4.7	Registration with Bargaining Council Only those tenders submitted by tenderers who are registered with the Bargaining Council for the Civil Engineering Industry (BCCEI) will be declared responsive. A completed returnable schedule I: DECLARATION IN RESPECT OF COMPLIANCE WITH LABOUR LEGISLATION to be provided and attach proof of registration with the applicable Bargaining Council to the applicable returnable schedule. In case of joint venture (JV) each member of the JV must provide proof of registration with the applicable Bargaining Council for Civil Engineering Industry.

SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

No	Clause	Wording
		Failure to comply with the requirements of this clause and applicable returnable schedule will render the tender non-responsive.
	F.2.1.4.8	Fulfilment of the Construction Regulations, 2014 Only those tenders submitted by tenderers who demonstrate by means of completing and providing returnable schedule J: DECLARATION IN RESPECT OF FULFILMENT OF THE CONSTRUCTION REGULATIONS, 2014 may be deemed responsive if the tenderer's declaration reasonably satisfy the Employer that the tenderer has, in terms of the Construction Regulations, 2014 of the Occupational Health and Safety Act, 1993, the necessary competencies and resources to carry out the work safely and have included in his tender rates and prices (in the appropriate payment items provided in the Pricing Schedules / Bill of Quantities) for all resources, actions, training and any other costs required for the due fulfilment of the Regulations for the duration of the construction and defects liability period.
	F2.6	Addenda Tenderers are required to download any addenda issued by the Employer from the Eastern Cape Department of Transport Website www.ectransport.gov.za only. Addenda will only be issued 7 (seven) days before the Tender Closing date and it is the Tenderers responsibility to check the addenda issued in the departmental website. Please note, ONLY addenda critical to the evaluation will be issued. Failure to apply instructions contained in Addenda will render a tenderer's offer non-responsive in terms of Condition of Tender.
	F.2.7	Clarification meeting" The Clarification meeting will be held on the 24th May 2023 at 10:00 am. The venue for the Compulsory clarification meeting will be Mbhashe Local Municipality (Mbhashe TRC Hall). No tender documents will be available at the clarification meeting. Attendees who are 20 minutes late to the Briefing will not be permitted to sign the Attendance Register and therefore will be prohibited from tendering. Failure to sign the attendance register of the compulsory clarification briefing will be rendered non responsive.
	F.2.8	Seek clarification Seek clarification Delete the clause and replace with the following: Request clarification of the tender documents, if necessary, by notifying the employer before 30th MAY 2023. The tenderer declares that it has: - Inspected the Specifications and read and fully understood the Conditions of Contract. - Read and fully understood the whole text of the Specifications and Pricing Schedules and thoroughly acquainted itself with the nature of the goods / services proposed and generally of all matters which may influence the Contract. - visited the site(s) where delivery of the proposed works will take place, carefully examined existing conditions, the means of access to the site(s), the conditions under which the delivery is to be made and acquainted itself with any limitations or restrictions that may be imposed by the Employer or other authorities in regard to access and transport of materials, plant and equipment to and from the site(s) and made the necessary provisions for any additional costs involved thereby. - Requested the Employer to clarify the requirements contained in the Specifications and Pricing Schedules, the exact meaning or interpretation of which is not clearly intelligible to the tenderer.

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No	Clause	Wording
		e) Received any Addenda to the tender documents which have been issued in accordance with the Employer's SCM Policy. The Employer will therefore not be liable for the payment of any extra costs resulting from any claim submitted by the tenderer arising from any alleged ambiguity or uncertainty contained in the tender document.
7	F.2.12	The criteria for alternative tenders are: There will be no alternative tender accepted.
	F.2.13	Submitting a tender offer
	F.2.13.3	Add the following to F.2.13.3 at the end of the first sentence: Parts of each tender offer communicated on paper shall be submitted as an original, plus zero (0) copies.
	F.2.13.5	Add the following to F.2.13.5 at the end of the first sentence: The tender submission details are stated in T1.1: TENDER NOTICE AND INVITATION TO TENDER.
	F.2.13.6	A two-envelope procedure <u>will not</u> be followed.
	F.2.13.9	Add the following to F.2.13.9 at the end of the first sentence: Telephonic, telegraphic, telex, facsimile or e-mailed tender offers will not be accepted.
	F.2.13.10	The Employer shall formally issue the Tender Documents as per F.1.2 (excluding Volumes 1 and 2) and supporting documentation electronically via download from the Eastern Cape Department of Transport website www.ectransport.gov.za and Department of National Treasury eTender Publication website https://etenders.treasury.gov.za/ . The use of electronic tender documents, supporting documentation and addenda shall be subject to the following: - The tenderer is forbidden to make or attempt electronic alteration to the tender documents. - Supporting documentation, issued as part of this tender, may be completed electronically. For submission of such supporting documentation the tender is required to submit with his tender submission a signed printed copy. - The use of electronic signatures is not allowed. - Where Addenda have been issued which amend the Pricing Schedules, then the printed Pricing Schedules shall take these into account by attaching the amended page to the front of the original page. The pages of the issued Pricing Schedules should not be removed from the tender document. - The Employer accepts no responsibility or liability arising from any reliance on or use of the electronic supporting documentation provided in terms of this clause. The tenderer is required to review provided supporting documentation and inform the Employer of any errors or discrepancies found prior to submission of the tender offer. - Any non-compliance with these provisions, including effecting any unauthorised alterations to the tender documents as contemplated in F.2.11, shall render the tender non-responsive. The Employer reserves the right to take any action against such tenderer allowed in law including, in circumstances where the tender had already been awarded, the right to cancel the contract.
	F.2.15	Closing time Add the following to F.2.15.1 after the last sentence: The closing time for submission of tender offers is as stated in T1.1: TENDER NOTICE AND INVITATION TO TENDER. It is the responsibility of the tenderer to ensure that tender

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No	Clause	Wording
		documents are submitted on or before the closing date and time and at the correct location as the Employer will not take responsibility for any wrong delivery.
	F.2.16	Add the following to F.2.16.1 at the end of the first sentence: The tender offer validity period is 90 days .
	F.2.17	Clarification of tender offer after submission Add the following to F.2.17 at the end of the third sentence: A tender will be rejected as non-responsive if the tenderer fails to provide any clarification or supporting documents requested by the Employer within the time for submission stated in the Employer's written request for such clarification or documents.
	F.2.23	Certificates Add the following: The tenderer is required to submit with his tender all certificates as required for in T1.2: TENDER DATA and T2.2: RETURNABLE SCHEDULES .
	F.3 F.3.1	The Employer's undertakings Respond to requests from the tenderer Add the follow to F.3.1.1: The Employer will respond to requests for clarification received up to 30th May 2023 .
	F.3.2	Issue Addenda Delete the first sentence and replace with the following: "If necessary, issue addenda that may amend or amplify the tender document" Add the following to F.3.2 at the end of the paragraph: Addenda issued by the Employer (if any) shall be available for download on the Eastern Cape Department of Transport website www.ectransport.gov.za only. Addenda will only be issued seven (7) days before the Tender Closing date and it is the responsibility of the prospective tenderer to check the addenda issued in the departmental website. Please note, ONLY addenda critical to the evaluation will be issued .
	F.3.4	Opening of tender submissions Add the following to F.3.4.2 at the end of the paragraph: Tenders will be opened immediately after the closing time of tenders at the location and closing time as stated in T1.1: TENDER NOTICE AND INVITATION TO TENDER .
	F.3.9	Arithmetical errors, omissions and discrepancies Add the following after clause F.3.9.2: F.3.9.3 In the event of tendered rates or lump sums being declared by the Employer to be unacceptable to it: a. because they are not priced, b. either excessively low or high, c. or not in proper balance with other rates or lump sums, The tenderer may be required to produce evidence and advance arguments in support of the tendered rates or lump sums objected to. If, after submission of such evidence and any further evidence requested, the Employer is still not satisfied with the tendered rates or lump sums objected to, it may request the tenderer to amend these rates and lump sums along the lines indicated by it. The tenderer will then have the option to alter and/or amend the rates and lump sums objected to and such other related amounts as are agreed on by the Employer, but this shall be done without altering the tender offer in accordance with this clause. Should the tenderer fail to amend his tender in a manner acceptable to and within the time stated by the Employer, the Employer may declare the tender as non-responsive.
	F.3.11	The method for the evaluation of responsive tenders is Method 2 (Compliance, Eligibility and Financial Offer) . The following formula will be used to calculate the total number of tender evaluation points: $T_{EV} = N_{FO} + N_p$

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No	Clause	Wording																															
			Maximum number of tender evaluation points																														
		Price Component (N _{FO})	90																														
		Preferential Component (specific goals) (N _p)	10																														
		Total evaluation points (T _{EV})	100																														
19	F.3.11.7	The financial offer will be scored using the following formula: $N_{FO} = W_1 \times A$ <u>Scoring financial offers</u> The value of W1 is: 1] 90 where the financial value, inclusive of VAT, of all responsive tender offers received has a value in excess of R50 000 000.00; or 2] 80 where the financial value, inclusive of VAT, of one or more responsive tender offers has a value that equals or is less than R50 000 000.00. The value of A will be calculated utilising Formula 2 (Option 1): $A = [1 - [P - P_m] / P_m]$ Where P is the comparative offer of the tender offer under consideration and P_m is the comparative offer of the most favourable comparative offer. If the calculated value is negative, the allocated score shall be zero [0].																															
20	F.3.11.8	Scoring of preference points (max=10 points) <table><tr><th colspan="3">PREFERENTIAL SPECIFIC GOALS POINTS TABLE</th></tr><tr><th>The specific goals allocated points in terms of this tender</th><th>Number of points allocated (90/10 system) (To be completed by the organ of state)</th><th>Number of points claimed (90/10 system) (To be completed by the tenderer)</th></tr><tr><td colspan="3">Historically Disadvantaged Individuals</td></tr><tr><td>Black ownership</td><td>5</td><td>% ownership as per CIPC / CSD</td></tr><tr><td colspan="3">Locality:-</td></tr><tr><td>(a) Preferred address in the Eastern Cape in the last 3</td><td>5</td><td></td></tr><tr><td>b) Alternative address in the Eastern Cape in the last 3 years</td><td>3</td><td></td></tr><tr><td>(c) Outside Eastern Cape no satellite office in Eastern Cape:</td><td>2</td><td></td></tr><tr><td>(i) including preferred address less than 3 years</td><td></td><td></td></tr><tr><td>(ii) Alternative address less than 3 years</td><td></td><td></td></tr></table> ➤ Historically Disadvantaged Individual (HDI): Black Ownership (max= 5 points)		PREFERENTIAL SPECIFIC GOALS POINTS TABLE			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 claimed (90/10 system) (To be completed by the tenderer)	Historically Disadvantaged Individuals			Black ownership	5	% ownership as per CIPC / CSD	Locality:-			(a) Preferred address in the Eastern Cape in the last 3	5		b) Alternative address in the Eastern Cape in the last 3 years	3		(c) Outside Eastern Cape no satellite office in Eastern Cape:	2		(i) including preferred address less than 3 years			(ii) Alternative address less than 3 years		
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No	Clause	Wording
		Central Supplier Database (CSD) report will be used. To Score points for Black Ownership the following formula will be used to calculate the points out of 5 points Max. $SGP = \frac{\%BOE (CIPC / CSD)}{100} \times MHI(Max = 5)$ SGP= Specific goals points MHI= Maximum points for Historical disadvantaged individuals BOE = Black Ownership Equity ➤ Locality (max= 5 points) Locality shall mean' Fully functional office within the Province of the Eastern Cape. Satellite shall mean an office with minimum staff of not more than 3 personnel running the office on fulltime. Locality Points will be allocated for proof of local office operations in Eastern Cape. The primary address on CSD and proof of ownership under the bidding company will be used for choice Locality. <u>Eligibility for preference points is subject to the following conditions:</u> A tenderer scorecard shall be based on the Construction Sector Codes of Practice promulgated in Government Gazette 32305 of 5 June 2009, only if such certificate has been issued before 17 February 2016, alternatively a B-BBEE Certificate issued in accordance with the revised Notice of Clarification published in Notice 444 of 2015 of Government Gazette No.38799 on 15 May 2015 by the Department of Trade and Industry: and - The Scorecard shall be submitted as a certificate attached to Returnable Schedule Form SBD6.1; and - The certificate shall: - be an original or an original certified copy of the original; and - have been issued by a verification agency accredited by the South African National Accreditation System [SANAS]; or - be in the form of a sworn affidavit in the case of an Exempted Micro Enterprise [EME] or Qualifying Small Enterprise [QSE]; and - The Verification Certificate must be valid at the tender closing date; and - The date of issue of the certificate must be less than 12 [twelve] months prior to the tender closing date [see Tender Data F.2.15]; and - Compliance with any other information requested to be attached to Returnable Schedule Form SBD6.1; - If a tenderer claims a preference score without submitting an acceptable verification certificate, a period of 24 hours will be granted to submit an acceptable verification certificate which was valid at date of tender closure; and - Failure to submit a valid verification certificate will result in the award of 0 [zero] points for preference; and - In the event of a joint venture [JV], a consolidated B-BBEE verification certificate in the name of the JV shall be submitted.
	F.3.11.10	Add the following after F.3.11.9: Risk Analysis Notwithstanding compliance with regard to CIDB registration or any other requirements of the

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No	Clause	Wording
		tender, the Employer will perform a risk analysis in respect of the following: a) reasonableness of the financial offer b) reasonableness of unit rates and prices c) as per clause F.1.5.1 (C), the previous and the current contracts performance of the responsive bidders will be used to draw a conclusion to determine the acceptability of the tender offer. The Department reserves the right to consider other similar contracts undertaken by the prospective bidder that do not form part of this proposal. d) The risk analysis will not be limited to a-c above, should there be required information deemed necessary for finalisation of the award, the department will therefore request the information within the time frames stipulated in the tender document. The conclusions drawn from this risk analysis will be used by the Employer in determining the acceptability of the tender offer.
21	F.3.13	Tender offers will only be acceptable if: a) Tenderers must be registered on the Central Supplier Database at National Treasury prior to the Award of a tender and the Tenderer's Tax Status must be compliant (National Treasury SCM Instruction #4A of 2016/2017: Central Supplier Database), submit a copy tax compliance pin. b) Tenderers must submit proof of registration with the Bargaining Council of Civil Engineering Industry (BCCEI). Good standing will be required within 21 days of tender award. c) the tenderer must be registered with the Construction Industry Development Board in an appropriate contractor grading designation (CE) (All parties to submit this information in the case of a Joint Venture); d) the tenderer or any of its directors is not listed in the Register of Tender Defaulters or the List of Restricted Suppliers managed by the National Treasury (www.treasury.gov.za) in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; e) the tenderer has not abused the Employer's Supply Chain Management System; f) the tenderer has not failed to perform on any previous contract with the Employer; g) the tenderer has completed and signed Form B (Certificate of Authority for Signatory) if applicable; h) the Form of Offer is duly completed and signed (Note: Any correction must be signed by the authorised signatory); i) the tenderer has completed and signed the Compulsory Enterprise Questionnaire (Form T2.2R) (for each of the participating firms in the case of a joint venture); j) has completed and signed all SBD Forms (SBD1; SBD4; SBD6.1; SBD6.2); k) has completed and signed annexure C which is part of SBD6.2 l) all relevant certified information is submitted with the Tender; m) all other Tender Conditions are complied with. n) Tenderers are to meet the minimum eligibility requirements specified in Clause F2.1 o) Tender completed with erasable ink will be deemed / declared non-responsive. Add the following: "Acceptance of the tender offer will be subject to the provisions of Clause F.1.5.1 and F.2.1." Note that the successful Tenderer will be required to submit a valid Letter of Good Standing from the Compensation Commissioner or FEMA within 21 days of receipt of Letter of Award.
22	F.3.17	Provide copies of the contract Add the following after the first sentence: The number of paper copies of the signed contract to be provided by the employer is one (1).

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No	Clause	Wording
		<u>ADDITIONAL CONDITIONS OF TENDER CLAUSES:</u>
23	Clause Number	Data
		Jurisdiction Unless stated otherwise in the tender data, each tenderer and the Employer undertake to accept the jurisdiction of the law courts of the Republic of South Africa.
		Employer's contract participation goals Employer's contract participation goals are: The appointed Contractor will be required to spend a total of 50% of the accepted tender sum less VAT, allowances for contingencies and contract price adjustment and provisional and prime cost sum amounts in the Eastern Cape as defined in the Contract Data. The 50% Eastern Cape spend will consist of the following: • 30% on SMME contractors appointed in terms of the Contract. • 10% on materials and services from Local Resources in terms of the Contract. • 10% on employment and training of Local Labour in terms of the Contract. It is a Condition of Tender that the successful tenderer [Contractor] will be required to engage SMME contractors as sub-contractors on the project. The total value of work that must be undertaken by the SMME sub-contractors must be at least 30% of the accepted tender sum less VAT, allowances for contingencies and contract price adjustment (CPA) and provisional and prime cost sum amounts. A financial penalty will be applicable should the contractor fail to meet the minimum targeted goal. For further details in this regard refer to part C3: Section F: Development of SMME Contractors Specifications in the Project Document. It also a Condition of Tender that the successful tenderer [contractor] will be required to employ and provide training for Local Labour on the project. A minimum of 10% of the accepted tender sum less VAT, allowances for contingencies and contract price adjustment and provisional and prime cost sum amounts will be required to be spent on the local labour. A financial penalty will be applicable should the contractor fail to meet the minimum targeted goal. For further details in this regard refer to part C3: Section E: Labour Specification Specifications in the Project Document. It is a Condition of Tender that the successful tenderer [Contractor] will be required to engage Local Resources [other than the Principal Contractor and SMME contractors appointed] on the project. A minimum of 10% of the accepted tender sum less VAT, allowances for contingencies and contract price adjustment and provisional and prime cost sum amounts will be required to be spent on materials and services procured by the successful tenderer [Contractor] within the Eastern Cape Province for the execution of the project. A financial penalty will be applicable should the contractor fail to meet the minimum targeted goal. For further details in this regard refer to part C3: Section F: Development of SMME Contractors Specifications in the Project Document.

No	Clause	Wording

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF
ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

**TENDER
PART T2: RETURNABLE DOCUMENTS**

T2.1 LIST OF RETURNABLE DOCUMENTS

T2.2 RETURNABLE DOCUMENTS

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

T2.1: LIST OF RETURNABLE DOCUMENTS

T2.1.1 THE TENDERER MUST COMPLETE THE FOLLOWING RETURNABLE SCHEDULES IN NON-ERASABLE BLACK INK

SCHEDULE	DESCRIPTION	CHECKLIST
SBD 1	INVITATION TO BID AND TERMS AND CONDITIONS FOR BIDDING	Y ☐ / N ☐
A	DECLARATION OF TENDER BRIEFING	Y ☐ / N ☐
B	CERTIFICATE OF AUTHORITY FOR SIGNATORY	Y ☐ / N ☐
C	REGISTRATION WITH THE CONSTRUCTION INDUSTRY DEVELOPMENT BOARD	Y ☐ / N ☐
D	SIMILAR PROJECT(S) COMPLETED BY THE TENDERER (including TABLE A of this schedule)	Y ☐ / N ☐
D(A)	SIMILAR PROJECT COMPLETED VERIFICATION FORM (one verification form required for each listed project)	Y ☐ / N ☐
E	TENDERER'S KEY PERSONNEL (including TABLES A and B of this schedule)	Y ☐ / N ☐
F	DECLARATION IN RESPECT OF CONSTRUCTION EQUIPMENT	Y ☐ / N ☐
G	JOINT VENTURE AGREEMENT DISCLOSURE (if applicable)	Y ☐ / N ☐
H	REGISTRATION ON NATIONAL TREASURY CENTRAL SUPPLIER DATABASE	Y ☐ / N ☐
I	DECLARATION IN RESPECT OF COMPLIANCE WITH LABOUR LEGISLATION	Y ☐ / N ☐
J	DECLARATION IN RESPECT OF FULFILMENT OF THE CONSTRUCTION REGULATIONS, 2014	Y ☐ / N ☐
K	RECORD OF ADDENDA TO TENDER DOCUMENTS	Y ☐ / N ☐
L	CONTRACTOR'S ESTABLISHMENT ON SITE	Y ☐ / N ☐
M	RATES FOR SPECIAL MATERIALS	Y ☐ / N ☐
N	TENDERER'S BANKING AND AUDITOR DETAILS	Y ☐ / N ☐
O	TENDERER'S PROPOSED SUBCONTRACTORS (excluding targeted subcontractors)	Y ☐ / N ☐
P	COMPULSORY ENTERPRISE QUESTIONNAIRE	Y ☐ / N ☐

SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

SCHEDULE	DESCRIPTION	CHECKLIST
SBD 4	BIDDER'S DISCLOSURE	Y ☐ / N ☐
SBD 6.1	PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022	Y ☐ / N ☐
SBD 6.2	DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS (including guidance document for the calculation of local content)	Y ☐ / N ☐

T2.1.2 OTHER PARTS OF THE DOCUMENT TO BE COMPLETED AS PART OF THE TENDER SUBMISSION

C1.1 Offer part of the Form of Offer and Acceptance; and

C2.2 Pricing Schedules

NOTES TO TENDERER

- (a) Returnable schedules have been based on the CIDB Standard for Uniformity in Construction Procurement and incorporate National Treasury requirements.
- (b) Failure to submit fully completed relevant returnable documents may render such a tender offer non-responsive.
- (c) Tenderers shall note that their signature appended to each returnable schedule represents a declaration that they vouch for the accuracy and correctness of the information provided.
- (d) Notwithstanding any check or audit conducted by or on behalf of the Employer, the information provided in the returnable schedules and / or supporting documentation is accepted in good faith and as justification for entering into a contract with a tenderer. If subsequently any information is found to be incorrect such discovery shall be taken as wilful misrepresentation by that tenderer to induce the contract. In such event:
 - (i) the Employer shall inform the tenderer and give the tenderer an opportunity to make representations within fourteen (14) days as to why the tender submitted should not be disqualified in terms of the Conditions of Tender and as to why the Employer should not apply any other measures available.
 - (ii) if the Employer has already entered into a contract with the tenderer, the Employer has the discretionary right under the Conditions of Contract to terminate the contract.
- (f) All supporting documentation and certificates shall be securely attached to the applicable returnable schedules. It is the responsibility of the tenderer to ensure no loose or unsecure pages are present in the submitted tender which may render the tender non-responsive.
- (e) Where the space provided in the bound tender document is insufficient the tenderer may, after giving written notice to the Employer, may draw up separate schedules in accordance with the given formats. These schedules shall then be bound together with a suitable contents page and submitted with the tender. All such schedules must be signed and clearly marked as appendices to the relevant returnable schedules. The Employer does not take any responsibility for any separate schedules lost during the tender evaluation process.

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD
DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

T2.2: RETURNABLE SCHEDULES

SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

SBD 1: INVITATION TO BID AND TERMS AND CONDITIONS FOR BIDDING

PART A: INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE Eastern Cape Department of Transport					
BID NUMBER:	SCMU10-23/24-0001	CLOSING DATE:	13 JUNE 2023	CLOSING TIME:	11:00
DESCRIPTION	APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1				
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT (STREET ADDRESS)					
Eastern Cape Department of Transport					
32 Cowan Close, Fleming Street					
Room C1, Stellenbosch Park Building					
Schornville, King Williams Town, 5601					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO			TECHNICAL ENQUIRIES MAY BE DIRECTED TO:		
CONTACT PERSON	Mr P Nqikashe		CONTACT PERSON	Mr. S. DLANJWA	
TELEPHONE NUMBER	067 419 8001		TELEPHONE NUMBER	060 870 3206	
FACSIMILE NUMBER	N/A		FACSIMILE NUMBER	N/A	
E-MAIL ADDRESS	Philasande.Nqikashe@ectransport.gov.za		E-MAIL ADDRESS	Sonwabile.dlanjwa@ectransport.gov.za	
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		OR	CENTRAL SUPPLIER DATABASE No:	MAAA
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE	[TICK APPLICABLE BOX] ☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT	[TICK APPLICABLE BOX] ☐ Yes ☐ No	
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]					
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES, ANSWER THE QUESTIONNAIRE BELOW]	
QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS					
IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?				☐ YES ☐ NO	
DOES THE ENTITY HAVE A BRANCH IN THE RSA?				☐ YES ☐ NO	
DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?				☐ YES ☐ NO	
DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?				☐ YES ☐ NO	

SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION? ☐ YES ☐ NO
 IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW.

SBD 1

PART B – TERMS AND CONDITIONS FOR BIDDING

1.	BID SUBMISSION:
1.1	BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
1.2	ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.
1.3	THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
1.4	THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).
2.	TAX COMPLIANCE REQUIREMENTS
2.1	BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
2.2	BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
2.3	APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
2.4	BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.5	IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.6	WHERE NO TCS PIN IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
2.7	NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:
 (Proof of authority must be submitted e.g. company resolution)

DATE:

SIGNED BY TENDERER:

A: DECLARATION OF THE COMPULSORY TENDER BRIEFING

Notes to tenderer:

1. The Tenderers are required to attend the compulsory tender briefing as per the part T1.1 of the tender document. The location of the tender briefing is **Mbhashe Local municipality (Mbhashe TRC Hall)**.
2. In the tender briefing venue, you are required to sign the attendance register. The briefing will start at 10h00, attendees who arrived 20 minutes late on the briefing will be prohibited from signing the attendance register and therefore will not be considered for tendering.

THE TENDERER HEREBY DECLARES:

(Name of tenderer), ...

.....

Has attended the compulsory briefing of the tender "**SCMU10-23/24-0001 TENDER BRIEFING**",

by (name of tenderer's representative)

(Signature of tenderer's representative)

and that the information provided by the tenderer's representative are correct.

SIGNED BY TENDERER:
SIGNATURE

.....
NAME (PRINT)

WITNESS:
SIGNATURE

.....
NAME (PRINT)

SIGNED BY TENDERER:

B: CERTIFICATE OF AUTHORITY FOR SIGNATORY

Notes to tenderer:

1. The signatory for the tenderer shall confirm his/her authority thereto by attaching, to the returnable schedule, on the tendering company's letterhead a duly signed and dated copy of the relevant resolution of the board of directors/partners.
2. If the tenderer is a joint venture, a certificate is required from each member of the joint venture clearly setting out authority for signatory.
3. The resolution below is given as an example of an acceptable format for authorisation, but submission of this page with the example completed shall not be accepted as authorisation of the tenderer's signatory.

EXAMPLE BELOW:

By resolution of the board of directors passed at a meeting held on

Mr/Ms

whose signature appears below, has been duly authorised to sign all documents in connection with the tender for **SCMU10-23/24-0001** and any contract that may arise therefrom on behalf of

.....
(name of tenderer in block capitals)

SIGNED ON BEHALF OF THE COMPANY:

IN HIS/HER CAPACITY AS:

DATE:

SIGNATURE OF SIGNATORY:

WITNESS:
SIGNATURE SIGNATURE

.....
NAME (PRINT) NAME (PRINT)

SIGNED BY TENDERER:

C: REGISTRATION WITH THE CONSTRUCTION INDUSTRY DEVELOPMENT BOARD

Notes to tenderer:

1. The tenderer shall attached to this returnable schedule a printed copy of the Active Contractor's Listing off the Construction Industry Development Board (CIDB) website (www.cidb.org.za).
2. Tenderers whose CIDB registration expires within 21 days after close of tender should attach proof of their application for re-registration.
3. In the case of a joint venture (JV):
 - (a) a printed copy of the Active Contractor's Listing must be provided for each member of the JV; and
 - (b) a signed copy of the JV Agreement must be attached to returnable schedule **G: JOINT VENTURE DISCLOSURE**

IN CASE OF SINGLE TENDERING ENTITY:

Name of Contractor:

Contractor Grading Designation: **CE** class of construction work

CIDB Contractor Registration Number:

Expiry Date:

IN CASE OF A JOINT VENTURE:

Lead member if Joint Venture

Name of Contractor:

Contractor Grading Designation: **CE** class of construction work

CIDB Contractor Registration Number:

Expiry Date:

Other member(s) of Joint Venture

Name of Contractor:

Contractor Grading Designation: **CE** class of construction work

CIDB Contractor Registration Number:

Expiry Date:

Name of Contractor:

Contractor Grading Designation: **CE** class of construction work

CIDB Contractor Registration Number:

Expiry Date:

(Attached additional pages if more space is required.)

SIGNED BY TENDERER:

D: SIMILAR PROJECT(S) COMPLETED BY THE TENDERER (including TABLE A of this schedule)

Notes to tenderer:

- 1. The tenderer must provide, in **TABLE A** of this returnable schedule, information of similar project(s) completed by the tenderer as defined in **CLAUSE F.2.1.4.4 OF T1.2: TENDER DATA**.

- 2. For each similar project listed by the tenderer in **TABLE A**, the tenderer must attach:
 - (a) the **COMPLETION CERTIFICATE** of the project; and
 - (b) a completed and signed returnable schedule **D(A): SIMILAR PROJECT COMPLETED VERIFICATION FORM**.

- 3. The tenderer shall indicate in **TABLE A**, were applicable, if the similar project was completed as:
 - (a) a principal contractor (PC);
 - (b) a joint venture (JV) member;

- 4. The tenderer must only list defined similar project(s) completed in **TABLE A** provided. **DO NOT** attach a separate list of projects; and **DO NOT** include projects which are not defined as similar project.

- 5. The information supplied by the tenderer in **TABLE A** and attached supporting documentation [similar project completed verification form(s) and completion certificate(s)] to this returnable schedule will be deemed material to the responsiveness and the Employer's risk analysis of the tender offer.

SIGNED BY TENDERER:

TABLE A: LIST OF SIMILAR PROJECTS COMPLETED FOR RETURNABLE SCHEDULE D

CONTRACT NAME AND CONTRACT NUMBER	EMPLOYER	WORK DONE AS A (tick applicable box)	SHORT DESCRIPTION OF WORKS COMPLETED	DURATION OF WORKS (months)	VALUE OF WORKS COMPLETED (incl. VAT)	COMPLETION DATE (mm/yyyy)
		☐ PC ☐ JV				
		☐ PC ☐ JV				
		☐ PC ☐ JV				
		☐ PC ☐ JV				
		☐ PC ☐ JV				

SIGNED BY TENDERER:

D(A): SIMILAR PROJECT COMPLETED VERIFICATION FORM (one verification form required for each listed project)

SIMILAR PROJECT VERIFICATION FORM (QUESTIONNAIRE)

FOR TENDER NO. SCMU10-23/24-0001

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

NAME OF TENDERER:

VERIFICATION OF TENDERER'S INDICATED SIMILAR PROJECT BY CONSULTING ENGINEER OR EMPLOYER

Page 1 of 2

(Note: Verification by Consulting Engineer or Employer in terms of the contract for the indicated similar project)

CONTRACT NO.:

CONTRACT NAME:

EMPLOYER:

CONTRACTOR:

CONSULTING ENGINEER:

VALUE OF WORKS AT COMPLETION (INCL. VAT): R

MONTH/YEAR COMPLETED:

In terms of this Tender a similar project is defined as:

"A bituminous surfaced road upgrading project(s) completed in the past ten (10) years to the value of at least **R 150 000 00**, located within the SADC (South African Development Community) region, which included as a minimum the following:

Bulk earthworks operations
Road layerworks and bituminous surfacing
Operation of quarry/source material
Stormwater drainage (major and minor culverts)
Targeted subcontractor management / development.

1. Was a certificate of completion, in terms of the condition of contract, issued to the contractor?

YES	NO

 (TICK APPLICABLE BOX)

If NO, please state reasons:

.....
.....

CONTINUE TO NEXT PAGE

VERIFICATION OF TENDERER'S INDICATED SIMILAR PROJECT BY CONSULTING ENGINEER OR EMPLOYER

Page 2 of 2

2. Was the project located within the SADC (South African Development Community) region?

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YES	NO

 (TICK APPLICABLE BOX)

3. Was the value of the Works, completed by the Tenderer (then Contractor) more or equal (≥) R 90 million (incl. VAT)

YES	NO

 (TICK APPLICABLE BOX)

If NO, please write value below

R

4. Did the project include the following works and was the Tenderer (then Contractor) involved with said works?

4.1 Bulk earthworks operations

YES	NO

 (TICK APPLICABLE BOX)

Involved	YES	NO

4.2 Road layerworks and bituminous surfacing

YES	NO

 (TICK APPLICABLE BOX)

Involved	YES	NO

4.3 Operation of quarry/source material

YES	NO

 (TICK APPLICABLE BOX)

Involved	YES	NO

4.4 Stormwater drainage (major and minor culverts)

YES	NO

 (TICK APPLICABLE BOX)

Involved	YES	NO

4.5 Targeted subcontractor management / development

YES	NO

 (TICK APPLICABLE BOX)

Involved	YES	NO

Details of respondent:

Verification information supplied by:
(state name & surname)

.....

Designation on Project:

Company:

Signature: Date:

Contact Details:

Tel No.:

Email:

Client Stamp:

(Please return both pages to Tenderer for submission with his Tender)

NB: Copy this page and make it available for the two (2) projects required as per clause F2.1.4.3.

E: TENDERER'S KEY PERSONNEL (including TABLES A and B of this schedule)

Notes to tenderer:

1. The tenderer must provide, in **TABLES A and B** of this returnable schedule, required information of the tenderer's key personnel as defined in **CLAUSE F.2.1.4.5 OF T1.2: TENDER DATA**.
2. For key personnel listed by the tenderer in **TABLES A and B**, the tenderer must attach:
 - (a) proof of required professional registration with the specified professional body and that the professional registration is currently active.
 - (b) if the key personnel listed by the tenderer is not currently in the employment of the tenderer, provide letter of intent as defined in **CLAUSE F.2.1.4.5 OF T1.2: TENDER DATA**.
3. **TABLES A and B** provides space for the tenderer to provide details of the key personnel and define experience required, as defined in **CLAUSE F.2.1.4.5 OF T1.2: TENDER DATA**.
4. A CV of the tenderer's key personnel is **NOT REQUIRED** in terms of this tender as **TABLES A and B**, completed by the tenderer as instructed, provides for the required information.
5. The information supplied by the tenderer in **TABLE A and B** and attached supporting documentation [proof of professional registration and letter of intent (if applicable)] to this returnable schedule will be deemed material to the responsiveness and the Employer's risk analysis of the tender offer.

SIGNED BY TENDERER:.....

TABLE A: TENDERER'S KEY PERSONNEL (CONSTRUCTION MANAGER) FOR RETURNABLE SCHEDULE E

NAME	KEY POSITION	ECSA Reg. No	ECSA Category	SACPCMP Reg No	SACPCMP Category	CURRENTLY EMPLOYMENT BE TENDERER (YES or NO)	NO. OF YEARS EXPERIENCE (for defined type of works)
	CONSTRUCTION MANAGER						
List only applicable information relevant to the type and duration of experience required (Start with latest experience)							
CLIENT AND PROJECT NAME	DESCRIPTION OF PROJECT	PROJECT END DATE AND DURATION ON PROJECT	VALUE OF PROJECT	POSITION HELD	CONTACT PERSON AND FIRM	CONTACT NO.	

SIGNED BY TENDERER:

TABLE B: TENDERER'S KEY PERSONNEL (CONSTRUCTION HEALTH AND SAFETY OFFICER) FOR RETURNABLE SCHEDULE E

NAME	KEY POSITION	SACPCMP Reg No	SACPCMP Category		CURRENTLY EMPLOYMENT BE TENDERER (YES or NO)	NO. OF YEARS EXPERIENCE (for defined type of works)
List only applicable information relevant to the type and duration of experience required (Start with latest experience)						
CLIENT AND PROJECT NAME	DESCRIPTION OF PROJECT	PROJECT END DATE AND DURATION ON PROJECT	VALUE OF PROJECT	POSITION HELD	CONTACT PERSON AND FIRM	CONTACT NO.

SIGNED BY TENDERER:

F: DECLARATION IN RESPECT OF CONSTRUCTION EQUIPMENT

Notes to tenderer:

1. The tenderer’s declaration in terms of this returnable schedule and any supporting documentation will be deemed material to the responsiveness and the Employer’s risk analysis of the tender offer.

DECLARATION IN RESPECT OF CONSTRUCTION EQUIPMENT

.....**(name of tenderer)** hereby declare the following:

1. The tenderer has available, either by means of his own construction equipment or ability to hire construction equipment from others, construction equipment exclusively intended for the execution and successful completion of the works as specified in the tender documentation.

by (name of tenderer’s representative)

(signature of tenderer’s representative)

and that the information provided by the tenderer’s representative are correct.

SIGNED BY TENDERER:
SIGNATURE

.....
NAME (PRINT)

WITNESS:
SIGNATURE

.....
NAME (PRINT)

SIGNED BY TENDERER:

G: JOINT VENTURE AGREEMENT DISCLOSURE (if applicable)

Notes to tenderer:

1. If submitting a tender offer as a joint venture (JV), attach a signed copy of the JV Agreement to this returnable schedule.
2. Failure to provide a JV Agreement will render the tender non-responsive.
3. In case of a JV please note additional requirements in terms of Returnable Schedules:
 - B: CERTIFICATE OF AUTHORITY FOR SIGNATORY
 - C: REGISTRATION WITH THE CONSTRUCTION INDUSTRY DEVELOPMENT BOARD
 - H: REGISTRATION ON NATIONAL TREASURY CENTRAL SUPPLIER DATABASE
 - I: DECLARATION IN RESPECT OF COMPLIANCE WITH LABOUR LEGISLATION
 - N: TENDERER'S BANKING AND AUDITOR DETAILS
 - P: COMPULSORY ENTERPRISE QUESTIONNAIRE
 - SBD 4: DECLARATION OF INTEREST
 - SBD 6.1: PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

SIGNED BY TENDERER:

H: REGISTRATION ON NATIONAL TREASURY CENTRAL SUPPLIER DATABASE

Notes to Tenderer:

1. The tenderer must be registered the National Treasury Central Supplier Database and tax status must be compliant, in terms of National Treasury requirements. Failure to comply will render the tender offer non-responsive.
2. The tenderer shall complete this returnable schedule and attach a printed copy of the Active Supplier Listing on the National Treasury Central Supplier Database (www.treasury.go.za). In the case of a joint venture (JV), the tenderer shall provide printed copies of the Active Supplier Listing on the National Treasury Central Supplier Database for each member of the JV.

IN CASE OF SINGLE TENDERING ENTITY:

Name of Supplier:

Central Supplier Database Supplier Number:

IN CASE OF A JOINT VENTURE:

Lead member if Joint Venture

Name of Supplier:

Central Supplier Database Supplier Number:

Other member(s) of Joint Venture

Name of Supplier:

Central Supplier Database Supplier Number:

Name of Supplier:

Central Supplier Database Supplier Number:

(Attached additional pages if more space is required.)

SIGNED BY TENDERER:

I: **DECLARATION IN RESPECT OF COMPLIANCE WITH LABOUR LEGISLATION**

Notes to tenderer:

1. The tenderer must be registered with the **Bargaining Council for the Civil Engineering Industry (BCCEI)**. Failure to comply will render the tender offer non-responsive.
2. The tender must attach to this returnable schedule proof of registration with applicable Bargaining Council. In case of a joint venture (JV) each member of the JV must attach proof of registration.
3. The tenderer's declaration in terms of this returnable schedule will be deemed material to the responsiveness and the Employer's risk analysis of the tender offer.

DECLARATION IN RESPECT OF COMPLIANCE WITH LABOUR LEGISLATION

.....(name of tenderer) hereby declare the following:

1. The tenderer and his subcontractors shall be registered with the **Bargaining Council for the Civil Engineering Industry (BCCEI)** prior to closing of the Tender.
2. The tenderer and his subcontractors shall apply the rates for wages and conditions of labour agreed by the **Bargaining Council for the Civil Engineering Industry (BCCEI)**.
3. The tenderer has included in the tendered rates and prices of the completed Pricing Schedules for all costs related to applying the rates for wages and conditions of labour agreed by the **Bargaining Council for the Civil Engineering Industry (BCCEI)**.

by (name of tenderer's representative)

(signature of tenderer's representative)

and that the information provided by the tenderer's representative are correct.

SIGNED BY TENDERER:
SIGNATURE

.....
NAME (PRINT)

WITNESS:
SIGNATURE

.....
NAME (PRINT)

SIGNED BY TENDERER:

J: DECLARATION IN RESPECT OF FULFILMENT OF THE CONSTRUCTION REGULATIONS, 2014

In terms of Regulation 7(1)(a) of the Construction Regulations, 2014 (hereinafter referred to as the Regulations), promulgated on 7 February 2014 in terms of Section 43 of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) the Employer shall not appoint a Contractor to perform construction work unless the Contractor can satisfy the Employer that his/her firm has the necessary competencies and resources to carry out the work safely and has allowed adequately in his/her tender for the due fulfilment of all the applicable requirements of the Act and the Regulations.

Definition of a Competent Person as in Construction Regulations 2014

“Competent person” means a person who:

- (a) has in respect in the work or the task to be performed the required knowledge, training and experience and, where applicable, qualifications and training are registered in terms of the provisions of the National Qualification Framework Act, 2000 (Act No.67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and
- (b) is familiar with the Act and with the applicable regulations made under the Act.

Tenderers shall answer the questions below:

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

Signature : : Name :

YES	☐
NO	☐

2. Indicate which approach shall be employed to achieve compliance with the Regulations (Tick)

Own resources, competent in terms of the Regulations (refer to 3 below)	☐
Own resources, still to be hired and/or trained (until competency is achieved)	☐
Specialist subcontract resources (competent) – specify:	☐

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

.....

.....

.....

.....

CONTINUE ON THE NEXT PAGE

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

.....

.....

.....

.....

5. List potential key risks identified and measures for addressing risks:

See the Baseline Hazard Identification and Risk Assessment contained in Part C3.3 of the Scope of Work.

Note: The successful tenderer must submit a Project Specific Occupational Health and Safety Plan approved by the Employer within 14 days of being awarded the contract.

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

YES	
NO	

Signature : Name :

and that the information provided by the tenderer's representative are correct.

SIGNED BY TENDERER:
SIGNATURE

.....
NAME (PRINT)

WITNESS:
SIGNATURE

.....
NAME (PRINT)

SIGNED BY TENDERER:

K: 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 considered in this tender offer:

	Date	Title of Details
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

(Attach additional pages if required.)

SIGNED BY TENDERER:

L: CONTRACTOR'S ESTABLISHMENT ON SITE

Should the combined, extended total tendered for Item B13.01 The contractor's obligations:

- (a) Fixed obligations
- (b) Value-related obligations
- (c)(i&ii) Time-related obligations

exceed a maximum of **15%** of the tender sum (excluding; provisional and prime cost sums and its related % mark-up amount in the bill of quantities, total amount for Section B1800: Dayworks, allowances for contingencies and contract price adjustments and VAT), **the tenderer shall clearly set out his reasons for tendering in this manner in a letter attached to this returnable schedule.**

The Employer will duly consider these reasons but reserves the right to consider the tendered rates or lump sums to be unacceptable or imbalanced and to deal with them in terms of **CLAUSE F.3.9.2 OF T1.2: TENDER DATA.**

Total tender for Item B13.01 expressed as a percentage of the tender sum (excluding; provisional and prime cost sums and its related % mark-up amount in the bill of quantities, total amount for Section B1800: Dayworks, allowances for contingencies and contract price adjustments and VAT)%

The information supplied by the tenderer in this returnable schedule and attached supporting documentation (if applicable) to this returnable schedule will be deemed material to the responsiveness and the Employer's risk analysis of the tender offer.

SIGNED BY TENDERER:

M: RATES FOR SPECIAL MATERIALS

Notes to tenderer:

1. Each material dealt with as a special material in terms of **CLAUSE 6.8.3 OF C1.2 CONTRACT DATE** is stated by the Employer, in the table below.
2. If **NO** special materials are stated by the Employer, in the table below, then **NO** special materials are applicable to the tender.
3. Where special material is stated by the Employer, in the table below, the tenderer shall provide the unit (indicating whether the material will be delivered in bulk or in containers) and rate for such special materials.
4. Such rates and prices shall not include VAT but shall include all other obligatory taxes and levies.
5. Fuel is **NOT** classified as a special material.
6. When called upon to do so by the Employer, the tenderer shall substantiate the tenderer special material rates and prices with acceptable documentary evidence.
7. Only special material, stated by the Employer, for which the tenderer has provided units, tendered rates and prices in the table below shall be carried forward to **CLAUSE 6.8.3 OF C1.2 CONTRACT DATA (PART 2)**.

SPECIAL MATERIAL	UNIT	RATE
Bitumen – 70/100 penetration grade bitumen		
Bitumen – 50/70 penetration grade bitumen		

SIGNED BY TENDERER:

N: TENDERER'S BANKING AND AUDITOR DETAILS

Notes to tenderer:

1. The tenderer shall provide his banking and auditor details as indicated below.
2. In the case of a joint venture (JV), the tenderer shall provide banking and auditor details for each member of the JV.
3. The information supplied by the tenderer in this returnable schedule and any additional financial information of the tenderer as may be requested by the Employer will be deemed material to the Employer's risk analysis of the tender offer.

Bank Details - Bank Name:

Address:

Account Number:

Contact Person:

Tel No.:

Fax No.:

Auditor Details - Firm Name:

Address:

Account Number:

Contact Person:

Tel No.:

Fax No.:

(Attach additional pages if required.)

SIGNED BY TENDERER:

SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

O: TENDERER'S PROPOSED SUBCONTRACTORS (excluding targeted subcontractors)

Project Title:		APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1				
Contract Number:		SCMU10-23/24-0001				
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 motivation does not change the requirement for us to submit the names of proposed Subcontractors in accordance with the requirements in the contract for such appointments. If there are no such requirements in the contract, then your written acceptance of this list shall be binding between us.						
	Name and address of proposed subcontractor (s)	HDI– status of subcontractor (Proof must be submitted with the tender)	Nature and extend of Work	Previous experience with subcontractor	Estimated R-value of subcontract works	Subcontracting % based on R-Value of total Bid price
1					R	_____ %
2					R	_____ %
3					R	_____ %
4					R	_____ %
5					R	_____ %
TOTAL R- VALUE AND PERCENTAGE OF WORK OF SUB-CONTRACTORS					R	_____ %

Signed:
(Signature of tenderer)

Date:

Name:
(Name of authorised signature)

Position:
(Position of authorised signature)

Name of tenderer:

This schedule will be read and apply in conjunction with the provisions of SBD 6.1, paragraph 7.

DO NOT INCLUDE TARGETED SUBCONTRACTOR(S) TO BE APPOINTED AS A CONDITION OF CONTRACT IN TERM OF THIS TENDER.

SIGNED BY TENDERER:

P: COMPULSORY ENTERPRISE QUESTIONNAIRE

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

Section 1: Name of enterprise:

Section 2: VAT registration number, if any:

Section 3: cidb 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: The attached SBD4 must be completed for each tender and attached as a tender requirement

Section 7.1: The attached SBD6.1 must be completed for each tender and attached as a tender requirement

Section 7.2: The attached SBD6.2 must be completed for each tender and attached as a tender requirement

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

- i) authorizes the Employer to verify Tax Compliance status from the South African Revenue Services or the Centralised Suppliers Database (CSD);
- ii) confirms that neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and
- iv) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed:

Date:

Name:

Position:

Enterprise name:

SIGNED BY TENDERER:

SBD 4: BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

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

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

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest 1 in the enterprise, employed by the state? **YES/NO**

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

Full Name	Identity Number	Name of State institution

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

.....
.....

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

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

2.3.1 If so, furnish particulars:
.....
.....

3 DECLARATION

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

- 3.1 I have read and I understand the contents of this disclosure;
- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium² will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.
- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

..... Signature	 Date
..... Position	 Name of bidder

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.

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	90
SPECIFIC GOALS	10
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:

$$\begin{array}{ccc} \mathbf{80/20} & \mathbf{or} & \mathbf{90/10} \\ \\ \mathbf{Ps = 80 \left(1 - \frac{Pt - P_{min}}{P_{min}} \right)} & \mathbf{or} & \mathbf{Ps = 90 \left(1 - \frac{Pt - P_{min}}{P_{min}} \right)} \end{array}$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

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

3.2.1. POINTS AWARDED FOR PRICE

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

$$\begin{array}{ccc} \mathbf{80/20} & \mathbf{or} & \mathbf{90/10} \\ \\ \mathbf{Ps = 80 \left(1 + \frac{Pt - P_{max}}{P_{max}} \right)} & \mathbf{or} & \mathbf{Ps = 90 \left(1 + \frac{Pt - P_{max}}{P_{max}} \right)} \end{array}$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

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

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

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

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

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

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

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

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

PREFERENTIAL SPECIFIC GOALS POINTS TABLE		
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 claimed (90/10 system) (To be completed by the tenderer)
Historically Disadvantaged Individuals		
Black ownership	5	
Locality:-		
(a) Preferred address in the Eastern Cape in the last 3	5	
b) Alternative address in the Eastern Cape in the last 3 years	3	
(c) Outside Eastern Cape no satellite office in Eastern Cape: (i) including preferred address less than 3 years (ii) Alternative address less than 3 years	2	

DECLARATION WITH REGARD TO COMPANY/FIRM

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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:

.....

.....

.....

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

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

IN RESPECT OF BID NO.:

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

NB

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

I, the undersigned, ... (full names),

do hereby declare, in my capacity as

of(name of bidder entity), the following:

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

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

If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above.

The local content percentages for each product has been calculated using the formula given in clause 3 of SATS 1286:2011, the rates of exchange indicated in paragraph 4.1 above and the information contained in Declaration D and E.

SBD 6.2

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

SIGNATURE: _____ **DATE:** _____

WITNESS No. _____ **DATE:** _____

WITNESS No. _____ **DATE:** _____

SIGNED BY TENDERER:

[illegible]

GUIDANCE DOCUMENT FOR THE CALCULATION OF LOCAL CONTENT

1. DEFINITIONS

Unless explicitly provided in this guideline, the definitions given in SATS 1286:2011 apply.

2. GENERAL

2.1. Introduction

This guideline provides tenderers with a detailed description of how to calculate local content of products (goods, services and works) by components/material/services and enables them to keep an updated record for verification requirements as per the SATS 1286:2011 Annexure A and B.

The guideline consists of two parts, namely:
a written guideline; and
three declarations that must be completed:

Declaration C: "Local Content Declaration – Summary Schedule" (see Annexure C);

Declaration D: "Imported Content Declaration – Supporting Schedule to Annex C" (see Annexure D);
and

Declaration E: "Local Content Declaration – Supporting Schedule to Annex C" (see Annexure E).

The guidelines and declarations should be used by tenderers when preparing a tender. A tenderer must complete Declarations D and E, and consolidate the information on Declaration C.

Annexure C must be submitted with the tender by the closing date and time as determined by the Tender Authority. The Tender Authority reserves the right to request that Declarations D and E also be submitted.

If the tender is successful, the tenderer must continuously update Declarations C, D and E with actual values for the duration of the contract.

NOTE:

Annexure A is a note to the purchaser in SATS 1286:2011; and
Annexure B is the Local Content Declaration IN SATS 1286:2011.

2.2. What is local content?

According to SATS 1286:2011, the local content of a product is the tender price less the value of imported content, expressed as a percentage. It is, therefore, necessary to first compute the imported value of a product to determine the local content of a product.

2.3. Categories: Imported and Local Content

The tenderer must differentiate between imported content and local content. Imported content of a product by components/material/services is separated into two categories, namely:
products imported directly by the tenderer; and
products imported by a third party and supplied to the tenderer.

2.3.1. Imported Content

Identify the imported content, if any, by value for products by component/material/services. In the case of components/materials/services sourced from a South African manufacturer, agent, supplier or subcontractor (i.e. third party), obtain that information and Declaration D from the third party.

Calculate the imported content of components/materials/services to be used in the manufacture of the total quantity of the products for which the tender is to be submitted.

As stated in clause 3.2.4 of SATS 1286:2011: "If information on the origin of components, parts or materials is not available, it will be deemed to be imported content."

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2.3.1.1. Imported directly by the tenderer:

When the tenderer import products directly, the onus is on the tenderer to provide evidence of any components/materials/services that were procured from a non-domestic source. The evidence should be verifiable and pertain to the tender as a whole. Typical evidence will include commercial invoices, bills of entry, etc.

When the tenderer procures imported services such as project management, design, testing, marketing, etc. and makes royalty and lease payments, such payments relating to the tender must be included when calculating imported content.

2.3.1.2. Imported by a third party and supplied to the tenderer:

When the tenderer supplies components/material/services that are imported by any third party (for example, a domestic manufacturer, agent, supplier or subcontractor in the supply chain), the onus is on the tenderer to obtain verifiable evidence from the third party.

The tenderer must obtain Declaration D from all third parties for the related tender. The third party must be requested by the tenderer to continuously update Declaration D. Typical evidence of imported content will include commercial invoices, bills of entry etc.

When a third party procures imported services such as project management, design, testing, marketing etc. and makes royalty and lease payments, such payments relating to the tender must be included when calculating imported content.

2.3.1.3. Exempt Imported Content:

Exemptions, if any, are granted by the Department of Trade and Industry (**the dti**). Evidence of the exemptions must be provided and included in Annexure D.

2.3.2. Local Content

Identify and calculate the local content, by value for products by components /materials/ services to be used in the manufacture of the total quantity of the products.

3. ANNEXURE C

3.1. Guidelines for completing Annexure C: Local Content Declaration – Summary Schedule

Note: The paragraph numbers correspond to the numbers in Annexure C.

C1. Tender Number

Supply the tender number that is specified on the specific tender documentation.

C2. Tender description

Supply the tender description that is specified on the specific tender documentation.

C3. Designated products

Supply the details of the products that are designated in terms of this tender (i.e. buses).

C4. Tender Authority

Supply the name of the tender authority.

C5. Tendering Entity name

Provide the tendering entity name (for example, Anybody Bus Builders (Pty) Ltd).

C6. Tender Exchange Rate

Provide the exchange rate used for this tender, as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

C7. Specified local content %

Provide the specified minimum local content requirement for the tender (i.e. 80%), as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

C8. Tender item number

Provide the tender item number(s) of the products that have a local content requirement as per the tender specification.

C9. List of items

Provide a list of the item(s) corresponding with the tender item number. This may be a short description or a brand name.

Calculation of local content

C10. Tender price

Provide the unit tender price of each item excluding VAT.

C11. Exempted imported content

Provide the ZAR value of the exempted imported content for each item, if applicable. These value(s) must correspond with the value(s) of column D16 on Annexure D.

C12. Tender value net of exempted imported content

Provide the net tender value of the item, if applicable, by deducting the exempted imported content (C11) from the tender price (C10).

C13. Imported value

Provide the ZAR value of the items' imported content.

C14. Local value

Provide the local value of the item by deducting the Imported value (C13) from the net tender value (C12).

C15. Local content percentage (per item)

Provide the local content percentage of the item(s) by dividing the local value (C14) by the net tender value (C12) as per the local content formula in SATS 1286.

Tender Summary

C16. Tender quantity

Provide the tender quantity for each item number as per the tender specification.

C17. Total tender value

Provide the total tender value by multiplying the tender quantity (C16) by the tender price (C10).

C18. Total exempted imported content

Provide the total exempted imported content by multiplying the tender quantity (C16) by the exempted imported content (C11). These values must correspond with the values of column D18 on Annexure D.

C19. Total imported content

Provide the total imported content of each item by multiplying the tender quantity (C16) by the imported value (C13).

C20. Total tender value

Total tender value is the sum of the values in column C17.

C21. Total exempted imported content

Total exempted imported content is the sum of the values in column C18. This value must correspond with the value of D19 on Annexure D.

C22. Total tender value net of exempted imported content

The total tender value net of exempt imported content is the total tender value (C20) less the total exempted imported content (C21).

C23. Total imported content

Total imported content is the sum of the values in column C19. This value must correspond with the value of D53 on Annexure D.

C24. Total local content

Total local content is the total tender value net of exempted imported content (C22) less the total imported content (C23). This value must correspond with the value of E13 on Annexure E.

C25. Average local content percentage of tender

The average local content percentage of tender is calculated by dividing total local content (C24) by the total tender value net of exempted imported content (C22).

4. ANNEXURE D

4.1. Guidelines for completing Annexure D: “Imported Content Declaration – Supporting Schedule to Annexure C”

Note: The paragraph numbers correspond to the numbers in Annexure D.

D1. Tender number

Supply the tender number that is specified on the specific tender documentation.

D2. Tender description

Supply the tender description that is specified on the specific tender documentation.

D3. Designated products

Supply the details of the products that are designated in terms of this tender (i.e. buses).

D4. Tender authority

Supply the name of the tender authority.

D5. Tendering entity name

Provide the tendering entity name (i.e. Unibody Bus Builders (Pty) Ltd).

D6. Tender exchange rate

Provide the exchange rate used for this tender, as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

Table A. Exempted Imported Content

D7. Tender item number

Provide the tender item number(s) of the product(s) that have imported content.

D8. Description of imported content

Provide a list of the exempted imported product(s), if any, as specified in the tender.

D9. Local supplier

Provide the name of the local supplier(s) supplying the imported product(s).

D10. Overseas supplier

Provide the name(s) of the overseas supplier(s) supplying the exempted imported product(s).

D11. Imported value as per commercial invoice

Provide the foreign currency value of the exempted imported product(s) disclosed in the commercial invoice accepted by the South African Revenue Service (SARS).

D12. Tender exchange rate

Provide the exchange rate used for this tender as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

D13. Local value of imports

Convert the value of the exempted imported content as per commercial invoice (D11) into the ZAR value by using the tender exchange rate (D12) disclosed in the tender documentation.

D14. Freight costs to port of entry

Provide the freight costs to the South African Port of the exempted imported item.

D15. All locally incurred landing costs and duties

Provide all landing costs including customs and excise duty for the exempted imported product(s) as stipulated in the SATS 1286:2011.

D16. Total landed costs excl VAT

Provide the total landed costs (excluding VAT) for each item imported by adding the corresponding item values in columns D13, D14 and D15. These values must be transferred to column C11 on Annexure C.

D17. Tender quantity

Provide the tender quantity of the exempted imported products as per the tender specification.

D18. Exempted imported value

Provide the imported value for each of the exempted imported product(s) by multiplying the total landed cost (excl. VAT) (D16) by the tender quantity (D17). The values in column D18 must correspond with the values of column C18 of Annexure C.

D19. Total exempted imported value

The total exempted imported value is the sum of the values in column D18. This total must correspond with the value of C21 on Annexure C.

Table B. Imported Directly By Tenderer

D20. Tender item numbers

Provide the tender item number(s) of the product(s) that have imported content.

D21. Description of imported content:

Provide a list of the product(s) imported directly by tender as specified in the tender documentation.

D22. Unit of measure

Provide the unit of measure for the product(s) imported directly by the tenderer.

D23. Overseas supplier

Provide the name(s) of the overseas supplier(s) supplying the imported product(s).

D24. Imported value as per commercial Invoice

Provide the foreign currency value of the product(s) imported directly by tenderer disclosed in the commercial invoice accepted by the South African Revenue Service (SARS).

D25. Tender rate of exchange

Provide the exchange rate used for this tender as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

D26. Local value of imports

Convert the value of the product(s) imported directly by the tenderer as per commercial invoice (D24) into the ZAR value by using the tender exchange rate (D25) disclosed in the tender documentation.

D27. Freight costs to port of entry

Provide the freight costs to the South African Port of the product(s) imported directly by the tenderer.

D28. All locally incurred landing costs and duties

Provide all landing costs including customs and excise duty for the product(s) imported directly by the tenderer as stipulated in the SATS 1286:2011.

D29. Total landed costs excl VAT

Provide the total landed costs (excluding VAT) for each item imported directly by the tenderer by adding the corresponding item values in columns D26, D27 and D28.

D30. Tender quantity

Provide the tender quantity of the product(s) imported directly by the tenderer as per the tender specification.

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D31. Total imported value

Provide the total imported value for each of the product(s) imported directly by the tenderer by multiplying the total landed cost (excl. VAT) (D29) by the tender quantity (D30).

D32. Total imported value by tenderer

The total value of imports by the tenderer is the sum of the values in column D31.

Table C. Imported by Third Party and Supplied to the Tenderer

D33. Description of imported content

Provide a list of the product(s) imported by the third party and supplied to the tenderer as specified in the tender documentation.

D34. Unit of measure

Provide the unit of measure for the product(s) imported by the third party and supplied to tenderer as disclosed in the commercial invoice.

D35. Local supplier

Provide the name of the local supplier(s) supplying the imported product(s).

D36. Overseas supplier

Provide the name(s) of the overseas supplier(s) supplying the imported products.

D37. Imported value as per commercial invoice

Provide the foreign currency value of the product(s) imported by the third party and supplied to the tenderer disclosed in the commercial invoice accepted by SARS.

D38. Tender rate of exchange

Provide the exchange rate used for this tender as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

D39. Local value of imports

Convert the value of the product(s) imported by the third party as per commercial invoice (D37) into the ZAR value by using the tender exchange rate (D38) disclosed in the tender documentation.

D40. Freight costs to port of entry

Provide the freight costs to the South African Port of the product(s) imported by third party and supplied to the tenderer.

D41. All locally incurred landing costs and duties

Provide all landing costs including customs and excise duty for the product(s) imported by third party and supplied to the tenderer as stipulated in the SATS 1286:2011.

D42. Total landed costs excluding VAT

Provide the total landed costs (excluding VAT) for each product imported by third party and supplied to the tenderer by adding the corresponding item values in columns D39, D40 and D41.

D43. Quantity imported

Provide the quantity of each product(s) imported by third party and supplied to the tenderer for the tender.

D44. Total imported value

Provide the total imported value of the product(s) imported by third party and supplied to the tenderer by multiplying the total landed cost (D42) by the quantity imported (D43).

D45. Total imported value by third party

The total imported value from the third party is the sum of the values in column D44.

Table D. Other Foreign Currency Payments

D46. Type of payment

Provide the type of foreign currency payment. (i.e. royalty payment for use of patent, annual licence fee, etc).

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D47. Local supplier making the payment

Provide the name of the local supplier making the payment.

D48. Overseas beneficiary

Provide the name of the overseas beneficiary.

D49. Foreign currency value paid

Provide the value of the listed payment(s) in their foreign currency.

D50. Tender rate of exchange

Provide the exchange rate used for this tender as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

D51. Local value of payments

Provide the local value of each payment by multiplying the foreign currency value paid (D49) by the tender rate of exchange (D50).

D52. Total of foreign currency payments declared by tenderer and/or third party

The total of foreign currency payments declared by tenderer and/or a third party is the sum of the values in column D51.

D53. Total of imported content and foreign currency payment

The total imported content and foreign currency payment is the sum of the values in column D32, D45 and D52. This value must correspond with the value of C23 on Annexure C.

5. ANNEXURE E

5.1. Guidelines to completing Annexure E: “Local Content Declaration - Supporting Schedule to Annexure C”

The paragraph numbers correspond to the numbers in Annexure E

E1. Tender number

Supply the tender number that is specified on the specific tender documentation.

E2. Tender description

Supply the tender description that is specified on the specific tender documentation.

E3. Designated products

Supply the details of the products that are designated in terms of this tender (for example, buses/canned vegetables).

E4. Tender authority

Supply the name of the tender authority.

E5. Tendering entity name

Provide the tendering entity name (for example, Unibody Bus Builders (Pty) Ltd) Ltd).

Local Goods, Services and Works

E6. Description of items purchased

Provide a description of the items purchased locally in the space provided.

E7. Local supplier

Provide the name of the local supplier that corresponds to the item listed in column E6.

E8. Value

Provide the total value of the item purchased in column E6.

E9. Total local products (Goods, Services and Works)

Total local products (goods, services and works) is the sum of the values in E8.

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E10. Manpower costs:

Provide the total of all the labour costs accruing only to the tenderer (i.e. not the suppliers to tenderer).

E11. Factory overheads:

Provide the total of all the factory overheads including rental, depreciation and amortisation for local and imported capital goods, utility costs and consumables. (Consumables are goods used by individuals and businesses that must be replaced regularly because they wear out or are used up. Consumables can also be defined as the components of an end product that are used up or permanently altered in the process of manufacturing, such as basic chemicals.)

E12. Administration overheads and mark-up:

Provide the total of all the administration overheads, including marketing, insurance, financing, interest and mark-up costs.

E13. Total local content:

The total local content is the sum of the values of E9, E10, E11 and E12. This total must correspond with C24 of Annexure C.

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE
UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY
(20KM) PHASE 1**

THE CONTRACT

PART 1 (OF 4): AGREEMENTS AND CONTRACT DATA

- C1.1 FORM OF OFFER AND ACCEPTANCE**
- C1.2 CONTRACT DATA**
- C1.3 PERFORMANCE GUARANTEE (PRO FORMA)**
- C1.4 OCCUPATIONAL HEALTH AND SAFETY ACT, ACT 85 OF 1993
CONTRACTORS 37.2 AGREEMENT**
- C1.5 APPLICATION FOR PERMIT TO DO CONSTRUCTION WORK (PRO
FORMA)**

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PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**UPGRADING TO A SURFACE STANDARD OF ROAD DR08034 - N2 TO R61 VIA CLARKEBURY (20KM)
PHASE 1**

C1.1: FORM OF OFFER AND ACCEPTANCE

1. OFFER

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

SCMU10-23/24-0001:

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF
ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

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

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

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

.....
.....

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

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this Agreement 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 terms of the Conditions of Contract identified in the Contract Data.

OFFER SIGNATURE BLOCK

For The Tenderer:

Signature(s)

Name(s)

Capacity

for the **Tenderer**

(Name and address of organization)

Name and signature

of witness

Date

2. ACCEPTANCE

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

The terms of the contract, are contained in

Part C1 : Agreements and Contract Data (which includes this Agreement)

Part C2 : Pricing data

Part C3 : Scope of Work

Part C4 : Site Information

and drawings and documents or parts thereof, which may be incorporated by reference into the above listed Parts.

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 duly 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 Deviation (if any), contact the Employer's Agent (whose details are given in the Contract Data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data. Failure to fulfil any of the obligations in accordance with these terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the Tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Tenderer (now Contractor) within five (5) 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.

ACCEPTANCE SIGNATURE BLOCK

For the Employer:

Signature(s)

Name(s)

Capacity

for the **Employer:** **Department of Transport
Province of the Eastern Cape
32 Cowan Close
Stellenbosch Park Building
Schornville
King William's Town
5601**

Name and signature
of witness

Date

3. 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 Tender'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
3. Subject
Details
4. Subject
Details
5. Subject
Details

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

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

SCHEDULE OF DEVIATIONS SIGNATURE BLOCK

For The Tenderer:

Signature(s)

Name(s)

Capacity

for the **Tenderer**
(Name and address of organization)

Name and signature
of witness

Date

For the Employer:

Signature(s)

Name(s)

Capacity

for the **Employer:** **Department of Transport**
Province of the Eastern Cape
32 Cowan Close
Stellenbosch Park Building
Schornville
King William's Town
5601

Name and signature
of witness

Date

4. 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:

SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

C1.2: CONTRACT DATA (PART 1 OF 4)		
PART 1 : DATA PROVIDED BY THE EMPLOYER		
CONDITIONS OF CONTRACT		
The General Conditions of Contract for Construction Works, Third Edition (2015) [hereinafter referred to as GCC2015], published by the South African Institution of Civil Engineer's, Private Bag X200, Halfway House, 1685, are applicable to this contract.		
CONTRACT SPECIFIC DATA		
The following contract specific data, amendments, additions, or omissions, referring to the GCC2015 are applicable to this Contract.		
No.	Clause	Description
1	1.1.1.13	The Defects Liability Period is twelve (12) months measured from the date of the Certificate of Completion.
2	1.1.1.14	The time for achieving Practical Completion is thirty-six (36) months including all relevant special non-working days and an estimated two (2) months for the construction work permit to be issued by the Department of Labour.
3	1.1.1.15	The name the Employer is THE DEPARTMENT OF TRANSPORT, EASTERN CAPE, represented by the Head of Department and/or such other person or persons duly authorized thereto by the Employer in writing.
4	1.1.1.16	The name of the Employer's Agent is SMMMS-Deedscon JV
5	1.1.1.26	The Pricing Strategy is a Re-measurement Contract.
6	1.1.1.35	<i>Add the following new sub-clause:</i> ““Value of Works” means the value of Works certified by the Employer's Agent as having been satisfactorily executed and shall include the value of the work done, the value of the materials and/or goods and Contract Price Adjustments.”
7	1.2.1.2	The address of the Employer is: Physical address: 32 Cowan Close Stellenbosch Park Building Schornville King Williams Town 5601 Postal address: Private Bag X0023 Bisho 5605 E-mail address: Sonwabile.dlanjwa@ectransport.gov.za Tel number: 060 870 3206
8	1.2.1.2	The address of the Employer's Agent's is: <u>During Tender Stage:</u>

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No.	Clause	Description
		Physical address: Deedscon Consult 8 Tyrell Road Berea East London 5241 E-mail address: deedscon@deedscon.co.za Telephone number: 043 726 8975 <u>During Construction Stage:</u> Physical address: Deedscon Consult 8 Tyrell Road Berea East London 5241 E-mail address: alis@deedscon.co.za/deedscon@deedscon.co.za Telephone number: 043 726 8975
9	1.3.7	<i>Add the following new subclause:</i> “All information, documents, recommendations, programmes and reports collected or compiled must be regarded as confidential and may not be communicated or made available to any person outside the Employer's service and may not be published either during the currency of this Contract or after termination thereof without the prior written consent of the Employer.”
10	2.4.1	<i>Add the following:</i> “In the event of any ambiguity, conflict, or discrepancy between the various contract documents, lists and schedules, the order of precedence (from highest to lowest) shall be as follows: 1. Form of Offer and Acceptance and Schedule of Deviations. 2. Contract Data. 3. General Conditions of Contract (2015). 4. Scope of Works. 5. Standard Specifications of Roads and Bridgeworks (1998). 6. Site Information. 7. Construction Drawings. 8. Bill of Quantities. 9. The Returnable Schedules.
11	3.2.3	The Employer's Agent shall obtain specific written approval from the Employer before carrying out any of his functions or duties according to the following Clauses of the General Condition of Contract: • Nominating the Employer's Agent's Representative in terms of Clause 3.3.1. • The issuing of instructions for dealing with fossils and the like in terms of Clause 4.7. • Authorising the Contractor to repair and make good excepted risks in terms of Clause 7.5.5. • The issuing of variation orders in terms of Clause 6.3.2. • The issuing of an instruction to accelerate progress in terms of Clause 5.12.4.

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No.	Clause	Description
		- The approval of any extension of time for completion in terms Clause 5.12.1. - The reduction of a penalty for delay in terms of Clause 5.13.2. - The issuing of penalties in terms of Clause 5.13. - The determination of additional or reduced costs arising from changes in legislation in terms of Clause 6.8.4. - The giving of a ruling on a Contractor's claim in terms of Clause 10.1.5. - The agreeing of the adjustment of the sums for general items in terms of Clause 6.11.
12	3.2.4	Delete the last sentence of clause 3.2.4.
13	3.3.6	<i>Add the following:</i> "The time limit for referring the matter to the Employer's Agent by the Contractor shall be twenty-one (21) days after the decision in question was given by the Employer's Agent's Representative".
14	4.3.3	<i>Add the following new subclause:</i> "The Employer and the Contractor hereby agree, in terms of the provisions of section 37 (2) of the Occupational Health & Safety Act, 1993 (Act 85 of 1993, hereinafter referred to as 'the Act'), that the following arrangements and procedures shall apply between them to ensure compliance by the Contractor with the provisions of the Act, namely: (a) The Contractor undertakes that the appropriate officials and employees of the Contractor will fully acquaint themselves with all relevant provisions of the Act and the Regulations promulgated in terms of the Act; (b) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the Act and Regulations will be fully complied with; (c) The Contractor hereby accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and Regulations, and expressly absolves the Employer from itself being obliged to comply with any of the aforesaid duties, obligations, and prohibitions; with the exception of such duties, obligations and prohibitions expressly assigned to the Employer in terms of the Act and its associated Regulations; (d) The Contractor agrees that any duly authorised official of the Employer shall be entitled (although not obliged) to take such steps as may be necessary to ensure that the Contractor has complied with his undertakings as set out more fully in paragraphs (a) and (b) above, which steps may include, but will not be limited to, the right to inspect any appropriate site or premises occupied by the Contractor, or to inspect any appropriate records or Safety Plans held by the Contractor; (e) The Contractor shall be obliged to report forthwith to the Employer any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the Act and regulations, pursuant to work performed in terms of this Contract, and shall, on written demand, provide full details in writing of such investigation, complaint or criminal charge. (f) The Contractor shall furthermore, in compliance with the Construction Regulations of 2014 (i) Acquaint himself with the requirements of the Employer's Health and Safety Specification as laid down in regulation 5(1)(b) of the Construction Regulations of 2014, and prepare a suitably and sufficiently documented Health and Safety Plan as contemplated in Construction Regulation 7(1)(a) of the Construction Regulations of 2014 for approval by the Employer or his assigned Agent. The Contractor's Health and Safety Plan and risk assessment shall be submitted to the Employer for approval within 14 days from the date of signing the Form of

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No.	Clause	Description
		Acceptance and shall be implemented and maintained from the Commencement of the Works. (ii) The Employer, or his assigned Agent, reserves the right to conduct periodic audits, as contemplated in the Construction Regulations 2014, to monitor that the Contractor is compliant in respect of his obligations. Failure by the Contractor to comply with requirements of these Regulations shall entitle the Employer's Agent, at the request of the Employer or his Agent, to suspend all or any part of the Works, with no recourse whatsoever by the Contractor for any damages incurred as a result of such suspension, until such time as the Employer or his Agents are satisfied that the issues in which the Contractor has been in default have been rectified."
15	4.3.4	<i>Add the following new subclause:</i> "The Contractor shall assume responsibility for compliance with the Environmental Management Programme (EMPR) and all other relevant environmental Acts and regulations in respect of the sites and shall ensure that the sites are rehabilitated before the conclusion of the Contract. a) The Contractor undertakes that the appropriate officials and employees of the Contractor will fully acquaint themselves with all relevant environmental documentation relevant to this project, which may include: i. NEMA Authorisations for the project; ii. MPRDA authorisations for the project; iii. DAFF permits for the project; iv. DWS authorisations for the project; and v. DEDEAT approved EMPr. b) The Contractor undertakes that the appropriate officials and employees of the Contractor will fully acquaint themselves with all relevant environmental legislative provisions of the relevant Acts as listed in Section B1232 of the Contract Document; c) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the various environmental Acts and regulations will be fully complied with; d) The Contractor hereby accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and Regulations, and expressly absolves the Employer from itself being obliged to comply with any of the aforesaid duties, obligations, and prohibitions; with the exception of such duties, obligations and prohibitions expressly assigned to the Employer in terms of the Act and its associated Regulations. e) The Contractor agrees that any duly authorised official of the Employer shall be entitled (although not obliged) to take such steps as may be necessary to ensure that the Contractor has complied with his undertakings as set out more fully in paragraphs (a) and (b) above, which steps may include, but will not be limited to, the right to inspect any appropriate site or premises occupied by the Contractor, or to inspect any appropriate records or Environmental Method Statements held by the Contractor; f) The Contractor shall be obliged to report forthwith to the Employer any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the Act and regulations, pursuant to work performed in terms of this Contract, and Oshall, on written demand, provide full details in writing of such investigation, complaint or criminal charge."
16	4.12.2	<i>Add the following:</i> <i>"Employer's minimum requirements for approval of the Contracts Manager:</i> <i>Employer's minimum requirements for approval of the Construction Manager:</i>

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No.	Clause	Description
		i) A suitably qualified and experienced Construction Manager/Site Agent who will be the single point accountable and responsible person for the full time management of the construction works on site, who is registered with ECSA as a Professional Engineer (Pr Eng.) or Professional Engineering Technologist (Pr Tech Eng.), SACPCMP as Professional Construction Manager (Pr CM) and has a minimum of ten (10) years' experience in surfaced road upgrading project(s). Employer's minimum requirements for approval of the Construction Health and Safety Officer: ii) A suitably qualified and experienced full time Construction Health and Safety Officer to manage the Contractor's health and safety obligations on site who is registered with SACPCMP as a Professional Construction Health and Safety Agent (Pr CHSA) or Professional Construction Health and Safety Manager (Pr CHSM) or Professional Construction Health and Safety Officer (Pr CHSO). iii) has a minimum of five (5) years' experience as a Construction Health and Safety Officer on road construction projects.
17	5.3.1	The documentation required from the Contractor before commencement of the Works are: i) An approved, project specific Health and Safety Plan (Refer Clause 4.3). ii) Initial programme (Refer Clause 5.6). iii) Security (Refer Clause 6.2). iv) Insurances (Refer Clause 8.6). v) Signed agreement in terms of Section 37.2 of the OHS Act, 1993. vi) A valid Letter of Good Standing from the Compensation Commissioner or FEMA. <i>Add the following:</i> "The documentation required from the provincial director (Department of Labour) before commencement with Works execution are: Construction work permit and site-specific number for each construction site in terms of Regulation 3(3) of Construction Regulations, 2014. In terms of Regulation 3(1) of Construction Regulations, 2014 the Employer must apply to the provincial director (Department of Labour) in writing for a construction work permit at least 30 days before Commencement of the Works. Said application must be in terms of Regulation 3(2) of Construction Regulations, 2014 and including documentation in terms of Regulation 3(2) of Construction Regulations, 2014. Commencement of the Works is estimated to be two (2) months after the Commencement of the Contract."
18	5.3.2	The Contractor shall submit the documentation required under subclause 5.3.1, including that required for the application for the Construction Work Permit and commencement with Works, within fourteen (14) days from the Commencement Date.
19	5.4.4	<i>Add the following new subclause:</i> "The Contractor shall bear all costs and charges for special and temporary rights of way required by him in connection with access to the Site. The Contractor shall also provide at his own cost any additional facilities outside the Site required by him for the purpose of the Works."
20	5.8.1	The non-working days are Sundays. The special non-working days are: 1. All gazetted public holidays. 2. The contractor's year-end break as determined by SAFCEC.

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No.	Clause	Description
21	5.11.2	<i>In the third line, after the word “progress”, insert “or alter the order”.</i>
22	5.13.1	The penalty for failing to complete the Works is 1.5 cents / R 100.00(of Contract Sum per calendar day or part thereof.
23	5.14.1	The requirements for achieving Practical Completion are as stated in the clause B1210 of Section 1200 of Section B of C3.4 of Part 3 of 4 of the Contract.
24	5.16.3	The latent defects period is ten (10) years.
25	6.2.1	The security to be provided by the Contractor shall be a Fixed Performance Guarantee of 10% of the Contract Sum.
26	6.3.1	<i>In the fifth line, after the word “shall”, insert “with the approval of the Employer”.</i>
27	6.6.1.2	<i>After all references to the word “sums”, insert “excluding VAT”</i>
28	6.8.1	<i>Add the following:</i> “The tender rates and prices shall also be exclusive of Value Added Tax (VAT). Provision is made for the addition of VAT in the summary of the Bill of Quantities.”
29	6.8.2	The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values: The value of “x” is 0.15 The values of the coefficients are : a = 0.20 (Labour) b = 0.40 (Contractor’s equipment) c = 0.25 (Material) d = 0.15 (Fuel) The indices for “L”, “P”, “M” and “F” are the following as published by Statistics South Africa: 1. “L” is the “Labour Index” and shall be the “Consumer Price Index (CPI) for Eastern Cape: Province” as published in the Statistical News Release P0141Table A the “Consumer Price Index: Main Indices” of Statistics South Africa. 2. “P” is the “Contractor’s Equipment Index” and shall be the price index for “Plant and equipment” as published in the Statistical Release P0151.1 Table 4 the “Mining and construction plant and equipment price index” of Statistics South Africa. 3. “M” is the “Materials Index” and shall be the price index for “Civil Engineering Material – Roads, General (Excluding bitumen)” as published in the Statistical Release P0151.1 Table 6 the “Civil Engineering material price indices” of Statistics South Africa. 4. “F” is the “Fuel Index” and shall be the price index for “Coal and petroleum products: Diesel” as published in the Statistical Release P0142.1 Table 1 the “PPI for final manufactured goods” of Statistics South Africa. The base month and year is the month prior to the month in which tender closed.
30	6.8.3	The Contract Price shall be subject to price adjustment for variations in the cost of special materials. The following materials are classified as a special material: • Net bitumen content of all penetration grade bituminous products measured in ton.

SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

No.	Clause	Description
		The net amount of any variation incurred shall be determined from the ex-refinery rate for bitumen at time of purchase relative to that of the base month for the supplier (refinery) of bitumen actually used to produce the relevant bituminous product. The base month for the purposes of calculating the variation in the cost of special materials shall be the month prior to the tender closing date.
31	6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is 80%.
32	6.10.19	<i>Add the following subsubclause:</i> "The Contractor is required to submit an accurately completed and signed monthly Contractor Monthly Local Labour Report in accordance with clause E1.4.4 of Section E of Part 3 of 4 of the Contract.
33	6.10.2	<i>Add the following:</i> "Payment for materials on site will only be considered for those materials which are physically on site. Any statement in which a claim for materials off site is included, shall have attached a declaration that the materials listed in the statement are owned by the Contractor, accompanied by proof of ownership. The ownership of materials shall be transferred to the Employer in accordance with the relevant pro-forma"
34	6.10.3	The percentage Retention on the amounts due to the Contractor is 10% of the Contract Price. <i>Add the following:</i> "A retention money guarantee in lieu of retention is not permitted.
35	6.10.4	In the third sentence replace "28 days of receipt" with "30 days of confirmed receipt".
36	6.11	<i>Replace all references to "15 per cent" with "20 per cent".</i> <i>Replace last paragraph after "6.11.1.6 Daywork, with the following:</i> "then the Value related portion of General Items shall be adjusted by such sums (if any)."
37	7.2.1	<i>Add the following at the end of the paragraph:</i> ",subject to approval of the Employer's Agent".
38	8.2.1	<i>Add the following:</i> "The Contractor shall protect the Works properly and shall so arrange his operations that the minimum danger and inconvenience are caused to the public and to vehicle and pedestrian traffic. For this purpose, he shall, inter alia, provide and maintain sufficient road traffic signs, lights, barricades, fencing and guarding as may be necessary or required by the Employer's Agent or by any act, regulation, or statutory authorities. All operations required in connection with the execution and completion of the Works shall, as far as the provisions of the Contract permit, not unnecessarily or in any improper manner encroach upon the use of public roads or upon access to private property, and the Contractor hereby indemnifies the Employer against any claims, demand, damage and costs that may arise in this regard. Compensation for such obligations shall be included in the Contractor's prices for provisional and general costs, except in as far as provision is made in the specifications for payment in respect of specific items pertaining to these obligations"
39	8.2.2.3	Add the following to the end of Clause 8.2.2.3

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No.	Clause	Description
		"risk arising from political riot and malicious damage, unless these risks are insurable with The South African Special Risk Insurance Association at the time of tendering and it is stipulated in the Contract that the Contractor is to effect insurance against these risks".
40	8.6.1.1.2	The value of Plant and materials supplied by the Employer to be included in the insurance sum is R 0.00.
41	8.6.1.1.3	The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is R 500 000.00.
42	8.6.1.3	The limit of indemnity for liability insurance is R 20 000 000.00 for any single claim with the number of claims to be unlimited.
43	8.6.1.5	Where the Contract involves manufacturing and/or fabrication of the Works or part thereof at premises other than the Site, the Contractor shall satisfy the Employer that all materials and equipment for incorporation in the Works are adequately insured during manufacture or fabrication. In the event the Employer having an insurable interest in such Works during manufacture or fabrication then such interest shall be noted by endorsement to the Contractor's policies of insurance.
44	10.5.3	The number of Adjudication Board Members to be appointed is one (1).
45	10.7.1	The determination of disputes shall be by arbitration.

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C1.2 : CONTRACT DATA (PART 2 OF 4)

PART 2 : DATA PROVIDED BY THE CONTRACTOR

No.	Clause	Description									
1	1.1.1.9	The Contractor is [The Legal name of the Contractor].									
2	1.2.1.2	The Contractor's address for receipt of communications and notices is : Telephone: Facsimile: E-mail : Address (Postal) : Address (Physical) :									
3	6.2.1	The security to be provided by the Contractor shall be: <table border="1"> <tr> <td>Type of Security</td></tr> <tr> <td>Fixed Performance Guarantee of 10% of the Contract Sum</td></tr> </table>	Type of Security	Fixed Performance Guarantee of 10% of the Contract Sum							
Type of Security											
Fixed Performance Guarantee of 10% of the Contract Sum											
4	6.8.3	The variation in cost of special materials is (if applicable) <table border="1"> <thead> <tr> <th>Type of special material</th><th>Unit</th><th>Rate</th></tr> </thead> <tbody> <tr> <td>Bitumen - 80/100 penetration grade bitumen</td><td>tonne</td><td></td></tr> <tr> <td>Bitumen - 50/70 penetration grade bitumen</td><td>tonne</td><td></td></tr> </tbody> </table>	Type of special material	Unit	Rate	Bitumen - 80/100 penetration grade bitumen	tonne		Bitumen - 50/70 penetration grade bitumen	tonne	
Type of special material	Unit	Rate									
Bitumen - 80/100 penetration grade bitumen	tonne										
Bitumen - 50/70 penetration grade bitumen	tonne										

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C1.3 : PERFORMANCE GUARANTEE (PRO FORMA)

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

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means:

Physical address:

"Employer" means: THE DEPARTMENT OF TRANSPORT, EASTERN CAPE

"Contractor" means:

"Employer's Agent" means: As appointed by the Employer

"Works" means: SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

"Site" means: The land and other places made available by the Employer, for the purpose of the Contract, on, under, over, in or through which the Works are to be carried out

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

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

Amount in words:

"Guaranteed Sum" means: The maximum aggregate amount of R

Amount in words:

Type of Performance Guarantee: **Fixed**

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

CONTRACT DETAILS

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

1. FIXED PERFORMANCE GUARANTEE

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

2. CONDITIONS APPLICABLE TO VARIABLE AND FIXED PERFORMANCE GUARANTEES

- 2.1 The Guarantor hereby acknowledges that:
 - 2.1.1 Any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship.
 - 2.1.2 Its obligation under this Performance Guarantee is restricted to the payment of money.
- 2.2 Subject to the Guarantor's maximum liability referred to in 1.1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 2.2.1 to 2.2.3:
 - 2.2.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Employer's Agent in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 2.2.2;
 - 2.2.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 2.2.1 and the sum certified has still not been paid;
 - 2.2.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 2.2.
- 2.3 Subject to the Guarantor's maximum liability referred to in 1.1, 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:
 - 2.3.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 2.3; or
 - 2.3.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 2.3; and
 - 2.3.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.
- 2.4 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 2.2 and 2.3 shall not exceed the Guarantor's maximum liability in terms of 1.1.
- 2.5 Where the Guarantor has made payment in terms of 2.3, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at 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.
- 2.6 Payment by the Guarantor in terms of 2.2 or 2.3 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.
- 2.7 Payment by the Guarantor in terms of 2.3 will only be made against the return of the original Performance Guarantee by the Employer.
- 2.8 The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may consider fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

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- 2.9 The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
- 2.10 This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 1.2, 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.
- 2.11 This Performance Guarantee, with the required demand notices in terms of 2.2 or 2.3, shall be regarded as a liquid document for the purposes of obtaining a court order.
- 2.12 Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrates' Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court 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)

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

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APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

**C1.4 : OCCUPATIONAL HEALTH AND SAFETY ACT, ACT 85 OF 1993
CONTRACTORS 37.2 AGREEMENT**

AGREEMENT WITH MANDATORY
In terms of Section 37(1) and (2)

WRITTEN AGREEMENT ENTERED INTO AND BETWEEN

DEPARTMENT OF TRANSPORT
(Hereinafter referred to as the "Client")

AND

PRINCIPAL CONTRACTOR
(Hereinafter referred to as the "Principal Contractor")

Compensation Fund Number: _____

Valid Letter of Good Standing to be attached to this Mandatory Document

PRINCIPAL CONTRACTOR'S UNDERTAKING AND INDEMNITY

1. The Principal Contractor hereby agrees and undertakes, in terms of Section 37(2) of the Act, to accept full responsibility for all health and safety matters for the duration of its carrying out the work, including but not limited to:-
 - 1.1 providing for the health and safety of its personnel and ensuring that its personnel at all times adhere to the provisions of the Act and the terms and conditions of the Agreement; and
 - 1.2 ensuring that no third party's health and safety is endangered in any way by the Principal Contractor's activities or conduct on the Clients premises.
2. The Principal Contractor hereby indemnifies and holds the Client harmless against any loss, action, expense, claim, harm or damage of whatsoever nature suffered or sustained by the Client pursuant to a breach by the Principal Contractor or its Personnel and/or Contractors, of the provisions of the agreement and the Act.

The Principal Contractor's obligations include, without limitation, the following: -

1. The Principal Contractor shall not cause, as far as is reasonably practicable, any harm to or endanger any Clients personnel or other persons on the Clients premises at which the Principal Contractor is carrying out the work.
2. The Principal Contractor shall ensure that its personnel have access to an updated edition of the OHS Act at all times.
3. The Principal Contractor agrees to co-operate with the Client and provide the Client with all information relating to occupational health and safety issues where the Client requests such information, including any non-compliance with the requirements of the Act.
4. The Principal Contractor shall ensure that the Personnel, when on Clients premises, at all times adhere to the standard health, safety and security procedures and guidelines as laid down by the Client for its own personnel in terms of the Act, as varied and conveyed by the Client to the Principal Contractor from time to time.
5. The Principal Contractor shall ensure that, where applicable in terms of the Act, members of its personnel involved in carrying out the work undergo thorough medical examinations prior to commencing any activity on the Clients premises and continue to undergo routine medical examinations for the duration of the work.
6. The Principal Contractor shall ensure that the work carried out on The Client premises shall be carried out under strict supervision by qualified members of the Principal Contractors personnel who are trained to understand the hazards associated with the work and who are authorized to take such precautionary measures as are necessary. Further, the Principal Contractor shall enforce disciplinary measures where any members of its Personnel do not comply with the provisions of the Act.
7. The Principal Contractor shall ensure that all members of its personnel report any unsafe or unhealthy work situations to the Principal Contractor immediately. The Principal Contractor will in turn report such situations to the Client's appointed Agent immediately.
8. In the event of an incident occurring on the Client premises, the Principal Contractor shall immediately notify the Client thereof and shall inform the relevant provincial director at the Department of Labour thereof within 7 (seven) days of the incident occurring. The Client reserves the right to retain an interest in any such incident. Accordingly, the Principal Contractor shall provide the Client with copies of all documentation relating to the incident and any formal investigations or inquiries conducted in terms of the OHS Act.
9. The Principal Contractor shall under no circumstances bring any intoxicating substances onto The Client premises. Where the Client has reason to believe that any member of the Principal Contractors personnel is under the influence of an intoxicating substance, the Client shall be entitled to deny such person access to or remove such person from the Clients premises.
10. In terms of Section 10(4) of the Act, the Principal Contractor undertakes that where it uses an article sourced from a third party in the course of carrying out the work, it shall ensure that such article complies with the prescribed requirements.

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11. The Principal Contractor undertakes that all vehicles used on the Clients premises shall be in a roadworthy condition and shall be fully licensed and adequately insured. The Principal Contractor undertakes further that it shall use suitably skilled and licensed drivers/operators for such vehicles and that no passengers shall be carried in these vehicles unless the vehicle in question has been specifically designed for carrying passengers. Further, the Principal Contractor shall comply with the requirements of the Hazardous Substances Act No 15 of 1973, as amended from time to time, where hazardous substances are carried on any of its vehicles.
12. The Principal Contractor undertakes, at all times, to adhere to the minimum requirements for environmental standards as set out in the OHS Act, including but not limited to lighting requirements, thermal requirements, ventilation, flooding precautions, fire precautions and noise conservation and further undertakes not to cause any impairment to the existing environmental conditions on The Clients premises.
13. The Principal Contractor shall at all times have an adequate supply of fire protection equipment at the Clients premises on which the work is in progress. The Principal Contractor shall also ensure that all personnel on the Clients premises are familiar with the Client's fire precautions and procedures; including alarm signals and emergency exits and that they adhere to such precautions.
14. The Principal Contractor shall provide and maintain in good condition, a satisfactorily equipped first aid box where there are more than five personnel members at the Clients premises.
15. The Principal Contractor shall ensure that all personnel are trained and provided with instructions and information on health and safety aspects relating to the work and that they understand the hazards associated with the work being carried out on the Clients premises, if applicable.
16. The Principal Contractor shall ensure that where needed, health and safety equipment shall be provided or installed.
17. The Principal Contractor shall further ensure that all personnel using any machinery or other equipment are properly trained and qualified to use such machinery or other equipment and that precautionary measures are taken when using any machinery or equipment.
18. The Principal Contractor shall not permit any person to enter the Clients premises where the work is being carried out where the health and safety of such person is at risk or may be at risk. Where the Client deems it necessary, the Principal Contractor agrees to post a notice at the Clients premises prohibiting the entry of unauthorized persons onto the premises.
19. If the Principal Contractor is to engage in construction work on the Client premises and if the nature of such construction work falls within the ambit of Section 3 of the Construction Regulations to the OHS Act, it shall inform the relevant provincial director at the Department of Labour thereof and provide the provincial director with the information required in the aforementioned Section 3.
20. The Principal Contractor shall at all times allow inspectors access to The Client premises and shall allow them to inspect the work. The Principal Contractor shall not prevent any inspector from removing any article, substance, machinery or documentation and shall allow an inspector to provide assistance where such inspector deems necessary.
21. Should the Client at any time have reason to believe that any member of the Principal Contractors personnel is failing to comply with the provisions of the OHS Act or that such Personnel-member poses a threat or risk to the Client, the Client shall be entitled to deny such personnel-member access to any or all of the Client's premises and require the Principal Contractor to replace such member of its personnel without delay.

Principal Contractor WARRANTIES

The Principal Contractor hereby warrants that it shall at all times:-

1. comply with all provisions of the OHS Act and the Regulations thereto;
2. be in possession of all required permits to carry out the work, such permits to remain valid for the full duration of the work;
3. be in possession of a valid registration with the Compensation Commissioner in terms of the Compensation for Occupational Injuries Act No 130 of 1993 and have paid all monies due to the Compensation Commissioner. The Principal Contractor must ensure that its cover under the abovementioned OHS Act remains in force for the duration of the work;
4. be in possession of and present to the Client on signing hereof, a letter of Good Standing from the Compensation Commissioner;
5. have correctly trained personnel with the required certifications and qualifications as prescribed by the Act;
6. maintain acceptable levels of hygiene and cleanliness in carrying out the work;
7. carry out and comply with all requirements prescribed in terms of the General Safety Regulations in the Act, including but not limited to:-
 - 7.1 using adequate personal protective equipment where applicable; and
 - 7.2 using machinery which is in good order and is fit for the purpose for which it is intended; and
8. as far as reasonably practicable, ensure that any persons other than the Personnel who may be directly affected by the Principal Contractor activities shall not be exposed to health and safety dangers as a result of the work which the Contractor is carrying out.

ACCEPTANCE BY MANDATORY

SIGNED at on 20

For and on behalf of the **Client**

Name & Office

WITNESSES:

1 _____
Signature

Name

2 _____
Signature

Name

SIGNED at on 20

For and on behalf of the **Contractor**

Name & Office

WITNESSES:

1 _____
Signature

Name

2 _____
Signature

Name

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

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APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

C1.5: APPLICATION FOR PERMIT TO DO CONSTRUCTION WORK (PRO FORMA)

ANNEXURE 1

APPLICATION FOR A PERMIT TO DO CONSTRUCTION WORK

In terms of Regulation 3(2) of Construction Regulations, 2014

This application must be submitted with the following documents

1. Health and Safety Specification
2. Health and Safety Plan
3. Baseline Risk Assessment

1. Name, Postal Address and Telephone Numbers of the Client:

.....
.....

2. Details of the Construction Health and Safety Agent:

- a) Title, Surname and Initials:
- b) Identity Number / Passport Number
- c) Registration Number with SACPCMP:
- d) Office Tel. Number and / or Mobile Number:
- e) Postal Address:
.....

3. Name, Postal Address and Telephone Numbers of the appointed Principal Contractor:

.....
.....

4. Name, Postal Address and Telephone Numbers of Designer of the Project:

.....
.....

5. Name, Postal Address and Telephone Numbers of the following Persons:

- a) Construction Manager: CR 8.1
.....

b) Construction Health and Safety Manager:

.....

c) Construction Health and Safety Officer: CR 8.5

.....

6. Exact Physical Address of Construction Site and Site Office:

.....

.....

7. Nature of Construction Work:

.....

.....

8. Expected Commencement Date:

9. Expected Completion Date:

10. Estimated Maximum Number of Persons on the Construction Site:

11. Planned Number of Contractors on Site accountable to the Principal Contractor:

12. Names of Contractors Appointed:

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.....

.....

.....

.....

.....

13. Signature of Client / Client's CHS Agent

.....

14. Signature of Principal Contractor

FOR OFFICE USE ONLY					
Authorization / Unique Number	Labour Centre			Official Approval Stamp	
15. Date of Application:					
16. Submitted Documents Prescribed in Construction Regulation 5.4 (Please Tick ✓)					
CR 5.1(a)		CR 5.1 (b)		CR 5.1 (c – s)	
17. Result of the Application (Please Tick ✓)		Approved		Declined	
18. Reason for Declining the Application: 19. Signature of Supervisor 20. Signature of Revoking Officer / Inspector					

Construction Regulations 2014

THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR

30 DAYS PRIOR TO COMMENCEMENT OF WORK ON SITE

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE
UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY
(20KM) PHASE 1**

THE CONTRACT
PART 2 (OF 4) : PRICING DATA

SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

**PROVINCE OF THE EASTERN CAPE
DEPARTMENT OF TRANSPORT
TENDER NO. SCMU10-23/24-0001**

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

C2. PRICING DATA

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SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

C2.1 PRICING INSTRUCTIONS

C2.1.1 Measurement and payment shall be in accordance with the relevant provisions of the COLTO Standard Specification for Road and Bridge Works for State Authorities (1998 edition) as amended in the Scope of Works.

C2.1.2 The units of measurement described in the Pricing Schedule are metric units. Abbreviations used in the Pricing Schedule are as follows:

%	=	percent	m ³ -km	=	cubic metre-kilometre
h	=	hour	MN	=	meganewton
ha	=	hectare	MN.m	=	meganewton-metre
kg	=	kilogram	MPa	=	megapascal
kl	=	kilolitre	No.	=	number
km	=	kilometre	Prov sum	=	Provisional sum
km-pass	=	kilometre-pass	PC Sum	=	Prime Cost sum
kPa	=	kilopascal	R/only	=	Rate only
kW	=	kilowatt	sum	=	lump sum
ℓ	=	litre	t	=	tonne (1000kg)
m	=	metre	W/day	=	Work day
mm	=	millimetre	LI	=	Labour Intensive
m ²	=	square metre			
m ² -pass	=	square metre-pass			
m ³	=	cubic metre			

C2.1.3 For the purpose of the Pricing Schedule, the following words shall have the meanings assigned to them:

Unit:	The unit of measurement for each item of work as defined in the COLTO Standard Specification for Road and Bridge Works for State Authorities (1998 edition).
Quantity:	The number of units of work for each item.
Rate:	The payment per unit of work for which the Service Provider 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 Pricing Schedule, the Scope of Work or elsewhere, but of which the quantity of work is not measured in units.

C2.1.4 Unless otherwise stated, items are measured nett in accordance with the drawings, and no allowance is made for waste.

C2.1.5 It will be assumed that prices included in the bills of quantities are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to www.stanza.org.za or www.iso.org for information standards)

C2.1.6 The prices and rates in the Pricing Schedule are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities and obligations set forth or implied in the Contract Data,

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as well as overhead charges and profit. These prices will be used as a basis for assessment of payment for additional work that may have to be carried out.

- C2.1.7 Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount tendered such items.
- C2.1.8 An item against which no price is entered will be considered to be covered by the other prices or rates in the Pricing Schedule. A single lump sum will apply should a number of items be grouped together for pricing purposes.
- C2.1.9 The quantities set out in the Pricing Schedule are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in the Pricing Schedule.
- C2.1.10 The short descriptions of the items of payment given in the Pricing Schedule are only for the purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work.
- C2.1.11 The item numbers appearing in the Pricing Schedule refer to the corresponding item numbers in the COLTO Standard Specification for Road and Bridge Works for State Authorities (1998 edition).
- C2.1.12 Those parts of the contract to be constructed using labour-intensive methods have been marked in the bill of quantities with the prefix LI filled in against every item so designated. The works, or parts of the works, including those parts requiring the use of selected subcontractors, 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 items marked with the letters LI are not necessarily an exhaustive list of all the activities which must be done by hand, and this clause does not over-ride any of the requirements in the generic labour intensive specification in the Scope of Works.
- C2.1.13 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. These items are marked L1 in the bill of quantities.
- C2.1.14 Mathematical errors in the Tender will be dealt with according to "Practice Note H2, August 2006 Version 3 – February 2008" as published by the CIDB.
- C2.1.15 Note on B12.12: The Tender has to calculate the total for the relevant Section and then calculate the percentage mark-up amount. This means that the Tenderer is required to insert Quantity, Rate and Amount.

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PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**UPGRADING TO A SURFACE STANDARD ROAD DR08034 - N2 TO R61 VIA CLARKBURY PHASE 1
(20KM)**

C2.2 PRICING SCHEDULE

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PAY	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1400	HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL				
14,01	Office and laboratory accommodation:				
	(a) Offices (interior floor space only) with concrete floors (class 25/20) (5 x 10m x 3 Nos)	m ²	150		
	(b) Laboratories (interior floor space only) with concrete floors (class 25/20) (5 x 12 m x 2 Nos)	m ²	240		
	(c) Open concrete working floors, 150 mm thick	m ²	120		
	(d) Roofs over open concrete working floors	m ²	120		
	(e) Ablution units with concrete floors (class 20/20)	m ²	28		
	(f) Stores with concrete floors (class 20/20)	m ²	28		
	(g) Kitchen area with concrete floors (Class 20/20)	m ²	15		
14,02	Office and laboratory furniture:				
	(a) Chairs				
	(i) Swivel arm chair	No	7		
	(ii) Arm chairs	No	25		
	(b) Draughtsman's stools	No	2		
	(c) High chairs for laboratory	No	10		
	(d) Desks, complete with drawers and locks	No	10		
	(e) Drawing tables (no drawers)	No	2		
	(f) Conference tables (16 seater)	No	1		
	(g) Kitchen table (6 seater)	No	1		
	(h) Kitchen chairs	No	6		
B14.03	Office and laboratory fittings installations and equipment:				
	(a) Items measured by number:				
	(i) 220/250 volt power points	No	20		
	(ii) 400/231 volt 3-phase power points complete with ballast and tubes	No	4		
	(iv) Double 55 watt fluorescent light fittings complete with ballast and tubes	No	20		
	(v) Single incandescent light fittings complete with 100 watt globes	No	10		
	(vi) Hand wash basins complete with taps and drains	No	4		
	(vii) Laboratory basins complete with swanneck taps and drains	No	6		
	(viii) Extractor fans installed complete with own power connection	No	3		
	(ix) Fume cupboards complete according to the drawings	No	1		
	(xi) Air conditioning units with 2.2 kW minimum capacity, mounted and with own power connection	No	11		
	(xii) Heater, space-heating type, minimum capacity, 1.5 kW	No	11		
	(xiii) Curing chamber for UCS specimens, including the provision of brick partitions, plaster, paint and shelving, all complete according to the drawings.	No	1		
	(xiv) General-purpose steel cupboards with shelves	No	10		
	(xv) Steel filing cabinets with drawers	No	7		
	(xvi) Refrigerators (300ℓ min)	No	5		
	TOTAL CARRIED FORWARD				

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PAY	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD				
	(xvii) Bookcases	No	3		
	(xviii) Voltage stabilizers	No	10		
	(xix) Plan racks	No	5		
	(xx) Floodlights complete with poles and 500 watt (or LED equivalent) minimum globes	No	10		
	(xxi) Shower cubicles with taps and drains	No	3		
	(xxii) Toilet bowl with cistern, plastic seats and taps	No	5		
	(xxiii) Rain gauge	No	1		
	(xxiv) Kitchen sink complete with taps, outlet, water and sewer connection	No	1		
	(kitchen cupboard	No	2		
	(xxv) Microwave oven (30ℓ)	No	2		
	(xxv1) Minimum and maximum thermometer	No	1		
	Prime-cost items paid in lump sum				
	(vii) The provision of 400/231 volt 3- phase electrical power installations, including all wiring, switchboards, mains connections, etc.	lump sum	1		
	(viii) The provision of gas installations, including gas-storage cylinders, tubing, regulators, gas burners and shut-off cocks	lump sum	1		
	(ix) Cell phone costs including pro-rata rentals, for calls and data usage in connection with contract administration	PC sum	1	R220 000,00	R220 000,00
	(x) Security system for office and laboratory accommodation	PC sum	1	R150 000,00	R150 000,00
	(xi) Provision for computer, computer network system and printers	PC sum	1	R130 000,00	R130 000,00
	(xii) Handling costs and profit in respect of sub-items B14.03(b)(ix), (x) and (xi) above	%	R500 000,00		
	TOTAL CARRIED FORWARD				

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PAY	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD				
	(c) Items measured by area:				
	(i) Shelving as specified, complete with brackets	m²	50		
	(ii) Work-benches complete with concrete slap top, minimum thickness 75 mm	m²	25		
	(iii) Work-benches complete with wooden top, minimum thickness 25 mm	m²	25		
	Constant temprature bath of concrete and/or plastered brick,galvanised iron or fibre cement, complete with insulating lid comprising of styrofoam with marine plywood backing, water depth 500mm	m²	15		
	(v) Foundations for laboratory equipment	m²	10		
	(vi) Roller blinds, opaque type	m²	20		
	(vii) Venetian blinds	m²	30		
	(viii) Notice boards, softboard 2000 mm x 1000 mm	m²	12		
	(ix) Whiteboard 1200 mm x 1000 mm	m²	12		
14,04	Car Ports				
	(a) Car ports, as specified, at offices and laboratory buildings	No	6		
14,07	Rented, hotel and other accommodation				
	(a) Provisional sum for providing rented housing, hotel or other accommodation as described in subsubclause 1403(c)(2)	PC sum	R1,00	R1 000 000,00	1 000 000,00
	(b) Handling costs and profit in respect of subitem 14.07(a)	%	R1 000 000,00		
14,08	Services				
	(a) Services at offices and laboratories:				
	(i) Fixed costs	Lump Sum	1		
	(ii) Running costs	month	36		
	(iii) Services for rented houses	month	36		
B14.10	Provision of copying facilities (A3 paper size)	month	36		
B14.11	Provision of semi-skilled labour for use by the Employer's Agent /Representatives				
	(a) Wage, salary & allowances	PC sum	1	120 000	120 000,00
	(b) Handling cost and profit in respect of subitem B14.11(a)	%	120000		
b14.12	Survey Equipment	month	36		
14/55.02	Security fencing as per drawing	m	450		
14/55.03	Security gates as per drawing	No	2		
	TOTAL CARRIED TO SUMMARY				

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THE UPGRADING TO A SURFACE STANDARD PORTION OF ROAD DR08034 - N2 TO R61 VIA CLARKBURY 20KM: PHASE 1					
PAY	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1500	ACCOMMODATION OF TRAFFIC				
15,01	Accommodating traffic and maintaining temporary deviations	km	20		
15,02	Earthworks for temporary deviations				
	(a) Shaping of temporary deviations	km	20		
	(c) Cut to spoil	m³	20 000,00		
B15.03	Temporary traffic-control facilities:				
	(a) Flagmen	man-day	13000		
	(b) Portable STOP and GO-RY signs	No	8		
	(d) Amber flicker lights	No	19		
	(e) Road signs, R- and TR series (900mm sides)				
	(i) Fixed in ground	No	100		
	(ii) Mounted on stand	No	35		
	(f) Road signs, TW- series,(900mm)				
	(i) Fixed in ground	No	100		
	(ii) Mounted on stand	No	35		
	(g) Road signs, STW-, DTG-, and TG series (excluding delineators)	m²	60		
	(h) Delineators (TW401 & TW402) (800mm x 200mm)				
	(i) Single sided	No	300		
	(ii) Double sided	No	1600		
	(l) Moveable barricade/road sign combination				
	(i) TW4ii/R3 and TRI05 or TR 106 combination mounted on stand (1800mm x 300 and 900mm)	No	12		
	(ii) R3 - RG and TW409 or combination mounted on stands (1400mmx400 and 900mm dia	No	10		
	(iii) R3 - RG and TW407 or TW408 combination mounted on stands (2400mmx400mm and 900mm sides)	No	10		
	(iv) Traffic Control Trailers including spot lights	No	4		
	(l) Traffic cones(600 mm)	No	100		
	(j) Single guardrails attached to post	m	130		
	(k) Movable barriers (Plastic NJB)	m	384		
	(l) Two-way communication devices	No	8		
	(m) Other traffic control measures ordered by the Employer's Agent				
	(i) Provision of other traffic control measures	P.Sum	1	100 000,00	100 000,00
	(ii) Contractor's handling cost and profit in respect of sub-item (B15.03 (m) (i)	%	100 000,00		
	(n) Temporary information sign (TIN-series)	m²	11		
15,04	Relocation of traffic control facilities	lump Sum	1		
15,06	Watering of temporary deviations	kl	40 000		
15,07	Blading by road grader of:				
	(a) Temporary deviations	km-pass	1700		
	(b) Existing roads used as temporary deviations	km-pass	350		
15,10	Accommodation of traffic where the road is constructed in half-widths include full operations of traffic signals and the required flagmen	km	20		
15,12	Temporary culverts:				
	(a) Provision and laying of temporary prefabricated culverts complete (600mm dia. Type 75D, on Class B bedding)	m	60		
	(c) Eventual removal of prefabricated culverts	m	60		
	TOTAL CARRIED TO SUMMARY				

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PAY	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1600	OVERHAUL				
B16.02	Overhaul on material hauled in excess of 1.0km (ordinary overhaul)	m ³ -km			Rate only
	TOTAL CARRIED TO SUMMARY				

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PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
B1800	DAYWORKS				
B18.01	Personnel during normal working hours:				
	(a) Unskilled labour	hr	300		
	(b) Semi-skilled labour	hr	67		
	(c) Skilled labour	hr	67		
	(d) Foreman	hr	20		
	(e) Ganger	hr	133		
	(f) Flagmen	hr	300		
B18.02	Equipment:				
	(a) TLB (up to 52 kW)	hr	67		
	(b) Excavators on tracks from 70kW up to 100 kW and mass 25t	hr	70		
	(c) Self-propelled compactors	h	20		
	(i) Vibrating roller up to 1,0m wide & mass 1,5t	day	42		
	(ii) Vibrating roller more than 80kW & mass 8t	hr	17		
	(d) Water tanker up to 10 000 l	hr	20		
	(e) Grader 140G or similar	hr	50		
	(f) Bulldozer up to 105kW and mass 25t	hr	17		
B18.03	Materials				
	(a) Procurement of materials	P Sum	1	R500 000	R500 000
	(b) Contractor's handling costs, profit and all other chargesin respect of sub-item B1803 (a)	%	R500 000		
	TOTAL CARRIED FORWARD				

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PAY	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2100	DRAINS				
B21.01	Excavation for open drains (LI):				
	(a) Excavating soft material situated within the following depth ranges below the surface level:				
	(i) 0m up to 1,5m	m ³	330		
	(b) Extra over subitem 21.01 (a) for excavation in hard material, irrespective of depth	m ³	33		
21,02	Excavation for subsoil drainage systems:				
	(a) Excavating soft material situated within the following depth ranges below the surface level:				
	(i) 0m up to 1,5m	m ³	2416		
	(b) Extra over subitem 21.03 (a) for excavation in hard material, irrespective of depth	m ³	73		
21,06	Natural permeable material in subsoil drainage systems (crushed stone) (LI):				
	(b) Crushed stone obtained from commercial source (19mm)	m ³	685		
21,07	Natural permeable material in subsoil drainage systems (sand):				
	(b) Sand obtained from commercial source	m ³	1 680		
21,08	Pipes in subsoil drainage systems:				
	(b) Unplasticised PVC pipes and fittings, normal duty, complete with couplings:				
	(i) Unperforated pipe, 110mm Ø	m	61		
	(ii) Perforated pipe, 110mm Ø	m	6 040		
21,09	Polyethylene sheeting 0.15mm thick, or similar approved material, for lining subsoil drainage systems	m ²	6 644		
21,10	Synthetic-fibre filter fabric:				
	(i) Grade 2 bidim or similar approved	m ²	4 775		
	TOTAL CARRIED FORWARD				

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PAY	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2200	PREFABRICATED CULVERTS				
B22.01	Excavation:				
	(a) Excavating soft material situated within the following depth ranges below the surface level:				
	(i) 0m up to 1,5m	m ³	2 237		
	(ii) Exceeding 1.5m up to 3m	m ³	450		
	(b) Extra over subitem 22.01 (a) for excavation in hard material, irrespective of depth	m ³	300		
	(c) Extra over subitem 22.01 (a) for excavation in intermediate material, irrespective of depth				
	(d) Extra over subitem 22.01 (a) for excavation in boulders material, irrespective of depth	m ³	100		
	(e) Extra over subitem 22.01 (a) for additional excavation required by the Employer's Agent after the excavation has been completed	m ³	800		
	(f) Extra over subitem 22.01 (a) for excavation by hand	m ³	200		
22,02	Backfilling (LI):				
	(a) Using the excavated material	m ³	795		
	(b) Using imported selected material	m ³	720		
	(c) Extra over subitems 22.02 (a) and (b) for soil cement backfilling (3% cement by mass)	m ³	152		
22,03	Concrete pipe culverts:				
	(a) On class B bedding:				
	(i) 600mm Ø, Type 75D	m	781		
	(ii) 900mm Ø, Type 75D	m	93		
22,05	Portal and recatangular culverts:				
	(b) Without prefabricated floor slabs				
	(i) 1800mm × 1200mm, Type 75S	m	63		
22,07	Cast in situ concrete and formwork (LI):				
	(b) In floor slabs for portal or rectangular culverts, including formwork, joints and class U2 surface finish (30/19)	m ³	53		
	(c) In inlet and outlet structures, skewed ends, catchpits, manholes, thrust and anchor blocks, excluding formwork but including class U2 surface finish (20/19)	m ³	474		
	(d) Formwork of concrete under 22.07(c):				
	(i) Formwork for class, F1 surface finish	m ²	1 003		
	(ii) Formwork for class, F2 surface finish	m ²	738		
22.10	Steel reinforcement (LI):				
	(b) High-tensile steel bars	t	5		
	TOTAL CARRIED FORWARD				

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THE UPGRADING TO A SURFACE STANDARD PORTION OF ROAD DR08034 - N2 TO R61 VIA CLARKBURY 20KM: PHASE 1					
PAY	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2200	PREFABRICATED CULVERTS				
B22.01	Excavation:				
	(a) Excavating soft material situated within the following depth ranges below the surface level:				
	(i) 0m up to 1,5m	m ³	2 237		
	(ii) Exceeding 1.5m up to 3m	m ³	450		
	(b) Extra over subitem 22.01 (a) for excavation in hard material, irrespective of depth	m ³	300		
	(c) Extra over subitem 22.01 (a) for excavation in intermediate material, irrespective of depth				
	(d) Extra over subitem 22.01 (a) for excavation in boulders material, irrespective of depth	m ³	100		
	(e) Extra over subitem 22.01 (a) for additional excavation required by the Employer's Agent after the excavation has been completed	m ³	800		
	(f) Extra over subitem 22.01 (a) for excavation by hand	m ³	200		
22,02	Backfilling (LI):				
	(a) Using the excavated material	m ³	795		
	(b) Using imported selected material	m ³	720		
	(c) Extra over subitems 22.02 (a) and (b) for soil cement backfilling (3% cement by mass)	m ³	152		
22,03	Concrete pipe culverts:				
	(a) On class B bedding:				
	(i) 600mm Ø, Type 75D	m	781		
	(ii) 900mm Ø, Type 75D	m	93		
22,05	Portal and recatangular culverts:				
	(b) Without prefabricated floor slabs				
	(i) 1800mm × 1200mm, Type 75S	m	63		
22,07	Cast in situ concrete and formwork (LI):				
	(b) In floor slabs for portal or rectangular culverts, including formwork, joints and class U2 surface finish (30/19)	m ³	53		
	(c) In inlet and outlet structures, skewed ends, catchpits, manholes, thrust and anchor blocks, excluding formwork but including class U2 surface finish (20/19)	m ³	474		
	(d) Formwork of concrete under 22.07(c):				
	(i) Formwork for class, F1 surface finish	m ²	1 003		
	(ii) Formwork for class, F2 surface finish	m ²	738		
22.10	Steel reinforcement (LI):				
	(b) High-tensile steel bars	t	5		
	(c) Welded Steel Fabric (Ref. 395)	kg	707		
	TOTAL CARRIED FORWARD				

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PAY	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	Brought forward				
	`	kg	707		
22.12	Removing existing concrete (LI):				
	(a) Plain concrete	m ³	162		
	(b) Reinforced concrete	m ³	324		
22.14	Removing and stacking existing prefabricated culverts				
	(b) 600mm Ø, class B bedding	m	496		
	(c) 900mm Ø, class B bedding	m	240		
22,18	Brickwork (LI):				
	(b) 230mm thick	m ²	50		
B22.29	Compaction of bedding (LI):				
	(a) Preparation and compaction of in-situ bedding material to 90% of Mod. AASHTO density (depth indicated)	m ³	190		
	(b) Extra over sub-item B22.29(a) for compaction to 93% of Mod. AASHTO density (depth indicated)	m ³	19		
	TOTAL CARRIED TO SUMMARY				

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PAY	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2300	CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES AND CONCRETE LININGS FOR OPEN DRAINS (LI)				
23,02	Concrete kerbing-channelling combination (U2 surface finish on channel, class 30/19 concrete)				
	(a) Figure 3 and (200mmx150mm channel)	m	11 140		
23,03	Cast in situ concrete chutes (measured by component)				
	(a) Concrete (U2 surface finish class 30/19) as per drawing:	m ³	7		
	(b) Formwork (Class F2 surface finish to both internal faces and ends of slabs)	m ²	20		
23,06	Inlet, outlet, transition and similar structures (measured by component)				
	(a) Concrete (Class 30/19). Tender rate to include Class U2 surface finish.	m ²	120		
	(b) Formwork (Class F2 surface finish to both internal faces and ends of slabs)	m ²	85		
23,07	Trimming of excavations for concrete-lined open drains and earth drains				
	(a) In soft material				
	(i) Concrete lined open drains	m ²	4 114		
	(ii) Earth drains	m ²	15 506		
	(b) In hard material				
	(i) Concrete lined open drains	m ²	123		
	(ii) Earth drains	m ²	378		
23,08	Concrete lining for open drains:				
	(a) Cast in situ concrete lining (class 30/19)				
	(i) Type F Open Drains	m ³	1 542		
	(b) Class U2 surface finish to cast in situ concrete:				
	(i) Type F Open drains	m ²	11 937		
23,09	Formwork to cast in situ concrete lining for open drains (class F1 surface finish):				
	(b) To sides with formwork on both internal and external faces (each face measured)	m ²	2094		
	(c) To ends of slabs	m ²	155		
	TOTAL CARRIED FORWARD				

SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

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SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

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SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

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PAY	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3300	MASS EARTHWORKS				
33,01	Cut and borrow to fill, including free haul up to 1.0 km:				
	(a) Material in compacted layer thicknesses of 200mm and less :				
	(ii) Compacted to 93% of modified AASHTO density:	m ³	113 340		
33,03	Extra over item 33.01 for excavating and breaking down material in:				
	(a) Intermediate excavation	m ³	90 000		
	(b) Hard excavation	m ³	50 000		
	(c) Boulder excavation (class A and class B)	m ³	3 400		
33,04	Cut to spoil, including free-haul up to 1.0 km. Material obtained from :				
	(a) Soft excavation	m ³	60 000		
	(b) Hard excavation	m ³	6 000		
33,07	Removal of unsuitable material (including free-haul of 0,5km):				
	(a) In layer thicknesses of 200mm and less:				
	(i) Stable material	m ³	1 133		
33,10	Roadbed preparation and the compaction of material:				
	(a) Compaction to 93% of modified AASHTO density	m ³	50 000		
33,13	Finishing-off cut and fill slopes, medians and interchange areas:				
	(a) Cut slopes	m ²	300 000		
	(b) Fill slopes	m ²	300 000		
33,14	Extra over item 33.01 for excavating material from the pavements and fills of existing roads:				
	(a) Non-cemented material	m ³	106 643		
	TOTAL CARRIED TO SUMMARY				

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PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
5600	ROAD SIGNS				
56.01	Road sign boards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class I retro- reflective material, where the sign board is constructed from:				
	(c) Prepainted galvanized steel plate (chromadek 1,4mm thick or approved equivalent):				
	(i) Area not exceeding 2m²	m²	90		
56.02	Extra over item B56.01 for using:				
	(a) Background of retro-reflective material of:				
	(i) Class I	m²	90		
	(iii) Class III	m²	90		
	(b) Lettering, symbols and borders of retro-reflective material of:				
	(i) Class I	m²	90		
	(iii) Class III	m²	90		
56.03	Road sign supports (overhead road sign structures excluded):				
	(b) Timber (125mm)				
	(i) 75mm	m	386		
	(ii) 125mm	m	297		
B56.04	Marker signs				
	(a) Kilometre post	No	6		
	(b) Distance Number Plate	No	3		
56.05	Excavation and backfilling for road sign supports (not applicable to kilometre posts)	m³	21		
56.06	Extra over item 56.05 for cement-treated soil backfill	m³	3		
B56.10	Danger plates at culverts/ structures:				
	(a) W405/W406	No	164		
	(b) W401/W402	No	136		
	(c) W416	No	14		
	(d) W417	No	14		
B56.11	Dismantling and disposing of existing road signs	No	10		
	TOTAL CARRIED TO SUMMARY				

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PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
5700	ROAD MARKINGS				
B57.02	Retro-reflective road marking paint:				
	(a) White lines (broken or unbroken):				
	(i) 100mm	km	21		
	(ii) 150mm	km	10		
	(iii) 500mm	km	5		
	(b) Yellow lines (broken or unbroken)				
	(i) 150mm	km	42		
	(d) White lettering and symbols	m ²	25		
	(f) Transverse lines, painted island, arrestor bed and kerb face markings:				
	(i) White	m ²	600		
	(ii) Yellow	m ²	4 000		
	(iii) Black/White	m ²	200		
57,04	Variations in rate of application:				
	(a) White paint	ℓ			Rate only
	(b) Yellow paint	ℓ			Rate only
	(d) Retro-reflective beads	kg			Rate only
57,05	Roadstuds:				
	(b) High density plastic stick-on type with a 43 glass bead reflector (red/red)				
	(i) White/White	No	800		
	(ii) Yellow/Red	No	3 000		
	(iii) Red/Red	No	1 000		
57,06	Setting out and premarking the lines (excluding traffic-island markings, lettering and symbols)	km	60		
57,07	Re-establishing the painting unit during the contract and at the end of the maintenance period	sum	1		
	TOTAL CARRIED TO SUMMARY				

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PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
5800	LANDSCAPING AND PLANTING PLANTS				
58.01	Trimming:				
	(a) Machine trimming	m ²	200 000		
	(b) Hand trimming	m ²	10 000		
58.03	Preparing the areas for grassing:				
	(a) Ripping	ha	20		
	(b) Scarifying for loosening topsoil	ha	1		
	(c) Topsoil within the road reserve, using:				
	(i) Topsoil obtained from within the road reserve or borrow areas:	m ³	30 000		
	(e) Providing and applying chemical fertilisers and/or soil-improvement material:				
	(ii) Superphosphate	t	5		
	(iii) Limestone ammonium nitrate	t	6		
58.04	Grassing:				
	(b) Sodding by using the following type of sods:				
	(i) Nursery sods	m ²	100 000		
	(d) Hydroseeding				
	(i) Providing an approved seed mixture for hydroseeding	kg	380		
	(ii) Providing an approved mulch	kg	1 000		
	(iii) Hydroseeding	ha	10		
58.05	Watering the grass when established by topsoiling only	kl	2 000		
	TOTAL CARRIED TO SUMMARY				

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PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD				
6100	FOUNDATIONS FOR STRUCTURES				
61,01	Additional foundation investigations	Prov Sum	1	R70 000,00	R70 000,00
61,02	Excavation:				
	(a) Excavating soft material situated within the following successive depth ranges:				
	(i) 0m up to 2m	m ³	336		
	(ii) 2m up to 4m	m ³	206		
	(ii) 4m up to 6m	m ³	103		
	(b) Extra over sub item 9/61.02 for excavation in hard material irrespective of depth	m ³	130		
	(c) Extra over subitem 1/61.02(a) for additional excavation required by the engineer after the excavation has been completed	m ³	200		
61,03	Access and drainage:				
	(a) Access	Lump Sum	1		
	(b) Drainage where no access has been provided	Lump Sum	1		
61,04	Backfill to excavations utilising:				
	(a) Material from the excavation	m ³	540		
	(b) Imported material	m ³	450		
61,05	Fill within a restricted area (extra over item 33.01)	m ³	490		
61,07	Overbreak in excavation in hard material	m ²	65		
61,08	Foundation fill consisting of:				
	(a) Rock fill	m ³	111		
	(c) Compacted granular material	m ³			Rate only
	(d) Mass concrete (Class 15/38)	m ³	75		
	(e) Concrete screed (75mm thick, Class 15/19)	m ³	25		
61,14	Foundation lining				
	(a) Of polyethylene, 250 micron thick under apron slab	m ²	15		
B61.51	Lateral support to excavations				
	(a) In cut				
	(i) 0 to 2 m depth	m ²	32		
	(ii) 2 to 4 m depth	m ²	32		
	(iii) 4 to 6 m depth	m ²	16		
	(b) In fill				
	(i) 0,5 to 1,5 m high	m ²			Rate only
	TOTAL CARRIED FORWARD				

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PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	BROUGHT FORWARD				
6100	FOUNDATIONS FOR STRUCTURES				
61,01	Additional foundation investigations	Prov Sum	1	R200 000,00	R200 000,00
61,02	Excavation:				
	(a) Excavating soft material situated within the following successive depth ranges:				
	(i) 0m up to 2m	m³	340		
	(b) Extra over sub item 7/61.02 for excavation in hard material irrespective of depth	m³	340		
	(c) Extra over subitem 7/61.02(a) of addition excavation required by the engineer after the excavation has been completed	m³	110		
	(d) Extra over subitem 7/61.02(a) for additional excavation required by hand	m³	5		
61,03	Access and drainage:				
	(a) Access	Lump Sum	1		
	(b) Drainage where no access has been provided	Lump Sum	1		
61,04	Backfill to excavations utilising:				
	(a) Material from the excavation	m³	103		
	(b) Imported material	m³	103		
61,05	Fill within a restricted area (extra over item 33.01)	m³	350		
61,07	Overbreak in excavation in hard material	m²	110		
61,08	Foundation fill consisting of:				
	(d) Mass concrete (Class 17/38)	m³	95		
	(e) Concrete screed (75mm thick, Class 17/19)	m³	4		
61,14	Foundation lining:				
	(a) Of polyethylene, 0.15 mm thick	m²	30		
	TOTAL CARRIED FORWARD				

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PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	BROUGHT FORWARD				
6600	NO-FINES CONCRETE, JOINTS, BEARINGS, BOLT GOUPS FOR ELECTRIFICATION, PARAPETS AND DRAINAGE FOR STRUCTURES				
B66.05	Expansion joints				
	(a) Asphaltic plug- Thorma joint or similar 400 x 85 mm	m	33		
B66.06	Filled joints:				
	(a) 15mm closed cell joint former between abutment and approach slab	m	33		
66,08	Sealing of joints with:				
	(a) Polysulphide (Sika-flex-Pro 2 HP) in NJ balustrades	m	13		
66,11	Bearings:				
	Teflon Sliding Bearings	m	18		
B66.15	Concrete parapets:				
	(a) In-situ type "F-shape" type balustrades including	m	48		
	(b) In-situ type Endblocks	No	4		
66,18	Numbers for structures				
	(a) Number plates:				
	(i) Parapet End blocks	No.	2		
	(ii) Abutments	No.	2		
66,19	Drainage pipes and weep holes				
	(a) Drainage pipes				
	(i) Measured by the metre:				
	(2) 110 mm diameter uPVC pipes between beams	m	15		
66,21	Bidim A4 (non- woven geofabric) cover to back of abutments	m²	20		
66,24	Nose Endings at balustrades	No	2		
66,25	Concrete transition blocks 2000 mm long in Class W30/19 concrete	No	4		
B66.27	Drainage Strip:				
	(a) 325mm wide DN3 Netlon drainage strips	m	20		
B66.28	Perforated Netlon drainage pipes M100 wrapped in Bidim A4 (non-woven geofabric). Include mortar bed of class 15/19 concrete	m	35		
	TOTAL CARRIED FORWARD				

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PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	BROUGHT FORWARD				
6100	FOUNDATIONS FOR STRUCTURES				
61,01	Additional foundation investigations	Prov Sum	1	R70 000,00	R70 000,00
61,02	Excavation:				
	(a) Excavating soft material situated within the following successive depth ranges:				
	(i) 0m up to 2m	m³	313		
	(ii) 2m up to 4m	m³	192		
	(iii) 4m up to 6m	m³	96		
	(b) Extra over sub item 9/61.02 for excavation in hard material irrespective of depth	m³	120		
	(c) Extra over subitem 1/61.02(a) for additional excavation required by the engineer after the excavation has been completed	m³	190		
61,03	Access and drainage:				
	(a) Access	Lump Sum	1		
	(b) Drainage where no access has been provided	Lump Sum	1		
61,04	Backfill to excavations utilising:				
	(a) Material from the excavation	m³	502		
	(b) Imported material	m³	418		
61,05	Fill within a restricted area (extra over item 33.01)	m³	490		
61,07	Overbreak in excavation in hard material	m²	65		
61,08	Foundation fill consisting of:				
	(a) Rock fill	m³	103		
	(c) Compacted granular material	m³	206		
	(d) Mass concrete (Class 15/38)	m³	69		
	(e) Concrete screed (75mm thick, Class 15/19)	m³	23		
61,14	Foundation lining				
	(a) Of polyethylene, 250 micron thick under apron slab	m²	15		
B61.51	Lateral support to excavations				
	(a) In cut				
	(i) 0 to 2 m depth	m²	29		
	(ii) 2 to 4 m depth	m²	29		
	(iii) 4 to 6 m depth	m²	14		
	(b) In fill				
	(i) 0,5 to 1,5 m high	m²			Rate Only
	TOTAL CARRIED FORWARD				

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PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	BROUGHT FORWARD				
6100	FOUNDATIONS FOR STRUCTURES				
61,01	Additional foundation investigations	Prov Sum	1	R70 000,00	R70 000,00
61,02	Excavation:				
	(a) Excavating soft material situated within the following successive depth ranges:				
	(i) 0m up to 2m	m³	216		
	(ii) 2m up to 4m	m³	108		
	(iii) 4m up to 6m	m³	96		
	(b) Extra over sub item 9/61.02 for excavation in hard material irrespective of depth	m³	80		
	(c) Extra over subitem 1/61.02(a) for additional excavation required by the engineer after the excavation has been completed	m³	70		
61,03	Access and drainage:				
	(a) Access	Lump Sum	1		
	(b) Drainage where no access has been provided	Lump Sum	1		
61,04	Backfill to excavations utilising:				
	(a) Material from the excavation	m³	80		
	(b) Imported material	m³	30		
61,05	Fill within a restricted area (extra over item 33.01)	m³	500		
61,07	Overbreak in excavation in hard material	m²	16		
61,08	Foundation fill consisting of:				
	(a) Rock fill	m³	120		
	(c) Compacted granular material	m³	220		
	(d) Mass concrete (Class 15/38)	m³	24		
	(e) Concrete screed (75mm thick, Class 15/19)	m³	8		
61,14	Foundation lining				
	(a) Of polyethylene, 250 micron thick under apron slab	m²	31		
B61.51	Lateral support to excavations				
	(a) In cut				
	(i) 0 to 2 m depth	m²	29		
	(ii) 2 to 4 m depth	m²	29		
	(iii) 4 to 6 m depth	m²	14		
	(b) In fill				
	(i) 0,5 to 1,5 m high	m²			Rate Only
	TOTAL CARRIED FORWARD				

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PAY REF	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
SCHEDULE	HEALTH AND SAFETY				
E23.01	Preparation of Principal Contractor's site specific Health and Safety Plan	L/sum	1		
E23.02	Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	L/sum	1		
E23.03	Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Month	36		
E23.04	Provision of personal protective equipment (PPE):				
	(a) Reflective vests	No.	200		
	(b) Reflective Sun Hat	No.	200		
	(c) Hard hats	No.	40		
	(d) Protective foot wear (pairs)	No.	200		
	(e) Earplugs (pairs)	No.	300		
	(f) Dust masks	No.	300		
	(g) Gloves (pairs)	No.	240		
	(h) High visibility overalls to SARTSM Chapter 13 Level 3	No.	200		
	(i) Ear Defenders SABS approved	No.	60		
E23.05	Provision of full time Construction Health and Safety Officer:				
	(a) To manage the Principal Contractor's H&S obligations on site (1 person)	month	36		
	(b) To manage the appointed SMME's H&S obligations on site (1 person)	month	36		
E23.06	Costs of medical certificates and medical surveillance:				
	(a) Initial (baseline) medical, including audiometric and lung function testing	No.	100		
	(b) Annual or Periodic examinations	No.	100		
	(c) Exit examinations	No.	100		
	d) Occupational Health and Safety Act No. 85 of 1993 and Regulations coupled with the disaster Management agreement 2002 and all COVID-19 related regulations	prov sum	1	R200 000,00	R200 000,00
	TOTAL CARRIED FORWARD				

SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

[illegible]

SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

[illegible]

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[illegible]

SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

[illegible]

SCMU10-23/24-0001: APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

CONTRACT NO. SCMU10-22/23-0024		
THE UPGRADING TO A SURFACE STANDARD PORTION OF ROAD DR08034 - N2 TO R61 VIA CLARKBURY +/-20KM: PHASE 1		
SUMMARY OF PRICING SCHEDULE		
SECTION	DESCRIPTION	AMOUNT (ZAR)
SCHEDULE A	ROAD CONSTRUCTION	
1200	GENERAL REQUIREMENTS AND PROVISIONS	
1300	CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS	
1400	HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL	
1500	ACCOMMODATION OF TRAFFIC	
1700	CLEARING AND GRUBBING	
1800	DAYWORKS	
2100	DRAINS	
2200	PREFABRICATED CULVERTS	
2300	CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES AND CONCRETE LININGS FOR OPEN DRAINS (LI)	
3100	BORROW MATERIALS	
3200	SELECTION, STOCKPILING AND BREAKING-DOWN THE MATERIAL FROM BORROW PITS, CUTTINGS AND EXISTING PAVEMENT LAYERS, AND PLACING AND COMPACTING THE GRAVEL LAYERS	
3300	MASS EARTHWORKS	
3400	PAVEMENT LAYERS OF GRAVEL MATERIALS	
3500	STABILIZATION	
3600	CRUSHED-STONE BASE	
3800	BREAKING UP EXISTING PAVEMENT LAYERS	
4100	PRIME COAT	
4600	BITUMINOUS SINGLE SEAL WITH SLURRY (CAPE SEAL)	
5100	PITCHING, STONEWORK AND PROTECTION AGAINST EROSION (LI)	
5200	GABIONS (LI)	
5400	GUARDRAILS (LI)	
5600	ROAD SIGNS	
5700	ROAD MARKINGS	
5800	LANDSCAPING AND PLANTING PLANTS	
5900	FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS	
5950	PREFABRICATED CONCRETE BUS SHELTER	
8100	TESTING MATERIAL AND WORKMANSHIP	
	TOTAL SCHEDULE A : ROAD CONSTRUCTION	
SCHEDULE B	STRUCTURES	
1	Culvert C1 at km 12.705	
2	Culvert C2 at km 13.250	
3	Bholotwa Bridge at km 19.430	
4	Culvert C3 at km 19.561	
	TOTAL SCHEDULE B: STRUCTURES	
SCHEDULE C	EMPLOYMENT OF LOCAL LABOUR	
SCHEDULE D	PROVISION OF COMPULSORY TRAINING	
SCHEDULE E	HEALTH AND SAFETY	
SCHEDULE F	HIV/AIDS AWARENESS	
SCHEDULE G	DEVELOPMENT OF SMME'S CONTRACTORS	
SCHEDULE H	ENVIRONMENTAL MANAGEMENT	
	TOTAL SCHEDULE C TO H	
	SUB-TOTAL 1	
	Add 15% CONTIGENCIES	
	SUB-TOTAL 2	
	Add 10% CPA	
	SUB-TOTAL 3	
	15% VAT	
	TOTAL TO FORM OF OFFER	

**CONTRACT NO. SCMU10-22/23-0024
UPGRADING TO A SURFACE STANDARD OF ROAD DR08034 - N2 TO R61 VIA CLARKEBURY
PHASE 1 (20KM)**

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD
DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

CALCULATION OF TENDER SUM

<u>DESCRIPTION</u>	<u>AMOUNT</u>
TOTAL SCHEDULE A : ROADWORKS	
TOTAL SCHEDULE B: STRUCTURES	
TOTAL SCHEDULE C: OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS	
TOTAL SCHEDULE D: DEVELOPMENT FOR SMME CONTRACTORS	
TOTAL SCHEDULE E: ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION	
TOTAL OF SCHEDULES:	
CONTINGENCIES The sum provided here is under the sole control of the Employer's Agent and may be deducted in whole or in part. Add 15% of TOTAL OF SCHEDULES.....	
SUBTOTAL A.....	
CONTRACT PRICE ADJUSTMENT Sum provided in terms of the provisions of the Contract Price Adjustment Schedule of the General Conditions of Contract. Add 10% of SUBTOTAL A.....	
SUBTOTAL B.....	
VALUE ADDED TAX (VAT) Add 15% of SUBTOTAL B.....	
CONTRACT SUM CARRIED TO FORM OF OFFER AND ACCEPTANCE:.....	

CONTRACT NO. SCMU10-22/23-0024
UPGRADING TO A SURFACE STANDARD OF ROAD DR08034 - N2 TO R61 VIA CLARKEBURY
PHASE 1 (20KM)

PART C3: SCOPE OF WORK (refer to new document)

THE CONTRACT
PART 3 (OF 4): SCOPE OF WORKS

**CONTRACT NO. SCMU10-22/23-0024
UPGRADING TO A SURFACE STANDARD OF ROAD DR08034 - N2 TO R61 VIA CLARKEBURY
PHASE 1 (20KM)**

SECTION C3.1: DESCRIPTION OF THE WORKS

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PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034
FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

PART C3 : SCOPE OF WORK

SECTION A:STANDARD AMENDMENTS ISSUED BY COLTO

**SCMU10-23/24-0001:
APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034
FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034
FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

PART C3 : SCOPE OF WORK

SECTION A: STANDARD AMENDMENTS ISSUED BY COLTO

Notes to tenderer

1. The Standard Specifications for Road and Bridge Works for State Road Authorities 1998, prepared by the Committee of Land Transport Officials, (COLTO), as amended, shall apply to this contract. The amendments are those issued by COLTO and reproduced in Section A, together with additional amendments as set out in Section B.
2. Where reference is made to the General Conditions of Contract and Sub-Clauses thereof in the abovementioned Standard Specifications, they refer to the appropriate edition of the 'General Conditions of Contract for Road and Bridge Works for State Road Authorities,' issued by COLTO (Clause 1115 of the Standard Specifications refers).

The General Conditions of Contract applicable to this contract are the "Conditions of Contract for Construction Works (Third Edition) 2015 (SAICE), as published by the South African Institute of Civil Employer's Agent and the necessary amendments to the Standard Specifications have been made and included in the Project Specifications contained in this document.

3. **The terms "Schedule of Quantities", (used throughout the Standard Specifications) and "Bill of Quantities", (used in all other documents forming part of this contract), and "Pricing Schedule" are synonymous.**

**SCMU10-23/24-0001:
APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034
FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034
FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

PART C3 : SCOPE OF WORK

SECTION B: PROJECT SPECIFICATION AMENDMENTS TO THE STANDARD SPECIFICATIONS

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034
FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

PART C3 : SCOPE OF WORK

SECTION B: PROJECT SPECIFICATION AMENDMENTS TO THE STANDARD SPECIFICATIONS

Notes to tenderer:

1. 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 required for this particular contract.
2. 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 which 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.
3. The tenderer shall note that the COLTO Standard Specifications are based on the General Conditions of Contract for Road and Bridge Works for State Road Authorities (1998 Edition) (COLTO), prepared by the Committee of Land Transport Officials . Reference to specific clauses in these COLTO General Conditions of Contract shall need to be exchanged for the equivalent clause in the General Conditions of Contract for Construction Works 3rd Edition 2015 (SAICE), as published by the South African Institute of Civil Employer's Agenting, as amended in the Contract Data (C1.2) of this document. Table 1115/1 showing details of the equivalent clause numbers is included in Clause B1115 of the Project Specifications.

Whereas every effort has been made to include all of the affected clauses in the table, there may be some omissions. In every case, however, the SAICE General Conditions of Contract for Construction Works, as amended in the Contract Data (C1.2), shall apply and the Contractor shall be responsible for interpretation of the equivalent clause.

PROVINCE OF THE EASTERN CAPE

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TENDER NO. SCMU10-23/24-0001

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PART C3: SCOPE OF WORK

SECTION B: PROJECT SPECIFICATION AMENDMENTS TO THE STANDARD SPECIFICATIONS

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SECTION 1100: DEFINITIONS AND TERMS

B1115 GENERAL CONDITIONS OF CONTRACT

Replace Clause 1115 with the following:

"The General Conditions of Contract for Construction Works 3rd edition 2015 (abbreviated as "GCC 2015" or as "General Conditions of Contract 2015") published by the South African Institution of Civil Employer's Agenting (SAICE), as amended in the Contract Data (C1.2) shall apply to and form part of this contract."

All references in the Standard Specifications for Road and Bridge Works for State Road Authorities COLTO are to the General Conditions of Contract for Road and Bridge Works for State Road Authorities COLTO. Consequently, all references in the COLTO Standard Specifications have to be amended accordingly to reflect the SAICE General Conditions of Contract that is applicable to this contract. The COLTO Standard Specifications have been scrutinized and the clauses, which refer to the COLTO General Conditions of Contract, were identified. Each COLTO clause reference is tabulated in Table B1115 below (context of reference is also given) together with the relevant equivalent clause in the SAICE General Conditions of Contract that is applicable to this contract.

Whereas every effort has been made to include all of the affected clauses in the table, there may be some omissions. In every case, however, the SAICE General Conditions of Contract for Construction Works, as amended in the Contract Data (C1.2), shall apply and the Contractor shall be responsible for interpretation of the equivalent clause."

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

TABLE B1115: REFERENCES IN COLTO STANDARD SPECIFICATIONS TO THE COLTO GENERAL CONDITIONS OF CONTRACT AND RELEVANT SAICE GENERAL CONDITIONS OF CONTRACT FOR CONSTRUCTION WORKS 3rd EDITION 2015

COLTO Standard Specification		COLTO General Conditions of Contract 1998		SAICE General Conditions of Contract for Construction Works 3 rd edition 2015	
Clause No	Page No	Clause No	Description or Reference	Clause No	Description or Reference
1204	1200-2	15	Programme	5.6	Programme
1209(e)	1200-5	52: 52(1)(e) 52(2)	Monthly payments (documentary evidence of ownership of materials) Valuation of material brought onto Site	6.9 & 6.10: 6.9 6.10.2	Vesting of plant and materials Valuation of material brought onto Site
1210	1200-5	54: 54(1) 54(2) 54(3)	Certificate of practical completion	5.14: 5.14.1 5.14.2 5.14.3	Certificate of Practical Completion
1212(l)	1200-7	49: 49(2)	Contract Price Adjustment Factor	6.8: 6.8.2	Contract Price Adjustment Factor
1215	1200-9	45	Extension of time for completion	5.12	Extension of time for practical completion
1217	1200-10	35	Care of the Works	8.2	Care of the Works
1303	1300-1 and 1300-2	49 & 53: 49(2) and 49(3) 53	Contract Price Adjustment Factor and special materials Variations exceeding 20%	6.8 & 6.11: 6.8.2 and 6.8.3 6.11	Contract Price Adjustment Factor and special materials Variations exceeding 15%
1303	1300-2	12 & 45: 12 45	Commencement of Works and Commencement Date Extension of time for completion	5.3 & 5.12: 5.3 5.12	Commencement of the Works Extension of time for practical completion
1403 (c)(ii)	1400-4	40(1)	Valuation of variations	6.4.1	Value of variations
1505	1500-3	40: 40(1)	Valuation of variations	6.4: 6.4.1	Value of variations
1507 Items: 15.08 15.09 15.11	1500-8	48: 48.1	Provisional Sums	6.6: 6.6.1	Provisional Sums
3108 Note (2)	3100-4	40: 40(1)	Valuation of variations	6.4: 6.4.1	Value of variations
3204 (b)(iii)	3200-2	40: 40(1)	Valuation of variations	6.4: 6.4.1	Value of variations

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COLTO Standard Specification		COLTO General Conditions of Contract 1998		SAICE General Conditions of Contract for Construction Works 3 rd edition 2015	
Clause No	Page No	Clause No	Description or Reference	Clause No	Description or Reference
3303(b)	3300-2	2	Employer's Agent and Employer's Agent's Representative	3	Employer's Agent
5803(c)	5800-3	40:		6.4:	
		40(1)	Valuation of variations	6.4.1	Value of variations
5805(d)	5800-4	40:		6.4:	
		40(1)	Valuation of variations	6.4.1	Value of variations
5809 Item 58.10	5800-10	48:		6.6:	
		48.1	Provisional Sums	6.6.1	Provisional Sums
8103(c)	8100-1	40:		6.4:	
		40(1)	Valuation of variations	6.4.1	Value of variations
8117 Item 81.03	8100-26	22	Clearance of site on completion	5.15	Clearance of site

The relevant definitions of the SAICE General Conditions of Contract (Third Edition) 2015 shall apply to this contract with the following reference to the terms used in the COLTO Standard Specifications:

SAICE General Conditions of Contract (Third Edition) 2015 : Sub-clause 1.1 Definitions

Replace clause 1.1.1.2 with the following:

"1.1.1.2 **"Bill of Quantities"** means the Schedule of Quantities document so designated in, and forming part of, the Tender. The Schedule of Quantities forms part of the Pricing Data that lists the items of work and the quantities and rates associated with each item to allow the Contractor to be paid at regular intervals an amount equal to the agreed rate for the work multiplied by the quantity of work completed."

Replace Sub-clause 1.1.1.8 with the following:

"1.1.1.8 **"Contract Data"** means the specific data in the document so designated in, and forming part of, the Tender. The Contract Data together with the General Conditions of Contract and the Special Conditions of Contract collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract."

Replace Sub-clause 1.1.1.25 with the following:

"1.1.1.25 **"Pricing Data"** means the document that contains the Schedule of Quantities and provides the criteria and assumptions which it will be assumed in the Contract that were taken into account by the Contractor when developing the Contract Sum."

Add the following new Definitions:

"1.1.1.35 **"Project Specifications"** means any specifications appearing under this heading and forming part of the Contract, and containing any amendments to, omissions from or additions to the Standard Specifications that may be required in connection with a specific project."

"1.1.1.36 **"Special Conditions"** means any addition to, departure from or amendment of the General Conditions of Contract as set out in the Contract Data forming part of the Tender Documents."

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

“1.1.1.37 **“Works Specifications”** means all specifications forming part of the Contract whether they appear in the Standard Specifications, the Project Specifications or on the Drawings, or be they instructions given to the Contractor, or any other specifications referred to in the above-mentioned Specifications.

B1155 WORK IN RESTRICTED AREAS

Delete the contents of Clause 1155 and replace with the following:

"Notwithstanding any reference in any specification to work in restricted areas, no additional payment will be made for work in restricted areas.

The Contractor will be deemed to have included any cost relating to work in restricted areas in the tendered rates."

Add the following additional clauses:

“B1156 PROCESS CONTROL

Process control is the responsibility of the Contractor and refers to all testing required to be carried out on the Works in order to ensure that the completed permanent works comply with the specifications and drawings. All such testing will be subject to inspection and approval by the Employer's Agent.

Process control will be carried out at the cost of the Contractor.

B1157 ACCEPTANCE CONTROL

Acceptance control means whatever testing the Employer's Agent carries out over and above the process control testing already carried out in order to decide on the acceptability of any work submitted by the Contractor.

Process control tests can be used as acceptance control if the Employer's Agent is satisfied with the results as presented to him.

The Employer shall not pay claims for delays to the works resulting from the awaiting of test results.

B1158 VALUE OF WORK DONE

The value of work done referred to in Section 1300 shall be defined as the total of the work done measured in the Bill of Quantities including items 13.01(a) to (c) (when calculated to include themselves), all day work done, all work done due to variation orders and eighty percent of the value of all materials on site but excluding any payment made for Contract Price Adjustment and VAT.

B1159 COMMERCIAL SOURCE

A commercial source is a source of material for which the Contractor is responsible for proving compliance with all relevant specifications. The tendered rate shall include full compensation for all required testing, transport and processing.

Should the Contractor elect not to utilise material for the proposed sources and instead utilise an alternative source then all material products from such source shall be deemed to be as from a “commercial source” for purposes of responsibility of specification compliance and payment.”

B1160 AGGREGATE SIZE

Where reference is made in this specification or the standard specifications to aggregate size, nominal aggregate size or maximum aggregate size, the aggregate size as listed shall be replaced with the new corresponding aggregate size as indicated in the following table:

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

Aggregate size	New aggregate size
26.5	28
19	20
13.2	14
9.5	10
6.7	7.1
4.75	5
2.36	2
1.18	1

B1161 COMPACTION

The standard for compaction efforts shall change from Modified AASHTO Density as per TMH1 Test Method to Maximum Dry Density (MDD) as per SANS 3001. Where reference is made to compaction or of Modified AASHTO Density in the contract documentation or the standard specifications or wherever there is conflict between the contract documentation and the standard specifications, the SANS 3001 specification and terminology shall govern.

B1162 SANS TEST METHODS AND SPECIFICATIONS

Where reference is made to TMH test methods in this project specification or the standard specifications, it shall be replaced with the relevant currently published SANS test methods (including the 3001 and 4001 series).

On this contract where a SANS specification exists, all products shall conform to the specification and shall bear the inspection seal or brand mark of the SABS (South African Bureau of Standards)."

SECTION 1200: GENERAL REQUIREMENTS AND PROVISIONS

B1202 SERVICES

Add the following at the end of clause 1202:

"A provisional sum is included in the Schedule of Quantities to cover the costs of relocating the known services. This provisional sum shall be used to effect payments for the services relocation work carried out by the service provider in consultation with the Employer."

Add the following to the second paragraph:

"The Contractor shall immediately inform the Employer's Agent's representative of any services encountered and which he discovers during the contract."

Insert the following paragraphs after the fifth paragraph:

"All services which exist or are presumed to exist by the Contractor or the Employer's Agent must be searched for and exposed by the Contractor so that the Employer's Agent can take a final decision about possible protection or shifting.

It is also a condition of this contract that the Contractor notify the Employer's Agent in writing at least one week in advance of the intention to search and expose any existing services. During this period the Contractor must assist the Employer's Agent in gathering any information about these services."

Add the following after the sixth paragraph of Clause 1202 of the Specifications:

"The Contractor's attention is drawn to the relevant clauses of the General and Special Conditions of Contract regarding liability for damage to the works, or property, or injury to persons arising from the construction of the works. His attention is also drawn to Clause 8.6 of the General Conditions of Contract regarding insurance to

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

be effected by the Contractor. Special attention is drawn to the exclusions in this insurance policy and particularly to the exclusions regarding consequential damage."

In the second paragraph (now the third paragraph), delete the word "utility" at the end of the second line.

In the final paragraph delete the second and third sentences starting with "Should" and replace with the following:

Before any work can commence the Contractor shall verify the actual position of each service and bring to the attention of the Employer's Agent any service that is not recorded. As the Contractor is not authorised to remove or replace these facilities he shall:

- (i) Give preliminary notice, in writing to the relevant service provider, that the services on the site will require removal or protection prior to works being carried out in the vicinity of each service. The Contractor shall advise the service provider of:
 - a) the number of services and their locations and
 - b) the proposed dates when works will commence in the vicinity of each service.
- (ii) In addition to the above preliminary notice, give the service provider thirty days written notice of the intention to commence work in the vicinity of each facility.
- (iii) Upon completion of the work in the vicinity of each facility, the Contractor shall notify the service provider, in writing, that work is complete and the service may be reinstated.

Any delay resulting from the removal/replacement of a service shall not be the subject of a claim, it being deemed that the Contractor shall employ the services of the service provider as a subcontractor.

For further details and positions of these services refer to Drawings numbered 1051-04-RS-T-G-008-00 to 1051-04-RS-T-G-012-00 for Tender purposes or 1051-04-RS-C-G-008-00 to 1051-04-RS-C-G-012-00 for Construction purposes. Any cost of repairs, replacement and/or installation of services and equipment resulting from the Contractor's negligence or unauthorized action shall be to the Contractor's account."

Add the following to this Clause:

"The cost of alterations to services necessitated by the construction will be borne by the Employer.

The Contractor shall allow all reasonable access to any authority or department for the purpose of maintaining, laying and/or altering any service cables or mains during the construction period.

- (a) Owing to the possible inaccuracy of records of existing services (water mains, electric cables, telephone cables, etc.) the Contractor shall locate services that may be affected by this Contract prior to the commencement of excavations.

Payment for the exposure of services by excavation will be on the basis of the tendered rates or, if no appropriate rate exists, on a Dayworks basis.

- (b) The Contractor shall not damage adjoining fences and buildings when depositing spoil and/or materials. All claims arising from such causes shall be settled by the Contractor.

The Contractor shall prevent damage to buildings, fences and other objects in the vicinity of the Works, as a result of the execution of this Contract. The Contractor shall supply and erect shoring, screens, barricades, temporary supports and other items necessary for preventing such damage."

Add the following to the eight paragraph:

Eskom and Telkom will be responsible for the relocation of all the electrical and telecommunication services under their control while the contractor will be responsible for the relocation and / or protection of all other services. The list of known services (Part C3) indicated in the schedule are indicative only and must be confirmed by the Contractor.

B1203 ROAD INTERSECTIONS AND JUNCTIONS

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In the first sentence of the first paragraph of this Clause insert ", public transport embankments" after the words "farm accesses".

Add the following Subclauses to this Clause:

"(a) Treatment at gravel road intersections and other accesses

The base layer as well as the surfacing shall end at the specified limit of construction shown on the drawings for proclaimed roads and such other roads as directed by the Employer's Agent.

Each of the underlying layers of the new road shall project a distance at least 600 mm beyond the termination of the layer immediately above it.

The void shall be backfilled with approved wearing course gravel or shoulder material compacted in layers by hand operated vibrating compactors.

Prior to placing the surfacing, an edge beam of 200 mm wide and 100 mm deep neatly excavated over the full width of the junction. This trench shall be filled with concrete, as specified in Section 2300 of the Specifications. The concrete shall be finished off level with the finished base and the surfacing for the new road shall be extended over this thickened edge.

B1204 PROGRAMME OF WORK

(a) General requirements

Add the following as a continuation of the first paragraph:

"In drawing up the programme the Contractor shall make allowance for the following:

- (i) All special non-working days defined in the Contract Data (C1.2).
- I. The expected delays defined in clause B1215: Extension of time resulting from abnormal climatic conditions.
 - (iii) The following restricted working conditions:
 - The expected delays as defined in B1215: Extension of time resulting from abnormal rainfall
 - Minimum spacing between two consecutive sections of half width construction = 1 km (no construction activities will be allowed in this section and traffic will flow uninterrupted)
 - Maximum length of half width construction shall be 2 km;
 - It is a condition of the Contract that the full width of road will be open to two-way traffic the duration of the Contractors' year end closure.
 - (iv) Physical conditions and artificial obstructions and their effects.
 - (v) The accommodation and safeguarding of public traffic.
 - (vi) Dealing with, altering and installing services.
 - (vii) All the training requirements specified.
 - (viii) All other actions required in terms of this Contract.

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- (ix) All programme implications of employing SMME subcontractors in accordance with the requirements of Part 3: Section F.

The Contractor shall clearly indicate the following:

- (i) Proposed production rates
- (ii) Sequence of activities and dependencies
- (iii) The critical path activities
- (iv) Non-working days i.e. special non-working days, pay weekends, year-end break etc.
- (v) Work to be carried out by selected subcontractors and critical lead times for procuring selected subcontractors.

This initial programme shall realistically account for the forecast cash flow within the defined contract period. If an alternative contract period is offered, the Contractor shall submit a separate programme with the alternative tender."

The following details shall be submitted together with the programme:

- (i) The number of working hours per day, working days per week, assumed holiday or shut down periods on which the programme is based.
- (ii) The overall labour and major plant resource levels on which the programme is based.
- (iii) The detailed traffic accommodation proposals on which the programme is based (road or lane closures, lengths of sections to be worked, timing etc.)

The Contractor shall base his programme of work on the scope of the work that he has determined from his own design and as described in the Project Specification. The Contractor shall take full responsibility for the programming of the work and make the necessary allowances for any factors that he considers relevant.

Should the Employer's Agent believe that a major revision of the programme is required, the Contractor will be required to submit a revised programme within two weeks of a written notification to this effect.

Progress reports and charts required in terms of the Contract shall be submitted at least three working days before each monthly site meeting. The format of the reports shall be agreed in advance with the Employer's Agent and shall contain amongst others the following information:

- (i) The contract programme with progress charts and programme graphs updated to reflect the actual progress to date.
- (ii) A summary of progress on site over the month preceding the site meeting. The report shall be in the form of a detailed narrative to the contract programme.
- (iii) Details of activities running late, indicating what steps have been or will be taken to ensure that the work is completed within the specified time.
- (iv) Details of subcontracts running late.
- (v) A report on all labour, plant and materials on site.
- (vi) A report on the training aspects of the contract.

It should be noted that it is in the Contractor's best interest to provide a comprehensive programme giving as much information as possible about the times allowed for the various activities as well as resource or other limitations affecting the programme.

Add the following new sub-clauses:

"(c) Limitations

The Contractor shall take into account the following when drawing up his construction programme:

(i) Working time

The entire works shall be completed within the time for completion stated in the Contract Data.

(ii) Construction limitations

Requirements for safety and accommodation of traffic, seals and road marking as set out in the Project Specifications shall be strictly enforced.

In compiling the programme of work, the Contractor shall take into account the weather and operational limitations regarding the application of bituminous products as specified in Series 4000 of the specifications.

(iii) Access to site

The whole of the site will be handed over at commencement and there are no restrictions anywhere work may be carried out at any one time. (Refer to Clause B1224).

It is a condition of the Contract that the road or temporary bypass will be open to two-way traffic during the end of year Contractor's closure.

(iv) In compiling the programme of work, the Contractor shall incorporate the following:

- a) Weather and operational limitations.
- b) No construction allowed within 100m either side of bridge and culvert construction sites until completed
- c) The maximum lengths of road allowed to be occupied at any one time.

(d) Programme revisions

The programme will be reviewed at the monthly site meetings at which the Contractor shall provide sufficient detail that will allow the comparison of completed work per activity against the original approved programme.

The Contractor shall indicate what resources and programme changes he intends to implement in order to remedy any activity that may have fallen behind. The Employer's Agent may instruct the Contractor to carry out a major revision of the programme. Such a revision shall be submitted for approval within fourteen days of the instruction."

(e) Use of selected subcontractors

In compiling the programme of work the contractor shall make due allowance for the procurement of selected subcontractors and indicate clearly commencement dates for each subcontract.

B1205: WORKMANSHIP AND QUALITY CONTROL

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Add the following after the title:

“The Contractor shall 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. **See Part C3 – Scope of Works – Quality Assurance Framework for Road Works** for a guideline in preparing the quality plan / system.

The quality manager shall be resident on site full time. No construction activities shall take place on site before the Employer’s Agent approves the method statement for that activity”.

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 Employer’s Agent, for his approval, within two weeks of the site handover. Once accepted by the Employer’s Agent 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.”

Insert the following paragraph:

“The site laboratory shall be a combined laboratory which will carry out process and acceptance control testing. This laboratory will be outsourced as detailed in B81.05(a).

Dual laboratory facilities for the Employer’s Agent and the Contractor may be substituted with the combined laboratory facilities for process and acceptance control testing subject to the following requirements laid down by the Employer.

The following is required from the contractor:

- (a) A formal application.
- (b) A clear indication of the type(s) of laboratory that will be included in the combined effort.
- (c) An undertaking that the Contractor will accept the test results of the combined laboratory. Should there be any doubts with regard to certain test results, this will be settled by an independent laboratory mutually agreed upon. The cost in such cases will be to the account of the party at fault.
An undertaking that the Employer’s Agent will be in charge of the combined laboratory and the staff and equipment will be under the sole control of the Employer’s Agent.
- (e) A monetary contribution that can be made up with respect to one or part of the following:
 - Qualified laboratory staff
 - Laboratory buildings
 - Laboratory equipment
 - Transport for field testing and sampling
 - Monetary

The Employer will not be prepared to consider claims for delays to the Works resulting from the awaiting of test results or approval of designs submitted. It is in the Contractor’s interest to submit samples for design approvals as early as possible in order to expedite any design approvals required. Testing will be effected as promptly as possible but it is in the Contractor’s own interest to submit material samples, concrete cubes, other components required for testing or requests for approval of concrete or layer works in good time in order to assist in avoiding or reducing delays.”

Add the following at the end of this clause:

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"Quality control as detailed in section 8200 (scheme 1) will be used for determining the acceptance levels with respect to the properties of the materials and workmanship executed by the contractor."

B1206: THE SETTING OUT OF WORK AND PROTECTION OF BEACONS

Delete "and of clause 14 of the general conditions of contract" in the sixth paragraph.

Add the following paragraphs:

"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 Employer's Agent. 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 Employer's Agent shall be the Contractor's responsibility and deemed to be included in the tendered rates.

"The contractor shall use appropriate methods for setting out the works to be constructed by labour-based methods. This may include the use of special templates and sight rails and other suitable implements, which will assist the labourers in constructing the works to the required lines, levels and standards. The cost of these implements and additional setting-out procedures shall be included in the rates for the works items and no separate payment will be made for them."

Add the following at the end of the fourth paragraph:

"Road markings, particularly the divergent/convergent lines of ramp interchanges and no overtaking barriers are also elements of the road that require proper setting out. The contractor shall prove to the Employer's Agent that critical reference points have been satisfactorily recorded for later reinstallation before any work commences that will obliterate the existing markings."

The scope of Clause B1206 shall be extended to include the appointment of Professional Land Surveyors to survey the final road reserve fence and frame SG Diagrams of the subdivided portions. The Contractor shall obtain quotations from a minimum of three (3) Professional Land Surveyors approved by the Employer's Agent to undertake this work. The final selection of Land Surveyor shall be approved by the Employer's Agent. Payment items for this work as well as for the Contractor's handling costs and is deemed to be included in the tendered rates"

B1207 NOTICES, SIGNS AND ADVERTISEMENTS

Delete the the 4th paragraph and replace with the following:

"All signboards erected in accordance with the drawings or as approved advertisements for the Contractor's establishment, shall be removed at the same time as the Contractor's de-establishment. Payment under sub-item 13.01 for the final instalment of 15 % of the tendered lump sum shall not be made unless all the advertisements, notices and temporary signs have been removed."

Add the following to this clause:

"Detail of the notice boards that are required in terms of clause 1207, are shown in Volume 4."

B1208 MEASUREMENTS

(a) Measurement of Completed Work

Add the following:

- (v) The actual authorised quantities of application or mix proportion of materials such as bituminous binders, aggregates, mineral fillers, paint, etc., shall be measured and paid for irrespective of allowed variations from nominal mix proportions or prescribed, portions. Any unauthorised increase in rates of application or mix proportions above those specified, shall however not be paid for.

The Employer's Agent may also reject any work outright where the actual rate of application of the aforementioned is not within the specified limits and this work shall be rectified or reconstructed at the Contractor's expense.'

B1209 PAYMENT

(b) Rates to be inclusive

In the first paragraph of this subclause insert the following between the words "temporary work," and "testing,"

"Complying with the OHS Act and in particular with its Construction Regulations, providing the required health and safety measures,".

Add the following to the first paragraph:

"VAT shall be excluded from the rates."

(c) The meanings of certain phrases in payment clauses

- (i) Procuring and furnishing (material)

Delete the words: 'but excluding overhaul' in the first paragraph

Add the following:

"Payment for procuring and furnishing material from commercial sources shall include all transport costs, irrespective of distance hauled".

(e) Materials on the site

Add the following:

"The Employer's Agent may at his sole discretion allow payments under "Materials on the site" in respect of any construction materials, if stored off-site, providing that:

- i) the site selected for this purpose is approved by the Employer's Agent;
- ii) such land is physically separated from any production plant or operation;
- iii) only materials for use under this contract are stockpiled on such land, and

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- iv) the contractor has provided proof of an agreement with the owner of such land that the owner has no objection to using the land for these purposes and has no claim whatsoever on any materials stockpiled on such land."

Add the following sub-clauses:

“(g) Trade names

Where materials are specified under trade names, tenders must be based on those materials. Alternative materials may be submitted as an alternative tender and the Employer’s Agent may, after receipt of tenders, approve the use of equivalent materials.

(h) Payment Certificates

With reference to Clause 6.10.1 of the General Conditions of Contract, the Contractor shall, at his own expense, submit to the Employer’s Agent three sets of A4-size paper copies of the monthly statement for payment.

(i) Value Added Tax (VAT)

No value added tax shall be included in the Contractor's tendered rates or amounts. Payment of value added tax (VAT) shall be made as a separate item in the Bill of Quantities Summary."

(j) Working in confined areas

Except where provided for in the Standard Specification and the Bill of Quantities no extra payment shall be made nor shall any claim for additional payment be considered for construction in confined areas. The omission of standard pay items from the Bill of Quantities shall be taken to be deliberate and any additional costs incurred shall be deemed to be included in the bulk rate.

The contractor must note that measurement and payment will be in accordance with the specified cross-sections and dimensions only, irrespective of the method used for achieving these cross-sections and dimensions and that the tendered rates and amounts shall include full compensation for all special equipment and construction methods and for all difficulties encountered when 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 additional payment be considered in such cases."

(k) Rates to remain unchanged when scope of work changes

Dependent on the rates and prices offered in the Pricing Schedule, the employer intends to increase or reduce the scope of work to match the budget allowed for this project. The value of such increase or reduction in the scope of works shall not give cause for the contractor to vary the offered rates and prices, which shall remain final and binding for the duration of the contract, excluding items under section B1300 of the pricing schedule, provided that:

- (i) Notification of the change to the scope of work is given in writing in the Appendix to the Form of Acceptance.
- (ii) The value of the increase or reduction in the scope of work does not alter the tendered sum, excluding all provisional sums, by more than 20%.

The employer reserves the right to negotiate with the contractor rates and prices for items under section B1300, as provided for in this clause.

B1210 CERTIFICATE OF PRACTICAL COMPLETION OF THE WORKS

Add the following paragraph:

"In addition to the listed specified items of work and regardless of the degree of beneficial occupation by the employer, no sections of the works, individually or collectively, shall be considered for practical completion unless the following criteria have also been met:

- (i) In the case of partial completion, the estimated cost to complete the outstanding work is less than 2 % of the estimated cost to construct the whole section or sections, excluding CPA, Contingencies and VAT.
- (ii) In the case of the whole works, the estimated cost to complete the outstanding work is less than 2 % of the tendered value of work plus the cost of any variation or extra work orders, but excluding CPA, contingencies, and VAT.
- (iii) It must be possible for the Contractor to complete the written list of outstanding items of work within 28 days of the list having been issued to the Contractor."
- (iv) Any information in the Contractor's possession, that is required by the Employer's Agent and has been requested in writing, has been supplied.

B1214 CONTRACTOR'S ACTIVITIES IN RESPECT OF PROPERTY OUTSIDE THE ROAD RESERVE AND OF SERVICES MOVED, DAMAGED OR ALTERED

Add the following to Sub clause (a):

- "(iii) any land outside the road reserve which the Contractor, with the approval of the Employer's Agent, wishes to temporarily use or occupy, for the purpose of a borrow pit, spoil area, haul or construction road, traffic diversion, stockpiling of material or a bridge camp site, will be temporarily expropriated by the Employer, as specified in Clause B1230.

Replace sub-subclause (b)(ii) with the following:

"Compensation, if applicable, for the land taken or for land temporarily used or occupied outside the area provided by the Employer."

Add the following to the last paragraph of subclause (d)

"Copies of these written agreements shall be handed to the Employer's Agent before the final certificate will be issued. Failing to obtain these written agreements from all landowners and authorities concerned, the Defects Liability Period will be extended including all conditions related to such an extension, until such time that all these agreements are obtained.

The obtaining of any such written agreements will not relieve the Contractor of the execution of any of his obligations to the satisfaction of the landowner or authority concerned, and to the approval of the Employer's Agent".

Under subclause (e) replace the opening paragraph with:

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"Should the Contractor use land not provided by the Employer for the purpose of his own establishment, Employer's Agent's offices and laboratory, or storing of equipment or materials required for construction or disposal, it shall be subject to the following:",

and add the following sub-subclauses:

- "(vi) That lease agreements are concluded with the owner or owners of such land for the full period that such areas are required. The leases shall provide for possible extensions to match the duration of the Contract. The lease agreements shall also provide for the Contract being terminated by Contractor's default or liquidation and the resulting possibility for them to be taken over by a succeeding Contractor.
- (vii) That copies of lease agreements shall be submitted to the Employer's Agent prior to signature by the signing parties, and copies lodged with the Employer's Agent after signing. Notwithstanding the Employer's Agent's approval of the conditions of a lease the Contractor shall be solely responsible for adhering to the terms of the agreements."

Add the following subclauses to this clause:

"(f) Alterations to existing works

Under no circumstances shall the Contractor alter or in any way interfere with existing works or overhead or underground services which are not to be relocated, replaced or removed. Where such works are required to be moved on account of unsuitable levels or situations, adequate notice shall be given to the Employer's Agent, who will arrange with the department and/or statutory authority concerned for the alterations to be carried out.

Where existing works are of such a nature that the Employer's Agent may require them to be moved by the Contractor, the cost of such work will be paid for at scheduled rates or as Dayworks."

(g) Clearance agreements from landowners

The Contractor shall provide the Employer's Agent with copies of all written clearance agreements obtained from landowners under subclauses (b) to (e) before the final certificate will be signed. Should any of the written clearance agreements not be obtained from any of the landowners, the Defects Liability Period, together with all its obligations, will be extended until such time as all the written clearance agreements are obtained.

The acquiring of any written clearance agreement shall not free the Contractor from the carrying out of his obligations to the affected landowner."

B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL

Replace the expressions "Abnormal rainfall" and "rainy weather" with "abnormal climatic conditions" wherever these expressions appear in this clause.

In the second sentence of the third paragraph insert after the words "been granted" the following:

"but excluding the period of the contractors holidays in December and January."

Extension of time resulting from abnormal climatic conditions shall be calculated according to the requirements of Method (ii) (Critical-path method).

Method (ii) (Critical-path method)

Delete the words "(based on a five-day working week)" in the fifth and sixth lines of the second paragraph of Method (ii).

Add the following to the end of Method (ii):

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"The value of "n" working days expected delay caused by normal rainy weather as referred to in Method (ii) shall be as given in Table B1215 below for each respective calendar month of any year:

Table B1215

Month	Expected delay of "n" working days due to normal rainy weather	Month	Expected delay of "n" working days due to normal rainy weather
January***	3	July	1
February	4	August	2
March	3	September	3
April	3	October	3
May	1	November	4
June	1	December***	5

*** Includes the whole month of December / January.

Each "n"-value in Table B1215 applies only to the calendar month immediately to the left of the number, and the "n"-values as specified shall not be taken as being carried forward so as to accumulate over the contract period. If no abnormal rainfall occurs during a particular calendar month in a particular year, then no extension of time for abnormal rainfall shall be granted with respect to that calendar month for that year, and no further consideration shall be given to that "n"-value in respect of that year.

Similarly, if the "n" working days expected delay caused by normal rainy weather during a particular calendar month in a particular year (for which the Contractor shall have made provision in his programme of work in accordance with Method (ii)) are not taken up (either in whole or in part) by standing time due to normal rainy weather during that month of that year, then no further consideration shall be given to those "n" working days (or portion thereof), which effectively have been gained, when any subsequent extension of time claims which may arise later during the contract period are assessed by the Employer."

B1216 INFORMATION FURNISHED BY THE EMPLOYER

Add the following before the first paragraph

"The reduced drawings that form part of the tender document (Volume 4 : Book of Drawings) shall be used for tender purposes only.

The Contractor will be supplied with three (3) paper copies of each of the construction drawings. These paper copies will be issued free of charge and the Contractor shall only be provided with additional copies on request and for his account.

Any information in the possession of the Contractor, which the Employer's Agent's representative requires for completing his as-built drawings, shall be supplied to the Employer's Agent's representative before a certificate of completion will be issued.

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

The levels given on drainage/structural drawings are subject to confirmation on site, and the Contractor shall submit all levels to the Employer's Agent for confirmation before he commences with the construction of drainage or other structures. The Contractor shall also check all clearances given on the drawings and shall inform the Employer's Agent of any discrepancies in accordance with the requirements specified in the paragraph below:

If the Contractor discovers any discrepancy of any sort in the information supplied by the Employer or Employer's Agent he shall, within 7 calendar days of such discovery, submit full details of the discrepancy to

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the Employer's Agent in writing. The Employer's Agent, in turn, will give a written ruling on rectification of the discrepancy within 7 calendar days of receipt of the Contractor's submission."

Add the following after the second paragraph:

"Drawings and quantities regarding the distribution and extent of repair work items were compiled and calculated to the best of the Employer's Agent's knowledge and available information at the time of the design and could be subject to significant variations at the construction stage. Such variations shall, however, not form grounds for a claim by the Contractor in terms of Clause 10 of the General Conditions of Contract."

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:

"(h) Prior to the start of any excavation on any part of the works, the contractor shall submit to the Employer's Agent for approval a method statement for the execution of that part of the work. The contractor is responsible for the protection of the underlying pavement layers and the drying out and/or keeping dry of such excavations. The contractor's programme shall make provision for the speedy backfilling of the excavations and the drainage thereof if inundation cannot be prevented.

The contractor shall, at his own cost, be responsible for the repair of pavement layers which have been damaged due to his own works or his neglect to submit his planning to the Employer's Agent for approval or to adhere to approved precautionary measures."

B1219 WATER

Add the following:

"The Contractor shall arrange for chemical tests to be carried out to confirm the suitability of his proposed water sources for use as drinking water and for use in the concrete construction. The Contractor shall ensure that these tests also include testing for salinity and sugar content levels.

The Contractor shall note that the necessary permission must be obtained from the Department of Water Affairs for the abstraction of water from streams and rivers."

TABLE B1219: WATER CLASSIFICATION OF CONSTRUCTION TESTING

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Property	Unit	Water Quality Classification Code						Method
		H0 Pure water (AR)	H1 Clean water (Rain)	H2 Treated water (Municipal)	H3 Silty (muddy) water with low salt content	H4 Highly mineralised chloride sulphate water (brackish)	H5 Waste brack, sewage, marsh, sea, etc water	
PH*	-	7.0	5.7 – 7.9	4.5 – 6.5	4.5 – 8.5	9.0	-	SABS M113 SM 11 - 1990
Dissolved solids*	ppm	0	1000	1500	3000	-	-	SABS 213 SM213 - 1990
Total hardness*	-	None	None	Temporary	Temporary	Permanent	-	SABS 215 SM 215 – 1971
Suspended matter	ppm	0	2000	2000	5000	-	-	SABS 1049 SM 1049 – 1990
Electrical conductivity	mS/m	0	200	200	500	-	-	SABS 1057 SM 1057 – 1982
Sulphates (SO ₄)	ppm	0	200	300	500	1000	-	SABS 212 SM 212 – 1971
Chlorides (Cl)	ppm	0	500	1000	3000	5000	-	SABS 202 SM 202 – 1983
Alkali Carbonates (CO ₃) & Bicarbonates (HCO ₃)	ppm	0	500	1000	1000	2000	-	SABS 241 – 1999
Sugar	-	Negative	Negative	Negative	Negative	Negative	-	SABS 833
Quality of water required	Untreated layer works		✓	✓	✓	✓	Investigate the effect on the quality of the material	References: 1. Concrete Technology – Dr S Fulton (1989) 2. Materials Manual (PAWC)
	Chemically treated layer works		✓	✓	✓	Investigate the effect on the quality of the material		
	Concrete mass		✓	✓	✓	Investigate the effect on the quality of the material		
	Concrete prestressed		✓	✓				
	Slurry & emulsion		✓	✓				
	Soil/gravel tests		✓	✓				
	Chemical or control tests		✓	✓				

* A primary property. The quality of the water is that quality where all three of the primary properties are within the limits.

The tabulated single values are maximum value except in the case of the pH value for pure water, which must be 7.0

B1222 USE OF EXPLOSIVES

Add the following subclause to this clause:

"(h) The Contractor shall submit to the Employer's Agent, at least thirty days before the commencement of excavation, full details of his proposed methods and sequence of excavation and programme for the use of explosives. These shall comply both with the Explosives Act (15 of 2003) and the Occupational Health and Safety Act and Regulations

The method to be used for blasting shall be discussed with the Employer's Agent who will specify the use to which the blasted material shall be put. The blasting method must be such as to produce the type and size of rock material required for the specified use. Failure to achieve the required product will result in a no payment for extra over and hard material as Items 33.03(b) and 33.04(c).

The work shall be programmed so as to minimise blasting adjacent to previously constructed sections of the Works.

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The Employer's Agent reserves the right to reject the proposals if, in his opinion, undesirable damage to permanent rock surfaces or existing structures will result from carrying out the blasting as proposed. No such approval will be unreasonably withheld and a trial section of blasting shall be undertaken to confirm the efficacy of the proposed method. If acceptance is withheld following a failed trial blast, new proposals in whole or in part shall be submitted. No drilling or blasting shall be carried out in areas for which the proposals have not been accepted by the Employer's Agent.

Each separate blast shall then be designed in accordance with modern blasting practice to break out the rock with the minimum explosive force.

The consent by the Employer's Agent to any blasting proposals shall not relieve the Contractor of his responsibilities under the Contract and in law.

There must be a qualified person on site to take seismic readings until such time that the Employer's Agent is satisfied.

The Contractor shall notify the Employer's Agent of the intention to blast at least twenty-four hours beforehand, and at the same time shall advise if any changes will be made to the previously agreed methods.

The Contractor shall distribute written notification to all organisations and communities adjacent to the site twenty-four hours prior to undertaking blasting. Any delay or postponement of any blasts shall be notified to all organisations and communities immediately.

In addition to any statutory requirements the firing of explosives will, unless otherwise approved by the Employer's Agent in writing, be restricted to between 10:00 and 15:00, Monday to Friday.

- (i) Unless otherwise agreed by the Employer's Agent all blasting work shall be carried out using controlled blasting techniques.

Use shall be made of approved special explosives and/or blasting techniques which will minimise blasting induced fractures, or disturbance, on the rock faces outside the excavation line so preserving the rock in the soundest possible condition.

The rocky face after blasting shall exhibit a regular fracture plane between barrels without back break and with half barrels visible over the major portion of the surface. The surface shall be scaled down of all loose and hollow sounding rock to leave a solid, intact surface. Light charges shall be used for enlarging or correcting the excavated profile and also for excavating trenches.

If in the opinion of the Employer's Agent, the methods of blasting are at any time causing excessive or undesirable disturbance of the rock mass surrounding the excavated space, he may order the Contractor to change his methods of blasting and/or carry out blasting trials until the desired results are achieved. No additional payment shall be made for any change or trials ordered by the Employer's Agent or any delays resulting there from.

- (j) In each and every case where the Contractor wishes to blast within 15 m of a structure, he shall prepare a proposal for this blasting and submit it to the Employer's Agent for consent. No blasting work of this nature may be carried out without the written consent of the Employer's Agent. The Contractor is to make a photographic record of every structure/houses within a 500 metre radius of the blast.

No separate payment will be made for any restrictions regarding blasting near structures which may be imposed by the Employer's Agent in terms of the Specifications.

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- (k) The Contractor shall keep records of all blasting carried out showing the time and location of each blast, the type and amount of explosive used, together with any other relevant data. Two copies of these records shall be sent to the Employer's Agent weekly relating to the previous week's work.
- l) All requirements of the Occupational Health and Safety Act and Regulations, as amended from time to time must be complied with. All method statements and risk analyses must be signed off by the Employer's Agent's representative as well as the OHS agent.

B1224 THE HANDING-OVER OF THE ROAD RESERVE

Add the following:

"The entire road reserve as well as all other roads within the construction limits of the contract will be handed-over to the Contractor at the commencement of the contract. The Contractor shall then be responsible for the accommodation of traffic and all routine maintenance of these roads from the date of the handing-over of the site until the date of issue of the certificate of completion of the works.

Once the certificate of completion of the works has been issued the responsibility for normal maintenance of the road (e.g. collection of litter, clearing of drains, repair of road signs damaged by the public, etc.) shall revert to the Employer.

Upon the handing-over of the site the Contractor shall immediately assume responsibility for the road reserve within the limits of this Contract as set out in the specifications.

Prior to the commencement of work the Contractor and the Employer's Representative shall together carry out a joint inspection of the road section. During such an inspection, notes shall be made of all damaged fences, guardrails, signs and any other notable problems or features that exist at the time of hand-over. The following matters should be agreed at the time of handing-over:

- (1) The limits, lengths, widths and areas of construction.
- (2) The location of kilometre markers and reference beacons.
- (3) The scope of remedial/repair or preparatory work measures to be executed by the Contractor.
- (4) The location of stockpile areas and the responsibilities of the Contractor with regard to the road reserve area and the stockpile sites (fencing, re-establishment, height of stockpile, etc.).
- (5) The method of accommodation of public traffic with regard to safety, sight distances, interference with existing road signs and road markings both within the work area and providing advance warning before the work area.
- (6) The method of construction and supervisory control measures."

B1228 LEGAL PROVISIONS

Add the following to this Clause:

"The Contractor shall comply with the requirements of the Provincial Department of Environmental Affairs and Tourism (DEAT) and Department of Minerals and Energy (DME). The requirements are contained in DEAT's Record of Decision and the Environmental Management Programme Report (EMPR) as approved by DME, which is incorporated into the Materials Report."

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B1229 SABS CEMENT SPECIFICATIONS

Add the following:

“All cement used during construction shall comply with SANS 50197-1:2013 for common cements and SANS 50413-1:2004 for masonry cement. Any reference to SABS 471 in the standard specifications shall be replaced with the new specification SANS 50197-1:2013Part 1: Compositions, specifications and conformity criteria for common cements.

Where the old SABS 471 product nomenclature has been used in the standard specifications, the Contractor shall supply and use the relevant new product, in compliance with SANS 50197-1.”

The product names available in the Eastern Cape and Northern Cape, obtained from The Concrete Institute, and are provided in the table below.

Cement Grade	Cement Type	Afrisam Eastern Cape	Afrisam Northern Cape	Lafarge Eastern Cape	Lafarge Northern Cape
52.5 R	CEM I	Rapid Hard Cement	Rapid Hard Cement	-	-
52.5 N	CEM II A-V	-	-	-	Rapidcem / Fastcast
42.5 R	CEM II A-M	High Strength Cement	High Strength Cement	-	-
	CEM II A-M (V-L)	-	-	Powercrete Plus	Powercrete Plus
32.5 R	CEM II B-L	All Purpose Cement	All Purpose Cement	-	-
	CEM IV B-V	-	-	Buildcrete / Civilcrete	Buildcrete / Civilcrete
32.5 N	CEM II B-L	Roadstab Cement	Roadstab Cement	-	-
	CEM II B-M (V-S)	-	-	-	RoadCem

The blending of cements on site shall not be permitted.”

Add the following new clauses:

“B1230 SAFETY

The Contractor must comply with the Occupational Health and Safety Act (Act No 85 of 1993) as amended as well as all the publications pertaining to the act or as specified in the Contract Document: A staff member will be appointed as the Construction Health and Safety Representative and will need to complete a site inspection register on a daily basis. Payment for the Construction Health and Safety Officer will be made under Item EB1.05. Payment for the Traffic Safety Officer will be under Item B15.16. The Traffic Safety Officer will report to the Construction Officer.

The Contractor shall nominate a Construction Health and Safety Officer who will be responsible at all times, including after hours, nights, weekends and public holidays, for the safety of the work area and the Contractor's adherence to the Health and Safety Specification and Plan. The accommodation of traffic will be supervised by the Traffic Safety Officer. All standard safety procedures and documentation must be adhered to.

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The travelling public and emergency services shall have the right of way on public roads. The Contractor shall make use of approved methods to control the movement of his equipment and vehicles so as not to constitute a hazard on those roadways open to the public.

The Contractor may not commence construction activities before adequate provision has been made to accommodate traffic in accordance with the requirements of the specifications and drawings.

Failure to maintain road signs, warning signs and flicker lights in good working conditions shall constitute ample reason for the Employer's Agent to suspend work until such road signs and road safety ancillaries have been repaired or reinstated to the Employer's Agent's satisfaction.

The Contractor shall ensure that all plant left in the work area overnight is parked safely in accordance with the requirements of specifications.

All construction vehicles and equipment must be highly visible with flashing lights, reflective markings, stickers, etc. Operators must be aware of the public at all times.

In areas of steep embankments where public access cannot be limited, temporary guardrails will be erected where instructed by the Employer's Agent so that pedestrians can proceed safely. All open excavations to be clearly demarcated with plastic mesh etc.

Security arrangements will be deemed to be included in the amount tendered for in Items 13.01(a) and 13.01(c).

B1231 MATERIALS

The Contractor, when using materials that are required to comply with any standard specification, shall, if so ordered, furnish the Employer's Agent with certificates showing that the materials do so comply. Where so specified, materials shall bear the official mark of the appropriate authority. Samples ordered or specified shall be delivered to the Employer's Agent's office on the Site free of charge.

Where proprietary products have been specified, equivalent equal products may be used subject to the prior written approval of the Employer's Agent.

Unless otherwise specified, all proprietary materials shall be used and placed strictly in accordance with the relevant manufacturer's current published instructions.

Unless anything to the contrary is specified, all manufactured articles or materials supplied by the Contractor for the permanent works shall be unused.

Earth, stone, gravel, sand, and all other materials excavated or present on the Site or in borrow areas provided by the employer shall not become the property of the Contractor, but will be at his disposal only in so far as they are approved for use on the Contract.

Existing structures on the Site shall remain the property of the Employer and except as and to the extent required elsewhere in the Contract, shall not be interfered with by the Contractor in any way.

No materials to be included in the works shall be damaged in any way and, should they be damaged on delivery or by the Contractor during handling, transportation, storage, installation or testing they shall be replaced by the Contractor at his own expense.

All places where materials are being manufactured or obtained for use in the Works, and all the processes in their entirety connected therewith shall be open to inspection by the Employer's Agent (or other persons

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authorised by the Employer's Agent) at all reasonable times, and the Employer's Agent shall be at liberty to suspend any portion of work which is not being executed in conformity with these specifications.

(a) Ordering of Materials

Immediately upon his Tender being accepted, the Contractor shall order materials which are in short supply or for which the delivery period may be long.

The quantities set out in the Bill of Quantities have been determined from calculations based on data available at the time and should therefore be considered to be only approximate quantities. The Contractor shall therefore, before ordering materials of any kind, check with the Employer's Agent the quantities required. No liability or responsibility whatsoever shall attach to the employer for materials ordered by the Contractor except if they have been ordered in accordance with written confirmation issued by the Employer's Agent.

B1232 ENVIRONMENTAL MANAGEMENT

The Contractor will be responsible for managing a non-specific Environmental Management Plan (EMP) in terms of Volume 7. Apart from the EMP in Volume 7, the Contractor should also adhere to an Environmental Management Programme Report (EMPR) for the use of material abstracted from borrow pits. The EMPR is legally binding and shall be adhered to at all times.

The Contractor shall take the utmost care to minimize the impact of his establishment and other construction activities on the environment and shall adhere to the requirements as set out in Volume 7.

The Contractor will be required to submit a Method Statement to the Environmental Control Officer (ECO) detailing his construction activities and what measures will be implemented to prevent the pollution of streams, rivers and countryside through the spilling of fuels, bituminous binders, sewage from the temporary toilets and other deleterious materials.

Where in the opinion of the Employer's Agent, the Contractor has not adhered to these requirements; the Contractor shall rectify the damage at his cost and to the satisfaction of the Employer's Agent.

B1233 CONSTRUCTION SITE CONTROL

In addition to normal good construction practices expected of the Contractor, the Contractor shall also observe the following:

(a) Restriction of working areas

Working in areas defined as those areas reasonably required by the Contractor to execute the Contract as agreed with the Employer. These shall generally be restricted to within the road reserve but where this is not possible, they shall be kept to a minimum in order to minimise damage to areas outside the road reserve.

Before commencing any other work the Contractor shall, in order to prevent unauthorised movement of persons or vehicles outside the designated working areas and access road servitudes, erect and maintain temporary fences along the boundaries of the working areas, access roads, spoil and stockpile areas etc. in conformity with the environmental specifications. Movement of vehicles and personnel outside the designated working areas will not be permitted and discipline on site and in the camp shall be to such a degree as to indemnify the Employer from all complaints.

(b) Protection of fauna and flora

All flora and fauna whether within or outside the road reserve, or in borrow areas, shall be dealt with in accordance with the environmental specifications.

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No domestic animals shall be permitted on site.

B1234 SITE CLEANLINESS AND PRECAUTIONS AGAINST NUISANCE

Wherever machinery is excavating or loading material which is liable to form a dust nuisance, an effective method of spraying the excavation area and loaded material with water shall be installed.

No separate or additional payment will be made for dust prevention measures.

The costs incurred by the Contractor for the provision of these measures shall be deemed to have been included in the rates for the operations requiring such measures.

The Site shall be maintained in a clean, orderly and sanitary condition as required and to the satisfaction of the Employer's Agent."

B1235 USE OF LABOUR

It is an objective of the Employer to create employment on this contract and therefore all the requirements in this respect contained in the contract will be rigorously monitored and enforced.

B1236 MEASUREMENT AND PAYMENT

Item	Unit

B12.01 Relocation and reinstatement of ESKOM overhead power lines and/or underground cables

(a)	Direct payment to ESKOM or its agent	provisional sum (Prov Sum)
(b)	Handling Cost and profit in respect of sub items B12.01(a).....	percentage (%)

Expenditure shall be made in accordance with the provisions of the General Conditions of Contract.

The tendered rate for item B12.01(a) is a percentage of the amount actually spent under items B12.01 (a) which shall include full compensation for the handling costs and the profit of the Contractor.

Item	Unit

B12.02 Relocation and reinstatement of TELKOM overhead phone lines and/or underground cables:

(a)	Direct payment to TELKOM or its agent.....	prime cost (PC) sum
(b)	Handling costs and profit in respect of sub-item B12.02(a)	percentage (%)

The prime cost sum sub-item B12.02(a) shall be paid for in accordance with the provisions of GCC 2015.

The tendered percentage for sub-item (b) is a percentage of the amount actually spent under sub-item B12.02(a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying Telkom or its appointed agent for carrying out the work.

Item	Unit

B12.03 Relocation and reinstatement of water lines belonging to local authorities, institutions or communities

(a)	Direct payment to authority or its agent.....	provisional sum (Prov Sum)

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- (b) Handling Cost and profit in respect of sub items B12.03(a).....percentage (%)

Expenditure shall be made in accordance with the provisions of the General Conditions of Contract.

The tendered rate for item B12.03(a) is a percentage of the amount actually spent under items B12.03(a) which shall include full compensation for the handling costs and the profit of the Contractor.

Item	Unit

B12.04 Removal of miscellaneous items such as gates, fences etc.:

- (a) Remove Fences..... prime cost (PC) sum
- (b) Handling costs and profit in respect of sub-item B12.04(a) percentage (%)

The prime cost sum sub-item B12.04(a) shall be paid for in accordance with the provisions of the GCC 2015.

The tendered percentage for sub-item (b) is a percentage of the amount actually spent under sub-item B12.04(a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying individual landowners, community co-operatives, communal land trusts etc., for the loss of land, crops, grazing or any other facility.

Item	Unit

B12.05 Community Liaison Officer (CLO):

- (a) Salary plus expenses incurred by the CLO provisional sum
- (b) Handling costs and profit in respect of sub-item B12.05(a) percentage (%)

A provisional sum is provided for the cost of community liaison, which shall include the salary of the Liaison Officer for the duration of the Contract, as well as costs with respect to the provision of use of a cell phone for the duration of the contract. The Liaison Officer will be required on a full-time basis and this provisional sum shall be expended as approved by the Employer's Agent.

The tendered percentage for sub-item (b) is a percentage of the amount actually spent under sub-item B12.06(a), which shall include full compensation for the handling costs and the profit of the Contractor.

Item	Unit

B12.06 Project Liaison Committee (PLC):

- (a) Payment of expenses/disbursements to the members of the PSC... ..provisional sum
- (b) Handling costs and profit in respect of sub-item B12.06(a) percentage (%)

Payment of the provisional sum provided in sub-item B12.06(a) is to reimburse members of the PSC for costs of travelling and subsistence for each meeting attended.

The tendered percentage for sub-item (b) is a percentage of the amount actually spent under sub-item B12.06(a), which shall include full compensation for the handling costs and the profit of the Contractor.

Item	Unit

B12.07 Provision of Accredited training:

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- (a) Wages and salaries of local labourers employed by the Contractor in respect of training periods for on-site training by the Contractor during which no productive work is executed provisional sum
- (b) Accredited and approved training courses for selected local labourers including wages during training prime cost (PC) sum
- (c) Handling costs and profit in respect of sub-items B12.07(a) and (b) percentage (%)

Payment of the provisional sum provided in sub-item B12.07(a) shall include full compensation for the wages and salaries of local labourers for the periods during which they attend courses and receive training that are arranged and paid for by the Contractor in terms of the Contractor's training schedule and are thus not available for the execution of productive work, as agreed with the Employer's Agent on a daily basis.

Payment for the prime cost sum provided in sub-item B12.07(b), to cover the costs incurred for the attendance by selected and approved local labourers in the employ of the Contractor and Selected Subcontractors of approved training courses presented by accredited institutions shall be effected in accordance with the provisions of Clause 6.6.2 of the General Conditions of Contract. The payment shall cover the applicable course fees as agreed to by the Employer's Agent as well as wages and transport costs expended by the Contractor or Selected Subcontractor related to the approved training courses.

The tendered percentage for sub-item (b) is a percentage of the amount actually spent under sub-item B12.07(a) and (b), which shall include full compensation for the handling costs and the profit of the Contractor.

No additional payment will be made for any of the extra costs which will be incurred as a result of the additional supervision required for managing labour and for providing informal training to the workers. The Contractor shall make suitable allowance for these costs in his tendered rates for the various items of work. Allowance must also be made for the involvement of senior staff members, directors and managers in training and guidance of emerging Contractors and attendance at meetings and discussions in respect of all training matters.

Except as specifically provided for in the relevant pay items included in the Bill / Schedule of Quantities no additional payment will be made to the Contractor in respect of the execution of the prescribed and approved training programme. Full compensation for the costs of training not covered by the above pay items shall be deemed to be included in the rates tendered for the Contractor's general obligations.

Item	Unit

B12.08 Provision of structured training:

- (a) Provision of training:
- (i) Technical Skills training provisional sum
- (ii) Entrepreneurial Skills training provisional sum
- (iii) Generic Skills training provisional sum
- (b) Training Venue provisional sum
- (c) Handling costs and profits in respect of sub-items B12.08(a)(i)(ii)(iii) and sub-item B12.08(b) percentage (%)

The stated provisional sum shall be expended only as ordered and approved by the Employer's Agent. Training of candidates shall be provided by an accredited subcontractor or institute approved by the Employer and all costs involved in the training of such personnel shall be reimbursed from the stated provisional sum.

The tendered percentage for sub-item (b) is a percentage of the amount actually spent under sub-items B12.08(a)(i)(ii)(iii) and sub-item B12.08(b), which shall include full compensation for the handling costs and the profit of the Contractor.

Payment will be made for training of personnel as specified in Part C2 of this document.

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Item	Unit

B12.09 Meteorological instruments:

Supply and install equipment capable of measuring
wind speed, temperature, rainfall and humidity Sum

The stated Sum shall allow for the supply, installation, maintenance and removal upon completion of all necessary equipment to monitor weather conditions daily, and more frequently when required. The costs of daily recording and monthly reporting by the Contractor shall be included in item B13.01(c).

Item	Unit

B12.10 Employers contribution to site laboratory prime cost (PC) sum

The PC sum will be paid in accordance with the provisions of the general conditions of contract. The prime cost sum is provided for the cost of the combined laboratory.

B12.11 Provision for balancing SMME rates:

(a) Provision for balancing SMME rates provisional sum

(b) Handling costs and profit in respect of sub-item B12.11(a) percentage (%)

Payment of the provisional sum provided in sub-item B12.11(a) is to reimburse the Contractor for the shortfall in rates, if any, due to any SMME providing rates in excess of the Contractor's tendered rates, following acceptance of the SMME rates by the Project Management Team.

The stated provisional sum shall only be expended as ordered and approved by the Employer's Agent.

The tendered percentage for sub-item (b) is a percentage of the amount actually spent under sub-item B12.11(a), which shall include full compensation for the handling costs and the profit of the Contractor.

Item	Unit

B12.12 Student allowances – note, this in B14.13 (BoQ)

(a) Renumeration of civil engineering students
and engineering graduates.....provisional sum (Prov Sum)

(b) Handling cost and profit in respect of sub item B12.12 (a) percentage (%)

The stated provisional sum shall be expended only as ordered and approved by the Employer's Agent.

The percentage tendered for handling costs and profit shall cover all additional costs for the Contractor over and above the sum paid under item B12.12 (a).

Item	Unit

B12.14 Special adhoc design undertaken by the Employer's Agent during

The contract no additional cost to the Client.....provisional sum (Prov Sum)

B12.15 Handling cost and profit in respect of sub item B12.14.....percentage (%)

The stated provisional sum shall be expended only as ordered and approved by the Employer's Agent.

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The percentage tendered for handling costs and profit shall cover all additional costs for the Contractor over and above the sum paid under item B12.14

SECTION 1300: CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS**B1302 GENERAL REQUIREMENTS****(a) Camps, construction plant and testing facilities**

Add the following after the first paragraph of subclause 1302(a) of the Specifications:

"No specific land has been made available for the camp and offices and the Contractor shall make his own arrangements concerning a suitable site and location, as well as the provision of water, electricity and other services for the campsite. Where necessary the Contractor shall make his own arrangements with land-owners."

No direct payment will be made for the provision of water, electrical and other services and the cost thereof shall be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.

The Contractor is responsible for obtaining the water extraction permit."

Add the following new subclauses after subclause 1302(c) of the Specifications:

"(d) Contractor's ablution facilities

The Contractor shall, at each construction section, provide sufficient portable chemical latrine units. Furthermore the Contractor shall also provide a portable chemical latrine unit at each temporary traffic control facility. The latrine units shall be serviced daily and kept in a hygienic and orderly state to the approval of the Employer's Agent. No separate payment shall be made for this requirement and the costs thereof shall be deemed to be included in the rates tendered for the Contractor's time-related obligations."

(e) Services

The Contractor shall at his own expense, make the necessary connections to any utility services required by him for the execution of the works.

(f) Sanitation and waste management

The Contractor shall provide suitable sanitary and waste management arrangements for his staff at his campsite. If outside latrines are provided, they shall be of a neat construction and shall be provided with doors and locks. They shall be to the satisfaction of the Employer's Agent's Representative and the Local Authorities and comply with the requirements of the specifications.

The Contractor shall provide portable chemical latrines on Site, as agreed by the Employer's Agent for use by construction workers. The latrines shall be serviced daily and maintained in good condition. No separate payment shall be made for any costs incurred in this regard and the Contractor shall allow for these costs in his tendered rates for establishment.

The Contractor shall be responsible for providing all necessary services to keep the latrines for himself, the Employer's Agent's Representative and the subcontractors on the Site in a clean, neat and hygienic condition, including the cost of refuse removal and disposal from the Site and from all accommodation provided by him.

The use of liquids containing formaldehyde in chemical toilets is not allowed.

If the Contractor fails to provide and/or maintain all Site sanitation facilities in a clean and hygienic condition the Employer's Agent's Representative may order the Contractor to suspend any or all work on the Site until

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the requirements of the Specifications are met. No payment shall be made for any delays or disruption of the Works caused thereby nor shall extensions of time be granted for such delays.

On completion of the Contract, the Contractor shall remove the sanitation system and reinstate the area to the satisfaction of the Employer's Agent's Representative and in compliance with the requirements of the specifications.

(g) Security

The Contractor shall provide adequate security and strict control of access to the campsite on a 24-hour basis including weekends and public holidays. The campsite area shall be adequately fenced with security fencing and security lights placed at strategic points. Notices to indicate that unauthorised persons may not enter the campsite area shall be erected at prominent locations as required by the Occupational Health and Safety requirements or agreed with the Employer's Agent's Representative.

(i) Environmental protection

Construction will take place within the existing road reserve and every precaution must be taken to protect the established vegetation and roadside facilities notwithstanding the provision set out in Volume 7 of these documents.

The following conditions apply:

- (i) Personnel and plant shall not enter property beyond the road reserve boundary irrespective of whether the boundaries are fenced off or not.
- (ii) The Contractor shall, to the satisfaction of the Employer's Agent, take every necessary precaution to prevent the contamination of any watercourses.
- (iii) The Contractor shall plan his activities so that materials, in so far as is possible, can be transported direct to and placed at the point where they are to be used. However, where utilising materials in this manner is impractical, it shall be temporarily stockpiled for later loading and transportation to where it will be used.
- (iv) Stockpiling areas shall be indicated to and approved by the Employer's Agent. Before any stockpiling of material may be done, the site shall be cleaned, and all loose stones or any plant or other material which may cause pollution shall be removed. After the stockpiled material has been removed, the site shall be reinstated as closely as possible to its original condition.
- (v) The Contractor shall be responsible for the establishment of a refuse control system for the collection and removal of refuse from the campsite and working areas.
- (vi) The Contractor shall ensure that waste and surplus food, food packaging plastic and organic waste are not deposited by his employees anywhere on the site except in refuse bins for removal. If his employees are to eat elsewhere on site than in the campsite, the Contractor shall designate restricted places for eating in his working areas, shall provide adequate refuse containers in all these places and shall remove the refuse and clean up any remaining food containers immediately after mealtimes.
- (vii) The Contractor has no right to the trees and shrubs on the Site.
- (viii) No bituminous material or waste material shall be dumped within the road reserve, even if only as a temporary measure. Provision shall be made to remove such excess material directly off the site to suitable waste sites as instructed by the Employer's Agent or Environmental Officer. "

On completion of the Contract, the Contractor shall remove the sanitation system and reinstate the area to the satisfaction of the Employer's Agent's Representative and in compliance with the requirements of the specifications.

(i) Environmental protection

Construction will take place within the existing road reserve and every precaution must be taken to protect the established vegetation and roadside facilities notwithstanding the provision set out in Volume 7 of these documents.

The following conditions apply:

- (i) Personnel and plant shall not enter property beyond the road reserve boundary irrespective of whether the boundaries are fenced off or not.
- (ii) The Contractor shall, to the satisfaction of the Employer's Agent, take every necessary precaution to prevent the contamination of any watercourses.
- (iii) The Contractor shall plan his activities so that materials, in so far as is possible, can be transported direct to and placed at the point where they are to be used. However, where utilising materials in this manner is impractical, it shall be temporarily stockpiled for later loading and transportation to where it will be used.
- (iv) Stockpiling areas shall be indicated to and approved by the Employer's Agent. Before any stockpiling of material may be done, the site shall be cleaned, and all loose stones or any plant or other material which may cause pollution shall be removed. After the stockpiled material has been removed, the site shall be reinstated as closely as possible to its original condition.
- (v) The Contractor shall be responsible for the establishment of a refuse control system for the collection and removal of refuse from the campsite and working areas.
- (vi) The Contractor shall ensure that waste and surplus food, food packaging plastic and organic waste are not deposited by his employees anywhere on the site except in refuse bins for removal. If his employees are to eat elsewhere on site than in the campsite, the Contractor shall designate restricted places for eating in his working areas, shall provide adequate refuse containers in all these places and shall remove the refuse and clean up any remaining food containers immediately after mealtimes.
- (vii) The Contractor has no right to the trees and shrubs on the Site.
- (viii) No bituminous material or waste material shall be dumped within the road reserve, even if only as a temporary measure. Provision shall be made to remove such excess material directly off the site to suitable waste sites as instructed by the Employer's Agent or Environmental Officer. "

B1303 PAYMENT

B13.01 The Contractor's general obligations

Insert the following paragraph after the fourth paragraph:

"Should the combined total tendered for sub-items (a), (b), and (c) exceed 15 % of the tender sum (excluding VAT), the tenderer shall state his reasons in writing for tendering in this manner. The tenderer's attention is drawn to Form F, (bound in this Volume), to be completed by the tenderer."

Delete the 17th paragraph commencing "The tendered rate per month for sub-item 13.01(c) " and replace with:

"The tendered rate per month for sub-item 13.01 (c) represents full compensation for that part of the Contractor's general obligations, which are mainly a function of construction time. The tendered sum will be

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paid monthly, pro rata for parts of a month, from the Commencement Date (as defined in the General Conditions of Contract under sub-clause 1.1.1.5) until the end of the period for completion of the works, plus any extension thereof as provided in clause 42 of the general conditions of contract, provided that"

Add the following after the 19th paragraph:

"The amount payable to the Contractor for time related costs arising from extensions of time granted by the employer, where the Contractor is fairly entitled to such compensation in terms of clause 5.12 of the General Conditions of Contract, shall be calculated as follows:

Account shall be taken of all time related items scheduled in Sections 1300, 1400 and 1500.

All pay items for which the unit of measurement is "month" shall be deemed to be based upon an average of 23 working days per month.

Payment will be made only for items for which the unit of measurement is "month."

OHS Specifications are to be found in Section C and the Schedule of Quantities are in Schedule C."

Item	Unit
B13.02 Health and safety	
(a) Fixed obligations	Sum
(b) Time-related obligations	Month

Payment of the lump sum tendered under subitem B13.02(a) and the rate per month for subitem B13.02(b) shall for the two subitems together, include full compensation for all the contractor's charges in respect of the following items in compliance with the OHS Act and the Construction Regulations and in accordance with Section C3.3: Particular Specifications: Part E which forms part of this Project Specification.

The lump sum tendered under subitem B13.02(a) shall represent full compensation for the fixed part of the contractor's obligations, i.e. that part which is substantially fixed and is not a function of the time required for completion of the Contract and includes the following:

- (i) Preparation of risk assessments, safe work procedures, the project Health and Safety file, the Health and Safety plan and any other Health and Safety matters that the Contractor deems necessary.
- (ii) Completing and checking the project Health and Safety file and handing over to the Employer on completion of the Works.

The tendered rate per month for subitem B13.02(b) represents full compensation for that part of the contractor's obligations which are mainly a function of time and includes the following:

- (i) Updating and amending the risk assessment, safe work procedures, the project Health and Safety file, the Health and Safety plan and full compliance with all Health and Safety matters during construction of the Works.

B13.02 The Contractor's general obligations on SMMEs

The tendered rate under this item is to allow the Contractor to price for the cost to manage and supervise the SMMEs during the execution of their works. The price tendered will be deemed to include all incidentals by the Contractor to comply with the conditions of this specification. No other claims will be entertained should SMMEs affect the contract works in any way, and the Contractor shall be deemed to have included for such eventualities in the handling cost percentage for the different SMME work packages above.

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B13.02 MEASUREMENT AND PAYMENT

Item	Unit
(a) Contractors General obligations to SMMEs including OHS and other contingencies.....	lump (sum)

"The tendered rates shall include full compensation for supervising and managing the procurement of the SMMEs and the SMME work activities at all times to ensure compliance with the specifications and drawings."

The Contractor will note that all works measured in the Bills of Quantities is the Contractor's sole responsibility including items or sections to be undertaken by SMMEs in their entirety.

The Contractor will supervise and manage the SMME work at all times to ensure compliance with the specifications and drawings.

B13.03 MEASUREMENT AND PAYMENT

Item	Unit
(a) SMME General Obligations, fixed and time related.....	provisional sum

"The tendered rates shall include full compensation for the SMMEs general obligations".

Amend sub-clause (i) and (ii) to read:

- (i) Setting up and maintaining his organization, personnel, accommodation, and communication.
 - (ii) Complying with the requirements of the General Conditions of Contract, including the effecting of insurances and sureties required.
- (b) Handling cost and profit in respect of sub item B13.03(a).....percentage (%)

B13.04 MEASUREMENT AND PAYMENT

Item	Unit
B13.04 Corporate Community Development	

- (a) Corporate Community Development.....provisional sum

"This provisional sum [B13.04(a)] will be only used based on the community requests, and approval by the Employer. All requests, quotation needs to be clear and agreed by both parties. Social Facilitator and project steering committee will help to handle community requests and report to project team.

- (b) Handling cost and profit in respect of sub item B13.04(a).....percentage (%)

SECTION 1400: HOUSING, OFFICES AND LABORATORIES FOR THE EMPLOYER'S AGENT'S SITE PERSONNEL

B1402 OFFICES AND LABORATORIES

- (a) General

Add the following:

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"It is a requirement of the contract that the offices for the Employer's Agent's supervisory staff shall be supplied with approved burglar proofing, the cost of which shall be taken as included in the relevant tendered rates for the provision of the specified building. In addition, the offices and any living accommodation are to be separated by at least 200m."

(b) Offices

Delete the first sentence of the first paragraph and add the following:

"The office requirements for the Employer's Agent's Representative are as follows:

- i) One office for the Employer's Agent's Representative.
- ii) One office for the Assistant Employer's Agent's Representatives
- iii) One office for the Assistant Employer's Agent, Roadworks
- iv) One office for the Assistant Employer's Agent, Structure,
- v) One office for the Assistant Employer's Agent Material Technician
- vi) One office for the Graduates.

The office size and other requirements are specified elsewhere in this sub clause."

Add the following to sub-clause (xii):

"The services shall consist of a telephone in the Resident Employer's Agent's office, four extensions to offices and laboratory to be indicated by the Employer's Agent as well as a dedicated line for the fax apparatus."

Add the following to sub-clause (xv):

"Each office as well as the conference room shall be provided with a white board, minimum size 1,3m², which shall be fastened securely to the wall."

Add the following to sub-sub-clause (xvii):

"A fax apparatus coupled to a separate dedicated telephone line shall be installed in the Resident Employer's Agent's office, for the exclusive use of the Employer's Agent. The fax apparatus shall be CCIT Group 3 and Group 2 compatible, capable of scanning A4 documents with automatic feed of maximum 30 sheets and able to operate at temperatures between 5 and 35 Deg. C. Ownership of the fax apparatus will revert to the Contractor on completion of the contract. The prime cost sum shall include the cost of installation and consumables in connection with contract administration and the cost of the telephone charges for outgoing faxes."

Add the following sub-sub-clauses:

- "(xviii) Steel plan cabinets shall be provided and shall be able to accommodate 30 A0 - sized drawings hanging vertically from approved holders.
- (xix) Two electric refrigerators of at least 300 litre capacity shall be provided for the use of the Employer's Agent. The Employer's Agent's kitchen shall be provided with a fitted sink with the necessary taps and drains, a microwave oven and a three-plate/ring stove with an oven.
- (xx) Provision of floodlights, which are to be controlled by a photocell for security purposes at the offices and laboratory of the supervisory staff.

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- (xxi) Provision of cellular telephones together with original manufacturer's hands-free kits shall be supplied to the Employer's Agent's site staff for the duration of the contract. The prime cost sum shall also include for the cost of all telephone calls in connection with contract administration, and full insurance cover for the duration of the contract.
- (xxii) Provision of approved photocopier capable of making A4 and A3 copies, as well as paper and toner for making up to 1000 copies per month.

All equipment shall revert back to the Contractor on completion of the Contract."

Add the following:

"Specifications for Offices

The Employer's Agent's Representative's office, which shall serve as a back up conference room and shall have a floor area of thirty (30) square metres. The Assistant Employer's Agent's Representative's office shall each have a floor area of fourteen (14) square metres while the remaining offices shall each have a floor area of twelve (12) square metres.

Each office shall be furnished with the following items:

The Employer's Agent's Representative's Office shall be provided with the following:

- (i) An office desk with a surface area of at least 1,5 m² with six drawers, two of which can be locked.
- (ii) One steel general purpose cabinet with a shelf area of at least 1,5 m². The cabinet shall be lockable with two keys.
- (iii) One steel filing cabinet with four drawers, a lock with two keys. The cabinet shall be 1 300 mm high, 480 mm wide and 800 mm from front to back.
- (iv) One drawing table with a smooth top of at least 2 400 mm x 900 mm, and the upper surface shall be 950 mm above floor level.
- (v) Two bookshelf units with at least three shelves each, capable of holding lever arch files. Units to be at least 900 mm wide x 900 mm high.
- (vi) Three sturdy and comfortable chairs.
- (vii) One height-adjustable draughtsman's stool with padded seat and backrest.
- (viii) One wash hand basin.
- (ix) One conference table (approximately 3,2 m x 1,3 m) and 10 chairs.

The Assistant Employer's Agent's Representatives' offices shall be provided with the following:

- (i) An office desk with a surface area of at least 1,5 m² with six drawers, two of which can be locked.
- (ii) One steel general purpose cabinet with a shelf area of at least 1,5 m². The cabinet shall be lockable with two keys.
- (iii) One steel filing cabinet with four drawers, a lock with two keys. The cabinet shall be 1 300 mm high, 480 mm wide and 800 mm from back to front.
- (iv) One drawing table with a smooth top of at least 2 400 mm x 900 mm, and the upper surface shall be 950 mm above floor level.
- (v) Two book shelf units with at least three shelves each, capable of holding lever arch files. Units to be at least 900 mm wide x 900 mm high.

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- (vi) Two sturdy and comfortable chairs.
- (vii) One height-adjustable draughtsman's stool with padded seat and backrest.
- (viii) One wash hand basin.

The offices shall be air-conditioned in the summer and heating shall be provided in the winter months.

Six carports shall be provided close to the offices."

(c) Laboratories

Delete the first and second paragraphs of this subclause and add the following:

"The Employer requires the establishment of a combined laboratory for process control by the contractor and acceptance control by the Employer's Agent for this contract. The envisaged advantages include time savings for the contract, cost savings for the contractor and Employer as well as more effective control over production and quality. The combined site laboratory will be under the total control of the Employer's Agent and be equipped to undertake testing of soils and aggregates and concrete cube sampling.

The envisaged basis of cost apportionment for a joint laboratory is as follows:

The Contractor to provide for:

- (i) A laboratory building as scheduled;
- (ii) The furniture and fittings for the laboratory as scheduled;
- (iii) Housing for the materials testers, their assistants as well as three labourers for the exclusive use of the Senior Laboratory Manager.
- (iv) Services for the above Accommodation;
- (v) Three labourers for the exclusive use of the Senior Laboratory Manager.
- (vi) 33% of the running costs of the laboratory including equipment rental or contract cost. A provisional sum has been scheduled for this purpose.

Section 1 of Schedule A, that is included in the Bill of Quantities under Section C2: Pricing Data, gives all the items that have been included for the contractor's contribution to the combined laboratory.

Although the contractor shall price this schedule, he will not receive payment for these items because his contribution to the site laboratory for process control testing shall be deemed to be fully covered by the Provisional Sum described above. All other costs shall be allowed for under his establishment on site and general obligations.

Employer will provide for:

- (i) Cost of employment for a Senior Laboratory Manager, 1 materials testers and 3 assistants for the exclusive use of the site laboratory, excludes travelling costs for private purposes.
- (ii) Housing of laboratory staff is included in Schedule A under items 14.05 and 14.07.
- (iii) Reimbursement for kilometres travelled on site for laboratory purposes at departmental rates and all equipment and testing apparatus that will be required for the laboratory to perform process and acceptance control testing for this contract.
- (iv) 67% of the running costs of the laboratory including equipment rental or contract cost.

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The layout shall be approved by the Employer's Agent, who will also indicate his preferred location of power points, work benches, windows, doors, furniture and laboratory apparatus. There shall be a clear height from floor to ceiling of at least 2,4 m. Separate cooking facilities shall be provided."

Add the following to the end of the first paragraph of Sub-clause (iii)(2) of this Sub-clause:

"Support shall be provided by single brick walls."

Add the following to the last paragraph of Sub-clause (iii)(2) of this Sub-clause:

", and include a robust timber shelf, mounted 400 mm above floor level, for the storage of samples."

Add the following to Sub-clause (vi) of this Sub-clause:

"The power consumption is estimated at 4000 KWh per month."

Add the following to Sub-clause (ix) of this Sub-clause:

"The water consumption is estimated at 100 kl per month."

Add the following to Sub-clause (xiv):

"The concrete test cube baths shall be automatically temperature controlled and fitted with a circulating pump of such capacity that it will maintain a constant temperature of 22° to 25°C, have an overflow at 0,5m above the metal grating, a drain, a hinged cover and a metal grating to support the cubes at 50mm above the floor."

Add the following new Sub-clauses to this Sub-clause:

"(xvii) A rack suitable for hanging clothes.

(xviii) A steel plate 1 m x 1 m x 13 mm thick with 100 mm high x 6,7 mm thick side plates and 19 mm diameter bars welded to the base plate as ordered by the Employer's Agent."

(g) Ablution units

Add the following:

"A dedicated ablution unit with a minimum floor area of 10 m² for the sole use of the Employer's Agent's supervisory staff shall be provided. The unit shall contain at least the following:

- (i) One flush toilet and one urinal complete with running water and sewer pipes.
- (ii) One shower complete with hot and cold running water.
- (iii) One hand wash basin complete with hot and cold running water.
- (iv) Mirrors, toilet roll holder, paper towels, soap etc."

(h) Communication system

Add the following:

"The Contractor shall provide two-way radio communication for the use of the Employer's Agent and his site staff. The communication system shall be sufficient to provide communication between his offices and vehicles at any point within the site. Should the Employer's Agent's staff change vehicles during the contract or should staff be replaced by new staff using different vehicles, the Contractor shall transfer the mobile stations between the vehicles. The system including the mobile stations in the Employer's Agent's vehicles shall be removed on completion of the contract. The Contractor shall maintain these sets in good working order at all times.

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It may be necessary for the Contractor to supply one or more relaying stations at suitable locations along the route to ensure uninterrupted communication. Such relaying stations will not be paid for separately and compensation therefore shall be deemed to be included in the rates tendered for Section 1300 for the Contractor's establishment."

Add the following sub-sub-clauses:

“(i) Provision of survey equipment for the Employer's Agent

The Contractor shall supply and keep the following equipment continuously on site and in perfect working condition for the duration of the contract:

- (i) Single second total station electronic measuring device (NIKON DTM A101LG or approved similar) complete with:
 - (1) Electronic field book (PSION type)
 - (2) RS 232 interface (COMMS LINK)
 - (3) Survey software package (QESS or similar)
 - (4) Battery and battery charger
 - (5) Communication cables
 - (6) Heavy duty tripod
 - (7) Two number telescopic prism poles with cases and bubbles
 - (8) Two single prisms with tilting holders and targets
 - (9) Two 64 K RAM packs
 - (10) Two ranging rod tripods.
- (ii) Automatic Survey Level with Tripod incorporating a horizontal circle (Zeiss model Ni 2 or approved equivalent).
- (iii) Two 5 m long metric telescopic level staff complete with built-in plumbing bubbles.
- (iv) Five 2 m long solid ranging rods
- (v) One 100 m long steel tape
- (vi) One 50 m long steel tape
- (vii) One 30 m long steel tape
- (viii) Three two-way FM radios (ADI or similar) together with battery chargers
- (ix) Two 3 m long builder's steel tapes

Ownership of these items shall revert to the Contractor on completion of the Contract.

These instruments will be for the exclusive use of the Employer's Agent. Survey assistants will be provided for under sub-clause B1402(k) and will be paid for separately.

(j) Computers and printers

When instructed by the Employer's Agent, the Contractor shall provide approved new computers, modems and printers for the exclusive use of the Employer's Agent's site staff. This shall include a network with the necessary cabling, an internet connection and e-mail facility.

Notebook: HP ProBook 450 G7 Intel Core i5-10210U 1x 8GB DDR4 1TB SATA3 Drive + 256GB M.2 PCIe SSD 15.6 FHD LCD nVidia MX130.2GB Graphics Intel Wi-Fi 6 AX201 + Bluetooth Win10 Pro 64bit.

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The laptop should include a 3yr On-Site warranty as standard, Windows 10 Pro should be installed on the Solid State Drive (SSD);

Software: Microsoft 365 Apps for Enterprise (annual subscription) – allow for contract duration (years up front), Microsoft 365 Project Plan 3 (annual subscription) – allow for contract duration (years up front) Bitdefender Internet Security 1-User (annual subscription) – allow for contract duration (years up front) or MS Office 2019 Professional FPP; MS Project 2019 Std FPP; Kaspersky Internet Security 1-user;

Other: Microsoft Wireless Bluetooth Notebook Mouse, 32GB USB3.1 Flash Drive, Carry Case – 16” Backpack type;

Printer: HP Mono LaserJet MFP 137fnw (with 3yr Return to Depot Warranty included), Print, Copy, Scan and Fax Multi-Function unit, HP 106A Black Laser Toner or HP LaserJet M1536dnf MFP 4:1 Print, Copy, Scan & Fax; A4 up to 25 pages per minute, 128MB, 600 x 600 dpi, HP FastRet 1200 ; USB2.0, 10/100 Ethernet, 35 page 1 x 250 sheet paper tray ADF, duplex, network, fax (1yr);

Internet & Email: MTN / Vodacom / Telkom LTE 5GB Data Contract & SIM + MiFi Device on 2yr Contract
The above to include an email address for use on site (if required), Provider with best signal at site location to be used.

All equipment shall be kept fully serviceable by the Contractor at all times. The Contractor shall repair/replace any defective equipment within 12 hours after notification by the Employer's Agent. The Contractor shall also provide all paper, ink cartridges and other consumables required by the Employer's Agent.

All computer equipment, peripherals, modems, UPSs and software packages shall be cleared with and approved by the Employer's Agent prior to provision.

All the above-mentioned equipment and software shall be handed to the Employer at the end of the Contract.

(k) Assistance to the Employer's Agent

The Contractor shall provide for the exclusive use of the Employer's Agent up to two (2) semi-skilled workmen trained or capable of being trained as survey hands, office messengers and laboratory hands. These workmen shall be available for the full Contract period as requested by the Employer's Agent.

All these labourers shall be available to the Employer's Agent and his staff throughout the duration of the Contract and in addition, should it be required by the Employer's Agent, a further period of time not exceeding one month, extending from the time of issue of the Certificate of Completion, at no additional cost to the employer.

(l) Emergency power supply

The Contractor will be required to provide emergency power supply to the Employer's Agent's offices, laboratories and kitchen. For that purpose a 25 kVA, 3-phase diesel-driven generator with an eight (8) hour fuel capacity will be required.

(m) Kitchen

The kitchen shall have:

- (i) a concrete floor space of at least 8 m² in area.
- (ii) a clear height from floor to ceiling of at least 2,4 m.
- (iii) windows of at least 1 m² in total area of which 0,75 m² can be opened to admit air.
- (iv) one door complete with lock and two keys

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- (v) one fixed stainless steel kitchen sink with draining board and cold water tap connected to a potable water supply system.
- (vi) one kettle.
- (vii) one kitchen table and two kitchen chairs."

B1403 HOUSING

The housing for the Employer's Agent's staff shall be rented accommodation to the approval of the Employer's Agent, provided in project area as agreed by the Employer's Agent.

(c) Rented accommodation

Replace the full stop at the end of the first sentence of sub-subclause (ii) of this subclause with a comma and add "and for all services connected with such accommodation."

Add the following sub-subclause:

- "(v) Where either rented or prefabricated accommodation is provided, the following minimum furnishings are required:
 - i) A single bed with inner spring mattress
 - ii) A kitchen table and 2 upright chairs
 - iii) 2 easy chairs
 - iv) A television set with access to DSTV, only with the approval of the Employer's Agent, the Contractor will be responsible for all operating costs including licensing."

(d) Accommodation for labourers

Delete the word "labourers" in the sub-heading and the words "labourers" or "labourer" in contents of the sub-clause and replace with the words "Employer's Agent's laboratory staff".

Delete the first sentence in the third paragraph and replace with the following:

"The ablution unit shall be a well-ventilated room of 16m² area, provided with electric lighting, a section containing two flush-type latrines complete with WC pans and PVC seats and covers, another section containing two showers, two wash basins, two twin concrete wash tubs, and a stainless steel urinal, all complete with the necessary running hot and cold water, taps, drains and sewerage. Two 300mm x 300mm mirrors shall be fixed to the wall above each washbasin. A clothes line shall be provided outside the ablution unit. One ablution unit shall be provided for every 10 laboratory staff."

Add the following to the fourth paragraph:

"An additional cooking unit shall consist of a kitchen of 20m² area, to be provided as part of the laboratory.

The unit shall be of the same construction as specified for the ablution unit and shall be provided with electric lighting, a dining room table and ten dining chairs, a double stainless steel sink, a lockable storage cupboard of not less than 1,2m³ of shelving, ten gas/ring burners and four 45 kg gas cylinders. All the necessary taps, drains, sewerage and hot and cold water supply shall be provided.

The accommodation for employees shall be constructed as specified for offices and laboratory units or prefabricated housing units.

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Sub-units of 16m² shall be provided. Each sub-unit shall be provided with opaque windows, all of which can open at least halfway, and a steel door with lock and padlock and three keys.

The sub-units shall be provided with vinyl floor covering and 220 Volt AC electricity. Each sub-unit shall be provided with:-

- (a) Two 15amp power points.
- (b) Two Fluorescent light fittings.

Each of the laboratory staff and shall be provided with:

- (a) A sturdy spring-type bedstead. The bedsteads shall be provided with a new mattress of acceptable quality and shall have a minimum thickness of 75mm.
- (b) A steel locker which shall not be manufactured from steel mesh, but be completely enclosed, and not less than 0,7m³ in size with hanging and shelf space, and which can be locked.
- (c) A sturdy steel chair.
- (d) A bedside chest with a top surface of at least 0,75m².
- (e) A suitable heater shall be provided.

The allocation of people per sub-unit shall be as follows;-

- (a) One foreman or artisan or operator or admin clerk or technician.
- (b) Two laboratory staff.
- (c) Women shall be provided with sub-units separate from those allocated to men."

Delete the fourth paragraph in the Standard Specifications and replace with the following:

"A cooking unit shall consist of a room of minimum floor area of 24m² and shall be of the same construction as specified for the ablution unit. It shall be provided with gas installations consisting of 4 x 45kg gas bottles and the necessary regulators, tubing and shut-off cocks. The gas bottles shall be enclosed in an expanded metal security cage on the outside of the unit.

The gas installation shall be connected to 10 ring gas burners. The cooking unit shall be provided with two stainless steel kitchen sinks with double basins, at least 6,0m² of concrete working top, a dining room table and 10 dining chairs, four lockable storage cupboards of 0,7m³ volume with shelves and two lockable fridge/freezer of 0,5m³ minimum size. The unit shall have electric lighting and five power plug points. All the necessary taps, drains, sewerage and hot or cold water supply shall be provided. One cooking unit shall be provided for every 10 laboratory staff. The contractor shall be responsible for the cost of the gas supply."

B1404 SERVICES

(b) Water, electricity and gas

Add the following:

"A suitable voltage regulator shall regulate the power supply in order to maintain a constant current and voltage level at all times to prevent damage to the office and laboratory equipment and related machinery during power surges. Payment for the voltage regulator shall be deemed to be included in the rates tendered for the supply of services under Items 14.08 (a)&(b). In the event of damage to the office and laboratory equipment and related machinery because of a faulty voltage regulator, the Contractor shall be liable for payment of all repair or replacement costs of such damaged items."

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(c) Maintenance

Add the following:

"The Contractor shall supply soap, toilet paper, towels, cleaners and sanitary personnel, cleaning aids and refuse removal service to keep the offices, laboratories, ablution facilities and kitchen units clean and tidy at all times. Offices shall be vacuum-cleaned once a week.

The Contractor shall also keep the grounds around the offices and laboratory and all access roads to these facilities, carports and surface drains clean and neat and in a condition acceptable to the Employer's Agent."

(d) Cooking Facilities

Add the following:

A cooking unit shall consist of a hut at least 12 m² in size and at least 2 m² of window area, all of which can be opened. The hut shall be of the same construction as specified for the ablution unit. It shall be provided with an electric or gas stove, a double kitchen sink and at least 3,0 m² of concrete working slab, and 1,5 m² of shelving. All the necessary taps, drains, sewerage and hot and cold water supply shall be provided."

Add the following subclauses:

“(e) Semi-skilled labourers for the Employer's Agent's Representative

The Contractor shall from time to time be required to make available to the Employer's Agent's Representative two (2) suitably educated semi-skilled labourers for his exclusive use on and about the site. The Employer's Agent's Representative shall be at liberty to accept or reject such staff. The Contractor shall at his cost provide the labourers with accommodation, transport to and from the site and training as for other staff. No separate payment for such labour shall be made under this type of contract.

(f) First aid

The Contractor shall provide a first aid kit at the site offices in addition to any other requirements in terms of the Occupational Health and Safety Specification."

B1406 MEASUREMENT AND PAYMENT

Item	Unit
B14.01 Office and laboratory accommodation:	

Add the following sub-item:

“(g) Kitchen (interior floor space only) square meter (m²)”

B14.02 Office and laboratory furniture:

Add the following sub-item:

“(g) Kitchen tables number (No)

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(h) Kitchen chairs number (No)"

B14.03 Office and laboratory fittings installations and equipment

(a) Items measured by number:

Amend sub-subitem (v) to read:

(v) Single light fitting complete with CFC type 75 watt globes..... number (No)

Amend the following sub-subitems to read:

"(xvi) Refrigerators (300 ℓ min.) number (No)
 (xviii) Uninterruptable power supply unit number (No)"

Add the following sub-subitems:

"(xix) Steel plan cabinets number (No)
 (xx) Floodlights complete with poles and 500 Watt minimum globes number (No)
 (xxi) 3-plate stove unit oven number (No)
 (xxii) Kitchen sink complete with taps, outlets, water and sewer connections etc number (No)
 (xxiii) Kitchen cupboards number (No)
 (xxiv) Microwave oven (30lt) number (No)
 (xxv) Plan racks number (No)
 (xxvi) Rain gauge number (No)
 (xxvii) Minimum and maximum thermometer number (No)

The tendered rate for subitem B14.03 (a)(xx) shall include for the operation of the lights from sunset to sunrise for the full duration of the Contract."

(b) Prime cost items and items paid for in a lump sum:

Amend the following items to read:

"(v) Provision of plain paper laser facsimile machine, Nashua 1400 L or similar Provisional Sum"

Add the following sub-subitems:

(ix) Provision of cell phones.....ProvisionalSum
 (x) Cost of cell phone calls on contract administration business and
 rental charges ProvisionalSum
 (xi) Handling costs and profit in respect of subitems 14.03 (b) (ix) and (x) above percentage (%)"
 (xii) Provision of ADSL Broadband Internet Access..... ProvisionalSum
 (xiii) Handling costs and profit in respect of subitem 14.03 (b) (xii) above percentage (%)"

(c) Items measured by area:

Add the following to sub-subitem (iv) of this subitem:

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"... galvanised iron or fibre cement complete with an insulated lid comprising of styrofoam with marine plywood backing, water depth 500 mm."

Amend sub-subitem (viii) of this sub item to read:

"(viii) Soft board notice board square metre (m²)"

Add the following sub-subitem:

"(ix) White boards square meter (m²)"

Item	Unit

B14.05 Housing for labourers

Amend the item description to read "B14.05 Housing for Employer's Agent's laboratory staff".

B14.08 Services

Add the following sub-subitem:

"(f) The provision of a back up generator when the provision of electricity is under subitem (a) is from Eskom
 (i) Fixed costs lump sum
 (ii) Running costs 100-hour (100h)"

Add the following pay items:

"Item	Unit

B14.11 Provision of semi-skilled labour for use by the Employer's Agent

(a) Wages, salaries and allowances prime cost (PC) sum
 (b) Handling costs and profit in respect of sub-item B14.11(a) percentage (%)

Expenditure under this item will be in accordance with the general conditions of contract. Payment under sub-item B14.11(a) shall be made monthly. The amount due to the Contractor will be equal to the total of the actual amount paid to the Employer's Agent's semi-skilled labourers plus the direct cost of medical and pension benefits, Workmen's Compensation, sick leave and holiday pay, incurred by the Contractor in respect of the Employer's Agent's semi-skilled labourers. The Contractor shall advise the Employer's Agent of the full monthly cost for each semi-skilled labourer engaged. No payment other than that provided above will be made in respect of the employment of semi-skilled labourers for the Employer's Agent. Contract price adjustment will not apply to this item.

The tendered percentage is a percentage of the amount actually spent under sub-item B14.11(a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying the Employer's Agent's assistants.

Item	Unit

B14.12 Two-way radio facilities

(a) Provision of radios number (No.)

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(b) Maintenance of radios month

The unit of measurement shall be the number of two-way facilities fitted to the vehicles used by the Employer's Agent's supervisory staff, or at the Employer's Agent's site office, or Contractor's site camp.

The rate tendered shall include full compensation for the provision, fitting, licensing, maintaining and final removal of radio links between vehicles used by the Employer's Agent's supervisory staff and the Contractor's camp site or Employer's Agent's site office as the case may be.

Item	Unit

B14.13 Site staff remuneration

(a) Remuneration to site staff..... provisional sum

(b) Handling costs and profit in respect of sub-item B14.13(a) percentage (%)

Expenditure under this item will be made in accordance with the general conditions of contract. Payment under sub-item B14.13(a) shall be made once the site staff's remuneration has been processed and signed to the satisfaction of the Employer's Agent, but only on submission of a proof of payment by the Contractor. Payment for the allowances will be made in the next monthly certificate.

The tendered percentage is a percentage of the amount actually spent under sub-item B14.13(a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying for the Employer's Agent's subsistence allowances.

Item	Unit

B14.14 Site Surveyor

(a) Surveyors remuneration provisional sum

(b) Handling costs and profit in respect of sub-item B14.14(a).....percentage (%)

Expenditure under this item will be made in accordance with the general conditions of contract. Payment under sub-item B14.14(a) shall be made once the site surveyor's remuneration has been approved by the Employer's Agent, but only on submission of a proof of payment by the Contractor. Payment for the allowances will be made in the next monthly certificate.

The tendered percentage is a percentage of the amount actually spent under sub-item B14.14(a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying for the surveyor's remuneration.

Item	Unit

B14.15 Laboratory Staff and Disbursements

(a) Laboratory staff remuneration and disbursements provisional sum

(b) Handling costs and profit in respect of sub-item B14.15(a).....percentage (%)

Expenditure under this item will be made in accordance with the general conditions of contract. Payment under sub-item B14.15(a) shall be made once the laboratory staff remuneration and disbursements have been processed and signed to the satisfaction of the Employer's Agent, but only on submission of a proof of payment by the Contractor. Payment for the allowances will be made in the next monthly certificate.

The tendered percentage is a percentage of the amount actually spent under sub-item B14.15(a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying for the surveyor's remuneration.

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Item	Unit

B14.16 Emergency power supply to Employer's Agent's offices

(a)	Power supply to Employer's Agent's offices, laboratory and kitchen	hour (hr)
(b)	Handling costs and profit in respect of sub-item B14.16(a)	percentage (%)

Expenditure under this item will be made once the contractor has provided emergency power to the Employer's Agent's offices, laboratory and kitchen. Should the power failure be as a result of the contractor no payment will be due. Payment for the emergency power supply will be made in the next monthly certificate.

The tendered percentage is a percentage of the amount actually spent under sub-item B14.16(a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with supplying power to the Employer's Agent.

Item	Unit

B14.17 Client's Occupational Health and Safety Agent

(a)	Direct payment to Client's Occupational Health and Safety Agent	provisional sum
(b)	Handling costs and profit in respect of sub-item B14.17(a)	percentage (%)

Item	Unit

B14.18 Client's Environmental Agent

(a)	Direct payment to Client's Environmental Agent	provisional sum
(b)	Handling costs and profit in respect of sub-item B14.18(a)	percentage (%)

Item	Unit

B14.19 Provision of mobile outdoor weather station	number (No)

The unit of measurement shall be the number of units supplied and operated.

The tendered rate shall include full compensation to procure, erect, operate and maintain, for the duration of the contract, a number of weather stations capable of measuring temperature, wind, chill, barometric pressure, UV levels, rainfall, wind direction and speed. The device should also have on-board storage capabilities for at least 7 (seven) days and it should include a USB PC connection with software, allowing data to be downloaded to a PC."

SECTION 1500: ACCOMMODATION OF TRAFFIC

B1501 SCOPE

Add the following:

"This section also covers the provision of additional information signs for motorists and releasing any notices to the media and public.

It is a condition of this contract that traffic is accommodated considering the provisions of the latest edition of the South African Road Traffic Signs Manual (SARTSM).

Copies of this publication are available from Government Printers attention Anna Steyn Tel. (012) 334-4500, e-mail: asteyn@print.pwv.gov.za"

B1502 GENERAL REQUIREMENTS

(a) Safety

Add the following at the end of the second paragraph of this subclause:

"The entire site will be handed over to the Contractor. The Contractor may, however, only occupy such areas on the site in accordance with the approved construction programme or as approved by the Employer's Agent.

The Contractor shall submit a programme for the accommodation of traffic to the Employer's Agent for approval."

Approval of temporary deviations

Add the following:

"If, after any temporary deviation has been constructed, any changes are considered necessary or desirable, the proposal shall be submitted to the Employer's Agent for his approval."

(i) Traffic Safety Officer

Add the following after the second paragraph:

"The Contractor shall submit a CV of the candidate to the Employer's Agent for approval before the Traffic Safety Officer is appointed. The Traffic Safety Officer shall be made available to discuss road safety and traffic accommodation matters whenever required by the Employer's Agent." This Traffic Safety Officer may not be the same person as the Construction Safety Officer contemplated in Section C of this specification. If a Traffic Safety Officer is found to be incompetent, the Employer's Agent will instruct the Contractor to remove and replace him with a competent person. The Traffic Safety Officer will report to the Construction Safety Officer.

At the end of the subclause add the following:

"The duties of the responsible persons shall include liaison with the relevant traffic authorities and in the event of an accident on the section of road under construction, the Traffic Safety Officer or his assistants shall be responsible for contacting the traffic authority and South African Police Service."

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Replace sub-subclauses (ii) and (iii) with the following:

- “(ii) Record on neat and dimensioned sketches and submit to the Employer’s Agent the position and sign reference number where applicable of each sign, barricade, delineator, cone, amber flicker light, guardrail and permanent or temporary painted road marking feature. The position of each of the above-mentioned signs and road marking features shall be adequately referenced to identifiable permanent features located along the site of the works.

These records shall also show the date and time at which the recorded traffic accommodation features are certified correct by the Traffic Safety Officer, and shall be signed by the Traffic Safety Officer before being submitted to the Employer’s Agent.

The records shall be amended whenever changes are made in the field and the amended detailed sketches shall be submitted to the Employer’s Agent. Such amendments shall record the position(s) of flagmen and stop/go control men and their associated traffic accommodation equipment wherever they are used.

- (iii) Personally inspect the position and condition of each traffic accommodation feature on the whole site of works at least twice each day at 9h30 and at 16h30, to record all irregularities discovered and the remedial action taken, and to sign off as correct and submit to the Employer’s Agent such record sheets by the middle of the next working day at the latest. The Traffic Safety Officer shall keep a duplicate book for this specific purpose. The provision of daily photographs is advisable.

The Traffic Safety Officer shall also submit the daily labour returns of flagmen, stop/go and traffic signal control men employed, with this report.

Add the following sub-subclauses:

- “(ix) The Traffic Safety Officer shall be equipped with a cellular telephone and shall have a vehicle and sufficient labourers at his disposal 24 hours a day, including special non-working days and shall not be available for other duties. He shall be directly answerable to the Contractor’s Site Agent. The traffic safety vehicle shall be a truck with a capacity of 3 tons and shall be equipped with a high visibility rear panel in accordance with the requirements of the South African Road Traffic Signs Manual.

The words “TRAFFIC CONTROL” shall be written on a warning sign in highly legible letters (not less than 150 mm in height) and the sign shall be mounted on the vehicle at a height of at least 1,5 m above ground level. The proposed sign with size of letters shall be submitted to the Employer’s Agent for his approval before the sign is ordered.

The vehicle shall be equipped with an amber-coloured flashing light of the rotating parabolic reflector type, with a minimum intensity of 100 W. The warning light shall be switched on at all times and the aforementioned sign shall be displayed when the vehicle is used on site.

The Traffic Safety Officer shall have a direct line of communication with the police and traffic officers responsible for the area within the limits of the contract at all times. The provision of the road safety vehicle, driver, sufficient labourers and the cost of the cellular telephone shall be deemed to be included in the tendered rates.”

- (x) Ensure that all obstructions related to the Contractor’s activities be removed before nightfall, where applicable or as instructed by the Employer’s Agent and that the roads are safe for night traffic.

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- (xi) Be responsible for implementing actions requested in writing by the traffic authorities with regard to the work to be carried out and be responsible for the erection and maintenance of all traffic signs necessary for the accommodation of traffic.
- (xii) In the event of an accident, the Traffic Safety Officer shall record details of the accident in a written report accompanied by photographs and a neat sketch plan which show identifiable permanent features, relevant dimensions and the position of all temporary road signs, barricades, delineators and other devices used for traffic accommodation."
- (xiii) Also ensure full compliance with all the requirements of the Occupational Health and Safety Act and Construction Regulations which may pertain to the accommodation of traffic.
- (xv) Keep the responsible traffic officers fully informed with regard to any changes in the accommodation of traffic planned by the Contractor due to construction activities."

Add the following subclauses:

“(j) Failure to comply with provisions

Failure or refusal on the part of the Contractor to take the necessary steps to ensure the safety and convenience of the travelling public, accommodation of traffic, and the provision of plant and personnel in accordance with these specifications or as required by statutory authorities or ordered by the Employer's Agent, shall be sufficient cause for the Employer's Agent to apply penalties as follows:

- (i) A fixed penalty of R5 000,00 per occurrence shall be deducted for each and every occurrence of non-compliance with any of the requirements of section 1500 of the standard specifications and section B1500 of the works specifications.
- (ii) In addition, a time-related penalty of R500,00 per hour over and above the fixed penalty shall be deducted for non-compliance to rectify any defects in the accommodation of traffic within the allowable time after an instruction to this effect has been given by the Employer's Agent. The Employer's Agent's instruction shall state the allowable time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

(k) Site personnel

The Contractor shall ensure that all his personnel, excluding those who are permanently office bound, are equipped with reflective safety jackets and that these are worn at all times when working on or near to the travelled way.

Any person found not wearing a reflective jacket under these circumstances shall be removed from the site until such time as he is in possession of and wearing a reflective jacket. Furthermore the above penalties will also be applied. Reflective safety jackets shall be kept in good condition and any jackets that are, in the opinion of the Employer's Agent, ineffective shall be immediately replaced by the Contractor.

(l) Use of the road by the public

The Contractor shall plan and conduct his activities so as to bring about the least possible disruption to the traffic on the roads on which he works. The Contractor shall deal with deliberate courtesy and understanding in any discussions or disputes at all points of contact with the travelling public.

(m) Extension of time for completion

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No delays caused by the requirement that public traffic be accommodated during the construction of the works and that traffic flows be maintained as specified will be regarded as reason for an extension of time in terms of the General Conditions of Contract.

(n) Provision of safety equipment for the Employer's Agent

The Contractor shall provide the Employer's Agent with:

- (1) Amber rotating flashing lights for mobile use which shall be approved by the Employer's Agent.
- (2) Safety jackets (not bibs) for the Employer's Agent and visitors for moving around the site. The jackets shall be of an approved type, orange/yellow in colour and shall be in accordance with the South African Road Signs Manual (Volume 2, Chapter 13) on Figure 13.30 (Detail 13.30.2).

(o) Flagmen

Where required by the Employer's Agent, flagmen shall be provided for the control of traffic at lane closures and road accidents if and when they occur.

Flagmen shall be adequately trained in the standard flagging techniques as described in the South African Road Signs Manual (Volume 2, Chapter 13) on Figure 13.23 (Detail 13.23.1) and be provided with conspicuous clothing such as safety jackets utilising retro-reflective and/or fluorescent panels in red, yellow and / or white.

Flagmen shall have in their possession, at all times, certification that they have attended and passed an accredited course in flagging techniques before being allowed onto the construction site.

Flags shall be made from bright red or red-orange material and shall be square with a minimum side length of 600 mm. The flag shall be attached to a staff at least 1,0 m in length.

Flagmen shall be placed at positions as shown on the drawings or as directed by the Employer's Agent. Such positions shall be a sufficient distance from the work areas to allow vehicles to slow down before entering the work area but not so far away that the drivers tend to increase speed before entering the work areas. The minimum requirement shall be one flagman at the start of each closure.

During the daytime, at least two flagmen shall be provided at each traffic control point in addition to the STOP/GO sign operator, one flagman at the 80 km/h sign and a second roving flagman to indicate to the traffic at the end of the queue to stop.

At night time at least one roving flagman equipped with a Stromberg Light man xenon strobe, or similar approved, and a torch is required at each traffic control point as well as the traffic light operator. Where the shoulder of the road is closed to traffic, a flagman shall be provided at the leading end of the closure during daytime. This flagman shall be provided at the 80-km/h sign to warn the traffic about the closure. No flagman shall be on duty for a period of more than 10 hours per day. The traffic control site shall be well-lighted at night with at least one floodlight positioned so as to illuminate the area and not shine into the oncoming traffic.

In terms of lateral clearance and safety, flagmen shall stand on the shoulder of the lane of traffic that is being controlled and under no circumstances shall flagmen be permitted to stand within the traffic lane. In order to obtain maximum visual impact for the travelling public, flagmen shall stand alone.

Flagmen shall be provided at all access exit points to the working areas.

(p) Access to the works

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The Contractor's plant and equipment shall not stop on the trafficked carriageway except to unload or load traffic control facilities."

B1503 TEMPORARY TRAFFIC-CONTROL FACILITIES

Replace the first sentence of the first paragraph with the following:

"The Contractor shall provide, erect and maintain and remove when no longer required the necessary traffic-control devices, road signs, channelization devices, barricades, warning devices and road markings (hereinafter referred to as traffic-control devices) in accordance with these special provisions and as shown on the drawings and in the SARTSM and remove them when no longer required. It shall be incumbent upon the Contractor to see to it that the abovementioned traffic-control devices are present where required and are functioning properly at all times."

Delete the last sentence of the second paragraph and substitute the following:

"Traffic-control devices no longer required at the site of a deviation or a lane closure shall be moved for re-use. Traffic-control devices lost or damaged by the Contractor shall be replaced at his own cost. Where it can be proved that any traffic-control device has been damaged by others and its loss of effective performance is beyond the Contractor's control and not the result of his actions or omissions, the Employer's Agent may order the device to be replaced and paid for at scheduled rates."

Replace the third paragraph with the following:

"The type of construction, spacing and placement of traffic-control devices shall be in accordance with the latest edition of the South African Roads Traffic Signs Manual (SARTSM). The recommended arrangements of the traffic control devices illustrated and/or drawings shall not be departed from without prior approval of the Employer's Agent. The arrangements expected to be most commonly used on this contract are shown on the tender drawings.

The details shown for spacing and placement of traffic-control facilities may however, be revised at the discretion of the Employer's Agent where deemed necessary to accommodate local site geometry and traffic conditions."

(a) Traffic-control devices

Add the following to this Sub-clause:

"Flagmen shall be provided at all access exit points to the working areas."

Add the following to this subclause:

"An all-weather shelter of at least 3 m² capable of accommodating two operators with a clear window, a stable door, two chairs and a portable chemical toilet which shall be maintained regularly, shall be provided at each traffic control point. Each control point shall have a generator and a 2 x 400W metal halide floodlight mounted onto a 9 m winched fibreglass pole bolted to a 1,5 m buried galvanized stem to light up the traffic control point at night-time.

The Contractor shall be responsible for the removal of all litter at the traffic control points on a daily basis to an approved dumping site."

(b) Road signs and barricades

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Add the following after the second paragraph of this subclause:

"The Contractor shall be responsible for the protection and maintenance of all signs, and shall at his own cost replace any that have been damaged, or lost, or stolen.

All temporary road signs required to remain in position for some time shall be pole mounted as shown on the drawings. All temporary road signs required to be moved more often shall be mounted on portable supports for the easy moving of signs to temporary positions. The only permitted method of ballasting the sign supports shall consist of durable sandbags filled with sand of adequate mass to prevent signs from being blown over by wind. The cost of the sandbags shall be included in the tendered rates for the various types of temporary road signs.

Temporary road signs and channelization devices shall be manufactured in accordance with the South African Road Traffic Signs Manual (Volume 2, Chapter 13) and arranged along the road as shown on the drawings and in the Manual.

Add the following paragraphs:

"All road signs shall be new or approved by the Employer's Agent as new in accordance with the specifications. The Contractor shall have available on site sufficient extra road signs, barricades, delineators, channelization devices and traffic cones to replace items that have become defective or missing.

The Contractor shall be responsible for the protection and maintenance of all signs, and shall take all reasonable measures to ensure minimum damages to signs and other traffic control devices.

The covering of permanent road signs, if applicable, shall be by first utilising a hessian bag, which shall be pulled over the sign in the form of a hood and fastened to the signposts. Plastic bags or other materials fastened by means of adhesive tape shall not be permitted. The cost of covering of permanent road signs including full operations of traffic signals and the required flagmen shall be deemed to be included in the tendered rates for items B15.01 and B15.10.

No work may proceed on any section where accommodation of traffic is required until such time as the relevant requirements with regard to sign posting and other detail shown on the Contractor's drawings are met and approved by the Traffic Safety Officer in writing."

(c) Channelization devices and barricades

Add the following:

"The start of barricades shall be positioned such that a minimum sight distance of 150m, measured at a height of 1,05m from the road surface, is obtained.

The use of drums as channelization devices shall not be permitted. Drums may however be used to set up barriers as provided for in sub clause 1503(d).

Delineators shall:

- (i) comply with the manufacturing and reflective requirements of the SARTSM and the blades shall be reversible;
- (ii) have smooth and round edges, be mounted on a post and base and all components shall be of durable plastic material;

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- (iii) have the lower edge of the reflective part mounted not lower than 250 mm above the road surface;
 - (iv) be capable of withstanding the movement of passing vehicles and gusting winds up to 80 km/h in typical working conditions without falling over (to achieve this, the base shall be at least 0,18 m² and ballasted by sandbags filled with sand); and
 - (v) together with its mounting be designed such that it will collapse in a safe manner under traffic impact.
- Where work is not taking place in a section closed half width to traffic, the delineators shall be moved laterally back to the edge of the work area to provide a wider space for traffic.

Traffic cones manufactured in a fluorescent red-orange or red plastic material shall be used only at short-term lane deviations during daylight. Cones shall not be used on their own but shall be interspersed with delineators at a ratio not exceeding 3:1. Cones used on all deviations shall be 750 mm high. Lane closures which continue into the night time shall be demarcated by delineators only."

(e) Warning devices

Add the following:

"All construction vehicles and plant used on the works shall be equipped with rotating amber flashing lights and warning boards as specified. All vehicles and plant, before being allowed onto the site, shall obtain a clearance permit from the Employer's Agent.

Rotating lights shall have an amber lens of minimum height of 200 mm and shall be mounted in such a way as to be highly visible from all directions. The lights on construction vehicles shall not be switched on while vehicles are being operated on unrestricted sections of a public road, but shall be switched on while construction vehicles are operating within the accommodation of traffic area, as the vehicles decelerate to enter a construction area, or as the vehicles accelerate to the general speed when entering the road from a construction area. Lights on plant shall operate continuously while the plant is working alongside sections of road open to public traffic.

All LDV's and cars operating on site shall also be equipped with rotating amber flashing lights which shall be placed so as to be highly visible and operated continuously while the vehicles are manoeuvring in or out of traffic or is travelling or parked alongside roads open to public traffic.

Rotating lights and the "CONSTRUCTION VEHICLE" signs on the Contractor's vehicles and plant shall not be paid for separately but shall be included in the rates covering the use of the vehicles. Those for the Employer's Agent's staff will be paid for under item B15.15.

The Contractor shall apply and maintain lights together with temporary mounting brackets, to the approval of the Employer's Agent. Vehicles and plant that do not comply with these requirements shall not enter the site.

Two amber flashing lights shall be vertically mounted on top of the traffic signs (i.e. sign mounted flashing lights) at each end of each traffic accommodation section as shown on the drawings. The lights shall be operated during the hours of darkness."

(f) Road markings

Replace this subclause with the following:

"Where the road is open full width to traffic and the new markings have not yet been painted on the new surfacing, where directed by the Employer's Agent, a temporary centreline of 100 mm wide broken white lines shall be painted along the centre of the road using PVA paint.

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On curves and blind rises, the frequency of temporary broken white lines shall be increased by halving the intervals between the lines and painting barrier lines."

Add the following:

"Where a section of road marking has been removed / covered, and before opening the section of road to traffic, the Contractor shall comply with the following:

- (i) Install temporary road marking;
- (ii) Install temporary road studs.

Should the time constraints not allow the Contractor to comply with (ii) above, the Contractor shall erect temporary delineators at 24 m spacing on the yellow line to indicate the edge of the slow lane. These delineators shall be provided, installed and maintained at the Contractor's cost.

Refer to B5701 for permanent road markings.

Add the following subclauses:

“(g) Other traffic control measures ordered by the Employer’s Agent

The Employer’s Agent may instruct the Contractor to provide any other road sign, reflective tape, etc. not measured in standard pay items. Such road signs shall conform to the requirements of the South African Road Traffic Signs Manual, or specification provided by the Employer’s Agent.

Similarly, in order to ensure that the travelling public is kept fully informed and warned on matters relating to the accommodation of traffic, construction sign posting and the effect of the construction on the flow of traffic through the site, the Employer's Agent may arrange for advertising in the press and/or for other forms of publicity.

(h) Cleanliness of traffic-control facilities

All delineators and traffic signs shall at all times be maintained in a clean and visible condition. Any bitumen or other material on delineators or traffic signs shall be removed by the Contractor, or they shall be replaced with new ones at his own cost.

(i) Temporary traffic-control signal systems

A complete traffic control signal system shall consist of four traffic control signals each with three aspects, and shall include the control device, power supply and mountings.

Temporary traffic-control signals shall be erected where directed by the Employer's Agent and shall comply with the following requirements:

- i) The provisions of Volume 4, Chapter 10 of the South African Road Traffic Signs Manual.
- ii) The signals shall be capable of operating under fixed time or linked control. Manual control shall also be possible. The signal timer shall control the cycle length, phase length and interval length. Amber times shall be a minimum of 3 seconds. Cycle times shall be adjustable up to at least 600 seconds.
- iii) The signals and the power supply shall be capable of operating under all weather conditions for uninterrupted periods of at least 15 hours.

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- iv) Standard signal faces with 210 mm diameter red and green aspects shall be provided.
- v) The traffic-control signal lights shall comply with SABS 1459-1988. Aspects shall be fitted with 50 W tungsten halogen lamps.
- vi) Two standard signal faces, both erected on the right-hand side of the road, shall be provided to control each direction of traffic.

Traffic-control signal systems shall be used during the night and shall be operated manually. Sufficient staff, equipped with two-way radios, shall be provided to operate the traffic-control signal system, in shifts of not more than eight hours. The same personnel shall not be on duty throughout an entire night.

The Contractor shall provide a backup power supply such that the traffic control signals can be operated continuously at night-time. In addition, the Contractor shall have available on site adequate spares to effect immediate repairs to a traffic control signal unit in the event of breakdown. The Contractor shall provide backup two-way radios for use in the event of breakdowns."

B1504 WIDTH AND LENGTH OF TEMPORARY DEVIATIONS

Replace "10m" and "5m" in the first paragraph with "6m" and "4m" respectively.

Replace the second paragraph with the following:

"Where the existing road is constructed in half widths or in full width with single direction traffic, the roadway width for accommodating one-way traffic shall be at least 3,2 m wide. The length of the half-width construction or full width construction with single direction traffic controlled by STOP and GO/RV signs shall not exceed 2, 0 km.

The traffic shall be single direction controlled by STOP and GO/RV signs during daytime and temporary traffic signals at night as agreed by the Employer's Agent."

B1506 EARTHWORKS FOR TEMPORARY DEVIATIONS

Add the following to this clause:

"Wherever possible and to the thickness as instructed by the Employer's Agent topsoil shall be stripped off the area required for deviations. The topsoil shall be stockpiled in accordance with the specifications for later re-use to re-instate the deviations. Payment for the stockpiling and re-use of topsoil will be made under Section 5800."

B1513 ACCOMMODATION OF TRAFFIC WHERE THE ROAD IS CONSTRUCTED IN HALF WIDTHS

Add the following:

"Where the road is constructed in half widths or in full width with one-way traffic, the traffic shall be accommodated as follows:

One-way traffic during working hours with STOP and GO/RV control and open to accommodate two-way traffic after working hours where this is possible. In this instance the road shall be in a safe trafficable condition for two-way traffic over the entire width or sufficient width to accommodate two-way traffic at the end of each day's work.

Where it is not possible to open the full width of the road or sufficient width to accommodate two-way traffic after working hours, the traffic shall be accommodated as one-way traffic with stop and GO/RV control during working hours and temporary traffic signals at night.

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The Contractor shall only work on one side of the road where traffic is accommodated as one-way traffic with stop and GO/RV control. Work on both sides of the road shall not be allowed where traffic is accommodated as one-way traffic with stop and GO/RV control.

All work on the travelled way and shoulders shall be done in such a way that the remaining portion of the roadway is available for traffic.

Construction shall be separated from traffic by means of barricades, guideposts, road signs, delineators and other arrangements in accordance with SARTSM and the drawings or as requested by the Employer's Agent.

The traffic flow shall be controlled during the daytime by flagmen with STOP and GO/RV signs and by manually operated traffic signals at night.

Add the following to the end of this clause:

"It may be required to close the road temporarily when blasting. The Contractor will be allowed to close the road for a maximum period of three (3) hours every day to allow for blasting and cleaning up after the blast before traffic is allowed through the pass again. The following will be required before the blasting operations can be commenced with:

- (i) The local residents/road users shall be informed of the times for these temporary closures through the CLO and the PSC.
- (ii) The public shall also be informed of the times for the temporary closures by means of a press release through the local media.
- (iii) Special signs shall be erected at both ends of the road as well as possible other locations indicated by the Employer's Agent. The times for the temporary closures shall be indicated on these signs. The wording on these signs as well as the sizes shall be approved by the Employer's Agent before they are ordered.
- (iv) Further signs that will indicate that the road is actually closed on a specific day shall also be displayed at the same locations as the signs mentioned in (iii) above.

Proper programming will be required to ensure that the blasting as well as cleaning of the road after the blast shall be completed within the four hours that the road will be closed.

The Contractor shall also ensure that these operations be programmed and executed in a way to reduce the impact on the flow of traffic to the minimum."

B1516 BLASTING OPERATIONS

When blasting operations are to be carried out in such close proximity to roads being used by the public that it will be necessary to stop the public traffic for safety reasons the following procedure shall apply:

- (a) The Contractor shall keep the Employer's Agent fully informed of his intentions and procedures. The Employer's Agent reserves the right to modify such procedures should he consider it to be in the interests of the Employer or safety of the public.
- (b) Blasting shall be carried out only once a day around midday and on the same day(s) of the week (e.g. Wednesdays) so that the travelling public will become accustomed to certain days being blasting days and can arrange their trips accordingly. Blasting shall be restricted to three days in the week.
- (c) The stoppage to the public traffic shall be minimised and limited to a maximum of three hours per blast.

In the event of the blast causing a partial or even complete blockage of the public road and the clearing of this blockage not being possible within the three hour time limit, then the Employer's Agent shall have the right to impose a penalty on the Contractor of R1 000-00 for every hour, or portion thereof, which the road is closed to traffic in excess of the three hour limit. In addition:

- (i) The Contractor shall be responsible for attending to, and satisfactorily resolving, all claims from members of the public as a consequence of exceeding the three hour limit and as part of his obligations under clause 8.1.8 of the General Conditions of Contract.

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- (ii) The Contractor shall submit, if requested by the Employer's Agent, a written report on the reasons for the blockage and possible measures to prevent a recurrence.
- (d) All fly rock and debris shall be thoroughly removed from the public road before reopening. This shall be subject to the Employer's Agent's inspection and approval.
- (e) Notices of an approved language and format shall be erected at the positions agreed by the Employer's Agent in order to warn the traffic of delays due to blasting.

Suitable timeous notices shall also be inserted in the local newspapers and use made of local radio stations as agreed with the Employer's Agent.
- (f) All advisory signs shall be paid for under Section 5600. All other costs involved with complying with the above requirements shall be the Contractor's responsibility and he shall allow for them in his rates.

B1517 MEASUREMENT AND PAYMENT

Item	Unit
B15.01 Accommodating traffic and maintaining temporary deviations	kilometre (km)

Amend the second sentence in the second paragraph as follows:

"The provision of a full-time Traffic Safety Officer and all the duties performed by him shall be paid for under Item B15.16".

Item	Unit

B15.02 Earthworks for temporary deviations

- (a) Shaping of temporary deviations

Add the following sub-subitem to this subitem:

"(i) Temporary deviations (new construction) kilometre (km)"

Item	Unit

B15.03 Temporary traffic control facilities

- (a) Flagmen

In the payment refers clause (a), delete the first sentence: "The unit of measurement shall be a day worked by a flagman." and replace with "The unit of measurement shall be a full day and night shift worked by flagmen. A person day shall be deemed to comprise of 3 x 8 hour shifts, in a 24 hour period."

In the payment refers clause (a), amend "a flagman who is" to read "flagmen who are" and at the end delete the full stop and add the following:

“, Stromberg Lightman xenon strobes and torches”.

(b), (c), (d), (e), (f) and (h).

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Delete the second paragraph and replace with the following:

“As for the Traffic Control Trailer, the tendered rate shall include full compensation for the supply and utilisation of, provision, erection and eventual removal of the trailer. The rates shall also include for the moving or covering of the signs as required throughout the Contract. This is a remeasurable item that will be paid according to the actual requirements on site”.

Add the following to this item:

"Note: For all road signs measurement and payment shall differentiate between signs fixed in the ground and mounted on stands."

Amend sub item (h) to read as follows:

Item	Unit
"B15.03(h) Delineators TW401 or TW402 (size indicated)	
(i) Single sided	number (No)
(ii) Double sided blade	number (No)"

Amend the following notes in the measurement paragraphs as follows:

“The tendered rate for subitem (h) shall also include full compensation for each delineator, for the provision of two sandbags per delineator to hold it in position and for their replacement when necessary due to whatever reason. Only the standard plastic type TW 401/402 (old DTG 50 J) will be allowed on this Contract.”

Item	Unit
B15.04 Relocation of traffic-control facilities.....	lump sum

Add the following:

“Item B15.04 is only applicable to those items ordered by the Employer’s Agent and for which the cost of relocation is not already included in item 15.03 (or B15.03).

Item	Unit
B15.10 Accommodation of traffic where the road is constructed in half-widths	kilometre (km)

In the second paragraph delete from the third line the expressions “flagmen”, “guards”, and “lights”.

Add the following new paragraphs:

“Half-width construction is defined as the construction of the layers of the shoulder and the lane and only where two-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 maximum 2 km sections controlled by temporary traffic signals for

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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."

B15.11 Traffic signals

Replace this item with the following:

"Item	Unit

B15.11 Temporary traffic-control signal systems:

- (a) Provision, first erection on Site and final removal of traffic-control signal systems..... number (No)

The unit of measurement shall be the number of traffic-control signal systems provided and erected. A traffic-control signal system shall consist of all the equipment required to operate four traffic-control signals each with at least two aspects and shall include the control device, power supply and mountings.

The tendered rate shall include full compensation for the provision, first erection, maintenance and final removal of the traffic-control signal system. 75% of the rate will be payable when the signals have been provided and erected and 25% when finally removed from the Site.

- (b) Re-use on Site of traffic-control signal systems number (No)

The unit of measurement shall be the number of traffic-control signal systems removed once and re-erected.

The tendered rate shall include full compensation for the dismantling, storing if required, transportation and re-erection in an entirely new locality and no payment will be made for their removal to a fresh position at the same location.

- (c) Manual operation

- (i) Traffic-control signal systems.....hundred hours (100 h)

- (ii) STOP and GO-RY boards.....hundred hours (100 h)

The unit of measurement shall be the number of hundred-hour units the traffic-control signal system is manually operated.

The tendered rate shall include full compensation for the maintenance of the power supply, replacement of lamps as required, two-way radios, portable all-weather shelters, flood lights, toilets, chairs etc., and litter removal."

Add the following items:

Item	Unit

B15.14 Amber flashing lights mounted on signs..... number (No.)

The unit of measurement shall be the number of amber flashing lights or sets of stroboscopic lights provided and erected.

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The tendered rate shall include full compensation for the provision, erection and final removal of the amber flashing light.

Item	Unit

B15.15 Provision of traffic safety equipment for use by the Employer's Agent

(a) Amber/Rotating lights, complying with SARTSM 13	number (No.)
(b) High Visibility Jackets	number (No.)
(c) Magnetic Signs "Construction Vehicle" or "Road Inspection"	number (No.)

The tendered rate shall include full compensation for the provision and delivery of these items.

Item	Unit

B15.16 Traffic safety officer month

The unit of measurement shall be the period in months that the approved traffic safety office is employed.

The tendered rate per month shall include full compensation for the cost of the traffic safety officer to conduct his duties as specified in Sub-clauses B1502(i).

Item	Unit

B15.17 Penalties for failing to comply with provisions.

(a) Fixed per occurrence	number (No.)
(b) Time related per occurrence	hour (h)

The rates are fixed with reference to B1502(j): item (a) will be applied following the occurrence of an offence; item (b) will be applied following the lapse of a deadline given to rectify any penalised occurrence (a), until it is rectified.

Add the following item to this section:

"Item	Unit

B15.18 Labour intensive maintenance of the existing road (on sections before final upgrading work commences) person–days"

SECTION 1600: OVERHAUL

B1602 DEFINITIONS

(a) Overhaul material

Add at the beginning of the first paragraph of this subclause:

"Except that no overhaul shall apply to materials from commercial sources ..."

Add as the last paragraph of this subclause:

"The tendered rates for all materials from commercial sources will be held to include full compensation for hauling the materials from source to point of use."

(b) Overhaul

Delete the text of the subclause and replace with:

"Payment shall only be made for material hauled in excess of 1 kilometre. Overhaul shall be measured as the product of the volume of material hauled and the overhaul distance."

(c) Haul distance

Add the following to this sub clause:

"The haul distance of any material which is removed from existing pavements shall be measured along the shortest route from the place of excavation to the point of use (should the material be re-used directly) or to the approved stockpile, and the shortest distance from the approved stockpile to the point of use."

(d) Free-haul distance

Replace the last sentence with:

"This distance shall be 1 kilometre in the case of all overhaul materials."

Add the following new paragraph:

"In the case of material hauled to a stockpile and then hauled again to point of use, the free-haul distance shall apply only once."

B1603 MEASUREMENT AND PAYMENT

Amend item 16.02 to read as follows:

Item	Unit
B16.02 Overhaul on material hauled in excess of 1 km	cubic metre-kilometre (m ³ -km)".

Delete the first paragraph of the first set of notes.

SECTION 1700: CLEARING AND GRUBBING

Add the following as a final paragraph:

"Clearing and grubbing for the construction of site offices shall not be measured separately and shall be deemed to be included in the rates tendered for item B13.01."

B1702 DESCRIPTION OF WORK

(c) Conservation of topsoil

Add the following to the end of the 1st paragraph:

"The depth of topsoil removed shall be reliant on the terrain, suitability of material and topsoil requirements of the work. Generally, the contractor will not be required to remove topsoil to more than an average depth of 400mm unless approved by the Employer's Agent before commencing with topsoil removal from any particular area."

Replace the second paragraph of this clause with the following:

"After clearing and grubbing, all topsoil shall be removed to either windrows alongside the construction area or to stockpile. Where ordered by the Employer's Agent, any topsoil that shall be required for the top soiling of new banks and cuts, but which cannot be accommodated within the construction site, shall be loaded and hauled to the designated stockpile area where it shall be placed in temporary stockpiles for later use in the rehabilitation of the site affected by construction activities. Where new borrow pits are to be opened up the topsoil shall first be removed (independently of the overburden) and placed in temporary stockpiles at the edge of the borrow pit. The moving of topsoil from windrow or the loading of topsoil from temporary stockpiles and the placing and spreading thereof on cut or fill slopes or on borrow pit spoil sites, is covered in Section 5800."

B1703 EXECUTION OF WORK

Add the following as the new first paragraph:

"This section covers the clearing of the site and the grubbing necessary for the construction of the Works covered by the Contract."

(a) Areas to be cleared and grubbed

Delete "normally" in the first line of the second paragraph of this subclause.

B1704 MEASUREMENT AND PAYMENT

Item	Unit
B17.01 Clearing and grubbing	hectare (ha)

Add the following to the measurement and payment paragraphs:

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“Clearing and grubbing for the construction of camp sites shall not be measured separately. Payment shall be regarded as included in the rates tendered for the applicable items for the above-mentioned work.”

SECTION 1800: DAYWORKS

Add the following section to the standard specifications:

SECTION B1800: DAYWORKS AND HIRE OF CONSTRUCTION EQUIPMENT

Contents

B1801	SCOPE
B1802	GENERAL REQUIREMENTS
B1803	MEASUREMENT AND PAYMENT

B1801 SCOPE

This Section covers the listing of daywork items in accordance with the General Conditions of Contract subclause 6.5 as amended by Special Condition, for use in determining payment for work which cannot be quantified in specific units in the Bill of Quantities, or work ordered by the Employer's Agent during the construction period which was not foreseen at tender stage and for which no applicable rate exists in the Bill of Quantities.

B1802 ORDERING OF DAYWORK

No daywork shall be undertaken unless written authorisation has been obtained from the Employer's Agent. Work will be classified as daywork only if the Employer's Agent considers no other rate in the Schedule of Quantities to be appropriate for payment purposes.

An instruction regarding all work to be carried out under daywork in terms of subclause 6.5 of the General Conditions of Contract will be issued at the discretion of the Employer's Agent. Some or all of the items priced under daywork in the Schedule of Quantities may possibly not be required for this contract.

Before ordering any material, the Contractor shall submit quotations to the Employer's Agent for his approval and shall submit such receipts or vouchers to the Employer's Agent as may be necessary for proving the amount claimed.

B1803 MEASUREMENT AND PAYMENT

Item	Unit
B18.01 Personnel	
(a) Personnel during normal hours	
(i) Unskilled labour	hour (h)
(ii) Semi-skilled labour	hour (h)
(iii) Skilled labour	hour (h)
(iv) Ganger	hour (h)
(v) Flagmen	hour (h)
(b) Outside normal working hours and Saturdays	

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(i)	Unskilled labour	hour (h)
(ii)	Semi-skilled labour	hour (h)
(iii)	Skilled labour	hour (h)
(iv)	Ganger	hour (h)
(v)	Flagmen	hour (h)
c)	Outside normal working hours Sundays and public holidays	
(i)	Unskilled labour	hour (h)
(ii)	Semi-skilled labour	hour (h)
(iii)	Skilled labour	hour (h)
(iv)	Ganger	hour (h)
(v)	Flagmen	hour (h)

The tendered rates shall include full compensation for overhead charges, profit, liabilities, obligations, site supervision, and the use of hand tools, appliances, and equipment and for consumable stores. The tendered rates shall be subject to the CPA factor as laid down in the General Conditions of Contract.

Item	Unit

B18.02 EQUIPMENT

(a)	TLB (up to 52 kW)	hour (h)
(b)	Excavators on tracks from 70kW up to 100kW and mass 25t	hour (hr)
(c)	Self-propelled compactors	
(i)	Vibrating roller up to 1.0m wide & mass 1.5t	hour (hr)
(ii)	Vibrating roller more than 80kW & mass 8t	hour (hr)
(d)	Water tanker up to 10000l	hour (hr)
(e)	Grader 140G or similar	hour (hr)
(f)	Bulldozer up to 105kW and mass 25t	hour (hr)

The tendered rates for plant for item B18.02 shall be an all-inclusive hire charge for the use of the vehicle and driver or plant/equipment and operator and shall apply only to vehicles plant and equipment nominated in writing by the Employer's Agent, for all administrative, supervisory operative and contingent cost, and profit, relating to the running of the plant.

Item	Unit

B18.03 Materials

(a)	Procurement of materials	provisional sum (Prov Sum)
(b)	Contractor's handling costs, profit and all other charges in respect of Sub item B18.02 (a)	percentage (%)

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The prices for materials (excluding VAT) shall be based on the documented proof submitted to the Employer's Agent as specified in clause B1803 and expenditure shall be made in accordance with the General Conditions of Contract. The prices shall not be subject to the Contract Price Adjustment Factor.

The tendered percentage as an on-cost on the net cost price of materials shall include full compensation for handling, overheads, profit, liabilities, obligations, risks, incidents and other on-cost for the supply, delivery and distribution of materials for dayworks.

Item

Unit

B18.04 Transport

The unit of measurement for items B18.04 (a) to (c) shall be a Kilometre and the unit measure for items B1803 (d) to (f) shall be the hour for the item of equipment or personnel. Non-working hours or transport breakdown, lack of operator of any other reason shall not be measured. The time shall be taken from the time that the personnel and/or equipment depart until return.

Measurement shall only be for work instructed and directed by the Employer's Agent, where the Employer's Agent considers no other appropriate rate is applicable in the Schedule of Quantities. Prior to the commencement of any work by the personnel described under item B18.01 the Contractor must obtain written consent from the Employer's Agent regarding their classification in terms of "unskilled", semi-skilled" and "skilled" personnel.

The tendered rates for labour under B18.01 shall include full compensation to cover overhead charges and profit, leave pay, bonuses, subsistence, allowances, Employer's contributions, additional payment for overtime where applicable, insurances, housing, site supervision, use of small hand tools and appliances, non-mechanical plant and equipment and consumable stores, for all administrative, supervisory, operative and contingent costs, relating to the supply of personnel.

The unit of measurement for item B18.04 shall be the kilometre distance that the vehicle travelled for transporting personnel and/or plant. All travelling shall be approved by the Employer's Agent.

The tendered rate for item B18.04 shall include full compensation for the cost of the vehicle including fuel, driver, maintenance depreciation and insurance as well as running costs.

The above-mentioned tendered rates shall be full compensation for the various items as specified and no further profit shall be paid.

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SECTION 2100: DRAINS

B2101 SCOPE

Amend the first paragraph to read:

“This section covers all the work in connection with the excavation and construction of open drains, subsoil drainage and banks and dykes at the location and to the size, shapes, grades and dimensions as shown on the drawings or as directed by the Employer’s Agent, and the test flushing of subsoil drains.”

B2104 SUBSOIL DRAINAGE

(a) Materials

(i) Pipes

Amend the 1st paragraph as follows:

“Pipes for subsoil drainage and shall be of the following type:

Perforated or slotted unplasticised PVC pipes complying with SABS 791”

(ii) Natural permeable material

Delete the 3rd paragraph and replace with the following:

“Crushed stone shall be coarse graded (19,0 mm nominal size) and shall conform to the following requirements:

Percentage passing through a 26.5 mm sieve: 100%

Percentage passing through a 19.0 mm sieve: 60-85%”

(iii) Geotextiles

Under item (4) Selection, of this sub-clause, replace the 1st paragraph with the following:

“The filter-fabric used for subsoil drains shall be grade 2 and shall satisfy the criteria for this grade of geotextile as given in Table 2104/2.”

Add the following:

(iv) Geocomposite Drains (Fin Drains)

Geocomposite drains shall consist of a drainage core connected to a drainage pipe, all of which shall be enclosed in a geotextile. The drainage core shall act as a flow net and shall include the physical characteristics as listed in Table 2104/3

Table 2104/3

Properties		Units	Core	Test Method
POLYMER TYPE			HDPE	
MASS	(minimum)	g/m ²	500	EN ISO 9864
THICKNESS	(under 2 kPa)	mm	4.0	EN ISO 9863
TENSILE STRENGTH	(machine & across)	kN	5.0	EN ISO 10319
DISCHARGE CAPACITY OF GEOCOMPOSITE				

DISCHARGE CAPACITY	(under 50 kPa)	l/s/m	>0.1	EN ISO 12958

(a) Construction of subsoil drainage systems

(iv) Geocomposite Drains (Fin Drains) drainage systems shall be constructed in accordance with the details shown on the drawings or as directed by the Employer's Agent.

The fin drain is supplied in 30m rolls and the pipes supplied in 6m lengths. The geocomposite drainage system shall be laid out and assembled above ground. The pipe shall be placed within the geotextile flap component of the fin drain with the white soffit mark facing towards the geo-net and secured in place. The composite in-plane system shall be installed against a vertical trench side through which the subsoil flow is expected. The trench shall then be backfilled and compacted in layers with suitable material resulting from the excavation for the subsoil drain. The pipe shall be bedded in a minimum 1.6 x pipe diameter of non-plastic fill over pipe before compaction. Where insitu soils that are not compatible with geotextile filtration are encountered, the composite in-plane drainage system shall be backfilled using materials not less than G7 quality material.

SECTION 2200: PREFABRICATED CULVERTS

B2201 SCOPE

Add the following to this clause:

"The information given on the drawings, long sections and drainage schedules may be altered to suit actual site conditions. Culverts shall only be constructed once the information on the drawings has been confirmed by the Employer's Agent. Prefabricated units shall only be ordered once actual measurements of length have been confirmed on site."

(d) Fine Granular Material

Add the following:

"Selected material, approved by the Employer's Agent, may be used for the bedding."

(f) Skewed ends

Replace the first and second paragraphs of this subclause with the following:

"No units shall be supplied with skew ends and no cutting of skew ends on site will be allowed."

Add the following subclause to this clause:

"(j) Steel reinforcement

All steel reinforcement work shall be carried out in accordance with the requirements of Section 6300."

SECTION 2200: PREFABRICATED CULVERTS

B2201 SCOPE

Add the following to this clause:

"The information given on the drawings, long sections and drainage schedules may be altered to suit actual site conditions. Culverts shall only be constructed once the information on the drawings has been confirmed by the Employer's Agent. Prefabricated units shall only be ordered once actual measurements of length have been confirmed on site."

B2203 MATERIALS

(b) Portal and rectangular prefabricated concrete culvert units

Delete the contents of this Subclause entirely and replace them with the following:

"Precast concrete units shall comply with the requirements of the latest SABS 986 specification.

Prior to the manufacture of any units the manufacturer shall submit his Quality Plan to be approved by the Employer's Agent before delivery of any units to site. As part of the Quality Plan submitted for approval copies of calibration certificates of both gauges used for proof loads and cover meters used at the factory shall be supplied to the Employer's Agent. The originals of these certificates shall at all stages also be available for inspection at the factory premises. The manufacturer shall check each precast unit for cover compliance, and random checking of units shall not be permitted. The Employer's Agent's Representative may visit the factory at any stage to ascertain adherence to the quality plan as well as to check covers before delivery to site. Any substandard cover shall result in the batch being rejected. Should the manufacturer not be adhering to their Quality Plan the Employer's Agent may exercise the right to reject the use of products from the manufacturer concerned. The Employer shall also be informed in all such cases.

For durability requirements due to the reduced cover provided for pre-cast culverts all durability testing shall be done in accordance to Clause B6404 (h) shall fall within the severe category. For units within the 5km zone from the coast the very severe category shall be used and increased cover shall be as specified by the Employer's Agent."

(d) Fine Granular Material

Add the following:

"Selected material, approved by the Employer's Agent, may be used for the bedding."

(f) Skewed ends

Replace the first and second paragraphs of this subclause with the following:

"No units shall be supplied with skew ends and no cutting of skew ends on site will be allowed."

Add the following subclause to this clause:

"(j) Steel reinforcement

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All steel reinforcement work shall be carried out in accordance with the requirements of Section 6300."

SECTION 2200: PREFABRICATED CULVERTS

B2201 SCOPE

Add the following to this clause:

"The information given on the drawings, long sections and drainage schedules may be altered to suit actual site conditions. Culverts shall only be constructed once the information on the drawings has been confirmed by the Employer's Agent. Prefabricated units shall only be ordered once actual measurements of length have been confirmed on site."

B2203 MATERIALS

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Prior to the manufacture of any units the manufacturer shall submit his Quality Plan to be approved by the Employer's Agent before delivery of any units to site. As part of the Quality Plan submitted for approval copies of calibration certificates of both gauges used for proof loads and cover meters used at the factory shall be supplied to the Employer's Agent. The originals of these certificates shall at all stages also be available for inspection at the factory premises. The manufacturer shall check each precast unit for cover compliance, and random checking of units shall not be permitted. The Employer's Agent's Representative may visit the factory at any stage to ascertain adherence to the quality plan as well as to check covers before delivery to site. Any substandard cover shall result in the batch being rejected. Should the manufacturer not be adhering to their Quality Plan the Employer's Agent may exercise the right to reject the use of products from the manufacturer concerned. The Employer shall also be informed in all such cases.

For durability requirements due to the reduced cover provided for pre-cast culverts all durability testing shall be done in accordance to Clause B6404 (h) shall fall within the severe category. For units within the 5km zone from the coast the very severe category shall be used and increased cover shall be as specified by the Employer's Agent."

(d) Fine Granular Material

Add the following:

"Selected material, approved by the Employer's Agent, may be used for the bedding."

(f) Skewed ends

Replace the first and second paragraphs of this subclause with the following:

"No units shall be supplied with skew ends and no cutting of skew ends on site will be allowed."

Add the following subclause to this clause:

"(j) Steel reinforcement

All steel reinforcement work shall be carried out in accordance with the requirements of Section 6300."

B2204 CONSTRUCTION METHODS

Add the following:

"In all cases where soft founding material 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 Employer Agent. Allowance for measurement and payment for this work is made in the schedule of quantities under this section.

"All culverts shall be installed/constructed by the "trench method" as described under subclause (a) except where otherwise instructed by the Employer's Agent. All these culverts shall be constructed and backfilled before the subbase is constructed."

B2205 EXCAVATION FOR CONSTRUCTION BY TRENCH METHOD

(b) Width of excavation

Add the following paragraph after the first paragraph:

"The width of excavation shall be as indicated on the drawings. The specifications given elsewhere in this section for backfilling the culverts shall apply mutatis mutandis to pipe culverts, inlet and outlet structures, catch pits and manholes."

B2207 UNSUITABLE FOUNDING CONDITIONS

Add the following to the first paragraph of this clause:

"Such material shall be classed as backfill for purposes of payment."

Amend the last three lines of the second sentence of the first paragraph of this clause to read as follows:

"... or other approved material, such as rock fill, compacted in accordance with Clause 3307."

Add the following to this clause:

"Unsuitable material excavated by the Contractor on the Employer's Agent's instructions shall be measured under item 22.01. The backfilling of the excavated material below the bottom of the culvert shall be termed "foundation fill" shall be measured under fill material."

B2210 LAYING AND BEDDING OF PREFABRICATED CULVERTS

(a) Concrete pipe culverts

In the first line of the first paragraph amend "Class A, B, C or D" to read "Class A or C".

(iii) Class C Bedding

Replace the contents of this sub-subclause with the following:

"The pipes shall be laid on a bedding cushion of lightly compacted selected material in accordance with the details as shown on the drawings or as prescribed by the Employer's Agent."

B2204 CONSTRUCTION METHODS

Add the following:

"All culverts shall be installed/constructed by the "trench method" as described under subclause (a) except where otherwise instructed by the Employer's Agent. All these culverts shall be constructed and backfilled before the subbase is constructed."

B2205 EXCAVATION FOR CONSTRUCTION BY TRENCH METHOD

(b) Width of excavation

Add the following paragraph after the first paragraph:

"The width of excavation shall be as indicated on the drawings. The specifications given elsewhere in this section for backfilling the culverts shall apply mutatis mutandis to pipe culverts, inlet and outlet structures, catch pits and manholes."

B2207 UNSUITABLE FOUNDING CONDITIONS

Add the following to the first paragraph of this clause:

"Such material shall be classed as backfill for purposes of payment."

Amend the last three lines of the second sentence of the first paragraph of this clause to read as follows:

"... or other approved material, such as rock fill, compacted in accordance with Clause 3307."

Add the following to this clause:

"Unsuitable material excavated by the Contractor on the Employer's Agent's instructions shall be measured under item 22.01. The backfilling of the excavated material below the bottom of the culvert shall be termed "foundation fill" shall be measured under fill material."

B2210 LAYING AND BEDDING OF PREFABRICATED CULVERTS

(a) Concrete pipe culverts

In the first line of the first paragraph amend "Class A, B, C or D" to read "Class A or C".

(iii) Class C Bedding

Replace the contents of this sub-subclause with the following:

"The pipes shall be laid on a bedding cushion of lightly compacted selected material in accordance with the details as shown on the drawings or as prescribed by the Employer's Agent."

Add the following new clause:

"B2219 CONSTRUCTION TOLERANCES

The installation of all culverts and ducts shall comply with the requirements stated below:

(a) Level

The permissible deviation from the specified level shall be + 25 mm.

(b) Alignment and grade

The permissible deviation of the alignment and grade of each culvert and pipeline shall be + 20 mm from the specified line and level, or from the line between culvert or pipe inverts at successive headwalls, manholes or catchpits, as applicable, when measured over any 6 m length, and all such deviations shall be gradual. Reverse falls are unacceptable."

B2200 MEASUREMENT AND PAYMENT

Item	Unit
B22.29 Compaction of bedding:	
(a) Preparation and compaction of in-situ bedding material to 90% of Mod. AASHTO density (depth indicated)	cubic metre (m3)
(b) Extra over sub-item B22.29(a) for compaction to 93% of Mod. AASHTO density (depth indicated)	cubic metre (m3)

The unit of measurement shall be the cubic meter of material ripped and compacted as specified.

The tendered rate shall include full compensation for the ripping of the in-situ material to the specified width and depth, wetting of the material to such an extent that the specified density can be achieved.

SECTION 2300: CONCRETE KERBING, CONCRETE CHANNELLING, OPEN CONCRETE CHUTES AND CONCRETE LININGS FOR OPEN DRAINS

B2301 SCOPE

Add the following to clause 2301:

"This section also covers the construction of concrete paved footways and islands."

B2302 MATERIALS

(b) Kerbing and channelling

Add the following paragraph to this subclause:

"Precast kerb and channel units used in curved kerbs shall have the following lengths:

Kerb radii up to and including 20 m	0,3 m

Kerb radii exceeding 20 m and straight 1,0 m".

B2304 CONSTRUCTION

(a) Excavation and preparation of bedding

(i) Kerbs and channels

In the first sentence of this sub-subclause amend "approved bedding material at least 75 mm thick" to read "15 MPa concrete at least 50 mm thick".

Add the following to this sub-subclause:

"If necessary due to pavement layer thicknesses some of the layers on which the bedding material is to be placed will have to be removed in order to ensure that the minimum thickness of 50 mm bedding beneath the kerbs and channels can be placed. The Contractor will be deemed to have allowed for the removal of this material in the rates for kerbing and channelling."

(b) Prefabricated concrete kerbing and channelling

Add to subclause 2304(b) the following:

"Kerbing of radius 1m and less shall be cast in situ in accordance with sub-clause 2304(e) and as shown on the drawings.

All prefabricated kerbs shall be provided with continuous in-situ concrete backing (haunching), the cost of which shall be included in the tendered rate.

Dimensions of the triangular-shaped (in cross-section) haunching shall be calculated as follows: If the difference in levels between the top of the kerb and the subbase on which the kerb is laid is (h), then the height of the haunch is $2/3h$ and the width of the haunch is h."

(e) Cast in situ kerbs and channels

Add to subclause 2304(e) the following:

"Where new kerbing and channelling or concrete v-drains has to be laid adjacent to an existing bitumen surface, the surface shall be neatly saw-cut to a straight line with approved means along the edge of the channel. The existing road foundation shall then be carefully removed over the width and depth required to construct the new kerb and channel or v-drain.

During the construction of the in situ channel, the contractor shall take care not to stain or damage the existing road surface. Any damage, excess overbreak, undermining or staining shall be repaired by the Contractor at his own expense."

Add the following new subclause to Clause 2304:

(l) Shrinkage joints for cast in-situ concrete work

Unless shown otherwise on the drawings, cast in situ channels shall be provided with shrinkage joints spaced a maximum of 2m apart. Shrinkage joints shall be constructed so that shrinkage cracks are generated at the joints. Sections of channel which have cracked between shrinkage joints shall be removed and replaced by the contractor at his own expense

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(i) Construction sequence

(i) Where kerbs and channelling are constructed before the base.

In the last sentence of this sub-subclause after the words "...precautionary measures..." insert "..., including complete backfilling behind kerbs, ..."

SECTION 2400: ASPHALT AND CONCRETE BERMS

B2407 MEASUREMENT AND PAYMENT

Item	Unit

B24.03 Prime and tack coats:

Add the following to the measurement clause:

"The nominal rate of application for the tack coat spray grade 65% emulsion shall be 0,7 l/m² at application temperature."

SECTION 3100: BORROW MATERIALS

B3103: OBTAINING BORROW MATERIALS

Add new paragraph:

"The Contractor shall adhere to the requirements within the Environmental Management Plan (EMP) as provided in Volume 6 for the preparation of the areas to be utilised as borrow pits. This shall include the removal and storage of the topsoil within the affected area, maintenance of the area during use and the rehabilitation of the area to its natural state on completion. A photographic record shall be kept of all borrow pit areas. Any construction materials spoiled within these sites shall be buried to a depth of not less than 300 mm below the surface soil. No construction material of any nature shall be left visible after top soiling. The Employer's Agent shall confirm this before grassing commences. The area shall be kept free of all undesirable plant material (5807(e))."

General

Add the following:

"The acquisition and compensation for land from which borrow material is obtained shall be negotiated and paid for by the employer."

c) Use of borrow materials

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

"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 expense and risk. Such borrow pits may be accepted by the Employer Agent only if the material complies in all respects with the specifications, it is the best economic alternative and the contractor can provide proof of compliance with all relevant legislation."

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Add the following new paragraphs to the end of this sub-clause:

"The Employer's Agent shall instruct the contractor as to the applicable usage of borrow pits always employing the best economic alternative (lowest cost in terms of tendered rates) taking cognizance of the following:

Quality of material;
Haulage distance;
Hardness of material;
Overburden.

Under no circumstances shall the contractor be entitled to any additional compensation in respect of any instruction by the Employer's Agent as to the usage of borrow pit material."

B3104 OPENING AND WORKING BORROW PITS AND HAUL ROADS

Add the following subclause to this clause:

"(h) Construction of haul roads

Access or haul roads to/from borrow pits shall be adequately constructed of suitable gravel thickness such that it can carry traffic without undue wear and tear. Only one access/haul road from any borrow-pit shall be constructed and/or used."

B3105 FINISHING OFF BORROW AREAS AND HAUL ROADS

(a) Borrow areas

Add the following to this Clause:

"The Contractor shall be responsible for complying with the requirements of the Environmental Management Programme Report (EMPR) provided in Volume 7 and as indicated on the drawings. The Contractor shall be responsible for complying with the EMPR requirements irrespective of whether the rehabilitation required is as a result of his own activities or of the activities carried out in the designated borrow pits and stockpile areas prior to the hand-over of such areas for use during this Contract. The rehabilitation of any new areas disturbed by the Contractor, or areas previously rehabilitated and again utilized, shall also be the responsibility of the Contractor.

Work required by the Contractor at the borrow pits shall include, but not be limited to:

- The return of all oversize material, overburden and other residual or reject material to the borrow pits, whether generated by the Contractor or not.
- Covering all the slopes with overburden and topsoil and the establishment of vegetation.

(b) Haul roads

In the second paragraph delete the comma after the words "private access roads" and insert "and public village access roads".

B3108: MEASUREMENT AND PAYMENT

Item	Unit
B31.01 Excess overburden	cubic metre (m³)

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Delete the word “stripping” in the 1st sentence of the 2nd paragraph under the payment description as payment for this item of work is covered under payment items 17.01 and B17.07(c).

SECTION 3200:SELECTION, STOCKPILING AND BREAKING-DOWN THE MATERIAL FROM BORROW PITS, CUTTINGS AND EXISTING PAVEMENT LAYERS, AND PLACING AND COMPACTING THE GRAVEL LAYERS

B32.01 PROVISION OF CRUSHING AND SCREENING PLANT AT THE QUARRY

The Employer's Agent will obtain quotations from a Quarry Operator (QO) to confirm the quantities of material at the quarry, supply, erect/re-erect and running a Crushing and Screening Plant at the identified quarry near the site. The Plant will operate during Phase 1 and Phase 2 of the construction period. Phase 1 will commence first and Phase 2 is expected to commence before the completion of Phase 1. A provisional Sum has been provided in the Bills of Quantities to cater for this item. Should the materials at the quarry is found to be insufficient to meet the required quantities, the contractor will obtain the balance of the materials from commercial sources to be identified and priced by the contractor during tendering.

The successful QO will submit monthly invoice for the volume of materials produced as approved by the Employer's Agent to the contractor on monthly basis. The contractor will in turn, include the amount in the invoice in his/her monthly Payment Certificate and pay the QO immediately after receiving payment from the Employer.

B3203 STOCKPILING THE MATERIAL

In the first paragraph, in the first sentence insert the following before “borrow pits”:

“commercial sources, existing pavement layers, ...”

In the third paragraph, replace the second and third sentences with:

“Before any stockpiling may be done the area shall be cleared of topsoil to a sufficient depth that will subsequently allow for the complete rehabilitation of the site with cover of topsoil that does not exceed 100mm in depth and is not less than 75mm in depth. If there is insufficient topsoil; the contractor shall acquire whatever balance is needed to rehabilitate the area at his own cost. No make-up topsoil shall be affected by construction activities nor impede the natural flow of water. The topsoil shall be windrowed or stockpiled and its surrounds shall be kept free of all undesirable vegetation. The Contractor shall not commence his stockpiling activities without prior written approval from the Employer's Agent that the site has been adequately prepared.

After the stockpiled material has been removed, the site shall be reinstated as closely as possible to its original condition by ripping of the affected areas, re-landscaping if necessary, re-instatement of the topsoil and re-vegetation.”

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 end of the first sentence of the subclause:

“or cut across in a side cut to fill operation”.

Amend the line “Pavement layers 300 mm maximum dimension” to read “Pavement layers 150 mm maximum dimension”.

(b) Further breaking-down of pavement material

Add the following:

“Material used for the construction of selected and subbase layers shall be broken down by means of normal grid rolling or additional normal grid-rolling to such an extent that the compacted layer pavement layer shall contain material of which 95% of the aggregate size shall not exceed 65mm. All oversize, after breaking-down, shall be removed, with a maximum aggregate size of 100mm allowed to remain in the layer (5%) if the layer thickness is in excess of 200mm. For thinner layers a maximum size (5%) of 75mm will be allowed. Allowance is made in the pricing schedule for single-stage crushing of subbase and selected layer materials.”

B3205 CRUSHING AND SCREENING

Add the following at the end of the last paragraph of this clause:

“It is strongly recommended that the Contractor use a vertical impact crusher in the multistage crushing process for the production of all crushed products at the project quarry.”

B3208 PLACING AND COMPACTING THE MATERIALS IN LAYER THICKNESSES OF 200 mm AND LESS AFTER COMPACTION

Add the following before the 1st paragraph:

“In the case of in situ reconstruction of existing pavement layers, the contents of this clause shall apply regardless of the layer thickness after compaction.”

(c) In place reworking of pavement layers

Add the following paragraphs:

“Where the new layer is to be constructed by in situ recycling one or more existing pavement layers, with or without the addition of extra material, the preparation procedures of subclause B3403 and B3512 shall apply so as to achieve a uniform pulverised layer complying with the target grading as specified in Table 3402/7.

The recycled layer shall not contain more than 40% of recycled asphalt or bituminous layers (RAP) measured as after compaction thickness of the designed layer.

New layers thicker than 200mm constructed using the above processes may be permitted by the engineer if the contractor can provide sufficient proof that his recycler has the capability to provide a homogenous layer with respect to moisture, stabiliser content and compaction.”

Add the following subclauses to this clause:

“(d) Joints in new layers

Where joints are formed between adjacent portions of the same layer the following conditions shall apply:

- (i) Wherever possible, joints shall be either at right angles or parallel to the road centreline or the kerb lines. Joints in upper layers shall not correspond with those of the layer below and shall be offset by not less than 250 mm from the joint below. The need for and positions of all proposed joints shall be

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approved by the Employer's Agent prior to commencement of work on any layer where a joint is required.

- (ii) During the placement of layers adjacent to a joint the material previously placed which forms the first half of the layer shall either be cut back sufficiently to ensure the removal of any loose or disturbed material or ripped and compacted together with the second half layer placed or only recompacted together with the second half layer as may be required by the Employer's Agent to ensure that a sound fully compacted joint is formed. To ensure proper compaction of the joint the Employer's Agent may require the use of hand operated vibratory compactors or other suitable equipment."

B3212 MEASUREMENT AND PAYMENT

In the first sentence of the paragraph immediately below the heading of this clause, after the words "given in this section", insert "including the forming of all joints as specified".

In the introductory paragraph replace the comma after "below" in the penultimate line with a full stop and delete the remainder of the paragraph.

Add the following as a 2nd paragraph:

"Separate payment for work applicable to these payment items shall be made under the relevant sections in these specifications pertaining to the construction material required. For example, material procured from borrow that is crushed and screened for use in selected and sub-base layers shall be measured for payment under Section 3400: PAVEMENT LAYERS OF GRAVEL MATERIAL as:

34/32.01(d) and 34/32.03(d) etc., whichever is the relevant pairing of pay items under sections 3200/3400."

B32.06 Stockpiling of material cubic metre (m³)

Add the following to the end of the first paragraph of this item:

"measured in place after compaction where it is finally used."

Add the following to the second paragraph of this item:

"The tendered rate shall also include for removal of topsoil, stockpiling of topsoil, replacing topsoil and any sacrificial layer(s) of material placed to form a stable stockpiling platform and for the removal of such material including all haul. The tendered rate shall also include full compensation for spreading or mixing material as required and for any wastage in the stockpile."

SECTION 3300: MASS EARTHWORKS

B3302 MATERIALS

(b) Fill

Add the following to sub-subclause (i):

"At least 20% of rockfill material by mass shall pass the 4,75 mm sieve in order to attain maximum densities."

Add the following to sub-subclause (ii):

"The minimum CBR of the material at 93% of MDD, at a depth between 0 m and 0,8 m below final road surface, shall be 7."

Replace the last paragraph of sub-subclause (ii) with the following:

"The Employer's Agent may allow or order the use of material not meeting these requirements, i.e. clay or clayey material with a CBR of less than 3% at 90% MDD, provided that such material shall be placed in the centre portion of fill so that at no place is it less than 2 m from any exposed face of the side slopes and not less than 6 m from the finished road level. The 2 m criterion may need to be increased depending on the outcome of stability analysis on the composite fill."

Add the following to the first paragraph of sub-subclause (iii):

"The minimum MDD of material, at a depth between 0,0 m and 0,8 m below final road surface, shall be 93%."

Amend sub-subclause (iv) to read:

"The maximum swell at 100MDD shall be not more than 2%."

B3303 CLASSIFICATION OF CUT AND BORROW EXCAVATION

Classification of cut and borrow excavation shall be revised as follows:

"a) Classes of excavation

(ii) Intermediate excavation

No distinction shall be made between soft and intermediate excavation, and all intermediate excavation shall be classified and measured as soft excavation."

B3305 TREATING THE ROADBED

(a) Removing unsuitable material

Add the following to the first paragraph of this subclause:

"Roadbed material within 0,8 m of the finished road level shall have a minimum CBR of 3 at 90% of MDD. Any material which does not meet this requirement shall be treated as unsuitable, removed and replaced with suitable fill material as specified in Clause B3302."

Replace "or" in the eight line of the third paragraph with "and"

d) In situ treatment of roadbed

Add the following after the second paragraph:

“Shales and mudstone shall be treated as directed by the Employer’s Agent.”

B3306 CUT AND BORROW

(a) Dimensions of cuts

Add the following new paragraph between the existing 2nd and 3rd paragraphs:

“As this is essentially an upgrading project all the cut earthworks contemplated in this project will effectively be widening of existing cuts. Item 33.08 for widening of cuts will therefore not be paid in respect of the initial earthworks cut widening. The paragraph below shall therefore only apply in the case of widening of cuts which have been completed or partly completed during the course of this contract.”

(b) Use of cut material

Add the following at the end of the last paragraph of this subclause:

“The Contractor shall submit his detailed earthworks utilization plan to the Employer’s Agent for approval before commencing with the permanent earthworks.”

(e) The temporary stockpiling of material

Replace the contents of this subclause with the following:

“The Contractor shall plan his activities so that materials excavated from cuttings and borrow areas can be directly transported and placed at the designated points.

The temporary stockpiling of material to be re-used for layerworks will be measured and paid for under the various items of use. Any other temporary stockpiling will not be paid for.”

(g) General

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

“The final cut surface in hard excavation shall not be more than 0,5 m below the specified slope face, measured at right angles to the strike and dip directions of the slope face.”

Add the following paragraph:

“The Contractor’s attention is drawn to the requirements of clause B1222 when blasting is required. The road shall be closed for traffic during blasting operations and blasting shall only be allowed during the periods as stated in clause B1222.”

B3307 FILLS

(d) Benching

Add the following after the second paragraph:

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"The method to be used for benching when existing fills or embankments are to be widened, or where new fills are to be constructed adjacent to existing fills or embankment shall be as indicated on the drawings or as otherwise agreed to on site between the Contractor and the Employer's Agent."

(e) Construction of high fills

Add the following:

"Fills with heights of 6m or more shall be classified as high fills and the following conditions shall apply:

- (i) The fill shall be constructed as early as possible during the contract period to obtain a minimum time lapse of six (6) months between completion of the mass fill and the construction of the layer works.
- (ii) The high fill shall be constructed to the level required for the construction of the lower selected layer. All settlement of the fill, and gravel loss due to construction traffic and weathering, shall be rectified with fill material prior to the construction of the selected layer.
- (iii) Level pegs shall be placed at spacing agreed with the Employer's Agent after the fill had been completed (originally) and levels shall be recorded for all these pegs. Levels shall then be taken at all these pegs at regular intervals as agreed with the Employer's Agent to monitor possible settlement of these fills. Should settlement still be noticeable after six months (at very high fills), such fills shall be left until such time that no further settlement is occurring before construction of the layer works is commenced with.
- (iv) The Contractor shall allow for the construction of these high fills in his programme. The work shall be programmed in such a way that this will not influence the completion of the project within the specified time. No extra payment will be considered for constructing the high fills as specified above."

(i) Widening of fills

Add the following new paragraph between the existing 7th and 8th paragraphs:

"As this is essentially an upgrading project all the fill earthworks contemplated in this project will effectively be widening of existing fills. Items 33.16 and 33.17 for widening of fills will therefore not be paid."

B3312 MEASUREMENT AND PAYMENT

Delete items 33.16 and 33.17.

Note: The free haul distance for all items, where applicable, in this section has been changed to 1,0 km as per the revision in Clauses B1602(b) and (d).

SECTION 3400: PAVEMENT LAYERS OF GRAVEL MATERIAL

B3402 MATERIALS

a) General

Add the following at the end of the second paragraph:

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"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:

Property	Type of material				
	G4			G5	
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	26.5 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 Stabilized Layers (BSM)

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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 For BITUMEN STABILISED LAYERS (bsm)

Sieve Size (mm)	Percent Passing
	BSM-emulsion
50	100
37.5	100
28	84 – 94
20	71 – 84
14	59 – 75
5	36 – 53
2	23 – 40
0.425	11 – 24
0.075	4 – 12

b) Compaction requirements

Amend the compaction requirements as follows:

Type of layer	Specified density
Upper selected layer	95% of modified AASHTO density
Lower selected layer	95% of modified AASHTO density
Subbase	97% of modified AASHTO density
Base (BSM)	100% of modified AASHTO density
Shoulder and wearing course	95% of modified AASHTO density

Add the following sub-clause:

“(d) Excavations

Excavations in the pavement shall be kept dry. In the event of water penetrating the underlying layers, construction of the consecutive layers shall be postponed until the underlying layers are dry enough to accommodate the construction plant without any deformation or distress.”

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 B3512.”

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B3405 CONSTRUCTION TOLERANCES

(a) Level

Replace the table in the sub-sub-clause with the following:

Layer	H_{90}	H_{max}
Selected layers	25 mm	33 mm
Sub-base layers	15 mm	20 mm
Base layers	12 mm	15 mm
Shoulders		25 mm"

Add the following:

"Level control for the various pavement layers shall be done at least at the following intervals in the longitudinal direction:

Layer	Interval
Selected layer, sub-base, shoulders and wearing course	20 m
Base	10 m

(b) Layer thicknesses

Replace the table in the sub-sub-clause with the following:

Layer	D_{90}	D_{max}	D_{ave}
Selected layers	25 mm	35 mm	8 mm
Sub-base layers	18 mm	24 mm	5 mm
Base layers	15 mm	22 mm	5 mm
Shoulders		30 mm	0 mm"

B3406 QUALITY OF MATERIALS AND WORKMANSHIP

Replace the second paragraph with the following:

"Test results and measurements will be assessed in accordance with the provisions of Section 8200."

B3407 MEASUREMENT AND PAYMENT

Delete the note at the start of the measurement and payment clause dealing with work in restricted areas and replace with the following:

"On this Contract, no extra over payment will be made due to the nature of the site or the size of the work area available. All costs associated with carrying out the works are deemed to be included in the tendered rates for the items in the Schedule of Quantities."

B3405 CONSTRUCTION TOLERANCES

(a) Level

Replace the table in the sub-sub-clause with the following:

Layer	H_{90}	H_{max}
Selected layers	25 mm	33 mm
Sub-base layers	15 mm	20 mm

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Base layers	12 mm	15 mm
Shoulders		25 mm"

Add the following:

"Level control for the various pavement layers shall be done at least at the following intervals in the longitudinal direction:

Layer	Interval
Selected layer, sub-base, shoulders and wearing course	20 m
Base	10 m

(b) Layer thicknesses

Replace the table in the sub-sub-clause with the following:

Layer	D_{90}	D_{max}	D_{ave}
Selected layers	25 mm	35 mm	8 mm
Sub-base layers	18 mm	24 mm	5 mm
Base layers	15 mm	22 mm	5 mm
Shoulders		30 mm	0 mm"

B3406 QUALITY OF MATERIALS AND WORKMANSHIP

Replace the second paragraph with the following:

"Test results and measurements will be assessed in accordance with the provisions of Section 8200."

B3407 MEASUREMENT AND PAYMENT

Delete the note at the start of the measurement and payment clause dealing with work in restricted areas and replace with the following:

"On this Contract, no extra over payment will be made due to the nature of the site or the size of the work area available. All costs associated with carrying out the works are deemed to be included in the tendered rates for the items in the Schedule of Quantities."

Replace the fourth paragraph starting with "No stabilization ..." with the following:

"No stabilization shall be done during windy conditions, wet weather or with falling air temperatures (7°C and dropping), or during rising air temperatures (when the air temperature is below 3°C).

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 precautions to prevent the layer from freezing.

All stabilized layers damaged by rain, 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."

In Table 3503/1, delete "8 hours" for Ordinary portland cements and cement blends and replace with "6 hours".

Item	Unit

B35.02 Chemical stabilizing agent

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Replace the full stop at the end of the third paragraph with the following:

" and layer dimensions."

B35.03

PRS NEOLOY® GEOCELLS – CATEGORY (Cellular Confinement System) SPECIFICATIONS

PROPERTIES		DESCRIPTION	
Material		Neoloy® polymeric nano-composite alloy Composite alloy of polyester/polyamide nano-fibers dispersed in polyethylene matrix	
Coefficient of Soil-Cell Friction Efficiency (±5%)	0.95	ASTM D5321	
Cell Wall Surface Texture		Textured and perforated for internal friction efficiency	
Cell Wall Height (±5%)		50, 75, 100, 120, 150, 200 mm (2, 3, 4, 4.7, 6, 8 in)	
Distance between Weld Seams (±2.5%)		330, 356, 445, 660, 712 mm (13, 14, 17.5, 26, 28 in)	
Traceability		Each section marked for full detailed traceability	
DESCRIPTION	VALUE	UNITS	TEST METHOD
Cell Dimensional Stability by Coefficient of Thermal Expansion (CTE)	≤ 135	ppm/10C	ISO 11359-2 (TMA) ASTM E831
Seam Weld Strength – Weld Splitting (1) Adjusted to simulate optimum open cell size	> 19	kN/m	ISO-13426-1 Part 1 Method C (1)
Strength at Yield – non-perforated (Wide-width)	> 23	kN/m	ISO 10319 (2)
Strength at Yield – perforated (Wide-width) (2) Standard ISO 10319 test modified to achieve more accurate results by using more representative test sample size; strip is cut adjacent to 2 seams and clamped so distance between clamps is 1/2 of cell height; test direction is perpendicular to seams. Test sample measured at strain rate 100 mm (4 in) /min at 23°C. Test of perforated tensile strength is conducted on the sample area with the densest perforations.	> 19	kN/m	ISO 10319 (2)
Resistance to UV Degradation (UV and Oxidation Resistance) (3) (3) Effective design life at least 75 years	≥ 1600	Minutes	ASTM D5885 (HPOIT @ 150°C) Testing per GRI GM13
Cumulative Permanent Deformation (Creep Resistance) Stepped Isothermal Method (SIM): Step 1 at 44°C Step 2 at 51°C Step 3 at 58°C Step 4 at 65°C (up to 75 years) (4) Sample size – wide-width strip with perforation pattern at fixed load of 6.1 kN/m	≤ 3.0	% Cumulative Deformation	ASTM D-6992 (SIM) (4)
Dynamic Mechanical Analysis (DMA) at sample elevated temperature: +30° C +45° C +60° C	> 775 > 675 > 525	MPa	ISO 6721-1 ASTM E2254 (DMA)
Brittle Temperature: Rates to include soil investigation before application.	≤ Minus 70	°	

SECTION 3500: STABILIZATION**B3502 MATERIALS****(a) Chemical stabilising agents**

Replace the full stop at the end of the third paragraph with the following:

" and layer dimensions."

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 32,5 shall not be permitted. On this contract CEM II 32,5N shall be used for stabilization purposes.

Enough stabilizer should be added, over and above the design value, to allow for wastage during construction, to allow for high pre-shaping levels and inaccuracies during the spreading operation. The contractor shall allow in his rates for any additional stabilizer content required to achieve the design stabilizer content in the stabilized layer compacted to the specified density and thickness. The contractor is to allow for the construction of thicker layer before the final cut (which will require additional stabilizer), to avoid the building-in of laminations. The extra layer thickness will depend on the methodology and equipment used by the contractor. Under no circumstances the cost of the additional stabilizer due to the additional layer thickness shall be claimed by the contractor."

B3503 CHEMICAL STABILISATION**a) Preparing the layer**

Insert the following before the first paragraph:

"Moisture content tests shall not be undertaken more than one day in advance of in situ stabilization 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."

b) Applying the stabilizing agent

Replace the second sentence of the second paragraph with the following:

"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 uniformly over the entire surface to be treated."

(d) Mixing in the stabilising agent

Add the following:

'Notwithstanding anything to the contrary in the provisions of any part of these specifications, the contractor shall, without any extra payment and for each type of material, prepare a trial section where he shall demonstrate his proposed mixing process before commencing any extensive mixing.

After approval has been obtained, the mixing process and equipment shall remain unaltered unless otherwise instructed by the Employer's Agent.

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The fact that the Employer's Agent has approved the mixing process shall not relieve the contractor of any of his obligations in respect of the mixing as specified elsewhere in the specifications. It will only serve as a guideline to ensure that the specified mixing requirements can actually be met.'

(h) Curing the Stabilised work

Amend the second sentence of paragraph (i) to read:

"This method will be permitted for up to a maximum period of 24 hours, but either (ii) or (v) shall be applied as soon as the moisture content of the stabilized layer so permits. Method (iii) and (iv) shall not be applicable."

(i) Construction limitations

Replace the fourth paragraph starting with "No stabilization..." with the following:

"No Stabilisation shall be done during windy conditions, wet weather or with falling air temperatures (7°C and dropping) or during rising air temperatures (when the air temperature is below 3°C).

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 precautions to prevent the layer from freezing.

All stabilized layers damaged by rain, 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 allowances for these requirements in his construction programme.

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."

In Table 3503/1, delete 8 hours for ordinary Portland cements and cement blends and replace with:"6 hours"

Add the following subsection:

(j) Uniformity of mix (chemical stabilization)

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.

Method A15(d) The acid/base back titration method shall be used to determine the chemical stabilizer content."

B3506 TOLERANCES

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b) Uniformity of mix (chemical stabilisation)

Replace the full stop at the end of paragraph (i) with the following:

“using the formula (S_n / X_n)

where:

S_n is the standard deviation of stabilizer

X_n is the average stabilizer content.”

B3507 CONSTRUCTION OF TRIAL SECTION

Add the following to the last paragraph:

“The fact that the Employer’s Agent 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.”

B3510 MEASUREMENT AND PAYMENT

B35.01 CHEMICAL STABILIZATION EXTRA OVER UNSTABILIZED COMPACTED LAYERS

Replace the first paragraph with the following:

“The unit of measurement shall be the cubic meter of stabilized material, the quantity of which shall be determined in accordance with the final in situ authorised dimensions of the layers treated and/or stabilized as instructed by the Employer’s Agent. Additional material pre-shaped 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.”

SECTION 3600: CRUSHED-STONE BASE

B3602 MATERIALS

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

(a) Requirements for crushed aggregate

After the first sentence *delete the remainder of the paragraph and replace with the following:*

“The aggregate shall not contain more than 0,1% by mass of unwanted material such as wood, coal or similar organic material.

Aggregates containing mica, such as granite, gneiss, mica schist, pegmatite, sandstone shall not contain more than 2% by mass of free mica, especially muscovite, when assessed by visually separating the particles, or more than 4% by volume when assessed by means of microscopic slides. Aggregate containing easily detectable quantities (more than 1%) of olivine, serpentine and sulphide minerals such as pyrites and marcasite, must be considered with caution, and may warrant additional evaluation to the satisfaction of the Employer's Agent.

Soft or weathered particles shall be controlled by the Durability Mill Index values specified in B3602(e) Durability.

Provision has been made in clause (B)8108(b)(iii), calculation, for the determination and calculation of the Apparent Density for aggregates with a total water absorption greater than 1,5%, when total water absorption is determined according to TMH1 methods B14 and B15.”

(c) Grading requirements

Replace entire clause with the following:

“The target grading, after compaction, shall be as near as possible to the mean of the specified grading envelope listed in table 3602/1 and shall be continuous with no marked gaps or excessive quantities of any particular size. The mean grading of each lot (minimum of 4 but preferably 6 test points per lot) shall conform to the approved target grading plus or minus the tolerances specified in table 3602/4.”

Replace the grading section in Table 3602/1 with:

Note: Refer to standard COLTO Table for COLTO grading if required

Grading	Nominal aperture size of sieve (mm)	Percentage passing through sieve by mass			
		Nominal max size			
		G1	G2	G3	
		37, 5mm	37,5 mm	37,5 mm	26,5 mm
	37,5	100	100	100	
	28	86 – 95	86 - 95	86 - 95	
	20	73 – 86	73 - 86	73 - 86	87 - 96
	14	61 – 76	61 - 76	61 - 76	73 - 86
	5	37 -54	37 -54	37 -54	43 - 61
	2	23 – 40	23 - 40	23 - 40	27 - 45
	0,425	11 – 24	11 - 24	11 - 24	13 - 27
	0,075	6 – 10	6 - 10	6 - 10	5 - 12

Replace Table 3602/4 with:

SCMU10-23/24-0001:
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Sieve size (mm)	Permissible deviations by mean values (% by mass)		Permissible deviations by individual values (% by mass)	
	Nominal maximum size (mm)			
	37,5	26,5	37,5	26,5
28	± 5		± 5	
20	± 5	± 5	± 7	± 7
14	± 5	± 5	± 7	± 7
5	± 5	± 5	± 7	± 7
2	± 4	± 4	± 5	± 5
0,425	± 3	± 3	± 5	± 5
0.075	± 2	± 2	± 3	± 3

Note: Refer to standard COLTO Table for COLTO grading if required

Add the following sub clause:

“(e) Durability

The durability property of aggregates derived from the basic crystalline group shall be assessed by means of the Ethylene Glycol Durability Index. When tested in accordance with the method prescribed in B 8105 (g) the Durability Index shall not exceed four. In addition, the 10% FACT value obtained after soaking in ethylene glycol for four days shall not be less than 70% of that obtained on the unsoaked sample. Where any values are obtained that fall outside the above requirements, a detailed assessment of the quarry shall be undertaken together with a specialist mineralogical evaluation of both the coarse as well as fine fractions in order to assess the long-term durability properties of the material.

For Basic crystalline rocks, Arenaceous rocks, Argillaceous rocks and Diamictites the Durability Mill Index (DMI) shall be less than 125. For all other rock types the Durability Mill Index (DMI) shall not be more than 420, subject to the % passing the 0,425mm sieve not increasing by more than 8 percentage points during the Durability Mill test.”

Add the following paragraph at the end of this subclause:

“A G2 base compacted to a specified density of 88% of Bulk Relative Density shall be used, as ordered by the Employer’s Agent.”

Add the following new subclause of this clause:

“(e) Material from commercial sources

The following additional requirements shall apply:

- (i) The use of aggregate derived from arenaceous, or argillaceous rock groups will not be permitted.
- (ii) The aggregate shall be subjected to the tests and their frequencies specified in Table 3602/5. The material may only be placed on the road when all of the specified tests have been completed and have passed.

Test Description	Frequency

SCMU10-23/24-0001:
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	(test / m ³ of compacted base)
Aggregate Crushing Values (10% Fact)	5 000
+ Ethylene glycol durability testing *	5 000
x Atterberg Limits	
PI –0,425	1 000
PI –0,075	2 000

- * Test method B8105 durability index shall not exceed 4 (four).
- x Pi -0,424 = Plasticity Index determination on - 0,425 mm material.
Pi -0,075 = Plasticity Index determination on - 0,075 mm material.
- + The cost of these tests shall be for the Contractor's account."

B3604 CONSTRUCTION

(a) Spreading and mixing

Add the following to this subclause:

"Level control for the construction of the base layer shall be installed at 10 m intervals. Level control during construction may be done at every second control position (20 m intervals) provided that the starting position is alternated to ensure all control positions are utilized during the construction of the layer.

No additional payment shall be made for the installation or use of level control at 10 m intervals."

(b) Compaction

Replace that last sentence of the first paragraph with:

"The density of the layer shall be tested at each third of the layer thickness."

Add the following at the end of the first paragraph of this subclause:

"The specified density shall also be obtained in the upper 50 mm of the layer."

(c) Surface preparation of the base

Subclause (i) shall be applicable to surface preparation of the base.

Replace the final paragraph in subclause 3604(c)(i) with:

"Slushing of the base, is compulsory and shall be carried out within 48 hours after completion of the compaction. Even if the specified density is achieved without slushing or before completion of the slushing process, the full slushing process must still be completed."

Delete sub-sub-clause (ii) Multi-stage process (water or slurry rolling).

(h) Joints between existing layers and new or reconstructed layers

Add the following at the end of the first paragraph of this subclause:

"During the working of the first half-width, the surface of the base layer shall be constructed a minimum of 200 mm past the centre longitudinal joint position in order to obtain proper compaction on the joint position.

During the working of the second half-width, the centre longitudinal joint between any reworked or new layer shall be cut back at least 100 mm into the first half-width to remove any loose or disturbed material and to ensure a sound longitudinal joint between the two half-width sections.

The Contractor shall ensure that any gravel, crushed stone or fines carried onto the surfaced half width accommodating traffic during the working of the pavement layer is removed immediately by hand brooming. In addition, all soil fines arising from the slushing of the base and carried on to the surfacing of the first half width shall be removed before the second half width is primed."

B3605 PROTECTION AND MAINTENANCE

Add the following to the end of the second sentence of this clause:

"as determined according to SANS-GR30; replacing TMH 1 method A7."

Replace "moisture content of the layer" in the first paragraph with "moisture content of the upper 50mm of the layer."

Add the following to the end of the second sentence:

"as determined according to TMH 1 method A7."

Add the following:

No traffic shall be allowed on primed crushed-stone base layers except at intersections where specific protection arrangements shall be ordered by the engineer.

Sample holes in crushed stone base layers shall be backfilled as follows:

- (1)** Sieve crushed stone base material through 19,0mm sieve and discard + 19mm size material.
- (2)** Add 60% cationic emulsion to minus 19,0mm size material at an application rate of 1% of the loose mass of the material and mix properly. Add water and mix properly to bring material to optimum moisture content.
- (3)** Place material to fill sample hole to 1/3 of the layer thickness and ram down with tamper with a mass of at least 5kg until no movement of the material is evident.
- (4)** Repeat the filling and compacting operation for the next 2 x 1/3 layer thicknesses.
- (5)** Finish off the surface of the backfilling and enrich the surface with a light application of 60% emulsion using a soft brush.
- (6)** The density of the backfill material shall not be less than that of the surrounding base layer when tested with nuclear methods.

Payment for backfilling of sample holes is allowed for under section 3600 of the schedule of quantities"

B3607 QUALITY OF MATERIALS AND WORKMANSHIP

Replace the last paragraph of this clause with the following:

"Test results and measurements shall be assessed in accordance with the provisions of Section 8200.
(Ls = 88,0 or 89,0 % as ordered)."

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SERIES 4000: ASPHALT PAVEMENTS AND SEALS

B4104 WEATHER AND OTHER LIMITATIONS

Replace paragraph (c) with the following:

"The type of prime and application rate best suited for the base shall be determined during construction. The Contractor shall provide about 20ℓ of each prime and apply it at different application rates with a brush on the base. Then engineer will then instruct the type of prime and application rate to be used. No payment shall be made for tests to determine the type of prime.

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 sub-clause:

"(j) Application in areas treated by reworking and construction of a new base shall be primed using a mechanical distributor complying with sub clause 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."

Delete paragraph (g) and replace with the following:

"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. In the event of rain after priming, the base shall be allowed to dry out to meet the above moisture content requirement prior to surfacing."

B4106 APPLICATION OF THE PRIME COAT

Add the following to paragraph (c):

"The nominal application rate of the prime shall be 0,7 ℓ/m². Unless directed otherwise by the Employer's Agent or indicated on the drawings, the edges of the primed surface shall be 150mm wider than the edges of the surfacing."

Add the following sub-clause:

"(j) Application in areas treated by reworking and construction of a new base shall be primed using a mechanical distributor complying with sub-clause 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 Employer's Agent. The Employer's Agent 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

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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 Employer's Agent 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, but shall consist of 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 Employer's Agent, 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."

B4110 MEASUREMENT AND PAYMENT

Item	Unit

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: 50/70 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"

b) Aggregates

Add the following paragraph to the introductory description:

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"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 Employer's Agent 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.

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"

SECTION 4300: SEALS: MATERIALS AND GENERAL REQUIREMENTS

B4301 SCOPE

Add the following Subclause to this Clause:

"Prior to the commencement of any seal work, a co-ordination meeting shall be arranged by all parties involved in the seal work including, but not limited to, the Employer's Agent, the Contractor, relevant subcontractors and the suppliers of bituminous products. The purpose of the meeting will be to clarify all technical, specification, management, plant and materials issues etc. related to the seal work."

"The contractor shall take and submit samples of materials and/or mixtures to the Employer's Agent who must approve designs before construction work can commence."

B4302 MATERIALS

Add the following to the first paragraph:

"Any tests referred to in the publication "Technical Guideline: TG1 The Use of Modified Bituminous Binders in Road Construction (TG 1-November-2007): Asphalt Academy", shall supersede those specified in the COLTO Standard Specifications for Road and Bridge Works for State Road Authorities (1998 edition). This document is available from the Asphalt Academy."

a) Bituminous binders

(ii) Non-homogeneous (heterogeneous) modified binders (summer grade)

(4) *Diluent*

Add the following sentence:

"The addition of a diluent or cutter to the blend shall not be permitted unless approved by the Employer's Agent."

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(iv) Homogenous cold applied modified binders

Replace the entire sub-sub-clause with the following:

“(1) *Base bitumen*

The cationic emulsion shall be manufactured from bitumen complying with the requirements of SANS 4001-BT1:2012.

(2) *Polymer modified emulsion blend*

All blending shall be done at the factory. The modified binder for this project shall be Class S-E1 and shall comply with the requirements in table B4302/5.

The recovered binder residue shall be obtained using either the rotary vacuum evaporation or simple evaporation method. If there is any discrepancy in the test results then the results on recovered binder obtained from the rotary vacuum evaporation method shall be binding.

The use of a volatile solvent flux added to the bitumen shall not be permitted unless approved by the Employer's Agent.”

Table B4302/5: Properties of polymer modified emulsions for surface seals

Property		Unit	Test Method	Modified Binder Class			
				SC-E1		SC-E2	
Modified Binder Content		(%)	MB-22	65-68	70-73	65-68	70-73
Saybolt Furol Viscosity @ 50°C		Second	MB-21	51-200	51-400	51-200	51-400
Residue on sieving ⁴ (/100ml)	710µm sieve	g	MB-23	≤0,1		≤0,1	
	150µm sieve			≤0,5		≤0,5	
Particle charge		-	MB-24	Positive		Positive	
Sedimentation after 60 rotations		°C	SANS 309	Nil		Nil	
Properties of recovered binder residue (MB-20) ¹							
Softening Point ²		°C	MB-17	≥48		≥55	
Elastic recovery @ 15°C		%	MB-4	≥50		≥55	
Force Ductility @ 5°C		N	EN 13703	Report ³		Report ³	

Notes:

1. Either the rotary vacuum or the simple evaporation method can be used. For on site testing the simple method is more practical and is thus recommended. The simple method retains a very small portion of the fluxing oils whereas these are removed in the rotary vacuum method. The latter method renders a better indication of the binder properties after in-service curing.
2. 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 refereeing purposes no stirrers should be used.
3. No values given but the test can be used to rank various binders according to their low temperatures cohesion properties. The properties listed as “Report” will only be determined on instruction of the Employer's Agent. The contractor will not be liable for the cost of such testing.
4. Pour the emulsion through the larger sieve to remove the skin and larger particles before passing the emulsion through the finer sieve.

Add the following sub-sub-clause:

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“(4) Durability

Aggregate used in seals and asphalt shall show a durability index of less than 4 as determined by the test method specified in Clause B8105 paragraph (g).”

(ii) Aggregate for slurry seals

In the first paragraph, add the following after the first sentence:

“The engineer may order the addition of an approved natural sand or additional cement to improve either the permeability or workability of the slurry.”

Add the following sub-sub-clause:

(b) Aggregates

(i) Aggregates for seals

Add the following at the end of the first sentence:

“and durability.”

(1) Grading

Add the following:

“Only Grade 1 aggregate shall be used for the construction of seals on this project.”

(3) Shape

Add Table B4302/13 and the following paragraph:

“Ninety-five (95%) percent of the particles shall have at least three fractured faces. The Average Least Dimension (ALD) of the relevant nominal aggregate sizes shall comply with the requirements of Table B4302/13.”

Table B4302/13
Average least dimension requirements

Nominal size (mm)	Minimum ALD (mm)
20	12,0
14	8,0
10	5,5

Replace Table 4302/8 with:

Sieve size (mm)	Grade	Percentage by mass passing
		14mm Nominal size
37.50	1	
28		100
20		85 – 100
14		0 – 30

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5		0 – 5*
2		
0.425		
0.075		

Note:

Refer to standard COLTO table for COLTO grading if required”

Replace Table 4302/10 with:

“TABLE B4302/10

Nominal size of aggregate (mm)	Maximum flakiness index (%)	
	Grade 1	Grade 2
20	25	30
14	25	30
10	30	35
7	30	35

Note:

Refer to standard COLTO table for COLTO grading if required”

Replace Table 4302/11 with:

“TABLE B4302/11

Sieve size (mm)	Percentage passing sieve by mass				
	Fine slurry			Coarse slurry	
	Fine grade	Medium grade	Coarse grade	Type 1	Type 2
14					100
10				100	86 – 100
7		100	100	87 – 100	71 – 91
5	100	84 – 100	72 – 91	72 – 91	62 – 82
2	84 – 99	51 – 90	40 – 64	40 – 63	36 – 56
1	60 – 90	33 – 68	25 - 46	22 – 41	22 - 41
0,600	42 – 72	22 – 50	19 – 34	15 – 30	15 – 30
0,300	23 – 48	15 – 37	12 – 35	10 – 20	10 – 20
0,150	10 – 27	7 – 20	7 – 18	6 – 15	6 – 15
0,075	4 – 12	4 – 12	2 - 8	4 – 10	4 - 10

Note:

Refer to standard COLTO table for COLTO grading if required”

Delete Table 4302/12 without replacement

Add the following Sub-clause:

“(4) Durability

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Aggregate used in seals and asphalt shall show a breakdown of less than 2%."

(ii) Aggregate for slurry seals

Add the following Sub-clause:

"The Employer's Agent may order the addition of an approved natural sand or additional cement to improve either the permeability or workability of the slurry."

"(iii) Aggregate for blinding

The aggregate used for blinding the single seal shall consist of 2mm to 5mm crushed aggregate or river sand. The aggregate shall be clean, hard and free from clay, silt or other deleterious matter."

d) Hydrophilic aggregates

(i) Precoating of aggregate for stockpiling or for immediate use:

In the second paragraph, delete "12 litre" in the second sentence, and add the following sentence:

"Precoating fluid shall be manufactured from petroleum based products. The use of tar based precoating fluids will not be permitted. For tender purposes the nominal quantity of precoating fluid for the relevant nominal aggregate sizes is specified in table B4302/14."

Table B4302/14: Nominal Application Rates for Precoating Fluid

Nominal aggregate size (mm)	Nominal precoating application rate (l/m ³)
20	12
14	16
10	19
7	22

Add the following sub-clauses:

"e) Water for diluting emulsions

Water used for the dilution of emulsions on site shall be suitable potable water, and each source of water used shall be tested for compatibility with the emulsion before it is added to the bulk emulsion.

f) Testing of polymer modified bitumen/emulsion

Testing shall be in accordance with the methods described in "Technical Guideline: The use of Modified Bituminous Binder in Road Construction (TG 1-November-2007): Asphalt Academy".

During spraying of each batch, the contractor shall draw off at least three test samples of the modified bitumen/emulsion product and submit them to the Employer's Agent for acceptance testing purposes. The supplier shall submit all his tests results to the Employer's Agent for correlation purposes, failing which the Employer's Agent's results shall be binding in terms of acceptance or rejection of the product."

B4303 PLANT AND EQUIPMENT

b) Binder distributor

Add the following:

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"Prior to the commencement of any work, a calibration certificate, not older than 12 months, for the binder distributor shall be presented to the Employer's Agent for approval.

The binder distributor shall be capable of spraying the binder at the specified application rates and to the satisfaction of the Employer's Agent. The pump of the distributor shall be capable of delivering the binder at the spray bar nozzles at the correct pressure to obtain the specified application rates, irrespective of the viscosity properties of the prescribed binder. The spray bar of the distributor shall be fitted with fishplates at the outside edge of the bar to prevent over spraying onto gravel shoulders or staining of concrete elements on the edge of the surfacing of the road

In addition, the transverse distribution of the spray bar shall be field-verified by means of the "Bakkie" test as described in B8119. The maximum permissible tolerance permitted between the troughs (excluding the outer 300 mm) is dependent on the viscosity of the binder type being applied and shall be as follows:

- Emulsions, cutback and penetration grade bitumens - 5%
- Homogeneous modified bitumens - 7%
- Non- homogeneous binders (bitumen rubber) - 10%

The spray bar shall be of such design as to allow for any adjustments to be made in order to meet the above tolerances. This procedure shall be carried out each time the distributor is first established on site and once a week thereafter or when a problem with transverse distribution is suspected. The binder distributor shall thus have a set of troughs available in order to allow the execution of the test. For limited quantities of spray-work, the Employer's Agent may accept the results of a recently completed distribution test that has been recorded and approved by an independent supervisor on the distributor's test log book.

The binder distributor shall be fitted with a suitable valve or other access gate for taking of samples of the binder for testing purposes."

c) Chip spreaders

Add the following at the end of the first paragraph:

"The chip spreader shall be capable of delivering a proper and uniform transverse distribution of chips across the conveyor belts. The chip distribution shall be tested by means of canvas patches, each 1,0m by 1,0m and placed side by side. The mass of chips spread onto each individual canvas patch shall not deviate by more than 10% from the calculated average spread per canvas patch."

Add the following to the last paragraph:

"A non-self-propelled chip spreader may only be used in the event of a breakdown of the self-propelled chip spreader during a pull and shall be limited to the completion of that pull. No further application of binder shall be permitted until such time as the self-propelled chip spreader is repaired or replaced."

B4304 GENERAL LIMITATIONS AND REQUIREMENTS

a) Weather limitations

Add the following:

"Binder Class S-E1 shall only be used until weather conditions dictate the change between summer grade and winter grade binder."

b) Moisture content

Replace "reseal" with "seal" in the second line of the second sentence.

Insert "and/or primed base" after "surfacing" in the third line of the second 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 seal layer."

(i) General

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Add the following:

“Seal work shall not be permitted on granular base layers if the moisture content in the upper 50mm exceeds 50% of the optimum moisture content, determined in accordance with TMH1 Method A7. This limitation shall apply even if the layer has been previously primed.

Sealing work shall not commence until the Employer’s Agent has approved all other works ordered on that section of road.”

e) Demarcation of the working areas

(i) New work

Add the following:

“Before the tack coat and first application of aggregate may be applied, the centreline of the road shall be demarcated by means of a clearly visible weatherable fibre rope, pegged down with nails driven into the existing surface at intervals of 15m on straight sections and 3m apart on curves. The demarcating rope shall be removed prior to the application of the tack coat and aggregate on the adjacent lane.”

B4305 HEATING AND STORAGE OF BITUMINOUS BINDERS

d) Homogeneous cold applied modified binders

Add the following:

“The requirements for short term handling, storage and application of these binders shall comply with the requirements listed in table B4305/5.”

Table B4305/5: Temperature/Time limits Polymer Modified Emulsions

Binder Class	Short term handling		Storage		Spraying		
	Max Temp (°C)	Max Time (hrs)	Max Temp (°C)	Max Time (hrs)	Max Temp (°C)	Min Temp (°C)	Max Time (hrs)
SC-E1 ¹ SC-E2 ¹	70	24	Ambient	240+	80	50	2
CC-E1	Ambient	240+	Ambient	240+	Ambient		240+

Notes:

1. This applies to modified emulsions with a binder content of approximately 70% m/m. For emulsions with a binder content of approximately 65% m/m the maximum short-term handling and maximum spraying temperature limit shall be reduced by 10°C.

e) Homogeneous hot-applied binders (summer grade)

In the second paragraph, replace table 4305/3 with “table B4305/3”:

Table B4305/3: Temperature/Time limits for Hot Polymer Modified Binders²

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Binder Class	Short term handling		Storage		Spraying/Asphalt Mixing/Application		
	Max Temp (°C)	Max Holding Time (hrs)	Max Temp (°C)	Max Holding Time ¹ (hrs)	Max Temp (°C)	Min Temp (°C)	Max Holding Time (hrs)
S-E1 (SBR)	180	24	150	240	210	190	8
S-E1 (SBS)	180	24	150	240	185	175	12
S-E2	180	24	150	240	185	175	12
A-E1 (SBR)	180	24	150	240	190	175	8
A-E1 (SBS)	180	24	150	240	180	170	12
A-E2	180	24	150	240	180	170	12
A-P1	180	24	150	240	170	150	24
C-E1	160	24	140	240	180	160	8

Notes:

1. If the recommended maximum holding time has been exceeded then resample and test the binder to ensure compliance with the specification.
2. In the event of non-polymer modified binders being used, refer to the supplier for guidelines on handling and application temperatures.

B4306 STOCKPILING OF AGGREGATE

a) General

Add the following:

"The contractor shall heed the environmental requirements of Section C of this volume in the preparation, operation and closure of stockpile sites. The positions for stockpiling of aggregate and the proposed operation methods shall be approved by the Employer's Agent before delivery of the aggregate can commence.

After application of the seal all loose stones swept off the road surface are to be heaped either in the drain or gravel shoulder, whichever is applicable, and removed in one operation. No sweepings are to be left on site for more than 24 hours. No sweepings are to be heaped or stored on the vegetated areas of the road reserve. No loose stone is to be spoiled in the road reserve."

B4307 CONSTRUCTION OF SEAL

b) Single and double aggregate seals

(i) Application of tack coat and aggregate

Replace the last sentence of the fourth paragraph with the following:

"The contractor shall so place the strips when constructing the seal that the joint between two adjacent aggregate applications shall be located along the centreline of the road."

Add the following to the fourth paragraph:

"Joints shall be straight and aggregate shall be broomed back in a neat straight line before the next spray. String lines shall be used to demarcate joint edges. All stone-loss and "tram-lining/roping" shall be made good by the contractor at no additional cost."

(ii) Initial rolling of aggregate

Replace the second sentence with the following:

"In the case of modified emulsions, initial rolling by means of self-propelled 5-ton flat steel wheel rollers shall only be permitted if crushing of aggregate does not occur. Pneumatic-tyred rolling shall be delayed until the

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emulsion has been allowed to break sufficiently to firmly secure the aggregate. Rolling shall be postponed if there is any pick-up of aggregate on the tyres of the pneumatic type roller."

(iii) Broom drag and final rolling of aggregate

Add the following after the first paragraph:

"The contractor shall provide a back-chipping team, together with a pneumatic-tyred roller, of sufficient capacity to ensure that back-chipping and rolling of aggregate shall be completed within thirty minutes after initial application of the aggregate."

Replace third paragraph with the following:

"After completing the spreading of the aggregate, final rolling shall consist of a minimum of four passes utilizing a 15-ton to 20-ton pneumatic-tyred roller, followed by one or two passes of a 6-8 ton flat steel wheel roller."

iv) Joints between binder sprays

Add the following at the end of the paragraph:

"The protective sheets shall be made of reinforced building paper."

(v) Protection of kerbs, channels etc.

Add the following:

"Where bitumen binder is to be sprayed directly adjacent to existing concrete kerbs, channels, side drains, concrete edge beams and bridge balustrades, or over bridge joints, such concrete elements shall be covered with an approved reinforced building paper."

Add the following sub-sub-clause:

"(vi) Trial section

Before the contractor commences with the construction of any seal work he shall demonstrate that the equipment and processes he proposes to use will enable him to construct the seal in accordance with the specified requirements.

At the commencement of the surfacing operation, a 200m half-width section shall be considered as a trial. After completion of each phase of the seal on this 200m section, the Employer's Agent will review and then approve/reject the work method. If approval is granted for a specific operation i.e. application of tack coat, aggregate, fog or slurry, the contractor may proceed with that approved operation.

Should the contractor at any stage fail to deliver an acceptable product he shall rectify the problems at his own cost and demonstrate with a further trial section that he can carry out the operation successfully. No specific payment shall be made for conducting these trials and the cost thereof shall be deemed to be included in the tendered rates of sections 4400, 4500 and 4600."

B4308 RATES OF APPLICATION

In the first sentence of the first paragraph, delete the following after "conventional":

"or homogeneous modified"

Add the following at the beginning of the second sentence:

"Homogeneous and"

In the second paragraph, replace 4314 with:"B4314"

Add the following at the end of the second paragraph:

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"In the case of single seals the Employer's Agent may, at his discretion, permit the application of a diluted emulsion fog spray in instances where application rates are below the minimum allowable tolerances. In such instances no additional payment over and above the unit rate tendered for the accepted seal, plus or minus any variation from the nominal, will be made. In the case of sand seals or graded seals the Employer's Agent may accept, at his discretion, an application of binder sprayed above the allowable tolerance subject to the contractor, at his own cost, applying and rolling any additional sand/aggregate necessary as a result of such over application."

B4314 TOLERANCES AND FINISH REQUIREMENTS

c) The rate of application

Replace the first paragraph with the following:

"The maximum permissible variation from the rates of application of aggregate or slurry, as ordered by the Employer's Agent, shall be plus or minus 5%.

For binders, the maximum permissible variation from that specified shall be 5% for conventional bitumen and all emulsions (measured net cold), and 5% for hot applied modified binders (measured at spray temperature). Provided he is satisfied that the seal will perform satisfactorily, the Employer's Agent may, at his discretion, conditionally accept out of tolerance variations at the reduced rates of payment listed in Table B4314/1 below. However, variations in total binder application rates in excess of those tabled shall be deemed rejected. Rejected sprays will not be considered for payment unless corrected to the satisfaction of the Employer's Agent.

A lot for acceptance control purposes shall be at least 2000 litres. Lots smaller than 2000 litres shall be combined with succeeding lots until a combined lot not less than 2000 litres is obtained. "

Table B4314/1: Payment Reduction Factors For Conditionally Accepted Binder Application Rates

Conventional bitumen and emulsion. Deviation from specified spray rate Net cold bitumen. (%)	Hot applied homogeneous and non-homogeneous modified bitumen. Deviation from specified rate. At spray temperature. (%)	% Payment of tendered rate for seal
±5,0	±5,0	100%
±6,0	±6,0	97,5%
±7,0	±7,0	95%
±8,0	±8,0	90%
±9,0	±9,0	85%
±10,0	±10,0	80%

Add the following at the end of the last paragraph:

"The completed surfacing shall be of uniform texture without gaps or patches and shall be free from longitudinal and transverse corrugations and any loose aggregate or binder spillage.

The edges of the completed bituminous surfacing shall be true to line."

d) Conditional acceptance

Delete the entire sub-clause

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SECTION 4600: BITUMINOUS SINGLE SEAL WITH SLURRY (CAPE SEAL)

B4601 SCOPE

Add the following subclause to this clause:

"Prior to the commencement of any seal work, a co-ordination meeting shall be arranged by all parties involved in the seal work including, but not limited to, the Employer's Agent, the Contractor, relevant sub-Contractors and the suppliers of bituminous products. The purpose of the meeting will be to clarify all technical, specifications, management, plant and materials issues etc. related to the seal work."

B4602 GRADES OF BINDER TO BE USED

"(a) Tack coat

Add the following to this subclause:

"The tack coat shall consist of the following:

- (i) Cat 65 spray grade emulsion (65% bitumen)
- (ii) 70/100 pen bitumen"

(b) Second application of binder

Add the following to this subclause:

"The second application of binder shall consist of a Cationic spray-grade emulsion (35% bitumen) applied at 1,0ℓ/m²".

B4604 SLURRY

(c) Composition of slurry

Add the following to the end of the first paragraph of this subclause:

"The aggregate used for slurry shall comply with the requirements of Table 4302/11. The first slurry application shall be a fine slurry "coarse" to "medium grade" and the second slurry application shall be fine slurry "fine grade". For tender purposes the mix proportions of the slurry shall be based on mass."

After the second paragraph of this subclause add the following:

"The slurry consistency when measured in accordance with ASTM D3910 Section 6.1 shall be between 30 mm and 40 mm."

In the eighth paragraph of this subclause amend "20 parts" to read "15 parts".

In the ninth paragraph of this subclause amend "1-1,5 parts" to read "1,5 parts".

Add the following to this subclause:

"Cationic or anionic stable grade emulsion may be used in the slurry mix. Mix designs shall however be carried out before slurry is placed to keep the water demand in the working mix below 16 parts by mass."

(e) Application of slurry

SCMU10-23/24-0001:
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In the first sentence of the third paragraph of this subclause before "two layers" insert "one or".

Delete the fifth and sixth paragraphs of this subclause and replace with:

"The measurement of slurry application rate shall be the dry mass of aggregate in kilograms applied per square meter of surfacing and the total nominal rate of application shall be 14 kg/m² if only one slurry layer is applied, and 15 kg/m² in total if two slurry layers are applied. Payment for slurry application variations shall be based only on the actual total rate of slurry application of the completed Cape Seal."

Add the following after the eighth paragraph of this subclause (now the seventh paragraph):

"Both the first and second application of slurry shall be spread to the full final width of the primed surface."

Change the eighth line of the tenth paragraph of this subclause (now the ninth paragraph) as follows:

"... pneumatic-tyre roller. However, each layer of slurry shall be ..."

B4605 MEASUREMENT AND PAYMENT

Item	Unit

B46.01 Bituminous single seal with 20mm aggregate and slurry (Cape Seal)	

Add the following to this subclause:

"No traffic shall be permitted onto a section, unless permitted by the Employer's Agent on limited areas due to traffic accommodation constraints, where only the tack coat and the first layer of aggregate has been applied. Normally traffic shall only be permitted to use a completed section once the first slurry has been completed and has cured.

Where partial width construction is carried out the application of the second layer of slurry shall be delayed until the full width of the surfacing has been constructed. The slurry shall be spread by hand."

Add the following at the end of the payment clause for this item:

Payment will be done as per BoQ.

"The cost of providing the final slurry seal over the primed (single seal) width shall be included in the rate for providing the seal with slurry over the bituminous surfaced width. The seal width is deemed the chipped width."

Item	Unit

B46.09 Extra over sub-items B46.01 and item B46.06 for the addition of natural sand from commercial sources to the aggregate of the slurry	ton (t)

The unit of measurement shall be the ton of natural sand from commercial sources, complying with the requirements of Table 4302/9, added to the slurry aggregate calculated from the proportion of natural sand ordered by the Employer's Agent and the actual measured application of the slurry.

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The tendered rate shall include full compensation for all additional cost for procuring and furnishing the sand from commercial sources, transporting the sand over an unlimited free-haul distance, and the mixing of the sand into the slurry aggregate.

B46.10 Second application of binder consisting of 30% spray

grade cationic emulsion litre (ℓ)

The unit of measurement shall be the litre of emulsion sprayed as specified and measured at the application temperature.

The tendered rate shall include full compensation for procuring and furnishing the binder and applying the second application of binder as specified.”

SERIES 4800: TREATMENT OF AN EXISTING SURFACE EXHIBITING CERTAIN DEFECTS

B4804 CONSTRUCTION

a) Treatment with diluted bituminous emulsion (fog spray)

Add the following:

“Tack coat using 30% bitumen emulsion, Cationic Spray Grade emulsion applied at a rate of 0.8l/m²

A water tanker with a pressure distributor shall be available on standby for pre-wetting or post-wetting the areas scheduled for fog spray.”

SECTION 5100: PITCHING, STONEMWORK AND PROTECTION AGAINST EROSION

B5101 SCOPE

Add the following paragraph to this section:

“This section also covers the furnishing of materials and the construction of cast in situ concrete paving for walkways.”

B5102 MATERIALS

(a) Stone

Replace the 2nd paragraph with the following:

“Unless suitable stone can be located on site, the stone for pitching shall come from commercial sources but, from whatever source, its use shall be subject to the prior approval of the Employer’s Agent”

(b) Cement

Delete the paragraph and replace with:

“Cement shall comply with the relevant requirements of SANS 50197-1:2000. The use of strength classes greater than 32,5 shall not be permitted.

(c) Sand

(ii) Sand for bedding

Replace this sub-sub-clause with the following:

“Sand for bedding used for paving blocks shall not contain any deleterious impurities and shall comply with the requirements given in table B5102/1.

TABLE B5102/1

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Sieve size (mm)	Percentage passing
10	100
5	95 – 100
2	73 – 86
1	43 - 78
0,600	25 – 60
0,300	10 - 30
0,150	5 – 15
0,075	5 - 10

Note:

Refer to standard COLTO table for COLTO grading if required

B5106 SEGMENTAL BLOCK PAVING

(d) Edge beams

Add the following paragraph:

“Where concrete edge beams are constructed, the relevant specifications under section 2300 shall apply.”

B5107 CAST IN SITU CONCRETE PITCHING

B5108 MEASUREMENT AND PAYMENT

Amend this payment item to read as follows:

SERIES 5000: ANCILLARY ROADWORKS

SECTION 5200: GABIONS

B5202 MATERIALS

(a) Rock

Add the following:

“The largest dimension of any rock shall not exceed 250 mm, and at least 85% by weight of the rock shall have a size equal to or larger than 125 mm. No rock shall pass through the mesh.”

(b) Wire mesh

Add the following:

“The diameter of the wire and the size of the meshes shall be as follows:

Depth (m)	Mesh Size (mm)	Wire Diameter (mm)
Gabions : 0,5m and over	80 x 100	2,7
Mattresses : 0,2m to 0,3m	80 x 100	2,5

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(f) Filter fabric below the gabions

Replace "subsubclause 2104(a)(iii) for grade 3 filter fabric" in the first sentence with "geotextile fabric grade 1 as specified below."

Add the following:

"(i) Composition and manufacturing

The synthetic-fibre filter fabric, or geotextile, shall be manufactured from a synthetic polymer processed into a permeable, homogenous sheet. Geotextile of non-woven construction is preferred, and woven geotextiles will be considered only if published data can be provided which show the satisfactory long-term performance of these geotextiles in an environment similar to that in which they are to be used.

On account of the temperature and moisture susceptibility of polyamide, this synthetic product is not considered acceptable.

(ii) Classification

The geotextile is classified according to the mechanical properties thereof, viz. its penetration load, puncture resistance and the minimum water-percolation rate as measured in the permeability test. The table below gives values for the properties.

Table B5202/2 Grade 1 Geotextile Properties

PROPERTY	GRADE 1	TEST METHOD
Penetration Load (minimum), N	3800	3,5 of SABS 0221-1988
Puncture Resistance (maximum), mm	14	Clause 8114
Water percolation (minimum) litre / m ² / sec	20	3,7 of SABS 0221-1988
Mass per unit area (minimum), g/m ²	320	3,4 of SABS 0221-1988

Notes:

The standard atmosphere for testing and the preconditioning atmosphere for all geotextile tests (SABS tests and others) shall have a relative humidity falling within the range of 0 to 80% and a temperature within the range of 15°C to 35°C.

- The resistance of a geotextile to puncture is the average diameter of the hole formed when a 45° cone with a mass of 1 kg is dropped through 500 mm onto the geotextile fixed in the holding device.

(iii) Durability

A geotextile is required to comply with the following specification:

- Resistance to chemical attack."

B5203 Constructing Gabion Cages

(c) Binding and Connecting Wire

Replace the existing paragraph with the following:

"Sufficient binding and bracing wire for all the tying to be done during construction of the gabions, as specified in clause 5204 below, shall be supplied with the gabions.

B5204 Constructing Gabions

(c) Assembly

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Replace the existing first paragraph with the following:

"The method of constructing the gabion wall viz. stretching, placing in position, tensioning, supporting on temporary frames, bracing, filling with rock and tying by lacing shall generally be in accordance with the manufacturer's instructions which have been approved by the Employer's Agent. Nevertheless, a minimum of six internal bracing wires per square metre of face shall be tensioned between the vertical sides of all the outer visible cells to prevent the deformation of cages as they are being filled with rocks.

Tension on the cages shall be released only when fully packed at which point the temporary frames are removed and the lids laced down into place.

During assembly of the cages all sharp ends of wire shall be twisted towards the inside of the cages to prevent damage to the filter fabric."

SECTION 5400: GUARDRAILS

B5401 SCOPE

Add the following sentence at the end of the paragraph of this clause:

"and includes careful removal of all guardrails and posts for re-erection."

B5402 MATERIALS

a) Guardrails

At the end of the 1st sentence delete the full stop and add "or SANS 51317 and carry the SABS mark or a mark by any other SANAS approved certification body for the applicable SANS specification."

(b) Guardrail posts

(i) Timber posts

Add the following to this sub-subclause:

"Timber posts and spacer blocks shall be treated with creosote."

(ii) Steel posts

Replace the paragraph with the following:

"Where offered or instructed to be used, steel posts shall be part of an approved guardrail system as tested and complying with SANS 51317, and galvanized in compliance with the requirements of SABS 763 for type A1 articles, shall be used.

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Where guardrails are placed on concrete retaining walls or concrete structures, the steel posts shall be of the type and size shown on the drawings or described in the project specifications."

(c) Reflective plates

Replace "1,5 mm thick" in the second line with "1,2 mm thick, grade Z275 pre-galvanized sheet"

After the first sentence, add the following:

"Type D reflective plates shall be manufactured as follows: The base plate of 1,2 mm thick, grade Z275 pre-galvanized sheet and the front face reflector of 1,0 mm thick, grade Z275 pre-galvanized sheet."

B5403 CONSTRUCTION

(a) Erection

In the second sentence of the first paragraph of this Sub clause amend "1 m" to read "1,2 m".

Replace the 7th paragraph with the following:

"Steel posts placed on concrete retaining walls or concrete structures shall be erected and fixed as shown on the drawings. For all other applications, steel posts shall be erected and fixed in compliance with the approved guardrail system as tested and approved in terms of SANS 51317."

Add the following after the final paragraph:

"The Contractor shall complete the installation of all guardrails along a completed length of road constructed in half-width, before he will be permitted to open that length of road to traffic."

B5405 REMOVING, RENOVATING AND RE-ERECTING EXISTING GUARDRAILS

Add the following before the first paragraph to this clause:

"Where in situ reconstruction is to be carried out adjacent to guardrails, the Contractor shall carefully remove all elements to the guardrails, temporarily store the elements and re-erect them on completion of the layer works. The Employer's Agent will indicate which materials are suitable for reuse. Any elements damaged as a result of negligent workmanship shall be replaced by the Contractor at his own cost. Materials that are suitable for reuse shall be cleaned and painted as instructed."

SECTION 5600: ROAD SIGNS

B5604 Road Sign faces and painting

(a) Colours, symbols and legends

Add the following paragraphs to this Sub-clause:

"All reflective signs shall be solid colours and not silk screened. Non-reflective borders, diagonals, letters and legends on non-reflective signs shall be made of cast vinyl material with a seven year durability. Colour impregnated reflective material shall be used and applied according to the requirements of the sheeting manufacturer."

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All symbols, letters and numerals shall be applied with a single piece of material. All borders shall be restricted as follows:

- Round signs - not more than four pieces
- Octagonal signs - not more than eight pieces
- Triangular signs - not more than three pieces

Diagonals and all other sign components shall be restricted to the minimum number of pieces required.

Overlap between adjacent pieces shall be a minimum of 10 mm."

Add the following sub-clause:

"e) Application of retro-reflective material

All sign faces shall be faced with 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."

B5606 Erecting Road Signs**(b) Excavation and backfilling**

In the first sentence of the first paragraph of this Sub-clause after "shown on the drawings" insert "or as directed by the Employer's Agent."

Add the following:

"A 50 mm thick permeable drainage layer shall be placed below concrete or soil-cement backfill for timber posts. No additional payment will be made and the cost thereof shall be deemed to be included in the tendered rates".

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 Employer's Agent."

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 panels and ground mounted sign supports.

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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.

Payitems are provided in the Pricing Schedule. Payment will differentiate between different types of sign panels."

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 I retro-reflective material, where the sign board is constructed from:

(c) Pre-painted galvanized steel plate (Chromadek 1,2 mm thick or approved equivalent):

Add the following sub-item to this sub-item:

"(iv) Signs measured by number:

(1) Octagonal - 900 mm	number (No.)
(2) Triangular - 1200 mm	number (No.)
(3) Round - 900 mm	number (No.)
(4) Rectangular - 450 mm x 450 mm W405 and W406 Sharp curve chevrons	number (No.)"

Amend the last two lines of the second paragraph of this item 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

Amend the following item to read and add the following sub-items to this item:

"B56.04 Marker signs

(a) Kilometre posts	number (No.)
(b) Distance number plates	number (No.)

The tendered rate shall cover full compensation for taking delivery of the marker signs and kilometre posts and their installation as shown on the drawings."

Amend the following item to read:

"B56.05 Excavation and backfilling for road sign supports (not applicable to sub-items B56.04(a) and (b) and item B56.10)"

Substitute "not in concrete" in the first paragraph with "not in concrete or a soil/cement mixture".

Add the following item to this clause:

"Item	Unit

B56.10 Provision and erection of danger plates (W401 and W402) at culvert structures, size 600 mm x 150 mm on timber posts as per Drawing No. 1051-04-RS-D15 number (No.)

The unit of measurement shall be the number of danger plates provided and erected in accordance with the drawings.

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The tendered rate shall include full compensation for all labour and material, painting, posts, excavation, backfilling with soil etc., as may be necessary for completing the work in accordance with the details shown on the drawings.”

SECTION 5700: ROAD MARKINGS**B5701 SCOPE**

Replace “South African Road Traffic Signs Manual” in the second paragraph with “SADC Road Traffic Signs Manual”.

Replace the words “ordinary road marking paint” with “solvent borne road marking paint”.

Replace “BS 3262” with “EN 1436”.

B5702 MATERIALS

Insert the following before subclause (a) Paint:

“The selection of the appropriate road marking paint and materials for permanent road markings to ensure conformance with the requirements of this specification rests with the Contractor. Such paint and material shall have technical characteristics (brightness, luminance, skid resistance, durability) equal to or greater than road marking paint and materials specified in subclauses 5702(a), (b) and B5702(c).

Where plastic road-marking material (hot-melt plastic (also known as thermoplastic) and two-component (also known as cold plastic)) is used, the contractor shall obtain an approved guarantee from the manufacturer that the paint complies with the specification. This shall be submitted to the Employer’s Agent on request.

Information of the type of road marking material utilized and application rates for each order shall be included in the quality control processes.

Normally road markings applied within 3 months of bituminous surfacing are deemed to be temporary road markings. For the purposes of clarity within this project, however, permanent road marking shall be deemed to be those applied within 3 months of bituminous surfacing in their permanent positions. Temporary road markings shall be deemed to be road markings applied on surface treatments prior to placing of the final surfacing of the road, or those applied in a position which is not the final position.”

(a) Paint

Replace sub-subclause B5702(a)(i) with the following:

“(i) Road marking paint

Road marking paint shall be Type 1 as specified in SANS 731-1. Only paint, manufactured in a SANS approved and accredited facility shall be accepted. The no-pick-up time of road-marking paint shall comply with the Class 1 requirement in accordance with SANS 731-1.

The paint shall be delivered at the site in sealed containers marked in accordance with SANS 731-1.

The viscosity of the paint shall be such that it can be applied without being thinned down.”

(ii) Retro-reflective road-marking paint

Add the following:

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"During actual painting the Contractor shall supply sealed samples of the paint to be used to the Employer's Agent together with details of the paint batch numbers and testing carried out on these particular batches by the paint manufacturer to prove compliance with this specification. These samples shall be kept until the end of the defects liability period."

(iv) Colour

Change the title to read:

"(iv) Colour, luminance and coefficient of retro reflection"

Amend the last sentence to read as follow:

"The colour and luminance shall as specified in Chapter 7 of Volume 1, Part 3 of SADC Road Traffic Signs Manual. The coefficient of retro reflection shall be a minimum of 150 minicandelas/lux/m² for white new material, and 100 minicandelas/lux/m² for yellow new material, as tested within 2 to 6 weeks of application."

Add subclause (v):

"(v) Other roadmarking materials

The Contractor may use other roadmarking materials which would ensure more durable markings and which would meet the specified performance criteria.

Such materials should comply with a standard set by a recognized national standards institution. Information on such materials and the standards to which they comply shall be submitted to the Employer's Agent."

(b) Roadstuds

Add the following:

"Roadstuds shall be Ferro Lynx A200 or similar approved, Bi-directional with a SABS approved mark, road studs with anchor shank."

"No additional payment will be made should temporary or permanent road studs be replaced if lost or broken during the construction period"

Add the following subclause:

"c) Retro-reflective beads

Retro-reflective glass beads shall be applied to the wet paint, thermoplastic and cold plastic.

The beads shall comply with Class A beads in accordance with EN 1424: 1998, with the following requirements or as approved by the Employer's Agent:

- Colour : crystal clear
- roundness : > 80%
- size range of : 14 – 200 US Mesh (75 – 1400 Microns)
- refractive index : > 1.5
- specific gravity : ± 2.5

Cumulative retained mass		
Sieve	Minimum	Maximum

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1700	0	2
1400	0	10
1180	5	30
850	40	80
600	70	100
425	80	100
355	90	100
212	95	100
Pan	100	100

The beads shall be delivered to the site in sealed bags, marked with the name of the manufacturer, the batch number and an inspection seal of SANS, confirming that the beads form part of a lot tested by SANS and comply with the requirements of EN 1424: 1998. Alternatively, the Contractor shall at all times have a SANS certificate on the site, identifying the batches to which the inspection seals apply and certifying that they have been tested by SANS, and comply with the requirement of EN 1424: 1998.”

B5704 MECHANICAL EQUIPMENT FOR PAINTING

Add the following sentence at the end of the first paragraph:

”The road-marking machine shall be fitted with a device to guide the operator to the centre of the line to be painted. This device shall be used at all times of operation.”

B5706 SETTING OUT THE ROAD MARKINGS

Insert the following before the first paragraph:

“Where road markings are to be replaced after any construction activity, it is essential that all existing road marking be accurately surveyed and referenced before commencement of such construction activities which will obliterate the existing road markings. The position of barrier lines shall be re-assessed on site by the Employer’s Agent before the Contractor commences with the road marking.”

B5708 APPLYING THE RETRO-REFLECTIVE BEADS

In the first paragraph, replace the nominal application rate of 0,8kg/litre with “400g/m²”.

Add the following:

“Beads shall be applied in accordance with EN 1424.”

“The rate of application and the distribution of the beads on permanent road markings shall be sufficient to ensure that the retro-reflective requirements are met as specified, but shall not be less than 0.34 kg/m² of marking.”

Add the following subclause:

B5610 DISMANTLING AND DISPOSING OF EXISTING ROAD SIGNS

“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

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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 panels 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.

Payitems are provided in the Pricing Schedule. Payment will not differentiate between different types of sign panels and the variation will be assumed to be included in the tendered rate."

Add following pay items:

"Item	Unit
B56.10	Danger plates at culverts/structures
	number (No)
	number (No)
	number (No)
	number (No)

"Item	Unit
B56.11	Dismantling and disposing of existing road signs.....Number (No)

SECTION 5700: ROAD MARKINGS

B5701 SCOPE

Replace South African Road Traffic Signs Manual in the second paragraph with:

"SADC Road Traffic Signs Manual"

B5702 MATERIALS

Insert the following before subclause (a) Paint:

"The selection of appropriate road marking materials for permanent road markings to ensure conformance with the requirements of this specification rests with the Contractor. Road marking materials for temporary road markings as clarified in SANS 731-1 shall be equal to or more durable than road marking paint specified in subclause B5702(a)(i) and (ii), provided it meets the specified initial performance criteria."

(a) Paint

- (i) Road-marking paint

Add the following:

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"The commercial product supplied by the contractor shall be subject to the approval by the Employer's Agent and the submission of a certificate of the SABS permitting the manufacturer to apply the SABS standardising mark to the supplied product."

(ii) Retro-reflective road-marking paint

Replace "CKS192" in the first paragraph with "SABS EN 1423 for medium grading glass beads".

When measured in accordance with SABS Method 1261-1998 within a period of two weeks

(± 1 week) after application, the coefficient of retro-reflected luminance, RL, of temporary road markings shall be at least 150 mcd/m².lx for white markings and 100 mcd/m².lx for yellow markings.

The product supplied for permanent road markings shall be subject to the approval by the Employer's Agent, who may request the contractor to provide sufficient supporting evidence to compare the durability of the proposed product with that of hot-melt thermoplastic material.

B5704 MECHANICAL EQUIPMENT FOR PAINTING

Add the following:

"The machine shall always operate in the same direction of the traffic flow when applying lane markings."

B5705 SURFACE PREPARATION

Add the following at the end of the second paragraph:

"The onus is on the contractor to ensure that the surface on which the road markings are to be applied is sufficiently clean and dry to ensure that the quality of the road markings will not be adversely affected. The contractor is also responsible for protecting road studs from being painted over, and the subsequent cleaning thereof if such over-painting did occur. (The cleaning of the road studs shall be done in such a manner that the functionality of the road studs will not be detrimentally affected by the cleaning agent.)"

B5706 SETTING OUT THE ROAD MARKINGS

Add the following:

"Where road markings are to be replaced on seal, it is essential that all existing barrier lines and other road marking lines be accurately referenced before commencement. The position of barrier lines shall be re-assessed on site by the Employer's Agent before the contractor commences with the road marking. No separate payment will be made for referencing the existing road markings and full compensation shall be included in the rate tendered for item B57.06."

B5707 APPLYING THE PAINT

Replace the last paragraph with 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 on site or is required to move within the site, other than those payments specifically allowed for in payment item B13.01(e)."

Replace the second last paragraph with the following:

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“Road marking materials shall be applied at application rates which would suit the traffic conditions in such a way that the functional life of the temporary road markings would exceed six months, whilst the expected functional life of the permanent road markings should exceed 36 months.”

B5710 TOLERANCES

(c) Alignment of markings

Add the following paragraphs to this subclause:

“When an unbroken line and a broken line are painted alongside each other, the beginning and the end of the unbroken line shall coincide with the beginning of one broken line and the end of another broken line. When existing lines are repainted, the new markings shall not deviate more than 100mm in the longitudinal direction nor 10mm in the transverse direction from the existing marking.

The alignment of the road studs shall not deviate from the true alignment by more than 10mm and shall be positioned so that the reflective faces are within 5° of a right angle to the centre line of the road.”

Add the following subclause:

“e) Testing

(1) Plant

Before painting any permanent road markings, the Contractor shall satisfy himself and the Employer's Agent, by painting test lines on a section of pavement other than the section required to be marked:

- that the painting machine is in good working order and properly adjusted;
- that the operator is fully experienced; and
- that the machine sprays at the specified rate of paint application.

The Contractor shall bear the cost of all materials and workmanship required for the above plant tests.

In addition, the Contractor shall conduct random paint thickness tests and dip/spread tests as required by the Employer's Agent.”

B5711 GENERAL

Replace the third paragraph with the following:

“The Contractor shall guarantee that permanent road markings shall meet the minimum initial requirements as specified in Chapter 7 of SADC Road Traffic Signs Manual.”

Add the following:

“The Contractor shall ensure that all roadstuds which have been affected by the painting will be cleaned without damaging the lens elements of the roadstuds. Such cleaning will be done within 24 hours after the studs have been affected by the painting.”

Insert the following into the last sentence of the last paragraph between “black paint” and “or chemical paint remover”:

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“, bituminous emulsion, slurry”

Add the following to the last paragraph:

“Where black paint is used, it shall be matt.”

Add the following clause:

“The Contractor shall provide temporary traffic control facilities in accordance with Section 1500 of the COLTO’s standard specifications for road and bridge works to ensure traffic safety where work is being executed.

Property and/or road signs damaged by the Contractor, his personnel, his agents or sub-contractors shall be repaired or restored to their condition prior to the damage at his own cost.”

B5712 FAULTY WORKMANSHIP OR MATERIAL

Add the following paragraphs to this item:

“The Contractor shall rectify in an acceptable manner and at his own costs; all marking that do not comply with the specified requirements.

While work is in progress, tests shall be carried out on materials and/or the quality of work to ensure compliance with the specified requirements. The sampling methods are specified in SANS 731-1. The sampling methods described in TMH5 shall be followed where applicable.”

B5713 PROTECTION

Add the following paragraph

“Traffic cones shall not be smaller than 750mm in height and shall be placed on the road not further than 48m apart. Cones shall not be removed before the paint on the road has hardened to such an extent that it will not be damaged by traffic and the adhesive of the road studs has hardened to such an extent that the studs will not turn or become loose. All marks on the road caused by traffic driving over wet paint shall be removed by the Contractor at his own cost.”

B5714 MEASUREMENT AND PAYMENT

Amend the following sub pay items:

“Item	Unit
B57.02 Retro-reflective road marking paint	
(a) White lines (broken or unbroken)	
(i) 100mm	kilometre (km)
(ii) 150mm	kilometre (km)
(iii) 500mm	kilometre (km)
(b) Yellow lines (broken or unbroken)	
(i) 150mm	kilometre (km)

- (d) White lettering and symbols square metre (m²)
- (f) Transverse lines, painted island, arrestor bed and kerb face markings:
 - (i) White.....square metre (m²)
 - (ii) Yellow square metre (m²)
 - (iii)Black/White square metre (m²)

Item	Unit

B57.05 Road studs

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

“No additional payment will be made should temporary or permanent road studs be replaced if lost or broken during the construction period or the Defects Liability Period.”

Item	Unit

B57.06 Setting out and pre-marking the lines (Excluding traffic island markings, lettering and symbols) kilometre (km)

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 at the end of the defects liability period lump sum

Substitute the 1st paragraph with the following:

“The unit of measurement shall be the lump sum for the painting unit to re-established on Site at the end of the defects liability period as required and approved by the Employer’s Agent.

The tendered rate shall include full compensation for re-establishing on site and the subsequent removal of all special equipment, personnel, etc. as may be required, for repainting the road traffic markings, and for re-establishment on Site at the end of the defects liability period.”

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SECTION 5800: LANDSCAPING AND GRASSING

B5801 SCOPE AND DEFINITION

(a) Scope

Delete this paragraph and replace with

"This section includes all areas affected by construction activities. It includes landscaping, grassing, rehabilitation, erosion protections and planting trees and shrubs"

Add the following to this subclause:

"Certain parts of the work under this section is reserved for selected subcontractors.

Vegetation shall be established on deviations, borrow pits and other areas as directed by the Employer's Agent using hydro seeding techniques."

(b) Definition

WEEDS

Delete the following:

"(as listed in bulletin 413 issued by the Department of Agriculture, Directorate of Agricultural Information)"

and replace it with

"(as listed in the Conservation of Agricultural Resources Act)"

B5802 MATERIALS

(a) Fertiliser/soil-improvement material

The types of fertilisers shall be as follows:

Type	Application rate (kg/hectare)
2:3:2(30)	400
Super phosphate	500
Lime	250
L.A.N.	<u>50</u>
Total kg per hectare	1200

(c) Grass seeds

Add the following to this subclause:

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"The grass seed mixture shall be as follows:

(1)	Cynodon dactylon	3.7 kg/ha
(2)	Tragus berteronianus	2.5kg/ha
(3)	Heterogon contortus	15.0kg/ha
(4)	Chloris gayana	5.0kg/ha
(5)	Eragrostis curvula	7.5kg/ha
(6)	Chloris virgate	0.5kg/ha
(7)	Digitaria eriantha	2.5kg/ha
(8)	Melinis repens	2.0kg/ha
(9)	Aristida congesta subso, Congesta	0.8kg/ha
(10)	Cymbopogon excavates	<u>2.5kg/ha</u>
	Total	42.0kg/ha

All seed used shall be labelled in accordance with the Government Seed Act No. 28 of 1961 or amendment thereof. The Contractor shall furnish the Employer's Agent with signed copies of a statement from the seed merchant certifying that each container of seed delivered is fully labelled in accordance with the Government Seed Act. This certification shall appear on, or be submitted with, all copies of invoices for the seed."

(f) Anti-erosion compounds

Add the following to this subclause:

"Where directed by the Employer's Agent Surface soil stabilizer (or similar approved anti-erosion products) shall be applied at a rate of 150 kg/ha."

(g) Topsoil

Add the following to this subclause:

"Prior to commencing any earthmoving operations, the Contractor shall strip and stockpile all topsoil, to a depth of 150 mm or as otherwise instructed by the Employer's Agent, within the working area and construction camp for subsequent use in the rehabilitation and re-vegetation of the site. Topsoil shall be stripped in a phased manner, so as to retain vegetation cover for as long as possible. Topsoil from different soil types shall be stockpiled separately and replaced in the same areas from which they were taken.

Topsoil thickness in certain areas may exceed the thickness instructed by the Employer's Agent but the Contractor shall not strip topsoil beyond the instructed thickness. Such material will be measured and paid for as "cut to spoil" or any other classification, as ordered by the Employer's Agent.

The Contractor shall ensure that stockpiled material does not blow or wash away. If the topsoil is in danger of being washed or blown away, the Contractor shall cover it with a suitable material, such as mulch and/or seed it with a fast-growing annual grass.

Topsoil material shall be stockpiled for as short a period as possible. Stockpiles shall be monitored at weekly intervals to identify invasive plants, which shall be removed when they germinate, to prevent contamination of the seed bank. Stockpiles shall not be covered with materials, such as plastic, that may cause it to compost, or kill any seeds."

5804 PREPARING THE AREAS FOR PLANTS

(c) Areas which require topsoil

Add the following to this subclause:

"Prior to top soiling, the Contractor shall remove all remnants of building materials, concrete foundations, timber and other foreign debris from the site.

Before placing topsoil, the Contractor shall remove all visible weeds from the placement area and from the topsoil. The area to be re-vegetated shall be ripped or scarified as directed by the Employer's Agent.

The stockpiled topsoil shall generally be spread evenly over the prepared surface to a depth of 75 to 150 mm on flat ground or to a minimum of 75 mm on slopes of 1:3 or steeper."

B5805 GRASSING

(c) Hydroseeding

Replace the first sentence of the second paragraph with the following:

"The seed shall be fresh and of good quality. The contractor shall provide samples of the seed for germination tests at an early stage. Hydroseeding shall preferably be carried out in the spring or early summer, and the Employer's Agent's prior approval of the programme shall be obtained. The seed mixture shall consist of the following species in the stated proportions:

For cut and fill slopes:

(i)	Eragrotis tef	2,0 kg/ha
(ii)	Eragrotis curvula	5,0 kg/ha
(iii)	Cenchrus ciliaris	5,0 kg/ha
(iv)	Cynodon dactylon (not pelleted)	6,0 kg/ha
(v)	Aristida congesta susp congesta	6,0 kg/ha
(vi)	Digitaria eriantha	6,0 kg/ha
(vii)	Panicum maximum	7,0 kg/ha
	Total	37,0 kg/ha

Add the following after the fourth paragraph:

During seeding, the seed mixture shall be regularly mixed by hand in order to prevent the separation of smaller and larger seeds in the mixture. After seeding, the soil surface shall be lightly raked parallel to the contours in order to cover the seed. During raking, care shall be taken to prevent the redistribution or removal of seed from any area."

Add the following:

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"The thickness of the topsoil layer shall be as specified by the Employer's Agent. The preparation of the soil for areas to be grassed is to include scarifying just before sowing the grass seed. Should erosion of any kind (by animal, wind or rain) have occurred before the contractor applies the grass seed, the slope shall be re-instated, at the contractor's cost, to its original, erosion free state before seeding.

The types and mixtures of seeds to be used shall be as specified in the project specifications. The contractor shall be solely responsible for establishing an acceptable grass cover, and any approval by the Employer's Agent of seed mixtures intended for use by the contractor shall not relieve him of his responsibility".

Add the following to this subclause:

"A minimum of 4500 litres of water per hectare shall be applied with the hydroseeding mixture to ensure proper distribution of all the ingredients.

The hydroseeder shall be capable of pumping the specified seed mix, fertilizer and soil stabiliser (mixed in water) at the specified rates over the areas to be seeded. The slurry distribution lines shall be large enough to prevent stoppage, and the discharge line shall be equipped with a set of hydraulic spray nozzles suitable for the even distribution of the slurry on the various slopes to be seeded.

Hydroseeding machines shall be thoroughly cleaned after each operation and before different seed mixes of different origins are introduced into it. The mixture shall be kept uniform during the seeding operation by means of a power-driven agitator."

(f) Sowing by hand

Delete the following from this subclause:

"If approved by the Employer's Agent,"

Add the following to this subclause:

"The thickness of the topsoil layer shall be as specified by the Employer's Agent. The preparation of the soil for areas to be grassed is to include scarifying just before sowing the grass seed. Should erosion of any kind (by animal, wind or rain) have occurred before the Contractor applies the grass seed, the slope shall be re-instated, at the Contractor's cost, to its original, erosion free state before seeding.

The types and mixtures of seeds to be used shall be as specified in the Project Specifications. The Contractor shall be solely responsible for establishing an acceptable grass cover, and any approval by the Employer's Agent of seed mixtures intended for use by the Contractor shall not relieve him of his responsibility."

Add the following subclause:

“(g) Removal of undesirable vegetation

During the course of the Contract the Employer's Agent may instruct the contractor to physically remove undesirable vegetation from within the road reserve. Such an operation will take place before the flowering stage of the undesirable vegetation upon written instruction from the Employer's Agent, but shall not relieve the contractor of his obligation towards weeding sodded, grassed areas as described under 5806(a) and any area directly affected by any construction activity. Should the contractor fail to respond to the written instruction from the Employer's Agent for the removal of the aforementioned undesirable vegetation before flowering, the

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contractor shall be held contractually responsible for any growth or seeding of said vegetation for a period of not less than twenty two (22) months in the affected area."

B5808 GENERAL

(a) Time for planting

Add the following to this subclause:

"The Contractor shall not begin planting work until all construction activities in the area to be vegetated have been completed. Hydroseeding shall be carried out either during April, May or June."

(e) Responsibility of establishing acceptable cover

Add the following to this Sub clause:

"Establishment of acceptable cover shall include maintaining the surface to the required slopes and levels without erosion or sedimentation, watering, weeding, fertilising, disease and insect pest control and any other procedure consistent with good horticultural practice necessary to ensure normal, vigorous and healthy growth of the plant material on site.

In the absence of adequate rainfall, all seeded areas shall be watered once weekly, during the first month, and once every two weeks during the second month. Rainfall of less than 60 mm in the first month and less than 45 mm in the second month is regarded as inadequate water supply. Watering should be carried out from a tanker, using a fine nozzle spray to avoid erosion and disturbance of the vegetation. The Contractor shall supply all water required for irrigation during the establishment period and shall provide all plant necessary for the operation.

As part of establishment, the Contractor shall be responsible for topdressing the re-vegetated areas with L.A.N., at a rate of 150 kg/ha, in August/September and April. The Contractor shall also be responsible for monitoring and controlling all alien/invasive vegetation and implementing appropriate erosion control and remediation measures, as approved by the Employer's Agent."

Add the following sub-items:

“(g) Weeding

The contractor shall maintain all areas affected by construction activities free of all undesirable plant species. They shall be removed before the flowering stage of each species. Should the contractor fail to remove the alien plant species before flowering he shall be held responsible for alien plant removal within the affected area, for an additional period of one year, over and above the contractual one year maintenance period.

The method for the removal of undesirable plant species shall be either by hand, which shall include the removal of the complete root system, or by chemical means, through the use of a registered selective herbicide. A registered, licensed pest control operator, licensed for the industrial application of herbicides, shall only administer the application of the herbicide.

B5901 SCOPE

In the first line of the second paragraph, insert the following after 'this section'

"...distinguishes between new construction and renewal construction. When construction is new, as in the case of new alignments for example, then this section....."

B5902 FINISHING THE ROAD AND ROAD RESERVE

Retain the existing paragraphs as new subclause:

“(a) New Construction”

Replace the sixth paragraph with:

"All materials resulting from the finishing operations shall be disposed of at approved spoil sites."

Add the following:

“(b) Renewal Construction

After completing construction work within the site, the contractor shall ensure that all construction generated or related material that may have been swept, windrowed, stockpiled, stored or spread beyond the road surface is removed. This shall be done before any other rehabilitation work is undertaken, including shaping, top soiling and grassing. Should, during the removal of construction generated or related material, existing vegetation or topsoil be disturbed or destroyed, the contractor shall, at his own cost, re-instate the road reserve to its original state. This shall include ripping, should the construction material have compacted the existing surface.

Culvert inlets and outlets, culvert barrels, and open drains shall be cleared of debris, soil, silt and other material generated from the construction activities.

The surfacing shall be cleared of all dirt, mud and foreign objects. Dragging, pushing or scraping material across the finished surfacing shall not be permitted.

All junctions, intersections, islands, kerbing and other elements making up the completed works shall be neatly finished off.

The contractor shall ensure that all undesirable plants have been removed from the road reserve and borrow pit areas.

All materials resulting from the finishing operations shall be disposed of at approved spoil sites.

SERIES 6000: STRUCTURES

SERIES 6100: FOUNDATIONS FOR STRUCTURES

PART A : GENERAL DESCRIPTION

1. MISCELLANEOUS

B6103 GENERAL

(a) Subsurface Data

Add the following:

“It is expressly understood that, while all subsurface information is given in good faith, the correctness of the information furnished is not guaranteed. Where the actual foundation conditions encountered are considerably at variance with conditions visualised and described in the Contract documents and those terms for which the rate or price provided for in the Contract is rendered unreasonable or inapplicable, such other rate or price consistent with the rates set out in the Contract shall be fixed as set out in Clause 13 – Variations and Adjustments of the General Conditions of Contract subject always to a founding depth variation not exceeding 2.5m in any foundation component of the permanent structure not, by itself, being held to constitute cause for variation for the Contract rates or prices.”

These Project Specifications form an integral part of the Contract Documents and supplement the Standard Specifications. In the event of any discrepancy or conflict with any part or parts of the Standard Specifications, the Schedule of Quantities, or the Drawings, the Project Specifications shall take precedence.

The Standard Specifications, which form part of this Contract, have been written to cover all phases of work normally required for road projects, and they may therefore cover items not applicable to this particular project. The Standard Specification is the COLTO Standard Specifications for Road and Bridge Works for State Road Authorities, 1998 Edition.

Wherever reference is made in the contract to specific codes and standards to be met by the materials, plant and other supplies to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the contract. Where such standards and codes are national, or relate to a particular country or region, other authoritative standards which ensure a substantially equal or higher performance than the standards and codes specified will be accepted subject to the Employer's Agent's prior review and written approval. Differences between the standards specified and the proposed alternative standards must be fully described in writing by the Contractor and submitted to the Employer's Agent at least 28 days prior to the date when the Contractor desires the Employer's Agent's approval. In the event of the Employer's Agent determining that such proposed deviations do not ensure substantially equal performance, the Contractor shall comply with the standards specified in the documents.

SECTION B6100: FOUNDATIONS FOR STRUCTURES

B6103 GENERAL

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(a) Subsurface Data

Add the following:

“It is expressly understood that, while all subsurface information is given in good faith, the correctness of the information furnished is not guaranteed. Where the actual foundation conditions encountered are considerably at variance with conditions visualised and described in the Contract documents and those terms for which the rate or price provided for in the Contract is rendered unreasonable or inapplicable, such other rate or price consistent with the rates set out in the Contract shall be fixed as set out in Clause 13 – Variations and Adjustments of the General Conditions of Contract subject always to a founding depth variation not exceeding 2.5m in any foundation component of the permanent structure not, by itself, being held to constitute cause for variation for the Contract rates or prices.”

B6104 ACCESS AND DRAINAGE

(c) Drainage

Add the following:

“Where dewatering and keeping dry of excavations has not been billed separately as per item 61.03 “Access and Drainage”, it shall be deemed to be included in the rates tendered and paid for excavation and backfill.”

B6105 EXCAVATION

(a) General

Add the following:

“Excavation required for diverting, channelling or widening streams within 5.0m of concrete structures shall be measured and paid for under item 61.02. Excavations beyond the 5.0m limit shall be measured and paid for under the appropriate items in Sections 2100 and 3300.”

(c) Excavation

Add the following paragraphs:

“Where excavation is in soft material, the final 0.75m and in the case of hard material, the final 0.25m of material shall be removed using suitable hand tools such as pick and shovel or pneumatic tools.

During construction of the river bridges the Contractor will only be permitted to construct, subject to the approval of the Directorate of Water Affairs, low level causeways access the rivers that cause negligible backing up and cofferdams around the piers and abutments for the construction of the foundations using material excavated in the road prism consisting of natural alluvial deposits of sand boulders, etc. These obstructions must be removed at the end of the contract and the river and banks restored to their original condition.

(g) The safety of excavations

Add the following paragraph:

“The design for shoring, signing of the drawings and inspection prior to construction of the permanent works of excavations to ensure it is safe shall be undertaken by the contractor’s competent person, who shall be a professional engineer with the relevant experience. The contractor shall ensure that all temporary works

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undertaken shall comply with the relevant sections of the Occupational Health and Safety Act and the Construction Regulations”.

Add the following subclause:

“(j) Temporary lateral support in cut

Excavations next to the existing road will be required to have temporary vertical, or near vertical, cut faces in the vicinity of the abutments.

The contractor shall be responsible for the design and implementation of a temporary system that will ensure safe lateral support of these cut faces, more than 1,0 m deep/high, including surcharge from traffic. This excludes all normal shoring required for standard foundation excavations.

Design and construction details of the contractor’s proposed method of support, must be submitted to the Engineer for comment at least 14 days before starting any excavations or fills next to the existing road.”

Add the following subclause:

“(k) Temporary lateral support in fill

Fills next to the existing road will be required to have temporary vertical, or near vertical, faces in the vicinity of the abutments.

The contractor shall be responsible for the design and implementation of a temporary system that will ensure safe lateral support of these faces, more than 0,5 m high, including surcharge from traffic.

Design and construction details of the contractor’s proposed method of support, must be submitted to the Engineer for comment at least 14 days before starting any excavations or fills next to the existing road.”

B6106 FOUNDING

Add the following clause at the end of the last paragraph:

“Where foundation slabs or pile caps are cast directly against the face of the excavations, the volume of concrete measured for payment shall be the total volume of concrete placed or the volume based on the plan dimensions detailed on the drawings plus a 100mm allowance for over break on each applicable side whichever is the lesser. No formwork to the footing shall be measured when the concrete is cast against the face of the excavations”.

B6109 FOUNDATION FILL

In the 5th paragraph, 7th line delete “60” substitute “45”.

Add the following after the 6th paragraph

“Concrete blinding shall extend 100mm all round beyond the horizontal dimensions of all formed footings to facilitate placing of the formwork, unless otherwise directed by the engineer.

In the case of structures where excessive ground water is encountered, the blinding layer may extend over the full plan area of the base of the excavation and beyond the edge of the foundation where required. Payment shall be made for the quantity of concrete calculated as the product of the specified thickness of blinding layer and the actual area of blinding placed subject to a maximum distance of 500mm beyond the edge of the foundation.”

B6115 MEASUREMENT AND PAYMENT

Add the following pay items:

"Item	Unit
B61.51 Lateral support to excavations	
(a) In cut	
(i) 0 to 2m depth	Square metre (m2)
(ii) 2 to 4m depth	Square metre (m2)
(iii) 4 to 6m depth	Square metre (m2)
(iv) Exceeding 6m depth	Square metre (m2)
(b) In fill	
(i) 0,5 to 1,5m high	Square metre (m ²)
(ii) 1,5 to 3,0m high	Square metre (m ²)

The unit of measurement shall be the square metre of excavated face supported over the successive depth ranges, measured down from the existing road levels.

The tendered rate shall include full compensation for procuring and installing the lateral support system, as well as for removal, if required. It shall include for all materials, labour, plant, equipment and incidentals to provide support to the excavated faces for the duration of substructure construction.

The work will be paid per square metre of the lateral support system installed, 80 % of which is payable upon installation. The second instalment of 20% of the tendered rate shall become payable after the system has been removed from the site, if required.

The cost of excavating the material shall not be included, but paid for under items B61.02 and B61.03(A)."

SECTION B6200: FALSEWORK, FORMWORK AND CONCRETE FINISH**B6204 DESIGN****(a) General**

Add the following:

"The Contractor shall submit to the Engineer at least 4 weeks before the structure is scheduled for construction a detailed analysis showing the effect of the stresses that will be induced by the Contractor's chosen method of construction. The cost of any additional prestressing, reinforcing steel, concrete, etc., required as a result of the Contractor's chosen method of construction shall be to the Contractor's account. No construction shall commence until the Engineer has given his written approval."

(b) Falsework

"Unless instructed otherwise by the Engineer, the Contractor shall submit his design criteria and detailed drawings of the staging to the formwork. The design, signing of the drawings and inspection of the falsework prior to construction of the permanent works shall be undertaken by the contractor's competent person, who shall be a professional engineer with the relevant experience."

B6205 CONSTRUCTION**(d) Class F3 surface finish**

Replace the second paragraph with the following:

“The use of steel forms shall be permitted to form surfaces for which Class F3 surface finish has been specified, provided that only undamaged forms shall be used for such work and that the forms shall be subject to the approval of the engineer.”

SECTION B6300: STEEL REINFORCEMENT FOR STRUCTURES**B6306 PLACING AND FIXING**

Replace the second and third paragraphs with the following:

“The concrete cover for all structural concrete shall be within the acceptance ranges shown in Table B6404/6. Prior to fixing the steel, samples of the proposed cover and spacer blocks shall be submitted to the engineer along with a written statement for in-situ manufacture, if applicable, for approval.

Overlap of steel reinforcement bars shall be such that the cover to the lapped bars remains constant at the specified cover.”

B6307 COVER AND SUPPORT

Amend the second paragraph as follows:

Replace the second sentence, commencing with

“Where no cover is indicated...shown in Table 6306/1” with the sentence “Where no cover is indicated, the contractor shall inform the engineer who shall after consultation with the design engineer indicate the required cover in writing and the as-built drawings shall indicate such cover”.

Add the following to the end of the fifth paragraph:

“Concrete cover and spacer blocks shall be made using the same cement and aggregate type as the main concrete with the same water/cement ratio so that differences in shrinkage, thermal movements and strain are minimised. Cover blocks shall be water cured by submersion for a minimum of 7 days and thereafter kept submerged in water until immediately before fixing onto reinforcing steel. Where concrete cover blocks, subsequent to fixing, have visually dried out they shall be remoistened by an appropriate method so that they are damp before the placing of concrete. Only semi-spherical concrete cover blocks shall be used. Where fixing wire is inserted into cover blocks, it shall be galvanised. Cover and spacer blocks manufactured from other materials e.g. plastic or wood, shall not be permitted. All cover blocks regardless of the type of material manufactured from, shall not be visible on exposed concrete surfaces.”

Delete Table 6306/1 in its entirety.

Add the following paragraph:

“Where the concrete cover specified has not been achieved after cover tests have been carried out in accordance with clause B8106(g)(iv), reduced payment as determined under clause B8212 shall be applied to all the relevant pay items under section 6300.”

SECTION B6400: CONCRETE FOR STRUCTURES

B6402 MATERIALS

(a) Cement

Replace the colon at the end of the first paragraph with a comma, and add the following:

“taking into account the adoption of the new SANS 50197-1:2000 code for cements: (refer to C&CI website www.cnci.org.za)”

Add the following paragraphs:

“The type of cement to be used in any concrete element shall take into account the environmental conditions and durability requirements at the location of the site of the works, and shall be as approved by the engineer.

With the exception of the standard SANS approved cement blends supplied by the primary cement producers, the blending of CEM1 and extenders shall not be permitted unless specifically approved by the engineer on the basis of an acceptable quality assurance procedure.

(b) Aggregates

Delete the remainder of the sentence after “exceed” in sub-clause (i) (1) and replace with the following:

“150% of that of the reference norite aggregate or any of the other three reference aggregates”

Delete the remainder of the sentence after “exceed” in sub-clause (i)(2) and replace with the following:

“200% and of the coarse aggregate 175% of that of the reference norite aggregate or any of the other three reference aggregates”

Delete the remainder of the sentence after “exceed” in the first paragraph of sub-clause (i)(3) and replace with the following:

“235% of that of the reference norite aggregate or any of the other three reference aggregates”

Delete the entire last paragraph of sub-sub-sub-clause (i)(3) commencing with “The drying shrinkage of concrete...”

Add the following sub-sub-clause:

“(vi) The maximum chloride ion content of fine aggregate shall be 0,03% by mass of aggregate as specified by SANS 1083:2002. Where concrete is situated in a chloride environment the value shall be reduced from 0,03% to 0,01%.”

d) Water

Add the following:

“Water for concrete other than prestressed concrete, shall not contain chlorides, calculated as sodium chloride, in excess of three thousand parts per million (3000ppm) nor sulphates, calculated as sodium sulphate, in excess of two thousand parts per million (2000ppm).

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Water for curing concrete shall not contain impurities in sufficient amount to cause discolouration of the concrete or produce etching of the surface.

No sea-water or water containing salts shall be used.

No water shall be added on site to ready mix concrete prior to placing to improve workability. All concrete delivered to site shall be checked for workability using the slump cone test and slump measured outside of the limit set from the design mix shall be rejected.”

(e) Admixtures

Add the following sub-sub-clauses:

- “(v) Admixtures, which have a retarding effect on the rate of hydration of the cement, may not be used when the concrete temperature is below 20°C.
- (vi) A retarding admixture shall be used if the temperatures of concrete mixes using cements of strength class 42.5 or higher is between 20 to 30°C or where the ambient temperature is between 20 to 30°C.”

Add the following:

“Note: Only admixtures of the type that do not increase the water content of the mix will be considered by the Engineer. In addition, no admixtures shall be added on site to ready mix concrete prior to placing to improve workability.”

B6404 CONCRETE QUALITY**(a) General**

Insert the following paragraph after the second paragraph:

“When structural concrete prefixed ‘W’ is shown on the drawings, it shall, in addition to the strength requirement, comply with the durability requirements specified in sub-clause 6404(h), ‘W’ class concrete shall not apply to minor structural elements such as side drains and catch pits except in very severe environmental conditions of exposure. Requirements for concrete quality (including any durability requirements) for concrete pavements are found in Section 7100 of the specifications.”

(b) Strength concrete

Replace the sixth paragraph with the following:

“Where concrete is designated by the prefix “W”, e.g. class W30/19, such designations shall denote concrete achieving the durability criteria specified in the relevant tables under sub-clause B6404(h).”

Add the following sub-clauses:

“(h) Concrete durability**(i) General**

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Concrete designated by the prefix 'W' shall, in addition to the requirements of sub-clause 6404(b) comply with the durability parameters described below. Durability is influenced by the materials used in the concrete, their mix proportions, transporting, placing, compacting and, in particular, curing of the finished cover concrete (concrete layer between the outermost layer of steel reinforcement and the exposed outer surface of the concrete element). The tests required to prove durability performance of the placed concrete are given under sub-clause B8106(h). The numbers of tests shown under payitem 81.02 are the minimum requirements that the engineer considers necessary to achieve the desired quality of concrete.

It is the engineer's responsibility to approve the component materials and their mix properties, however it is the contractor's responsibility to utilise acceptable component material and to achieve mix properties complying to the specifications. It is the contractor's responsibility to design and blend materials to produce concrete of the specified quality

(ii) Durability parameters

Water sorptivity:	Sorptivity is sensitive to surface effects and may be used to assess the effectiveness of initial curing.
Oxygen permeability:	Permeability is sensitive to changes in the coarse pore fraction and thus a means of assessing compaction of concrete. It is used to quantify the microstructure of the concrete and sensitive to macro-defects such as voids and cracking.
Chloride conductivity:	Chloride conductivity provides a method of characterisation of concretes in the marine environment and is used to assess the chloride resistance of concrete.
Cover concrete:	Cover concrete is the outer concrete layer that protects reinforcing steel. Concrete cover is a requirement for all concrete whether specified as durability concrete (Class "W") or normal reinforced concrete.
Individual Cover Depth Measurement (CDM):	Individual cover depth measurement determined by an electromagnetic cover meter, complying with BS 1881, Part 204.
Average Cover:	The average of at least 30 individual CDM's per m ² determined on a clearly identified area.
Overall Cover:	The mean average cover determined for the scanned area per structure.
Scan Area:	Areas of approximately 1m ² , randomly distributed over the entire structure, representing at least 5% of total surface area for that structure.
Individual bar reading:	A minimum of 3 linear CDM's, spaced at 100mm intervals, representing a single bar of reinforcement.
Capped CDM:	The value applied to all CDM's in excess of the maximum allowed CDM, determined by the engineer

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(e.g. 40mm (specified cover) + 15mm (upper limit) = 55mm) or

Capped Value:

A value in mm, assigned to a cover reading where the raw reading exceeds the specified cover, plus a value (mm) specified by the engineer.

Quick/Linear Scan: For evaluation of cover depth measurements taken perpendicular to closest rebar in a line covering required area to be scanned.

Image/Block/Grid Scan:

Provides an overview of rebar layout. Measurements taken over a square meter clearly indicating position of first and second layer of rebar.

Notes:

1. Water sorptivity and Oxygen Permeability tests are required to assess carbonation resistance
2. Water sorptivity, permeability and chloride conductivity tests are required to assess chloride resistance

Concrete cover:

Concrete cover is a dimensional indicator of cover concrete depth and it varies according to the requirements of the different environmental exposure classes.

When tested in accordance with the test protocols described in B8106 for each potential durability parameter, the concrete shall meet the limits listed in tables B6404/4 and B6404/6.

(iii) Cement content

In order to meet the durability criteria, the proportions of cementitious binder used shall be determined to suit the fine and coarse aggregate and cement type used in order to achieve the durability limits specified in tables B6404/4 and B6404/6 under the Acceptance Category of "Concrete made, cured and tested in the laboratory."

In order to avoid the possibility of Alkali Silica Reaction (ASR), the following shall be taken into account when designing the mixes:

1. Where the cementitious contents is less than 350kg/m³ the maximum equivalent sodium monoxide content (calculated as Na₂O) permitted shall be 0.60%, unless a test certificate from the CSIR (Built Environment) is provided stating that the long term testing has proved the aggregate to be non-reactive.
2. Where the cement content exceeds 350kg/m³, the maximum equivalent sodium monoxide content permitted shall be 2.1kg/m³ of concrete.
3. Where potentially reactive aggregate is used, the maximum cement content shall be 400kg/m³ and the equivalent sodium oxide (Na₂O) content permitted shall be 2.4kg/m³ of concrete.
4. The contractor shall prior to the use of cement provide test certificates from an approved laboratory confirming the equivalent sodium oxide (Na₂O) content of the batch of cement to be used.
5. Special literature should be consulted e.g. Fulton's Concrete Technology.

(i) Environmental Classes of Exposure

For this project, the environmental classes for carbonation and chloride exposure for the different structural elements are as shown below in Table B6404/3.

TABLE B6404/3: ENVIRONMENTAL CLASSES OF EXPOSURE FOR ELEMENTS OF STRUCTURE

Element	Carbonation Environment (OPI)
Foundations	n/a
Substructures	XC3
Superstructures	XC3

(v) Acceptance ranges

TABLE B6404/4: DURABILITY PARAMETERS ACCEPTANCE RANGES

Acceptance Category	Test No./ Description/ Unit				
	B8106(g)(i) Water Sorptivity (mm/h)	B8106(g)(ii) Oxygen Permeability (log scale)			
		Parapets	Sub-structures	Super-structure	Etc. for other members
Concrete made, cured and tested in the laboratory using Trial Panels	<10.0	>9.1	>9.1	>9.1	>9.1
Full acceptance of in-situ using Test Panels	<10.0	>9.1	>9.1	>9.1	>9.1
Conditional acceptance of in-situ concrete based on results of Test Panels	Not applicable ²	9.0 – 9.1	9.0 – 9.1	9.0 – 9.1	9.0 – 9.1
Rejection based on results of Test Panels	Not applicable ²	<9.0	<9.0	<9.0	<9.0

Note:

1. A value has been given, but the value to be adopted shall be based on the results from design mixes.
2. Although no value has been given due to ongoing research, values above 12 are regarded as poor quality concrete.
3. For purposes of interpretation, substructure is deemed to be all supporting elements below the deck (superstructure), including buried lengths of columns, etc., but excluding foundation elements like bases and spread footings.

TABLE B6404/6: DURABILITY PARAMETERS ACCEPTANCE RANGES: COVER FOR ALL CONCRETE TYPES

Test No.	Description of Test	Specified Cover (mm)	Acceptance Range	
			Min	Max
			Overall cover	Overall cover
B8106(g)(iv)	Concrete cover to reinforcement (mm)	30 to 80	85% of specified cover – 5mm	Specified cover + 15mm or where member depth is less than 300mm the limit accepted in writing by Design Engineer.

(v) Site Testing

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To ensure that the concrete has been placed, compacted and cured correctly, a number of tests shall be carried out on the concrete by an approved laboratory.

(vi) Non-compliance with specified criteria

The Contractor should also note that there is specific provision made for curing of concrete under payment item B64.07 of the project specification. The amount priced under this item will be subject to reduced payments should the durability tests indicated under B8106(h) fail to meet the required targets. Similarly, failure to achieve the required durability test results will be sufficient cause to apply partial payment factors for all the payitems of the elements of the structure under sections 6300 and 6400 of the standard and project specifications or in some cases the removal of the rejected concrete.

Add the following sub-clauses:

“(i) Mix design approval procedures

(i) General

The compressive strength achieved on ‘W’ class concrete shall generally exceed the characteristic strength class structurally required. The contractor shall note that the process of finalising ‘W’ class mix designs could take up to two months. In order to expedite the process, the contractor must submit samples of aggregate and cement to an approved laboratory within seven days of the Commencement Date. Should ‘W’ class concrete be required before the mix design is finalised, the engineer will approve a preliminary mix design in consultation with the contractor.

(ii) Laboratory designs and site tests based on Trial Panels

Good mix design practice is essential and the following criteria shall be taken into consideration when pricing and determination of the mix design:

1. Selection of sands and aggregates to achieve a good grading is important if the desirable concrete density and durability have to be achieved.
2. The selection and use of the correct cement grade and type for the environmental conditions (and not based solely on costs) is fundamental
3. Water: cement ratios are critical, dictating both the structural strength and the durability requirements

Mix proportions for the concrete to be used on site need to be determined by an approved laboratory, Cylindrical specimens, 70 ± 2 mm in diameter shall be made or cored from a trial panel during the laboratory trial mix for performance of tests B8106(g)(i), (ii) (if required).

Note that concrete cubes are not cored for durability testing during design trial mix stage or during the construction stage.

Testing for design purposes shall be carried out by an accredited laboratory approved by the engineer, the costs of which are deemed to be included in the contractor’s rates for structural concrete. Concrete as designed shall satisfy the limits set out in Table B6404/4 under the heading “Concrete made, cured and tested in the laboratory, using Trial Panels”. It is therefore a requirement that the trial panels be cast on the site and the cores extracted and tested in the laboratory as part of the mix design approval process. Where the site is remote from the laboratory, the Trial Panels may be cast at the laboratory in accordance with the requirements of sub-clause B8106(g).

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It will be necessary for the contractor to establish a target mean strength with a margin above the minimum requirement so that small fluctuations due to material changes or workmanship can be accommodated. In general, mean target strength = characteristic strength + $1.645 \times S_n$.

Once the mix is approved, the target mean compressive strength for quality control purposes for durability class concrete shall be the mean compressive strength obtained from the mix that satisfies the durability requirements."

B6407 PLACING AND COMPACTION

Add the following:

(b) Placing

"Casting of the in-situ parapets or placing of precast parapets shall only commence after removal of the deck staging, and in addition, in the case of prestressed decks, the stressing must be complete. Where specified on the drawings the top of the parapets after placing shall follow the pre-camber levels specified on the drawings to allow for future creep effects. This is of particular importance on the edges of very long skew decks and prestressed simply supported decks. The levels of the top rail of each panel of the balustrades/parapets shall be confirmed in writing by the design engineer"

B6408 CONSTRUCTION JOINTS

(a) General

Add the following:

"No construction joints other than those indicated on the drawings will be permitted without the written approval of the engineer. In all cases the proposed method of forming the joint shall be discussed and agreed with the engineer."

B6409 CURING AND PROTECTION

Add the following to the end of sub-clause 6409(f):

"Where a curing compound is used, it shall consist of an approved water based low viscosity clear wax emulsion applied in accordance with the manufacturer's instructions."

Add the following paragraphs to the end of this sub-clause:

"Where curing by retention of formwork is used as the only method of curing the concrete, it must be left in place for the minimum period specified in Table 6206/1 but in no instance shall it be less than 7 days.

The materials used for formwork shall take into account properties such as thermal insulation and moisture absorption when assessing the suitability of the material, to the approval of the engineer.

If impermeable curing membranes are to be used as a curing method, they shall be installed at the same time as formwork is removed and no portion of a concrete surface may be left unprotected for a period in excess of 2 hours. If the surface is an unformed finish e.g. top of deck slab, then the surface must be protected immediately by appropriate methods approved by the engineer after it is finished, without damage to that surface, since it is vulnerable to plastic shrinkage cracking due to high rates of evaporation while the concrete is still in a plastic state. Plastic shrinkage and settlement shall not be permitted on any of the structural elements since it compromises the durability of the concrete. In order to prevent early settlement and shrinkage of the concrete, the concrete placed shall be re-vibrated after initial compaction while the concrete is still in a plastic

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state. Any remedial measures shall be as approved in writing by the Employer's Agent. On bridge decks, the top surface shall be cured using the method described in clause 6409(d) i.e. "Constantly spraying the entire area of exposed surfaces with water".

For all concrete curing shall be excluded from the make-up of rates for measurement under items B64.01 and B64.02 and will be paid for separately under payitem B64.07. Where the application of a curing compound is used, the type and nominal application rate thereof shall be as specified in the schedule of quantities or to the manufacturer's nominal specified rates."

B6410 ADVERSE WEATHER

Add the following sub-clause:

“(d) Temperature and hydration of concrete

Site batched concrete: The temperature of concrete delivered to site shall be within the range 10°C to 30°C. Concrete which has a temperature outside of this range shall not be placed in the structure.

Ready mix concrete: In the case of ready mix concrete the temperature limits at point of delivery shall be as specified in SANS 878 2004 unless the Employer's Agent has specified other limits due to specific design requirements. If slump loss occurs at concrete temperatures of over 30°C and more than two hours after mixing, the concrete shall be rejected. Also if after addition of allowed water the concrete begins to stiffen again such as to place in doubt that full compaction and finishing can be achieved, the concrete shall be rejected.

Care must also be taken not to cast concrete onto hot steel shutters as this might induce cracking.

The rate of hydration of the cement in the concrete shall be such that the concrete can be placed and properly compacted within 2 hours after the addition of water to the mix ingredients. The initial set of the concrete shall not be unduly delayed due to inappropriateness of admixtures or cement type, which could promote bleeding."

B6413 PRECAST CONCRETE

Add the following final paragraph:

"Precast concrete units shall comply with the requirements of the latest SANS 986:2006 specification.

Prior to the manufacture of any units the manufacturer shall submit his Quality Plan to be approved by the Employer's Agent. The quality plan must incorporate all requirements and frequency for durability index testing i.e. Sorptivity, Oxygen Permeability, Chloride Conductivity (if required) and Cover Testing. As part of the Quality Plan submitted for approval, copies of calibration certificates of both gauges used for proof loads and cover meters used at the factory shall be supplied to the Employer's Agent. The originals of these certificates shall at all stages also be available for inspection at the factory premises. The manufacturer shall check each precast unit for cover compliance, and random checking of units shall not be permitted. The Employer's Agents representative may visit the factory at any stage to ascertain adherence to the quality plan including test results from the durability index testing as well as to check covers before delivery to site. Any substandard cover shall result in the applicable structural element or part thereof being rejected. Should the manufacturer not be adhering to their Quality Plan the Employer's Agent may exercise the right to reject the use of products from the manufacturer concerned. The Employer shall also be informed in all such cases.

For durability requirements due to the reduced cover provided for precast culverts, all such durability testing shall be done in accordance with clause B6404(h). "

B6414 QUALITY OF MATERIALS AND WORKMANSHIP

(a) Criteria for compliance with the requirements

Add the following paragraphs after the first paragraph:

"The cores shall be taken from the Trial Panels cast using the design mixes made in the laboratory. Where the site is remote from the laboratory, the Trial Panels may be cast at the laboratory in accordance with the requirements of sub-clause B8106(g).

In the event that for 'W' classed concrete the actual achieved average cube strengths of an element are less than 85% of the target mean strength needed to meet durability requirements or less than 100% of the target mean strength to meet strength requirements, it may result in the durability parameters not meeting the prescribed targets and the Employer's Agent will instruct the taking of cores from the test panel and structure for additional testing. The cost of these in-situ tests shall be borne by the contractor cost unless the results are acceptable.

The approved quality control criteria for durability concrete shall be coring and testing of test panels. The frequency of manufacture and coring of test panels shall be as ordered by the Employer's Agent and indicated in Tables B8106/1 and B8106/2.

Tests B8106(g)(i), (ii) and (iii) (when required), shall be conducted on cores extracted from the test panels when the concrete reaches the age of at least 28 days. To allow for variability in the material potential, the type of chloride conductivity values shall be limited to 90% of the values indicated in table B6404/5. Test no. B8106(g)(iv) shall be conducted to confirm that the specified depth of concrete cover has been achieved. The frequency of these tests shall be as described under item B8106(g). The test results shall be accepted or rejected on the criteria set out in Table B6404/4 and B6404/5 based on the following categories:

(i) Full acceptance

Concrete shall be accepted unconditionally and full payment shall be made.

(ii) Conditional acceptance

Concrete may be accepted, based on the cube strength and durability index results with a warning that construction methods be examined to improve the durability criteria. A reduced payment shall be applied to all the relevant payitems of the specific element under B6300 where the cover requirements are not achieved and B6400 where the oxygen permeability and strength requirements are not achieved for the non-conforming element or concrete pour as set out in Tables B8212/1 and B8212/2. The decision to accept the substandard concrete at reduced payment shall rest solely with the Employer.

Should the test result(s) indicate conditional acceptance of the element tested, the Contractor shall have the option of carrying out additional tests (on 4 extracted cores) on that element of the structure, at his own expense to confirm or disapprove the original test result(s). These cores shall be extracted within 56 days from the date of the element being cast.

Should the additional test confirm the original test result, then the original test result shall serve to determine payment in accordance with Tables B8212/1 and B8212/2.

Should the additional test show that the structure meets the targets, the penalty shall be halved."

(iii) Rejection

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The concrete shall be removed and replaced with fresh concrete at the expense of the contractor, as directed by the Employer's Agent.

B6416 MEASUREMENT AND PAYMENT

Add the following at the beginning of clause 6416:

"Note that pay items B64.01, B64.02 and B64.07 below are only applicable to durability concrete prefixed 'W'."

Item		Unit

B64.01 Cast in situ concrete

Amend the descriptions of subitems 64.01(a) and (b) to read as:

"(a)	Durability Concrete (Class W)	cubic metre (m ³)
	(i) Indicate part of structure and strength e.g. Piers (W30/19))	
	(ii) Etc. for other parts of structure	
(b)	Normal Concrete	cubic metre (m ³)
	(i) Indicate part of structure and strength e.g. Blinding (15/19)	
	(ii) Etc. for other parts of structure	

In the case of cast in situ concrete, delete "curing and protecting the concrete," in the sixth line of the description of the tendered rate for item 64.01.

Add the following after the second paragraph in the rate make-up:

"The Contractor shall note that the strengths indicated above are to meet structural requirements only. In order for the durability criteria to be achieved, it may result in higher strengths being required. Target mean strengths to be achieved for durability purposes may therefore be higher than those shown above, as discussed under sub-clauses B6406(b) and B6404(h)(ii)."

Item		Unit

B64.02 Manufacturing precast concrete members

(description of member with reference to drawing) number (No)

In the case of precast concrete, delete "curing and" in the second line of the description of the tendered rate for item 64.02.

Add the following:

"The bottom of the precast beams shall be finished to Class F2 surface finish, prior to being placed in position. No surface finish shall be permitted after the beams are placed in position"

Add the following payment item:

Item		Unit

B64.06 Demolishing existing concrete

Amend the payment paragraph as follows:

"The tendered rate shall include full compensation for all labour, plant (including access and craneage) and equipment (including concrete cutters) required to demolish the existing concrete (irrespective of strength) and the disposal of the product of the demolishing to a borrow pit within a free-haul distance of 15km. The tendered

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rate shall also include full compensation for any necessary measures to ensure no debris falls into rivers or surfaces where damage is possible and for any debris that has fallen into rivers to be recovered.

Payment shall distinguish between plain and reinforced concrete. For the purposes of this item, reinforced concrete is defined as concrete containing at least 0,2% of steel reinforcement measured by volume."

Add the following payment items at the end of clause B6416:

"Item	Unit
B64.07 Curing of concrete:	
(a) (Indicate structural element and surface to be cured)	
(Tenderer to specify method of curing)	square metre (m ²)

The unit of measurement shall be the square metre of completed concrete element cured using an approved method as described in clause B6409 of these Project Specifications.

The tendered rates shall include full compensation for providing the curing agent and applying it to the fresh concrete surface by means of an approved pressure distributor (or other approved methods of application) in accordance with the manufacturer's specified nominal rates of application. Wet fine mist spray curing is also permitted providing it is done for 7 days. Payment will also be made under this item if this is the preferred method to be used. Should no curing method be specified at time of tender then it will be assumed wet fine mist spray curing is to be done. Partial payment shall be applied in the event that the engineer allows conditional acceptance.

SECTION B6500: PRESTRESSING OF STRUCTURES

B6505 TECHNICAL DATA

(h) Bursting reinforcement

Add the following paragraph:

"The contractor shall design the bursting reinforcement for his proposed prestressing system and submit drawings to the Employer's Agent for approval in accordance with clause 6507. The price for the steel and fixing shall be included in the rate tendered for stressing."

SECTION B6600: NO-FINES CONCRETE, JOINTS, BEARINGS, PARAPETS AND DRAINAGE FOR STRUCTURES

B6603 JOINTS IN STRUCTURE

(a) Materials

(h) General

Add the following after the last paragraph:

"It is a firm requirement that all contracts have full Agreement certification for bridge deck joints, with the target date for new applications for Agreement assessment one year from receipt and acceptance by Agreement South Africa of each application. Proof of original acceptance of application by Agreement is required in such a case.

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- (1) current Agreement assessments: 1 September 2010.
 (2) new applications for Agreement assessment one year from receipt and acceptance by Agreement South Africa of each application. Proof of original acceptance of application by Agreement is required in such a case.”
 (g) Installing the expansion joints

Delete the first paragraph and replace with the following:

“All deck expansion joints shall be installed by approved specialist subcontractors only. Installed deck expansion joints shall have the following guarantees:

Proprietary joints -	15 years
Asphalt plug type joints -	10 years
Concrete nosings (replacement) -	10 years
Joint sealant -	5 years

All deck expansion joints will only be considered for use on this contract if the manufacturer has obtained Agreement certification. New applications for Agreement assessment takes up to one year from receipt to acceptance by Agreement South Africa.”

B6608 MEASUREMENT AND PAYMENT

Item	Unit
B66.05 Expansion Joints	metre (m)

Add the following to the measurement clause of subitem (b):

“The joint measured shall be the complete joint shown on the drawings including termination details and recesses at balustrades and cover plates and fixings.”

Add the following to the end of the second paragraph:

“The tendered rate for subitems (a) and (b) shall also include for water test required to prove the joint. The water shall be ponded and maintained to a minimum depth of 150mm above the top of the joint for a period of one hour each. Testing should follow the installation of the various sections of joints to take advantage of the existing traffic accommodation and each test shall cover the length of each joint installed (generally half width of bridge)”.

Item	Unit
B66.06 Filled Joints	metre (m)

Add the following to the end of the second paragraph:

“The tendered rate for subitems (a) and (b) shall also include for water test required to prove the joint. The water shall be ponded and maintained to a minimum depth of 150mm above the top of the joint for a period of one hour each. Testing should follow the installation of the various sections of joints to take advantage of the existing traffic accommodation and each test shall cover the length of each joint installed (generally half width of bridge)”.

Item	Unit
B66.15 Concrete parapets	metre (m)

Add the following to this clause:

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"The tendered rate shall include for sealing of joints between balustrade units as shown on the drawings.

Add the following payment items:

Item	Unit
B66.27 Drainage strips	metre (m)

The unit of measurement shall be the linear metre of drainage strips laced behind the earth faces as shown on the drawing.

The tendered rate shall include full compensation for all material, labour, and equipment to supply and install the strips as shown.

Item	Unit
B66.28 Perforated drainage pipes – M1 Netlon drainage pipe wrapped in Kaymat U34 or similar approved	metre (m)

The unit of measurement shall be the linear metre of perforated drainage pipes placed behind the earth faces as shown on the drawing.

The tendered rate shall include full compensation for all material, labour, and equipment to supply and install the perforated pipes as shown including the 300mm wide by 50mm thick mortar bed under the core.

SERIES 8000:SUNDRIES

SECTION B8100: TESTING MATERIALS AND WORKMANSHIP

B8105 TESTING OF AGGREGATES

Add the following sub-clause:

“(g) Determination of Ethylene Glycol Durability Index

The Ethylene Glycol Durability Index shall be determined as follows:

(i) Apparatus

Suitable pans or basins

Ethylene Glycol solution

Stirring rod

(ii) Method

Obtain three or more representative samples from the source to be evaluated.

If not already crushed, crush the material in order to obtain sufficient minus 19mm plus 13mm sized aggregate in order to totally cover the bottom of the basin or pan with a single layer of stone. Add sufficient ethylene glycol to each basin ensuring that every aggregate particle is completely submerged.

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After soaking for 24 hours, gently stir the aggregate and allow to settle. Observe and record the response of the aggregate to the ethylene glycol according to the criteria listed in (iii) below. Continue the above cycle at intervals of 24 hours for a further 4 days, in each case recording the observed response. After 5 days allow the samples to remain submerged in the solution and observe and record the disintegration response after a total period of 15, 30 and 60 days have elapsed.

(iii) Classification of response

After each cycle, classify and record the response of the aggregate as follows:

DISINTEGRATION CLASS

- Class 1: No obvious effects, or only very minor spalling of sand sized particles or very small flakes.
- Class 2: Splitting of rock, accompanied by any other disintegrative effects.
- Class 3: Fracturing (spheroidal and/ or internal) without extensive spalling or distortion.
- Class 4: Fracturing (spheroidal and/or internal) with extensive spalling or distortion.
- Class 5: Complete disintegration.

TIME CLASS

The time factor in the above disintegrative process is classified according to the time taken for the most serious effect of the expansive stresses to occur i.e.

- Class 4: 0 - 5 days
- Class 3: 6 - 15 days
- Class 2: 16 - 30 days
- Class 1: 31 - 60 days
- Class 0: Over 60 days

(iv) Determination of Glycol Durability Index

The Ethylene Durability Index is determined by adding the class number as assigned for the specific disintegrative response observed to the class number as assigned for the period for this response to occur. A durability index ranging from 1 (no response) to 9 (rapid and complete disintegration) is thus determined."

Amend the heading of B8106 to read as follows:

"B8106 TESTING THE CONCRETE AND COVER TO STEEL REINFORCEMENT"

Add the following sub-clauses under B8106:

"(g) Trial panels for durability concrete (W class concrete)

As part of the durability class concrete mix design approval process, trial panels shall be constructed on the site (or at the laboratory) before construction of structural elements commences, to ensure that the contractor can successfully achieve the oxygen permeability and sorptivity targets set for the in-situ concrete with method of construction to be adopted. Each trial panel shall be constructed using the same type of concrete mix, shuttering type, placing and curing methods (including application rates of curing compounds if applicable) as to be used on the final structural element to be constructed. The dimensions of such a trial panel shall be 0.40m wide, 0.60m high and 150mm thick. The panel shall be constructed vertically. It is suggested that 2 lifting hooks be cast into the panel to facilitate lifting, moving or disposal of panel. It most likely will be that one

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trial panel will be required for substructures (piers, abutments, retaining walls, etc.) if the same grade concrete is specified for all substructures and another for the decks due to type of casting and curing methods.

The test area for taking of cores (taken in horizontal direction) shall not be less than 100mm from all horizontal and vertical edges. The number of cores to be extracted and tested is described under B8106(i).

(h) Test panels for durability concrete (W class concrete)

During casting of concrete on site, test panels shall be constructed on the site adjacent to where the concrete element is being placed. Each test panel shall be constructed with the same concrete, shutter type, compaction and curing methods being used in the element being cast (including same vibrator frequency and curing compound application rates), and be left to cure for 28 days adjacent to the concrete element. Thereafter it shall either be cored on site or transported to the laboratory for testing of the required durability parameters. The dimensions of the test panels shall be 0,4m wide, 0,6m high and 150mm thick and be cast vertically to simulate vertical casts of the substructures and vertical faces of bridge decks. It is suggested that 2 lifting hooks be installed at both top ends of the test panel to assist with transport. For precast concrete, test panels will not be constructed, as cores will be drilled from the concrete elements at the Precast yard before being placed at its final location. For the horizontal faces of in-situ bridge decks and culverts, test panels will also not be constructed. Instead cores will be extracted from the top surface of the decks.

The frequency of the testing and number of cores to be extracted is described under B8106(i).

The test area for the taking of cores (taken in a horizontal direction) shall not be less than 100mm all horizontal and vertical edges.

The costs for construction of the test panels shall be deemed to be included under rates for payitem 64.01."

(i) Testing for concrete durability

Durability predictions for durability concrete prefixed 'W' will be based on the following tests that shall be carried out by an accredited laboratory approved by the Employer's Agent:

- (i) Oxygen permeability
- (ii) Water sorptivity
- (iii) Chloride conductivity (if specified)

Notes:

The test methods shall be as described below.

For test no's (i) and (ii) (and (iii) when required), cores of 70 ± 2 mm diameter shall be extracted from the test panels when the concrete reaches the age of at least 28 days and tested for the durability criteria set out in clause B6404(h) and used to determine the payment as per Table B8212/1. Test No. (iii) may only be required where specified (e.g. within a chloride environment along the coast or where chlorides are present in ground water).

A sample for the purposes of durability testing is as defined in Table B8106/1. The cores for durability testing shall be extracted from the test panels for process and acceptance control (at the frequency as shown in Table B8106/2). Durability testing shall only be required for concrete specified as durability concrete with the prefix "W". The number of samples to be taken shall be as shown in Table B8106/2.

TABLE B8106/1: NUMBER OF CORE RESULTS REQUIRED FOR A SINGLE SAMPLE FOR DURABILITY TESTING

Durability Parameter	No. of Core Results
a. Sorptivity	2
b. Oxygen Permeability	4

c. Chloride Conductivity*	4

* Test undertaken only if specified and within a chloride environment.

TABLE B8106/2: NUMBER OF TEST PANELS REQUIRED FOR DURABILITY TESTING

Element	No. of Test Panels to be taken (see Table B8106/1 for number of core results required for a single sample)
In-situ Bridge Decks	1 (per pour) ¹
Bridge Piers/Abutments	1 (per element) ²
Precast Elements	1 (per element) ^{2, 3}
Bridge / Culvert Parapets	1 (per element) ²
Culvert walls / wing walls / slabs	1 (per wall section) ^{1, 2}
Retaining walls	1 (per wall section) ²
All bases	1 (per element/pour) ²

Note:

1. Test panels required to be cast vertically. Additional cores required to be extracted from top of deck / major culvert slabs, i.e. in-situ cores.
2. Note that where group of elements are cast on the same day, only one test panel will be required, but only if the same grade concrete is used.
3. Sample required to be taken from Precast element in casting yard. For edge beams, inner face to be cored.

For cores to be extracted from precast elements and top of bridge decks, the engineer will indicate the positions at which the cores will be extracted. Filling of the holes left by the drilling of the cores shall be the responsibility of the contractor and shall be carried out using an approved proprietary non-shrink repair mortar so as to restore structural integrity and durability of the structural element tested.

If the test results indicate that the durability requirement has not been achieved, then the structural element shall be cored and tested for the durability criteria. The Employer's Agent will indicate the positions at which the cores will be extracted. The costs for testing of the structure shall be borne by the contractor. Filling of the holes left by the drilling of the cores shall be the responsibility of the contractor and shall be carried out with material as described in the paragraph above.

Note that if testing has to be undertaken on sides of decks and walls, the cores shall be taken on the exposed faces of the concrete i.e. the sidewall face taking care not to cut the reinforcing bars. Where the cores do contain pieces of reinforcing steel, they shall not be used for the tests. The cores shall be extracted through the cover concrete from the Test Panels or constructed concrete element as applicable. The outer 5mm of the exposed surface of the core shall be cut off and then a slice (30 ± 2mm thick) shall then be cut and prepared for testing. The Employer's Agent will indicate the positions at which the cores will be extracted.

The methodology and latest revisions for the durability index tests are available at the University of Cape Town's web address at www.civil.uct.ac.za. In addition, the results of all the durability testing shall be submitted at least once a month in the required format to the University of Cape Town, where the present contact person is:

Dr. H Beushausen - email: hans.beushausen@uct.ac.za.

(j) Testing for concrete cover

Concrete cover testing shall be conducted using an approved calibrated electromagnetic cover meter, able to comply to requirements as defined in linear and block scans, and has the ability to save and calculate data measured.

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The testing (non-destructive) shall be conducted to confirm that the specified depth of concrete cover has been achieved. The cover meter tests shall cover at least 1m² for every 20m² surface area of concrete placed. Readings shall be taken to identify individual bars, with at least 3 readings at 100mm spacing on every single bar within 1m². The average cover of the 1m² subjected to the test shall be used to determine the payment as per Table B8212/2 unless the Contractor chooses to carry out additional tests as detailed in the final paragraph of clause B6414(a). The cover meter must be calibrated whenever being used to test for cover on each project. Standard Calibration block must be used on each project, and where substantial testing is required, the calibration block shall be kept on site. Cover meters shall comply with the relevant modern standards (e.g. EN55011, 50082-1, 6100-6-1, 6100-6-2, 6100-6-3, 6100-6-4 and BS18881 Part 204).

Critical elements for cover surveys are parapets, deck edges including underside of cantilevers, lower portions of columns and abutments and walls. Soffits should be excluded from measurements. All parapets (F-shaped) including the parapet beam shall be fully tested for cover compliance. In addition, the entire area up to 1,5m high on piers, walls and abutments, including the rear of abutments and wing walls, shall be fully tested before being backfilled. The Employer's Agent will identify other critical areas required to be surveyed. Should any of these areas shows deficiencies, the Employer's Agent may order additional cover tests on other areas at the contractors costs.

The procedure for testing for depth of reinforcement from concrete surface shall be in accordance with the manufacturer's requirements for the relevant electromagnetic cover meter, but further requirements are set out in clause B8119. All cover meters shall be calibrated on site under the control of the Employer's Agent. The number of readings taken of the layer of rebar closest to the concrete surface to each 1m² to be tested shall be such that an accurate average cover can be determined for the tested area. For the purposes of calculating the average depth of cover bars that have covers 15mm or greater than what is specified shall be capped at specified cover plus 15mm in the calculations. For calculation of payment, specified cover to be reduced by 5mm (allowance for variation of equipment) before apply criteria as defined in Table B8212/2.

Example, where Specified cover = 40mm, test as 35mm, then apply limits, $85\% * 35 = 30\text{mm}$.

Quick Scan readings are to be taken perpendicular to the layer of rebar closest to the concrete surface for each scan area (± 30 per m²), so that an *average cover* to reinforcement can be determined for the tested area.

Readings are to be taken to identify individual bars within each 1m². At least three cover readings, at 150mm spacing, per an individual bar shall be shown in the test results but only overall cover measurement would be used for payment purposes. Reports generated by the equipment shall be used for determining payment. Where more than 10% of readings are below specified lower limit, the area shall be re-scanned, by *Image, Block or Grid scan* method, to verify the average cover. For calculation refer to specific worksheet (attached)

Cognizance to be taken of the effect to cover depth measured, where spliced bars are measured in same area as single bars. The size of rebar shall be corrected manually on the device by means of applying the following formula (approximately $1.41 \times$ diameter of rebar as shown in design).

Where insufficient cover are established before placing of concrete, e.g. Starter bars from base not correct position, remedial action to be performed before continuing with next concreting – these actions to be clearly recorded and area identified.

B8108 DETERMINING THE TOTAL APPROXIMATE DRY BULK RELATIVE DENSITY AND THE APPARENT DENSITY

Add the following at the end of this clause:

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"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:

$$\frac{(b - a)}{(d - a) + \left\{ \frac{(w - 1.0)}{100} \times (b - a) \right\} - (b - c)}$$

This formula shall be used as an alternative to note (5) regarding soaking period, when so instructed by the Employer'."

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 (SANRAL 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 airtight 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 ± 3°C and 110 ± 5°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).

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3.2 Curing of specimens

Rapid cure the specimens (see 5.6). Alternatively, and where instructed by the Employer's Agent, 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.

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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

B8117 MEASUREMENT AND PAYMENT

Add the following payment items before the “**Note:**”

“**B81.04 Financial contribution for the combined laboratory** month

The unit of measurement shall be the month.

The **negative** rate tendered per month shall cover the contractor’s contribution towards the establishment and operation of the combined laboratory over the contract period including any approved extension of time and shall be deducted from the contractor’s payment certificates. The negative rate amount shall be calculated based on 30% of the total running cost of the combined laboratory that shall not exceed R120 000 per month during the construction period or a total of R 4 320 000 for the duration of the contract.

The Employer’s Agent ”

Insert “(a) & (b)” after “81.03” in the 1st line of the 2nd paragraph of the **Note**

“**B81.05 Combined Site Laboratory** **P. Sum**

B81.05(a) A Combined Site Laboratory will be used by both the Employer Agent and the Contractor during the construction period. The Employer’s Agent will request quotations from the Service Providers (SP) and appoint a successful SP after the approval of the Employer. During construction period, the contractor will receive monthly invoice from the Combined Laboratory’s responsible person on monthly basis and in turn, the Contractor will include the invoice in his/her Monthly Payment Certificate and pay the Combined Laboratory accordingly. The contractor contribution on the Combined Site Laboratory is indicated in B81.04

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3. Apparatus

3.1 Steel troughs

Steel troughs fitted with handles and manufactured from 3mm mild steel plate, conforming to the following or similar dimensions:

Width	-	265mm
Depth	-	405mm.
Height	-	300mm

A total of 14 troughs are required for a 4,2m wide spray bar. Each trough must be clearly numbered on its side.

3.2 Balance

A balance capable of weighing up to 50kg to an accuracy of 20g.

3.3 Personal protective clothing

The appropriate safety gear must be worn when performing this test and should include a pair of asbestos gloves, face shield and approved overalls.

3.4 Cleaning fluid

Diesel or other suitable fluid.

4. Preparation of the binder distributor

Ensure that all the binder strainers on the sprayer have been cleaned.

Preheat the binder in the distributor tank to within $\pm 5^{\circ}\text{C}$ of the required spray temperature.

Circulate the binder through the spray bar for at least 15 minutes.

4.1 Position the spray bar over a full-length drip tray. A short preliminary spray is made to ensure that all the nozzles are functioning and that the machine is in normal working condition. Suck back the binder from the drip tray into the distributor tank on completion of test spray.

4.2 If necessary, correct any malfunctioning of the spray bar.

5. Method

5.1 Ensure that all troughs are clean and free of any water or other materials.

5.2 Place the pre-weighed steel troughs described in 3.1 under the spray bar in such a manner that the discharge of each set of three nozzles are collected in one trough. Ensure that the troughs are placed in numerical order.

5.3 Adjust the spray bar height to ensure that the nozzles are below the sides of the trough.

5.4 Increase the bitumen pump speed to yield the desired triple spray overlap in accordance to the type of nozzles and type of binder being used. Typically, this could vary between 12 and 20 litres per minute for conventional binders.

5.5 Open the nozzles and spray sufficient binder to fill the troughs without risking spillage during handling.

5.6 Weigh the troughs to determine the mass of binder sprayed.

5.7 On completion of the weighing and before the binder cools suck back the binder into the distributor tank.

5.8 Only clean the troughs with a suitable cleaning fluid once they have cooled down to room temperature.

5.9 Store used cleaning fluid in a suitable container for re-use.

6. Calculation and report

6.1 Determine the net mass of binder in each trough to the nearest 20 grams.

$$\text{Net mass binder} = (M_1, M_2, M_3 \dots M_n).$$

6.2 Calculate the average mass of the binder collected in all the troughs.

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$$M_{ave} = \sum (M_1 \dots M_n) / n$$

where n = number of troughs

- 6.3 Calculate the deviation from the average mass for every trough and express the value as a percentage.

$$\% \text{ Deviation} = (M_{ave} - M_i) / M_{ave} \times 100$$

- 6.4 If the transverse distribution is out of specification, make the necessary adjustments to the spray bar and repeat the test.
- 6.5 Report results on a suitable report sheet.
- 6.6 Update the 'bakkie' test record with the relevant information for the distributor.

7. Accuracy

Due to the varying nature of the different types of binders, cognisance must be taken of the respective binder's viscosity at spray temperature when establishing achievable tolerances, namely:

Conventional binders	40 – 100 CPs
Polymer modified binders	120 – 200 CPs
Bitumen rubber	2,000 – 3,000 CPs.

B8119 CONCRETE COVER TESTING PROCEDURE

1. Scope

This procedure covers all measurements to be done on concrete structures to establish conformance to specified concrete cover requirements.

2. Guidelines and Preparation

- The contractor is to complete a cover survey request and forward it to the Employer's Agent.
- The selected area for cover measurement is to be indicated on a sketch (see example attached).
- The responsible person must identify the area to be scanned, take measurements on the required date and calculate the results in terms of project specification.
- The cover meter is to be checked against a calibration box/block constructed with typical reinforcement of known parameters, on each day of use. Any deviations from actual measurement must be recorded on a Cover Survey Request.
- Cognizance shall be taken of the effect to cover depth measured, where spliced bars are measured in the same area as single bars (typically, the rebar diameter is increased by a factor of 1.44).
- The depth of cover shall be determined with equipment, complying with BS 1881, Part 204 and capable of identifying the location and depth of reinforcement on a scanned area. The results shall be recorded electronically by the equipment software.
- Measurements are to be taken in accordance with cover meter manufacturer's guidelines.
- The person responsible for measurements must indicate the position, dimension, type and splicing of reinforcement on the sketch for each scanned area.

3. Method of Measurement

Two methods of measurement are proposed as follows:

- Quick/Linear Scan Method
 - Readings are to be taken perpendicular to the layer of rebar closest to the concrete surface for each scan area (± 30 per m²), so that an *average cover* to reinforcement can be determined for the tested area.

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- (ii) Readings are to be taken to identify individual bars within each 1m². At least three cover readings, at 150mm spacing, per individual bar shall be shown in the test results but only the overall cover measurement would be used for payment purposes. Reports generated by the equipment shall be used for determining payment. Further specified cover to be reduced by 5mm (allowance for variation of equipment), before applying criteria as defined in table B8212/2a.

e.g. If specified cover is 40mm, the lower limit for full acceptance is:

$$(40 \text{ mm} - 5 \text{ mm}) \times 85\% = 30 \text{ mm}.$$

- (iii) Where more than 10% of readings are below specified lower limit, the area shall be re-scanned, by *Image, Block or Grid scan method*, to verify the average cover. Refer to item 3.2 below.

An example of Quick Scan information and presentation is shown in Figure B8119-1 below.

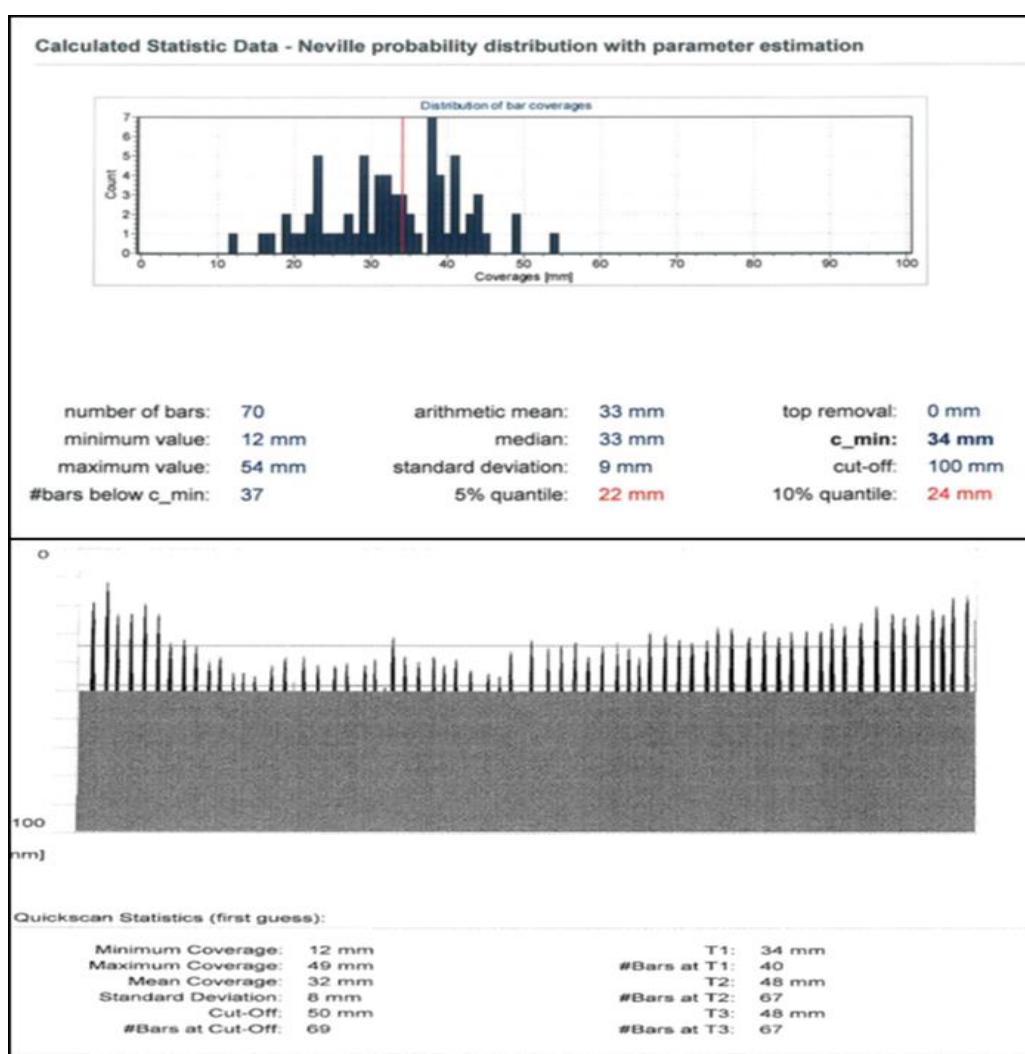


Figure B8119-1: Example of a Quick scan output

(b) Image/Block/Grid Scan Method

- (i) Readings are to be taken in both directions of a marked grid as per the equipment manufacturer's recommendations.

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- (ii) This method shall be used to determine the average cover to reinforcement when more than 10% of the Quick/Linear Scan results do not meet the specified lower limit for overall cover.
- (iii) For purposes of calculation of the averages for cover of a rebar layer, readings exceeding upper limit (cover + 15mm) to be capped on upper limit. Further specified cover to be reduced by 5mm (allowance for variation of equipment), before applying criteria as defined in Table B8212/2a.

e.g. If specified cover is 40mm, the lower limit for full acceptance is:

$$(40 \text{ mm} - 5 \text{ mm}) \times 85\% = 30 \text{ mm}.$$

An example of Image Scan information and presentation is shown in Figure B8119-2 below:

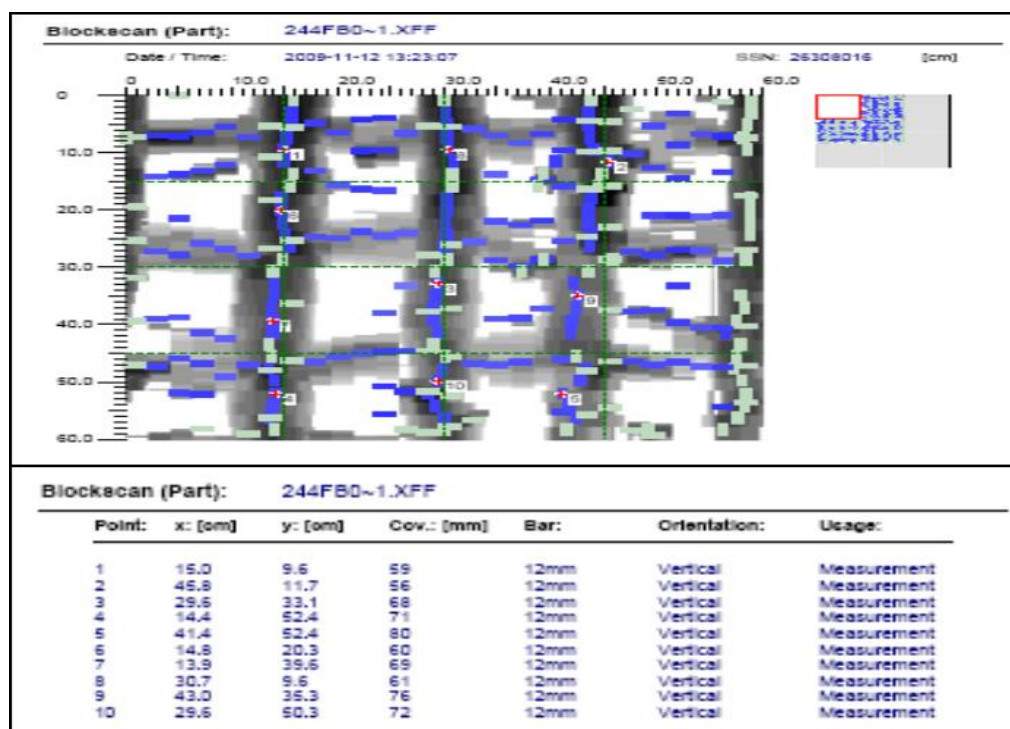


FIGURE B8119-2 : EXAMPLE OF A IMAGESCAN OUTPUT

If the equipment used is not able to provide the above presentation it has to be done manually by determining the grid of rebar, first and second layer closest to surface, and manually record readings in order to establish the depth of rebar, as shown in Figure B8119-3 below.

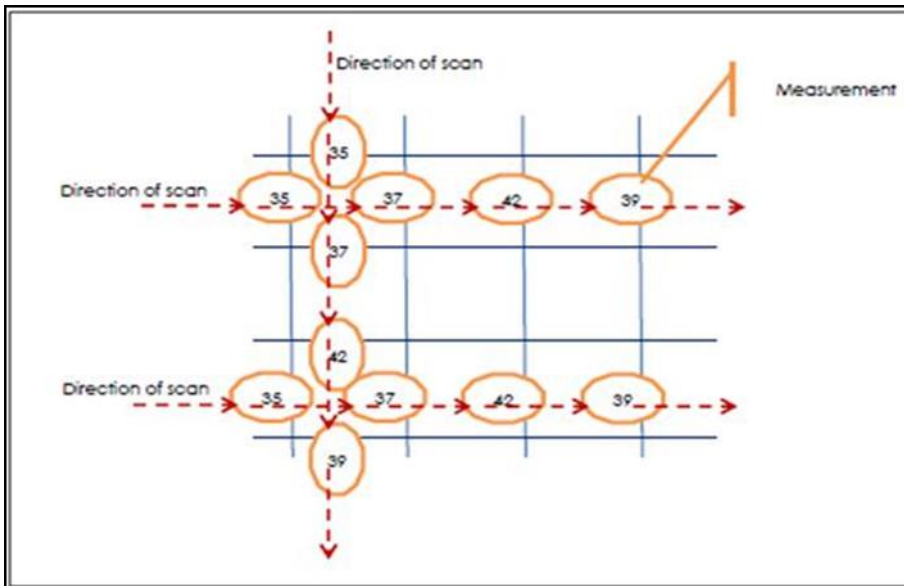


FIGURE B8119-3 : MANUAL RECORDING OF READINGS

B8200: QUALITY CONTROL**B8206 JUDGEMENT PLAN B**

Notes (Table 8206/3)

(1) Asphalt base or surfacing: Specification limits for-

(c) Voids*Delete and replace the contents of this subitem with the following:*

"L_s = specified values -1,0% points

L'_s = specified values +1,0% points"

*Add the following clause:***"B8212 DETERMINING BOTH REDUCED PAYMENTS FOR 'W' CLASS CONCRETE AND COVER METER TESTING**

Payments for all durability concrete prefixed 'W' shall be based on the test results of the compressive strengths and of the durability parameters, i.e. oxygen permeability (from test panels) and for both durability and non-durability class concrete, cover meter testing as indicated in Tables B8212/1 and B8212/2 a and b.

General note:

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The percentage payment shall be applied to a specific concrete member and shall apply to the relevant pay items of sections 6300 (based on concrete cover test) and 6400 (based on the worst results from the oxygen permeability and compressive strength tests).

TABLE B8212/1: TABLE OF REDUCED PAYMENTS FOR OXYGEN PERMEABILITY INDEX - 'W' CLASS CONCRETE

Description of test	Oxygen permeability index (log scale)	Percentage (%) payment
Full acceptance	See Table B6404/4 for limit	100%
Conditional acceptance (with reduced payment)	See Table B6404/4 for limit	80%
Rejection	See Table B6404/4 for limit	Not Applicable

TABLE B8212/2: TABLE OF REDUCED PAYMENTS FOR CONCRETE COVER

Concrete cover (mm)	% of specified cover	Percentage (%) payment
	Overall cover	
Full acceptance	$\geq 85\%$ $< (100\% + 15\text{mm})$	100%
Conditional acceptance (with reduced payment)	$< 85\% \geq 75\%$	85%
Conditional acceptance (with remedial measures as approved by the Engineer and reduced payment)	$< 75\% \geq 65\%$	70%
Non-conforming (non-conformance raised with remedial measures as approved by the Engineer)	$< 65\%$	Agreed by Engineer (Note: remedial measures at the contractor's costs should restore full payment)

The following notes shall apply to Table B8212/2:

1. Specified cover to be reduced by 5mm (allowance for variation of equipment) before applying criteria as defined in Table B8212/2, e.g. where specified cover = 40mm, test as 35mm, apply limits, $85\% \times 35 = 30\text{mm}$.
2. For cantilevers, the cover shall in no instance be greater than 10mm of the specified cover for the top reinforcement.
3. Percentage payment for concrete cover shall be based on the average number of cover meter tests performed on a particular concrete element.

In addition, the Employer's Agents shall confirm to the Employer whether substandard cover at a reduced payment shall be acceptable by agreement with the contractor."

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1.0 CONCRETE DURABILITY

(a) General

All structural concrete prefixed 'W' shall conform to the durability requirements specified under sub-clause B6404(h) of the Project Specifications. Durability is influenced by the materials used in the concrete, their mix proportions, transporting, placing, compacting and, in particular, curing of the finished cover concrete (concrete layer between the outermost layer of steel reinforcement and the exposed outer surface of the concrete element). The tests required to prove durability performance of the placed concrete are given under sub-clause B8106. The numbers of panels and tests are shown in Tables 1 and 2 below and are the minimum requirement that the Employer's Agent considers necessary to achieve the desired quality of concrete.

It is the Employer's Agent responsibility to approve the component materials and their mix properties. However it is the contractor's responsibility to design and blend them and in so doing produce concrete of the specified quality.

(b) Concrete mix design

Good mix design practice is essential and the following criteria ought to be taken into consideration when pricing:

- (i) Selection of sands and aggregates to achieve a good grading is important if the correct concrete density is to be achieved.
- (ii) The use of the correct cement grade and type for the environmental conditions (and not based solely on costs) is fundamental
- (iii) Selection of the correct cement extenders and admixtures are also fundamental to appropriate mix designs.
- (iv) Water: cement ratios are critical, dictating both the structural strength and the durability requirements. Mix proportions for the concrete to be used on site need to be determined by an approved laboratory. Cylindrical specimens, 70 ± 2 mm in diameter must be made or cored from a laboratory trial mix for performance of tests B8106(g)(i), (ii) and (iii) (if required).

It will be necessary for the contractor to establish a target mean strength with a margin above the minimum requirement so that small fluctuations due to material changes or workmanship can be accommodated.

(c) Site testing

To ensure that the concrete has been placed, compacted and cured correctly, a number of tests shall be carried out on the trial and test panels as well as on the tops of decks and precast panels by an approved laboratory.

For this contract the following number of test / trial panels and testing are envisaged:

TABLE 1: MINIMUM NUMBER OF TRIAL / TEST PANELS REQUIRED

Panel Type	No. Vertical Cast	No. Horizontally cast	Total No.
Trial Panel	1	2	3
Test Panel			
Substructures	3	=	3
Culverts	128	=	128
Retaining walls	-	=	-
Bases	31	=	31
Decks	4	=	5
Parapets	6	=	6
Precast Beams	-	=	-

TABLE 2: MINIMUM NUMBER OF CORE RESULTS REQUIRED

Element	No. of Cores
Substructures	18
Culverts	768
Retaining walls	0
Bases	186
Decks	24
Parapets	36
Pre-Cast Beams	-

(d) Non-compliance with specified criteria

The contractor should also note that there is specific provision made for curing of concrete under payment item B64.07 of the project specification. The amounts priced under this item will be subject to reduced payments should the durability tests indicated under B8106(g) fail to meet the required targets. Similarly, failure to achieve the required durability test results will be sufficient cause to apply partial payment factors for all the payitems of the elements of the structure under section 6300 and 6400 of the standard and project specifications or in some cases the removal of the concrete rejected.

B1. STANDARD AMENDMENTS TO THE STANDARD SPECIFICATIONS PROJECT SPECIFICATIONS**PART B : MATTERS RELATING TO THE STANDARD SPECIFICATIONS****B.2. PROJECT SPECIFICATIONS RELATING TO THE STANDARD SPECIFICATIONS AND OTHER ADDITIONAL SPECIFICATIONS**

In certain clauses in the Standard Specifications, allowance is made for 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 required for this 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.

New clauses and payment items not covered by clauses or items in the Standard Specifications have been included here and have also been designated the prefix "B". Such clauses and items have been given a new number following the last number used in the particular section of the Standard Specifications referred to.

STATUS

The Project Specification shall govern and take preference in cases of misunderstanding, in interpretation of, or in conflict with the Standardised Specifications of Drawings.

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

THE UPGRADING TO A SURFACE STANDARD ROAD DR08034 - N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

PART C3 : SCOPE OF WORK

SECTION C : OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS

**SCMU10-23/24-0001:
APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034
FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034
FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

PART C3 : SCOPE OF WORK

SECTION C : OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS

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ANNEXURE H NON CONFORMANCE CLOSEOUT REPORT DEFINED.	C3.ERROR! BOOKMARK NOT DEFINED.
ANNEXURE I EXAMPLE OF MEDICAL CERTIFICATE OF FITNESS DEFINED.	C3.ERROR! BOOKMARK NOT DEFINED.

C1 INTRODUCTION**C1.1 List of Abbreviations**

CHSA	: Construction Health and Safety Agent
CHSO	: Construction Health and Safety Officer
DoT	: Department of Transport of the Eastern Cape Provincial Government
DME	: Department of Mineral and Energy
DMR	: Department of Mineral Resources
DoL	: Department of Labour
DSTI's	: Daily Safe Task Instructions
EA	: Employers Agent
EAR	: Employers Agents Representative
EEA	: Employers Environmental Agent
FEMA	: Federated Employers Mutual Association
H&S	: Health and Safety
HIRA	: Hazard Identification Risk Assessment
MH&SA	: Mine Health and Safety Act No. 29 of 1996 (as amended)
OHS	: Occupational Health and Safety
OHSA	: Occupational Health and Safety Act No. 85 of 1993 (as amended)
PSHSS	: Project Specific Health and Safety Specification
PC	: Principal Contractor
PPC	: Personal Protective Clothing
PPE	: Personal Protective Equipment
SANS	: South African National Standards (Authority)
SMME	: Small, Micro, Medium Enterprise
SoP's	: Safe Operating Procedures
SWP	: Safe Work Procedure
TMS	: Technical Method Statement
WCC	: Workman's Compensation Commissioner

C1.2 Definitions

The definitions used will be those set out in the Regulation Gazette No 37305 of 7th February 2014 with the following additions or amendments;

Client:	Hereafter referred to as the Employer in terms of the Contract.
Employers Agent:	Means a competent person appointed by the Client to design, supervise and monitor construction on their behalf.
Hazard Identification and Risk Assessment (HIRA) and Risk Control:	Means a documented plan, which identifies hazards, assesses the risks and details the control measures and safe working procedures which are to be used to mitigate and control the occurrence of hazards and risks during construction or operational phases.
Induction Training:	Means once off introductory training on general health and safety issues given to all employees and visitors to the site before commencement of work on site.
Mine:	Any excavation from which material (soil, gravel, stone etc.) is taken for use on the construction site.
Site:	Means the area in the possession of the Principal Contractor for the construction of the works. Where there is no demarcated boundary it will include all adjacent

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areas and haul roads which are reasonably required for the activities for the Principal Contractor, and approved for such use by the Employer's Agent.

The Act: Means, unless the context indicates otherwise, the Occupational Health and Safety Act, No. 85 of 1993 and Regulations promulgated thereunder, as amended.

Health and Safety Plan: The Pre-Construction Health and Safety Plan is the foundation upon which the health and safety management of the construction phase of a project needs to be based.

C1.3 Key Role-Players

Client	ECDOT represented by the Head of Department and/or such other person or persons, authorised thereto in writing.
Designer / Employer's Agent	As appointed in terms of the Contract. The Designer/Employer's Agent as referred to in CR6 is hereafter referred to as the Employers Agent.
CHS Agent	As appointed by the Employer in terms of CR5.2(5) of the OHS Act
Principal Contractor	As appointed in terms of CR5.1(k) of the OHS Act.
Contractor	A Contractor appointed by the Principal Contractor in terms of CR7.1(c)(v) of the OHS Act.

C1.4 Key References

Occupational Health and Safety Act No. 85 of 1993 and Regulations (as amended)
 Mine Health and Safety Act and Regulations No. 29 of 1996 (as amended)
 Compensation for Injury and Occupational Diseases Act No. 100 of 1993 (as amended)
 Committee of Land Transport Officials (COLTO) South African Roads Specifications for Road and Bridge Construction
 South African National Standards
 General Conditions of Contract 2015 (GCC) Edition 3
 Traffic Safety Manual (SARTSM) Chapter 13, Volume 2 of 1999
 Road Traffic Act No. 93 of 1996 (as amended)
 Covid 19 Occupational Health and Safety Measures in Workplaces (Covid-19 C19 OHS), 2020

C2 PURPOSE OF THIS PROJECT SPECIFIC HEALTH AND SAFETY SPECIFICATION (PSHSS)

This PSHSS highlights the aspects to be implemented over and above the minimum requirements of current legislation. Requirements may be changed should new risks or issues be identified that could not have been foreseen during the design phase of the project. The Principal Contractor will be required to include Covid 19 health and safety measures in the construction health and safety plan.

C2.1 Preamble

The Department of Transport (ECDOT) is tasked to provide infrastructure within the Eastern Cape including the construction of roads and civil structures.

Each year fatalities and serious injuries mar the reputation of the Construction Industry. The ECDOT has a responsibility to limit such injuries by ensuring a zero tolerance approach to Contractors and those affiliated to a particular project. Thus a high premium is placed on the Health and Safety ECDOT stakeholders, which include its employees, professional service providers, public and its physical assets. The responsibilities that the ECDOT and relevant stakeholders have toward its employees are captured in this document. The responsibilities stem from both moral, civil and a variety of legal obligations.

The Principal Contractor is to take due cognisance of the above statement.

This PSHSS is a performance specification to ensure that the ECDOT and any bodies that enter into formal agreements with the ECDOT, i.e. Employer's Agents, Principal Contractors (PC) and Contractors, achieve an acceptable level of OHS compliance.

No advice, approval of any document required by this PSHSS (i.e. hazard identification and risk assessment, action plans) or any other form of communication from the Client shall be construed as an acceptance by the Client. Nor shall such communication relieve or absolve the PC from any obligation or from achieving compliance with legal requirements. The PC remains responsible for achieving the required performance levels.

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C3 IMPLEMENTATION OF THE PROJECT SPECIFIC HEALTH AND SAFETY SPECIFICATION (PSHSS)

This PSHSS forms an integral part of the Contract, and the Principal Contractor is required to make it an integral part of their Contracts with Contractors and Suppliers. A PSHSS is to be available for each level of Contract and Contractor, and must be complied with.

This PSHSS must be read in conjunction with the OHSA, its Regulations (as amended) and any other standards relating to work being done, and ensure compliance thereto. The information relative to the scope of the project, the works etc. is detailed in the tender document, and is to be taken into account when developing the H&S Plan and associated documentation.

The Employers baseline design risk assessment is included, as is a summary of risks identified. Refer to Annexure J in these specifications

C3.1 Summary of Risks Identified During Design

- (a) General Requirements and Provisions (Series 1000)
- (b) Drainage (Series 2000)
- (c) Earthworks (Series 3000)
- (d) Asphalt Pavements and Seals (Series 4000)
- (e) Ancillary Roadwork's (Series 5000)
- (f) Structures (Series 6000)
- (g) Sundry Structures (Series 7000)
- (h) Sundries (Series 8000)
- (i) Specified Hazardous Chemical Substances

Should there be design changes, or change in the scope of works, an amended PSHSS may be issued. Where amended PSHSSs are issued, the PC will be required to ensure a resubmission of an amended H&S Plan and OHS BoQ for approval. Further to this, the PC must ensure that a similar system must be implemented between all their Contractors and Suppliers.

C4 REQUIREMENTS AT TENDER STAGE

C4.1 Documentation required from the Tenderer;

- (a) Declaration – Fulfilment of the Construction Regulations 7th February 2014 and any subsequent additions
- (b) OHS BoQ - Adequate pricing for Occupational Health and Safety is required, and the appropriate section in the BoQ is to be completed.
- (c) OHS BoQ – Pricing should include also include Covid 19 compliance (Awareness, Screening, Sanitisers, PPE, etc.) as gazetted on the Covid 19 Occupational Health and Safety Measures in Work Places Covid-19 (C19 OHS) No.43257 of 29 April 2020

These documents can be found in the Tender Document and are to be completed by the tenderer where applicable. These documents shall be deemed to form part of the returnable Contract Documents.

C5 REQUIREMENTS PRE-COMMENCEMENT OF WORKS

C5.1 Documentation required from the Principal Contractor;

- (a) The successful tenderer must provide a Project Specific Health and Safety Plan which includes Covid 19 health and safety specifications within 14 days of the award of the tender. Refer to "Annexure A" in these specifications.
- (b) Mandatory Agreement "SECTION 37.2"

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C5.2 Documentation required from the Employers Agent;

- (a) Construction Specification and Scope of Works
- (b) Contract Construction Drawings
- (c) Geotechnical Reports

C5.3 Documentation required by the Employer or his/her appointed CHSA;

- (a) Letter of Approval of the PC's OHS Plan.
- (b) Application for a Permit to do "CONSTRUCTION WORK ANNEXURE 1"

The application will not be submitted until the PC's OHS Plan has been approved by the Client/CHSA and the Annexure 1 – Application for a Permit to do Construction Work being correctly completed by the Client/CHSA and the PC.

The Client or his/her appointed CHSA shall submit all the relevant documentation to the Provincial Director of the Department of Labour (DoL) once the OHS Plan has been approved, with the form as in Annexure 1 of the Construction Regulations-2014.

The following needs to be submitted with the Annexure 1 (but not limited to):

- (a) Baseline risk assessment
- (a) H&S Specification
- (b) Approved H&S Plan
- (c) Appointment letter for the Contracts manager and Construction health and safety officer together with certified copies of the identity document and training certificates.
- (d) Registration certificate of the CHSO from the SACPCMP
- (e) Letter of award from the Client
- (f) Approved drawings
- (g) Appointment letter as per CR 5(1) (k)

The site-specific Construction Work Permit Number must be displayed conspicuously at the main entrance to the site on its own. The size of the permit board should be clearly visible from a distance of 20 meters the site-specific number is not transferable.

The Principal Contractor must keep a copy of the construction work permit in the health and safety file. Should any changes be made to the Contracts manager and Construction health and safety officer as per the submitted construction work permit, the Principal Contractor must provide the replacement persons documentation for approval to the CHSA.

C6 REQUIREMENTS FOR COMMENCEMENT OF THE WORKS

No work may commence until the following has been complied with;

- (a) Work Permit issued by the Department of Labour to the Employer/CHSA
- (b) An acknowledgement letter must be signed by the Principal Contractor on receipt of Construction Work Permit from the Employer/ CHSA
- (c) Covid 19 awareness and action plan [Government Notice No 43257 – 29 April 2020]

C7 REQUIREMENTS DURING THE CONSTRUCTION STAGE

C7.1 Requirements from the Principal Contractor

- (a) Compilation and continuous updating of the H&S Plan. Refer to "Annexure B" in these specifications

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- (b) Action plans as well as close out reports for all non-conformances issued by the Employer, his/her Agent, CHSA or any other parties who have the necessary powers to conduct legal inspections on the construction site
- (c) Construction Appointments. Refer to "Annexure C" in these specifications.

C7.2 Requirements from the Employer/CHSA

- (a) Conduct at least a monthly or more frequently if deemed necessary OHS Compliance Audit of the PC's H&S File as well as the Works
- (b) All activities on the site and all appropriate documentation will be monitored and reported on to the Client, Employer's Agent and PC.
- (c) Discuss all findings of an audit with the PC and/or his/her representative
- (d) Submit an audit report with findings within seven (7) days of the actual audit taking place
- (e) Issue the PC with a non-conformance report within seven (7) days for action by the PC
- (f) Non conformance close out to be completed within 3 days of issue of audit report.
- (g) Penalties or work stoppage instructions will be issued where appropriate.
- (h) Communication between the CHSA and the PC will be through the Employers Agent.

C8 APPOINTMENTS

C8.1 Appointment of Competent Site Personnel

The CEO (OHSA S16.1) of the PC will take overall responsibility for the appointment of competent site personnel for the duration of the contract. Should the CEO not be personally involved in the project, the H&S responsibilities are to be delegated to the Contracts Manager (OHSA 16.2. and CR8.1)

In terms of the OHSA the PC is required to make the following minimum appointments for the duration of the Contract (or part thereof).

C8.1.1 Contracts Manager (CR8.1)

- (a) Appointment of the Contracts Manager (CR8.1) is subject to approval by the Employer in terms of the Contract Data
- (b) In the absence of the CR8(1) an alternate manager suitably qualified shall be appointed to manage the site.

C8.1.2 Construction Managers (CR8.2)

Appointment of the Construction Manager(s) (CR8.2) is subject to the size and complexity of the Contract as determined by the PC.

C8.1.3 Construction Work Supervisors (CR8.7)

Appointment of construction work supervisors shall be concluded by the contracts manager for construction activities.

C8.1.4 Construction Health and Safety Officer (CR8.5)

PC's H&S obligations

For this Contract it is a requirement that the PC appoint at least one (1) approved full-time CHSO to manage the on site OHS for the duration of the Contract.

The above CHSO's will report directly to the Contracts Manager and The PC's Construction Health and Safety Manager.(if applicable)

SMME Contractor(s) H&S obligations

Furthermore to the above the PC is required to appoint an additional at least one (1) approved full-time CHSO to manage the appointed SMME work packages on site for the duration of the works.

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Please note that the full time CHSO appointed to manage the H&S obligations of the SMME Contractor(s) shall be assisted by Health and Safety Representatives (as referred to in "Clause C8.2.2" of this specification) as appointed by the SMME Contractor(s).
The SMME CHSO will report directly to the PC CHSO.

CHSO's CV's , qualifications and SACPCMP registration certificates are to be submitted to the Employer's Agent and CHSA for approval.

Candidate Construction Health and Safety Officers will not be accepted.

Approval of the CHSO's is subject to the following minimum requirements:

- (a) Professionally registered with the South African Council for the Project and Construction Management Professions (SACPCMP) at a minimum as a Professional Construction Health and Safety Officer (Pr CHSO).
- (b) Accredited Qualifications regarding the Occupational Health and Safety Act Procedures and Regulations.
- (c) Valid South African driver's license
- (d) Minimum two (2) years' experience related to Health and Safety on road construction projects.

The PC is required to provide each of the approved CHSO's with the following minimum resources:

- (a) Suitable dedicated construction vehicle
- (b) Mobile phone and airtime
- (c) Computer with internet access and printer
- (d) Camera with; Time, Date and GPS stamp facilities
- (e) Vehicle dash camera for daily site video recording. (Allow for digital storage capacity)
- (f) Two way radios for communication
- (g) Any other equipment or facilities to enable him/her to carry out their duties effectively

Restrictions applicable to the approved CHSO's:

- (a) May not be appointed or be responsible for any other work activity on site.
- (b) May not be appointed as the Traffic Safety Officer in terms Clause B1502 (i), Section B, Part 3 of 4 of the Contract.

In the case of a contract where Contractors are employed, the CHSO must have the competence to evaluate the Contractors Health and Safety Plans.

The Contracts Manager assisted by the CHSO's will be held responsible for all H&S on the project. Senior Site Staff, Supervisors and Contractors are to follow systems, instructions etc. given by the CHSO at all times. No new workers or Contractors may commence work without the required site inductions and approval of the H&S Plan as submitted by Contractors.

The CHSO will be responsible for ensuring that daily Traffic Management is adequately managed for the entire construction site.

A monthly report compiled by the CHSO of all H&S activities and incidents is required by the end of the first week of each month, or at a date agreed to by the CHSA and the CHSO. Refer to "Annexure G" in these specifications.

The CHSO will be responsible for collating the H&S documentation (electronically) at the close out of the project. A list of the typical aspects are included in these specifications. Refer to "Annexure D" in these specifications.

C8.2 Health and Safety Representatives and Committee (OHS Act 17 & 19)

- C8.2.1 H&S Representatives are to be appointed following the start-up of the project, to be made up from both Principal Contractor, Contractors and Local Labour. Representatives from local labour can be appointed to represent such labour for the duration of the contract. Local labour should not be responsible for H&S duties unless appropriate training has been provided and the CHSO deems such labour competent to do

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so. Development in H&S of such labour would be an advantage to the community and the PC. H&S Representatives are to be actively involved with H&S and serve on the H&S Committee.

The CHSO shall ensure that there is a H&S Committee made up of active site staff and H&S Representatives, representing each work area, including all Contractors. Meetings will be held at least monthly, and more frequently if so instructed. Key site staff is to be appointed. Issues arising from the CHSA audits are to be discussed, as well as all H&S related issues.

Minutes are to be distributed and discussed among all workers and Contractors and records kept thereof. H&S Committee Meetings are to be held in the first week of each month

C8.2.2 The Health and safety Representatives as appointed by the SMME Contractors will also be required to train Safety Representatives for their respective works packages in the following fields to assist the CHSO appointed to manage the H&S for the SMME's

- (a) Safety Representative
- (b) HIRA
- (c) Incident Investigation
- (d) Level One First Aid
- (e) Basic Fire Fighting

C8.3 Appointment of Competent Contractors (CR7.3)

C8.3.1 The Principal Contractor is to ensure compliance with the Clients minimum standards and all legislative requirements. The same H&S standards required of the PC are to be applied to all Contractors. A register of all Contractors and Suppliers is to be on file and kept updated at all times. The PC is to ensure there is sufficient funding for H&S compliance by each Contractor.

The following minimum aspects are applicable to any Contractor appointed:

- (a) The CHSO is to ensure a Contractors appointment and approval of H&S
- (b) documentation at least seven (7) working days prior to commencing work.
- (c) No Contractor may work under the PCs Compensation Registration Number. If required the PC may assist SMMEs with their registration with the Compensation Commissioner. However, such Contractors will not be able to commence work until proof of registration or Letter of Good Standing has been received.
- (d) No work may commence without the following documentation in place:
- (e) The Contractor is to have an appointment letter
- (f) Mandatory (37.2) agreements between parties in place.
- (g) Valid letters of Good Standing or proof of application (not older than 3 months)
- (h) OHS Plan Approval Letter issued by the PC

C8.3.2 The following aspects are applicable to Suppliers or short-term works (surveying, repairs, servicing, deliveries etc.). Cognisance is to be taken of the level of risk involved and the CHSO is to ensure the level of H&S documentation is appropriate:

- (a) Mandatory Agreements in place
- (b) Letter of Good Standing
- (c) TMS and Risk Assessments
- (d) Competencies for drivers and operators of delivery vehicles

C9 GENERAL RISK MANAGEMENT

C9.1 Health Risks and Medical Surveillance

A Contractor must ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed as per Annexure I and issued by an Occupational Health Practitioner CR7.8.

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Medical surveillance will commence at pre-employment. All workers (including Professional Team, Principal Contractor and Contractors) are required to be in possession of a medical certificate of fitness prior to commencing work. Annual medical surveillance is required (unless identified as being required more frequently), as well as an exit medical.

Given the potential health risks the following aspects are to be included in each medical surveillance intervention:

- (a) Full medical, surgical and occupational history;
- (b) Full physical examination of all systems, and
- (c) Referral if required for the management of identified health issues that may affect the worker.

Specific testing for existing conditions and limitations relative to exposure could include, but are not limited to:

- (a) Audiometry (hearing tests);
- (b) Spirometry (lung function testing);
- (c) Chest X-rays;
- (d) Liver function testing (volatiles), and
- (e) Any other tests identified as relevant

C9.1.1 Noise Risks

All plant and equipment is to be measured for noise levels as soon as the majority of plant is on site (including Contractors construction plant and equipment).

The CHSO shall provide a list of all plant on site with their individual noise levels as assessed. Findings are to be discussed at the H&S Committee and H&S Representatives and Supervisors are to ensure that noise zones are identified and wearing of the appropriate PPE is enforced.

C9.1.2 General Environmental Conditions

Any spillages of substances which could be toxic to persons must be dealt with adequately. The PC must include his spillage procedure in the OHS Plan in the OHS File.

C9.2 Emergency Procedures

Attention to emergency planning and procedures is very important. The full emergency plan must form part of the supporting documentation with the H&S Plan. The CHSA approval of all emergency plans and procedures is required prior to commencement on site. It is advised that the system should be simple and easy for any worker to follow. The plan must be updated should new information or risks be identified.

First aiders shall be available in each working team, and be able to work as a team when responding to any emergency on the project.

The procedure shall detail the response plan in relation to the works, and include at least (but are not limited to) the following key elements:

- (a) Appointment of a competent emergency response co-ordinator and wardens;
- (b) Lists of first aiders, and
- (c) Requirement in terms of identified risks:
- (d) Fire;
- (e) Explosions;
- (f) Falls from heights, and
- (g) Motor vehicle accidents.

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The emergency plan is to ensure the inclusion of relevant local service providers. Such arrangements should be made with these persons prior to the commencement of the project. Local emergency telephone numbers must be displayed and made part of the emergency procedure.

C9.2.1 First Aiders and First Aid Equipment

Competent, trained First Aiders are to be formally appointed for the project. If the project is in a remote area, at least 3 workers are to be trained to Level 3. In urban areas and close to medical assistance 2 Level 3 first aiders are required. First aiders are to be available at all times and be able to cover each working team. Further first aiders from the community or SMMEs, if not already accredited, are to be sent for SAQA accredited first aid training. Contractors are expected to ensure compliance and manage their own first aiders and equipment.

The PC shall provide an on-site First Aid Station with first aid facilities, including first aid boxes containing, at least the requirements to manage the type of emergencies identified. All Supervisors are to carry a Regulation 3 first aid kit in their vehicles at all times.

C9.2.2 Fires and Emergency Management

The PC shall ensure that any fire risks will be managed appropriately. Trained fire fighters shall be appointed at offices or areas where fire risks are deemed high. The emergency plan shall include the risk of fire at site camps, on site and related to any specific activities.

Fire extinguishers are to be appropriate for the risk and in sufficient numbers to deal with the type of fires that could occur. Every item of heavy plant, e.g. Graders, TLBs, Rollers etc., must be fitted with at least a 4.5Kg DCP fire extinguisher.

C9.2.3 Incident Management and Compensation Claims

The PC will ensure there is a management system to investigate all incidents. All serious incidents involving any form of disabling injury or fatality are to be reported to the Employer's Agent and CHSA telephonically immediately. This shall be confirmed in writing as soon as possible after the incident. Full details are to be included in the H&S meetings, and each site meeting. The details are also to be included in the CHSO monthly report.

C9.3 Personal Protective Equipment (PPE) and Clothing (PPC)

The wearing of the identified SANS approved PPE and PPC at all times is non-negotiable. The PC shall ensure that all workers (Including Contractors and other PCs) are issued with and shall wear PPE/PPC as per the OHS BoQ.

Adequate quantities of PPE shall be kept on site at all times. This shall include necessary PPE for visitors.

C9.4 Occupational Health and Safety Signage

On-site H&S signage is required. Signage shall be posted up at the appropriate fixed or temporary working areas, on scaffolding, and other potential risk areas/operations including vehicles. These signs shall be in accordance with the requirements of the General Safety Regulations or SANS requirements as amended. Signage is to be noted on the site drawings indicating where fixed signage is required.

Signage is to include (but not be limited to) the following:

- (a) 'no unauthorised entry';
- (b) 'report to site office';
- (c) 'site office';
- (d) 'beware of overhead work';
- (e) 'hard hat area' or other PPE / PPC requirements noted;
- (f) First aid box positions (including vehicles), and
- (g) Fire extinguishers

Signs shall be posted permanently or temporarily at areas of work onsite indicating that a construction site is being entered and that persons should take note of safety requirements.

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The Contractor shall establish a system for controlling and recording entrance to the Site Office and camp area, which shall include a visitors site induction

C9.5 Induction of Employees and Visitors, General H&S Training

A formal induction programme is to be submitted as an addendum for approval with the H&S plan. Inductions must be carried out for all workers and visitors to the site. Pre-task training is required to ensure workers are familiar with the risks and H&S measures of the work or tasks to be done. Such training is to be done at least daily. Records of inductions and pre-task training are to be kept in the H&S file.

Any person found on site without proof of induction will be removed from site until the proof of their induction is supplied.

C9.6 Testing Laboratory and the use of Radioactive Equipment

A joint laboratory may be required, or a service provider will be appointed for the project. The service provider will be seen as a Contractor, or where appointed as a joint laboratory, as a PC. All the H&S rules and requirements are to be met. Where appointed as a PC, the CHSA will be responsible for approving the initial H&S plan and ensuring on-going compliance. All other requirements of the construction PC are to be met. Each PC is to be familiar with the H&S rules of each party. Mandatory Agreements, Inductions and Emergency requirements among other are to be addressed and managed to ensure limitation of H&S risks.

The use of radioactive equipment for the measuring of compaction parameters shall conform to the requirements of the "Code of Practice for the safe use of soil moisture and density gauges containing radioactive sources" as published by the Department of Health: Directorate: Radiation Control Soil revised September 2001. TMS, risk assessments and the appropriate training will be required.

C9.7 Use of Support Work, Scaffolding and other Temporary Works

Where temporary works are envisaged on the project, these must be properly designed and signed off by a competent person. In these instances a competent person is defined as a Professional Employer's Agent (registered with ECSA) who has sufficient experience in the design of the type of temporary work in question to be able to assess the design. The appropriate competent persons are to be appointed to manage and monitor such works to the satisfaction of the Employer's Agent. Where the scaffolding, and /or support work is to be supplied and designed by a specialist company, care must be taken to comply with all the requirements of the supplier. Records and registers are to be properly completed and kept in the H&S file.

All formwork must be designed and approved by a competent person.

C9.8 Quarries, Borrow Pits, Crushers, Blasting and Batch Plants

It must be noted that the use of quarries and borrow pits falls under the Mine Health and Safety Act 29 of 1966 and its Regulations. Work in these areas must comply with these requirements and separate appointments and CoP's will be required.

Where single or multistage crushers are established on site, for quarries or borrow pits, the requirements of the MH&SA as well as the OH&SA and Regulations shall apply.

The Department of Mineral Resources (DMR), as well as the CHSA will carry out audits on this aspect of the project. Non-conformances raised by either party will require closeout within specified time periods negotiated at the time.

All blasting must comply with the Explosives Act No. 15 of 2003 and the OHSA and MH&SA or other legislation as applicable.

Blasting activities will only be allowed to take place from Tuesday's to Thursdays between the hours of 09:00 and 15:00. These times are to include the actual blast as well as clean-up of material.

If any blasting activities are to take place within 500m of any Eskom installation, including sub-stations and power lines. The Principal Contractor will be required to notify the local Eskom Depot Manager in writing seven (7) days before the blasting is to take place. This is due to Eskom having their own regulations regarding blasting in the vicinity of their installations

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TMS and Risk Assessments will be required before blasting will be permitted. The Employer's Agent and CHSA will be required to approve the arrangements. Should a blasting Contractor be used, the requirements relating to the management of Contractors shall apply. A Blasting Application is attached, refer to "Annexure F" in these specifications.

C9.9 Management of Plant and Equipment

A substantial amount of large plant and equipment will be used. Close control of the PCs plant and equipment is required, including that of Contractors.

Daily monitoring of all plant and equipment is required prior to commencing work. Full lists of hired and own plant are to be available during the CHSA's audit. Copies of all daily inspection records are to be retained in the H&S file. Registers are not to be more than 1 week behind. Plant Hire or Haulage Contractors are to comply with the requirements, and comply with all H&S standards for the project. All supervisory vehicles and construction plant are to be fitted with beacon/s capable of emitting an intermittently-flashing amber light in any direction.

All operators on site are to be competent and medically fit.

The following documentation is to be supplied for each operator on site:

- (a) Valid medical certificate issued by an OH Practitioner and Annexure 3
- (b) Valid driver's licence
- (c) Applicable PrDP for vehicle or plant
- (d) Appointment letter
- (e) Competency certificate for the specific vehicle or plant to be operated

Movement of plant in closures and in confined working areas is to be closely monitored and managed by the CHSO and CTSO and Supervisors. The blind spots of plant are to be taken into account and workers and Contractors protected accordingly.

C9.10 Excavations

Steep slopes require careful management. A Geotechnical report is available and is to be utilised to assess ground conditions. Shoring may be required, where indicated in the Geotechnical report or by the Employer's Agent. The PC is to ensure that the Community Liaison Officer (CLO) and the local community, schools and general public are aware of the dangers of open excavations.

All excavations are to be securely barricaded at all times. Only barrier netting will be allowed. Initial barricading will be the responsibility of the Excavation Inspector. Once the excavations have been barricaded this information will be submitted to the CHSO for continuous monitoring. Continuous monitoring of all barricading around excavations will be the responsibility of the Excavations Inspector CM, CHSO and CTSO.

C9.11 Inclement Weather

High levels of humidity and temperatures during the summer months may be experienced. Workers are at greater risk of heat exhaustion where the discomfort index rises above 100. A weather station has been allowed for to monitor temperature and humidity specifically. Should the discomfort index rise above 105, work may be partially or totally stopped.

During winter in areas known for cold weather, notice must be taken of the wind-chill factor. Workers must be supplied with adequate protective clothing and shelters provided as necessary.

Flooding may occur during the rainy season. High winds may be experienced and to limit dust or danger when working at heights, a wind speed should be set at which work may be stopped or the workers in an affected area moved.

The emergency plan is to include how these and other weather extremes identified are to be managed. The general aspects as detailed in the Environmental Regulations will be applied.

All decisions regarding work stoppage will be decided between the PC, the CHSO and the Employer's Agent.

C9.12 Internal Auditing

The PC will ensure that all their Contractors are internally audited by the CHSO at least monthly prior to the CHSA monthly audit by the CHSO and these audit reports are to be available for perusal by the CHSA during the audit.

The PC audits may be done more frequently where short term contracts are in place, or deemed high risk. Audit results will be acted upon and non-conformances and penalties issued. The Client, Employer's Agent or CHSA may act or require further outcomes if non-compliances are noted or unsafe acts are noted on site. Internal audits are to include site conditions as well as ensuring H&S files are appropriate, and compliant.

C9.13 Communication on Site

All communication on site will be done through the Employer's Agent to the PC and be in writing, including the issue and responses to non-conformances and H&S audit results.

C9.14 Care of Workers on Site (Welfare)

Toilets for each sex where applicable, will be within reasonable distance of workers, or placed with each working team in safety, with reasonable privacy. Only bacterial or enzyme based products may be used in portable toilets; the use of products containing Formaldehyde is not allowed. The ratio of portable toilets on site will be a minimum of 1:30. Daily cleaning and increased removal of waste may be required if deemed necessary. Proof of safe disposal of waste will be required. Waste Removal Contractors or the PC are to ensure the appropriate H&S systems are available to limit exposure to sewage.

Hand washing facilities will be provided. The Environmental and Facilities Regulations will be adhered to at all times.

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C9.15 Discipline, Alcohol and Substance Abuse

All employees (management included) are to follow instructions given in the interest of H&S. Disciplinary action is to be imposed on those who do not follow such instructions or company rules or policies.

No person is allowed to work or access site if under the influence of alcohol or other substances that could impact on their own or others safety. The PC is to have a drug and alcohol policy available to manage such instances.

C9.16 Electrical Equipment

In addition to the requirements of the Electrical Machinery Regulations and the General Machinery Regulations any electrical distribution board used for construction work shall be fitted with suitable earth leakage protection. Leads must be properly and firmly connected, they should be so placed as to avoid damage especially if they cross portions of the site. Plugs and sockets shall be in good and safe condition.

All electrical apparatus, other than electrical hand tools, shall have a physical "lock out" system which will prevent any operation other than that authorized by a supervisor. A "lock out" sign shall be displayed when the apparatus is not in use.

TMS and Safe Work Procedures will be required for all work involving electrical apparatus.

The relevant certificate of compliance (COC) must be issued for the site camp and any other establishment with regards to the project.

C9.17 Traffic Accommodation

Traffic accommodation is covered under section 1500 of the COLTO specifications which form part of this contract and as amended by the requirements listed in the Amendments to the Standard Specification.

Traffic accommodation drawings will be according to SARTSM Chapter 13 Volume 2, and any changes suggested or required are to be discussed with the Employer's Agent.

Speed controls must be clearly stipulated and managed.

Speed limits must be strictly adhered to by all construction traffic. Unreasonable limits may be revised by the Employer's Agent and/or CHSA. Additional care must be taken where workers and construction traffic interface. This should be in the form of trained competent flag persons to direct vehicular traffic and adequate signage as directed by the Employer's Agent.

C9.18 Transportation of Workers to and on Site

Transportation of workers shall comply with the relevant legislative requirements. Vehicles used to transport workers to, from, or on site, shall have secure seats with seat belts and be covered. No equipment or materials shall be transported in the same vehicle at the same time as workers.

The CTO's and their teams are to have vehicles which are designed to safely transport employees as well as equipment at the same time. Preferably crew cab type vehicles.

Tenderers must indicate in their OHS Plans what type of transport is envisaged for the general employees and how this will be managed.

C10 HEALTH AND SAFETY FILE CLOSEOUT AT THE END OF THE PROJECT

The H&S File shall be closed out following the hand-over of the project.

For closeout requirements refer to "Annexure D" in these specifications.

C11 NON-CONFORMANCES

Should, at any time, the works, or part of the works, be stopped due to unsafe acts or non-compliance with the Clients or PCs H&S Plan; neither the PC nor any other Contractor shall have a claim for extension of time or any other compensation.

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The following constitute examples of the types of non-conformances that will attract penalties:

Minor Penalty: R500.00 / count	Medium Penalty: R1000.00 / count and a non-conformance	Severe Penalty: R5000.00 / count, a non-conformance and / or activity stoppage
Non-use of PPE supplied	Toilets not supplied or regularly serviced Lack of drinking water	Contractors working without Health and Safety Plan approval
Non completion of registers for plant and equipment on site	Contractors not audited	Workers transported in contravention of the OHS plan or legal requirements
Lack of H&S signage at work areas	Working without training or the appropriate H&S TMS	Invalid Letters of Good Standing
Tools and equipment identified in poor condition during inspections	Legal non-conformances identified during the previous audit and not addressed within the agreed time frame	Non-compliance with traffic accommodation requirements: layout or physical conditions
	No monthly OHS report at site meeting to report on	Fall protection harness not tied off / not worn
	No certificates of fitness for workers as required	Any breach of legal requirements
	Working without approved TMS	

C11.1 Failure to Comply with Provisions

Failure or refusal on the part of the contractor to take the necessary steps to ensure the safety of workers and the general public in accordance with these specifications or as required by statutory authorities or ordered by the Employer's Agent or the Client's H&S Agent, shall be sufficient cause for the Employer's Agent to apply penalties as follows:

- A penalty as shown in the Table above shall be deducted for each and every occurrence of non-compliance with any of the requirements of the PSHSS.
- In addition a time-related penalty of R500.00 per hour over and above the fixed penalty shall be deducted for non-compliance to rectify any non-conformance within the allowable time after a site instruction to this effect has been given by the Employer's Agent Representative or Employer's Agent. The site instruction shall state the agreed time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

FAILURE TO COMPLY WITH ANY OF THE ABOVE AS WELL AS ANY OTHER LEGAL REQUIREMENT WILL BE CONSIDERED A SERIOUS OFFENCE.

C12 MEASUREMENT AND PAYMENT

Payment items to cover the Principal Contractor's cost related to Occupational Health and Safety Compliance are included in the bill of quantities. These items are described under SCHEDULE C – OCCUPATIONAL HEALTH AND SAFETY in SECTION C : OCCUPATIONAL HEALTH AND SAFETY.

Item

Unit

C10.01 Preparation of Principal Contractor's site specific Health and Safety Plan.....lump sum

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The lump sum tendered shall include full compensation for the Principal Contractor to prepare and submit, for approval by the Employer's Health and Safety Agent, a site specific health and safety plan as detailed in these specifications.

Payment of the once-off tendered lump sum shall be made only once the Employer's Agent has issued the instruction to commence the works.

Item	Unit
C10.02 Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	lump sum

The lump sum tendered shall include full compensation for the Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations as detailed in these specifications.

Payment of the once-off tendered lump sum shall be made only once the Employer's Health and Safety Agent has verified that the Principal Contractor has fulfilled the required initial obligations.

Item	Unit
C10.03 Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	month

The tendered rate per month represents full compensation for that part of the Principal Contractor's obligations in respect of the Occupational Health and Safety Act and Construction Regulations which are mainly a function of construction time.

The tendered rate will be paid monthly, pro-rata for parts of a month, from the date on which the Employer's Agent issue the instruction to commence the works to the date on which the Employer's Agent issue the Certificate of Completion in terms of the contract.

Payment shall be made when the Employer's Health and Safety Agent has verified the Principal Contractor's compliance as part of his monthly audit report.

Item	Unit
C10.04 Provision of personal protective equipment (PPE):	

(a to) As per Bill of Quantities number (No)

The unit of measurement shall be the number of each type of PPE, specified in the bill of quantities, issued to local labours employed by the Principal Contractor in terms of the contract.

The tendered rate shall include full compensation for the procurement, delivery, storage, issuing and maintenance (replacement PPE) of all PPE required by local labours of the Principal Contractor. Payment shall be based on first time issuing of PPE, specified in the bill of quantities, to local labours employed by the Principal Contractor in terms of the contract. The issue register for PPE as kept by the Construction Health and Safety Officer shall be used to verify quantities of PPE claimed under this item.

General:

Only first PPE items, specified in the bill of quantities, issued to local labours employed by the Principal Contractor shall be paid for under this pay item. Replacement PPE issued to local labours shall not be paid for

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under this pay item and the cost thereof shall be deemed to be included in the rate of each type of PPE as specified in the bill of quantities. Any other PPE, not specified in the bill of quantities, issued to local labours such as standard overalls and standard workshop safety equipment shall be at the Principal Contractor's own cost.

The cost of required PPE for the Principal Contractor's site staff, operators and skilled labours shall be at the Principal Contractor own cost.

Item	Unit

C10.05 Provision of full time Construction Health and Safety Officer:

(a)	To manage the Principal Contractor's H&S obligations on site (No. required)	month
(b)	To manage the appointed SMME's H&S obligations on site (No. required)	month

The tendered rate per month represents full compensation for providing full time Construction Health and Safety Officer(s) in terms of these specifications; to manage the Principal Contractor's H&S obligations on site for subitem C10.05(a) and to manage the appointed SMME's H&S obligations on site for subitem C10.05(b).

The tendered rate shall include full compensation for employment of full time Construction Health and Safety Officer(s) in terms of these specifications, overheads, provision of transport and all other equipment and resources necessary to carry out their duties effectively.

The tendered rate will be paid monthly, pro-rata for parts of a month for:

(i)	Subitem C10.05(a), from the date on which the Employer's Agent issue the instruction to commence the works to the date on which the Employer's Agent issue the Certificate of Completion in terms of the contract
(ii)	Subitem C10.05(b), from the date on which the first SMME is appointed by the Principal Contractor to the completion of the last SMME works.

Item	Unit

C10.06 Costs of medical certificates and medical surveillance:

(a)	Initial (baseline) medical, including audiometric and lung function testing	Number (No)
(b)	Annual or Periodic examinations	Number (No)
(c)	Exist examinations	Number (No)

The unit of measurement shall be the number of medical testing and surveillance of local labours employed by the Principal Contractor in terms of the contract.

The tendered rates shall include full compensation for the obtaining of baseline, periodic (at least annually) and exit medical certification and conducting medical surveillance for all workers and especially operators of construction vehicles and mobile plant as contemplated in CR 23; Workers at Heights CR16 and workers exposed to hazardous chemicals including bituminous fumes under Regulation 7 of the HCSR; for temporary workers and workers exposed to noises at or above the limits given in the Noise-Induced Hearing Loss Regulations, as stipulated above.

Chest X-rays will be required in the case of local labours who may be exposed to high concentrations of dust (silica) working in the quarry and/or borrow pits

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Medicals and medical surveillance of the Principal Contractor's site staff, operators and skilled labours shall be at the Principal Contractor's own cost.

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Item	Unit

C10.07 Environmental monitoring:

(a) Air quality monitoring	Number (No)
(b) Compliance with Amendment of the Occupational Exposure Control Limit for Silica in Table 1 of the Hazardous Chemical Substances Regulations (February 2010)	Number (No)
(c) Air sampling in situ	Number (No)
(d) Analysing sample	Number (No)
(e) Tests on workers	Number (No)

The unit of measurement shall be the number environmental monitoring, sampling and testing required in terms of the contract.

The tendered rate shall include full compensation for testing and monitoring the environment in respect of general health hazards including the presence of hazardous chemicals, as required by the Construction Regulations and the Mine Health and Safety Act. Furthermore the costs shall include for all air monitoring, air sample testing and tests on workers for silica exposure as required by the above amendment. It should be noted that these items must be under the control of an authorised inspection authority which would normally be a registered H&S Hygienist or Occupational Health Practitioner familiar with the Hazardous Chemical Regulations and include for all necessary costs in this regard including travelling to and from site and all required reporting.

Item	Unit

C10.08 Establishment of noise zones Number (No)

The unit of measurement shall be the number of noise zones established on site in terms of Regulation 9, of the Noise-Induced Hearing Loss Regulations.

The tendered rate shall include full compensation for establishment of noise zones on site, including any workshops, in terms of Regulation 9, of the Noise-Induced Hearing Loss Regulations.

All equipment established on site by the Principal Contractor are required to have noise zones established before coming onto site and therefor any noise level testing for establishment of noise zones are at the Principal Contractor's own cost.

Where a zone has previously been established for a particular item of equipment within the last two years, the test need not be repeated but must be kept valid for the duration of the contract.

Item	Unit

C10.09 Payment for Health and Safety Representatives at meetings hour (hr)

The unit of measurement shall be the number of hours appointed Health and Safety Representatives attend monthly meetings.

The tendered rate shall include full compensation for the loss of productive time while attending monthly meetings as specified in these specifications.

Payment shall be based on attendance registers of monthly meetings submitted to the Employer's Health and Safety Agent for verification.

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Item	Unit
C10.10 Provision of First Aid Boxes	Number (No)

The unit of measurement shall be the number of first aid boxes provided by the Principal Contractor on site.

The tendered rate shall include full compensation for the provision and maintenance of first aid boxes in terms of these specifications.

Item	Unit
C10.11 Transportation of workers	month

The tendered rate per month represents full compensation for the safe transportation of workers in terms of these specifications.

The tendered rate will be paid monthly, pro-rata for parts of a month, from the date on which the Employer's Agent issue the instruction to commence the works to the date on which the Employer's Agent issue the Certificate of Completion in terms of the contract.

Item	Unit
C10.12 Submission of the Occupational Health and Safety File	lump sum

The lump sum tendered shall include full compensation for the Principal Contractor's to fulfil all his close-out 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 in these specifications to the Employer's satisfaction.

The Principal Contractor's Health and Safety File must be submitted to the Employer's Health and Safety Agent prior to the Employer's Agent issuing the Certificate of Completion in terms of the contract.

Item	Unit
C10.13 Construction Work Permit Board	lump sum

The lump sum tendered amount shall include compensation for the Principal Contractors obligation to prominently display the permit number at the site entrance, in respect of the Construction Regulations.

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ANNEXURE A CONTENTS AND NUMBERING FOR THE H&S PLAN

1. Index of the H&S Plan
2. Letter of Good Standing from Workman's Compensation Commissioner or with a licensed compensation insurer as contemplated in COIDA
3. Appointment letter from the Employer
4. Signed Section 37(2) Agreement between the Employer and the Principal Contractor
5. Occupational Health & Safety Policy
6. Quality Policy
7. Environmental Policy
8. Waste Management Policy
9. HIV AIDS Policy
10. Alcohol / Drug Policy
11. PPE / PPC Policy
12. Health & Safety BoQ
13. Employers Site Specific Safety Specification
14. Project Specific Baseline Hazard Identification and Risk Assessment
15. Site Specific Risk Assessment
16. Technical Method Statements, Safe Operating Procedures and Safe Work Procedures for the first three (3) months planned project works
17. Site Specific Organogram
18. Signed Appointment Letters and CV's for the following Site Personnel

18.1. Responsible Person	16.2
18.2. Construction Manager	CR8.1
18.3. Assistant Construction Manager	CR8.2
18.4. Construction Health and Safety Officer	CR8.5
18.5. Construction Supervisor	CR8.7
18.6. Risk Assessor	CR9
18.7. Construction Traffic Safety Officer	S 8(2)(d)
18.8. Incident Investigator	GAR9
18.9. First Aider	GSR3.4
19. A Site Plan indicating the following;

19.1. Positions of emergency assembly points and equipment at the site camp, or each fixed working area
19.2. Traffic routes for plant and pedestrians as well as parking areas
19.3. Storage areas (flammable stores, materials etc.)
19.4. Location of facilities
19.5. Electrical installations
20. First Aid, Accident, Incident and Emergency management procedure
21. Safety and Access Signage management procedure
22. Traffic Safety management procedure
23. Waste management procedure
24. Hazardous chemical substances management procedure
25. Construction plant and machinery management procedure
26. Public Health and Safety management procedure
27. Employee facilities management procedure
28. PPE management procedure
29. Occupational medical examinations procedure
30. Safety inspections and Inspection register management
31. Internal Audit management procedure
32. Contractor management procedure

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ANNEXURE B CONTENTS AND NUMBERING SYSTEM FOR THE H&S FILE

Approved H&S Plan (as submitted at Pre-Construction Stage for approval by the Employer)

All Construction/TMS and SWP are to be generated by senior site personnel, and the appropriate Risk Assessments developed therefrom in conjunction with the CHSO.

The TMS and SWP are to be signed by the CM, CHSO and EAR on site

The construction team is to ensure that the CHSO is kept up to date with all planned activities, to ensure all H&S requirements are met.

1. Index of the H&S File
2. Updated COIDA Letter of Good Standing
3. Updated organizational organogram and signed Letters of Appointment
4. Registrations, qualifications and other proof of competency
5. Training and Competency Matrix
6. Medical Certificates of Fitness
7. Risk monitoring and review records
8. Procedures
 - 8.1. Training and OHS competency
 - 8.2. General record keeping
 - 8.3. Issue based risk, risk review and risk monitoring management procedure
 - 8.4. Night work
 - 8.5. Excavation management (include hard rock)
 - 8.6. Temporary work management
 - 8.7. Fall protection plan
 - 8.8. Demolition management
 - 8.9. Electrical management
 - 8.10. Delivery, offloading, stacking, storage and housekeeping
 - 8.11. Concrete and batching management
 - 8.12. Hired plant and machinery management
 - 8.13. Lifting and rigging management
 - 8.14. Water environments
9. Registers
 - 9.1. Issue based Risk Assessments
 - 9.2. Inspection Registers
 - 9.3. DSTI records
 - 9.4. MS & SWP training records
 - 9.5. Induction training programme & records
 - 9.6. Visitor Induction records
 - 9.7. Inspection & Maintenance records
 - 9.8. PPE Issue and Condition check
 - 9.9. Incident registers & Investigation reports
10. COIDA accident and incident management
11. Waste manifests
12. Safety Data Sheets
13. Internal audits
14. Letters of Approval Contractors H&S plan
15. Letters of Appointment of Contractors
16. Audits by Employers Agent
17. Corrective/Preventive action plans for clients audits
18. Contractors audits
19. Certified documents and Permits (CoC – PV Test – Lifting Equipment Certificates – Haz.Substance Permits)
20. Archived Documents

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ANNEXURE C

CONSTRUCTION APPOINTMENTS

No	Designation	Legal Reference
1	Principal Contractor	CR 5.1(k)
2	Contractor	CR 7.1(c)(v)
3	Construction Manager	CR 8.1
4	Assistant Construction Manager	CR 8.2
5	Construction Health and Safety Officer	CR 8.5
6	Construction Supervisor	CR 8.7
7	Assistant Construction Supervisor	CR 8.8
8	Risk Assessor	CR 9.1
9	Fall Protection Plan Developer	CR 10.1(a)
10	Fall Protection Plan Supervisor	CR 10
11	Temporary Works Designer	CR 12.1
12	Temporary Works Supervisor	CR 12.2
13	Excavation Supervisor	CR 13
14	Blaster	CR 13.2(k)
15	Demolition Supervisor	CR 14
16	Explosive Method Plan Designer	CR 14.11
17	Scaffold Supervisor	CR 16.1
18	Suspended Platform Supervisor	CR 17.1
19	Rope Access Work Supervisor	CR 18.1(a)
20	Material Hoist Inspector	CR 19.6
21	Material Hoist Inspector	CR 19.7(a)
22	Bulk Mixing Plant Supervisor	CR 20.1
23	Bulk Mixing Plant Operator	CR 20.2
24	Explosive Actuated Fastening Device Controller	CR 21.2(g)(i)
25	Construction Vehicle and Mobile Plant Inspector/Operator	CR 23.1(d)(k)
26	Electrical Installation Controller	CR 24(c)
27	Electrical Installation Inspector	CR 24(d)
28	Housekeeping Supervisor	CR 27
29	Stacking and Storage Supervisor	CR 28
30	Fire Extinguisher Inspector	CR 29(h) & PER 19
31	Assigned Responsibilities	OHSA S 16.2
32	Scaffold Inspector	SANS 10085-1:2003 Item 16.1(c)
33	Scaffold Erector	SANS 10085-1:2003 Item 16.1(a)
34	Traffic Control Planner	OHSA S 8.2(d)
35	Traffic Control Supervisor	OHSA S 8.2(i)
36	Emergency / Fire Co-ordinator	OHSA S 8
37	Incident Investigator	GAR 9
38	First Aider	GSR 3
39	Ladder Inspector	GSR 13A
40	Lifting Machine Operator	DMR 18
41	Portable Electrical Equipment Inspector	EMR 9
42	Radiation Protection Officer	National Nuclear Regulatory Act 1999
Additional appointment could be added as and when required		

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ANNEXURE D CLOSE OUT REQUIREMENTS

CONSOLIDATED HEALTH & SAFETY FILE			
Construction Regulations - February 2014 7(1b,e & f)			
1	DEFINITION: CONSOLIDATED HEALTH AND SAFETY FILE		
	A file or other means containing record in permanent form, of the information required as contemplated in the Construction Regulations of February 2014: Regulation 7(1b, e & f)		
	The H&S files for the Principal Contractors and all Contractors require closure and handover to the Client at the completion of the project. The following list is an example of what should be included, but is not exhaustive. The OHS Agent or the Client may require further information at the time of completion and the Principal Contractor is to ensure that all instructions are met. Documentation would include all records from the start of the project. Daily or monthly plant inspection records are not required unless they are related to an accident. All records to be in electronic format and submitted to the OHS agent for approval in adequately formatted lists and folders. Layout should be logical and in the same order as in the site files.		
REQUIRED DOCUMENTATION			
2	The Principle Contractor submits a formal letter to the project appointed Agent, consolidating and Confirming the H & S history of the project.		INCLUDED
	The following summary of information is required in the letter, but not limited to:		YES NO
a	Client H&S Specification		
b	Principal Contractor's OHS Plan(s)		
c	Organograms		
d	Legal Appointments		
e	Notification to Department of Labour of commencement of work		
f	Letters of Good Standing for the Project		
g	Full files for all Contractors as well as their close out reports		
i	List of Contractors		
ii	Letters of Approval of Contractors		
iii	Mandatarly Agreements		
iv	Letters of Good Standing		
v	Appointments		
h	Incident Records		
	Non- Conformance records		
	Agent's Audits		
	TMS		
	Risk Assessments		
	Safe Work Procedures		
	Medical surveillance certificates of fitness. Medical records are to be kept according to the OH&S Act as amended.		
	All drawings for temporary structures (suspended beams/scaffolds etc)		
	Copies of test results, policies and procedures for environmental monitoring (silica, noise, dusts etc.)		
Please Note:			
3	The Client's appointed OHS Agent will verify the submission of the Principal Contractor in writing before handing the above documentation to the Client		
4	The Client / Agent need to evaluate the SHE performance of the Principal Contractor i.e. Compliance, Performance, Quality and refer same in their cover letter which will be added to the Principal Contractor's portfolio of evidence.		
5	Defect and Liability Period		
	The H&S files are to be kept 'live' for the defect and liability period by the Principal Contractor, including those of their Contractors. Any work required during the defect and liability period will require an assessment of the H&S file by the OH&S Agent prior to any work commencing. A copy of the as-built Drawings is to be placed on file by the Designers once complete.		

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ANNEXURE E SPECIFIED HAZARDOUS CHEMICAL SUBSTANCES

PRODUCT	POTENTIAL HEALTH OR OTHER RISKS
CEM II grade 32,5N / Cement	Hand mixing may occur, will be used for structures, stabilizing. 50kg bags delivered on pallets, ergonomic risk from handling, dust exposure, chromates. Eye, skin and respiratory irritant
Shutter Oil	Usually hand application prior to placing formwork in position. Volatiles present. Skin and respiratory irritant.
Penetration grade bitumen 70/100	Vapours, overexposure to fumes- loss of consciousness, respiratory problems.
Polymer modified bitumen-Class S-E1 (Hot applied)	Avoid skin contact with hot emulsions, Burns
Polymer modified emulsion (cold Applied)	Principal Contractor to ensure use of SDSs and appropriate protection measures
Petroleum based pre-coating fluid	Danger of cutaneous absorption, irritation to the skin
Polymer modified binder conforming to class A-E2	Principal Contractor to ensure use of SDSs and appropriate protection measures
Asphalt	Inhalation will cause headaches, nausea, respiratory, eye and skin irritation. Carcinogen. Burns from hot mix. Hydrogen Sulphide and carbon monoxide emitted as by-product. Breaking or cutting will release silica (crystalline)
Retro-reflective Road paint	High levels of volatiles, Products have narcotic effect. Carcinogen
Lime	Dust, eye and respiratory irritation
Petrol/Diesel/Lubricants	Storage tanks/ bowsers on site. Fire, spillage, fumes
Superphosphate Fertilizers	Eye, respiratory and skin irritant
Limestone Ammonium Nitrate Fertilizer (LAN)	Prolonged skin or eye contact could cause irritation. Explosive and will release toxic fumes if heated
Formula 2:3:2 Fertilizer	Prolonged skin or eye contact could cause irritation. Explosive and will release toxic fumes if heated.
Creosote (pre-treated poles)	Eye and skin irritation and minor burns, carcinogen
Herbicides and Ant Poison	Type not specified, but will be used. Principal Contractor to ensure use of SDSs and appropriate protection measures
Epoxies and Epoxy Resins	Type not specified, but will be used. Principal Contractor to ensure use of SDSs and appropriate protection measures
Coatings	Type not specified, but will be used. Principal Contractor to ensure use of SDSs and appropriate protection measures
Grouts	Will be determined by the Principal Contractor; various grouts will be required, cementitious or other, may contain silica (crystalline - quartz), hexavalent chromium, respiratory, skin and eye irritant

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ANNEXURE F REQUEST TO CONDUCT BLASTING ACTIVITIES

PART 1 REQUEST TO CONDUCT BLASTING ACTIVITIES						
Request Date:						
Blast Date:						
Blast Time:						
Blasting Company:						
Project:						
Project Number:						
Blast Number:						
Request Submitted By:						
Blast Details						
Blaster Name:						
Location GPS:						
Chainage No:						
Average Hole Depth:						
Number of Holes:						
Type of Explosives:						
Estimated Quantities of Explosives to be Used:						
Estimated Rock Volume:						
Blasting Company's Documentation						
Blasting Certificate of Registration:						
Letter of Good Standing:						
Explosives Permit:	No:		Expiry Date:			
Explosives Transport Permit:	No:		Expiry Date:			
Risk Assessment:						
Legal Appointments:						
Competency Certificates:						
Hazards						
Distance to Nearest Structures and Services in meters:						
Vibration Recorder to be Placed at:						
Photographic Evidence of Nearby Structures:						
Copies Attached:						
Other Comments:						
Notices Distributed to:	Contractor	Client	Employer's Agent	Safety Agent	Community	Media
Accepted by Principal Contractor:	Date		Name		Signature	
Construction Manager:						
Construction Safety Officer:						
Accepted by Client Representatives:	Date		Name		Signature	
Employer's Agent:						
Construction Safety Agent:	Date		Name		Signature	
Refused by Client Representatives:						
Employer's Agent:						
Construction Safety Agent:						
Reason for Refusal:						

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PART 2 POST BLAST REPORT			
Blast Date:			
Blast Time:			
Blasting Company:			
Project:			
Project Number:			
Blast Number:			
Report Submitted By:			
Blast Details			
Blaster Name:			
Location GPS:			
Chainage No:			
Post Blast Report			
Average Vibration:			
Damage to Structures, Vehicles and / or Services:			
Photographic Evidence of Damages:			
Injuries to People / Animals			
Other Comments:			
	Date	Name	Signature
Received by Principal Contractor:			
Construction Manager			
Construction Safety Officer			
Received by Client Representatives:			
Employer's Agent:			
Construction Safety Agent			

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ANNEXURE G CONSTRUCTION HEALTH AND SAFETY OFFICER MONTHLY REPORT

MONTH ENDING:

YEAR:

Manpower Returns		Current Month	Project to Date
Total Number Principal Contractors employees			
Total Number Contractor employees			
Total Number of Contractors			
No. Shifts/Days Worked (incl. Weekend & Public Holidays)			
Man Hours Worked			
Total for Principal Contractor			
Total for Contractor/s			
Total All Man-Hours For Current Month	Total All Man-Hours Worked	LTI Free Hours (From Last Incident)	Target LTI Free Hours

List of Contractors	No. of Employees		No. of Vehicles
Incident Report	Current Month	Project to Date	Investigation Status
No. of First Aid Cases			
No. of Medical Cases			
No. of Lost Time Injury (LTI) excluding Fatalities			
No. of Occupational Disease Cases			
No. of Fatalities			
No. of Reportable Incidents			
No. of Environmental Incidents			
No. of Property Damage			
No. of Near Misses			
No. of Vehicle related Accidents			
Disabling Injury Frequency Rate	Current Month		Project to Date
(LT Injuries x 200 000) / man hours			

Incident Details

Incident No.	Brief Details (incl. Nature of Injury, e.g. Laceration on Right Hand)	Status of Injured Employee/s	Incident Type (e.g. Fall to Below, Struck By)
Incident Analysis and Trends and Action Plans			
(Including new or revised risk assessments)			
Corrective Actions Implemented		Actioned By	Date Completed

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OHS Training	Current Month	Year to Date
Induction		
Safety Representative		
First Aid		
Fire Fighting		
Scaffold Erection and Inspection		
Vehicle (stipulate)		
Safety Harness		
Other		
Other		

Site Audits & Inspections			
Management			
Client			
External			
Additional Comments / Remarks (e.g. site issues or concerns)			
<u>Awards or Achievements:</u>			
Submitted By			
Name	Designation	Signature	Date
ANNEXURE H	NON CONFORMANCE CLOSEOUT REPORT	ANNEXURE H	NON CONFORMANCE CLOSEOUT REPORT

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NON-CONFORMANCE CLOSE-OUT REPORT			
Project			
Client			
Principal Agent			
Principal Contractor			
CHSA			
OHS Audit No		Date of Audit	
Non-Conformance No		Non-Conformances to Date	
COMMENTS ON WHAT WAS DONE (ATTACH PROOF IF AVAILABLE)		DATE COMPLETED	VERIFIED BY CLIENT / AGENT
PHOTOGRAPHIC EVIDENCE			
1		2	
3		4	
5		6	
Engineer's Representative (RE)		Principal Contractors - CM (8.1)	
Date		Date	
Principal Contractors CHSO (8.5)		Client / CHSA	
Date		Date	

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034
FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

NNEXURE I EXAMPLE OF MEDICAL CERTIFICATE OF FITNESS

ANNEXURE 3 OCCUPATIONAL HEALTH AND SAFETY ACT, 85 OF 1993 CONSTRUCTION REGULATIONS, 2014 Medical Certificate of Fitness			
Name of Employee:	ID Number:	Co. Number:	
	*Possible Exposures e.g. Noise, Heat, Fall Risk, Confined Space, etc.	*Job Specific Requirements e.g. Operating Mobile Crane, Digging Trenches, Erecting Formwork & Support Work, etc.	*Protective Equipment e.g. Dust Respirator, (Light Duty), Welding Gloves, etc.
*Occupation e.g. General Worker, Welder, Bricklayer, Steel Fixer, Mobile Crane Operator, etc.			
* The Employer to complete the information in the spaces marked with an * before sending the Employee for a medical examination			
Declaration by the Medical Examiner: I certify that I have, by examination and testing, using the above criteria specified by the employer, satisfied myself that the above mentioned employee is fit to perform the duties as described by the employer in the matrix above.			
Occupational Medicine Practitioner / Occupational Health Nursing Practitioner: (Please Print Name: _____)			
Signature: _____		Practice Number: _____	Date: _____
Address: _____			

ANNEXURE J DESIGN HAZARD IDENTIFICATION AND RISK ASSESSMENT

DESIGN HAZARD IDENTIFICATION AND RISK ASSESSMENT				Low	Med	High
Risk Rating Multiplier: Low = 1; Medium = 2; High = 3				1	4	12
Baseline Raw Design Risk - Typical behaviour given the design / factors present				2	6	18
Residual Risk - The extra factors noted that must be in place to reduce the risk				3	8	27
Low Risk - Does not mean that the activity is safe, or that potential injuries and / or fatalities are eliminated						
Key Risks will be assessed and reported on in the Site Specific H&S Specification						
New tasks require re-assessment as the project progresses						
GAR	General Administration Regulations	GMR	General Machinery Regulation			
GSR	General Safety Regulations	OHS Act	Occupational Health and Safety Act and Regulations 85 of 1993			
SANS	South African National Standards	SWP	Safe Work Procedures			
SABS	South African Bureau of Standards	MS	Technical Method Statements			
NIHL	Noise Induced Hearing Loss	HCS	Hazardous Chemical Substances			
		PrDP	Professional Driving Permit			

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences f an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
SERIES 1000 - GENERAL REQUIREMENTS AND PROVISIONS												
1202	Services- Eskom, Telkom lines, underground water, and sewage. Telkom and Eskom will remove own services where required.	Yes	PC will expose and protect services.	2	2	2	8	Competent supervision and adequate pre-task training will be required	2	2	1	4
1202		Yes	May be illegal connections	2	2	2	8	Removal of asbestos pipe to be according to the Asbestos Regulations	2	2	1	4

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
1202		Yes	Asbestos pipes	2	2	2	8	All excavations open longer than 1 shift are to be demarcated with netting or similar, at least 1m from the edge of the excavation. MS and SWP are required for the exposure of services, and are to be approved by the ER prior to commencing the activity	2	2	1	4
1219	Water	Yes	All water will be treated as contaminated and maybe unfit for human consumption	3	2	2	12	Treatment of contaminated water will be required, water testing will take place regularly. Tankers of water may be required to be brought in from other sources	3	2	1	6
1219		Yes	Potable water is available in the towns and rural water schemes are available for use. Alternate water sources/supplies will have to be approved by DWA	3	2	2	12		3	2	1	6

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

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1302	Construction plant workshops and camps to be established and maintained by the contractor for the duration of the contract	Yes	A number of camps may be established and maintained for various activities to construct what is required to undertake the works	2	3	3	18	The PC will be required to submit with his pre-tender H&S plan the TMS, risk assessments and supporting documentation to ensure overall activities are managed.	2	3	2	12
1402	Offices and Laboratories	Yes	Offices required for staff and a Laboratory for onsite testing	2	3	3	18	All buildings to be to SANS requirements and according to specifications in the tender document	2	3	2	12
1403	Housing	Yes	Housing for the Employer's Agents employees who operate the laboratory	2	3	3	18	All buildings to be to SANS requirements and according to specifications in the tender document	2	3	1	6

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
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1404	Electricity, Telkom, Water, Sewerage, Gas and Sanitation	Yes	Depends on the site chosen by the PC. May be septic tanks and or French drainage system. Temporary chemical toilets for use by workers Local or imported water supply, ESKOM, Telkom and gas supply River water is to be treated as contaminated, and workers may well be exposed when working around bridges and culverts	2	3	2	12	The ECO to provide the requirements relative to sanitary requirements on site. The PC will be required to submit with his pre- tender H&S plan the TMS, risk assessments and other supporting documentation to ensure start up activities are adequately managed. Please ensure adequate servicing of portable toilets in the very hot months, as the chemicals deteriorate more rapidly. Formaldehyde is used in the portable toilets	2	3	1	6

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
1502(a)	Traffic Safety	Yes	The whole site will require traffic accommodation All deviations and Stop/Go controls to be conspicuously sign posted There will be public and construction traffic on the road during construction	3	3	3	27	Construction drawings to be provided, all accommodation in line with SARTSM Ch. 13 Vol. 2. TMS and risk assessments to reflect management of same. Dedicated Traffic Safety Officer is to be employed to control these requirements	3	3	2	18
1502(b)(f)	Temporary deviations	Yes	All deviations and Stop/Go controls to be conspicuously sign posted There will be public and construction traffic on the road during construction	3	3	3	27	Construction drawings to be provided, all accommodation in line with SARTSM Ch. 13 Vol. 2. TMS and risk assessments to reflect management of same. Dedicated Traffic Safety Officer is to be employed to control these requirements	3	2	1	6

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
1502(e)(h)	Are there specific concerns regarding public access?	Yes	All deviations and Stop/Go controls to be conspicuously sign posted There will be public and construction traffic on the road during construction	3	3	3	27	Construction drawings to be provided, all accommodation in line with SARTSM Ch. 13 Vol. 2. TMS and risk assessments to reflect management of same. Dedicated Traffic Safety Officer is to be employed to control these requirements	3	3	2	18
1502(i)	Traffic Safety Officer (TSO) will be appointed?	Yes	All deviations and Stop/Go controls to be conspicuously sign posted There will be public and construction traffic on the road during construction	3	3	3	27	Adequate competent TSO's to be appointed. TSO shall not be H&S Officer	3	3	2	18
1503(a)	Construction will be under traffic?	Yes	Construction in half widths and single lane closures will be used for the project (24 hr) Stop/Go required	3	3	3	27	Traffic safety teams to maintain 24 hour closures, construction drawings to be provided, all accommodation in line with SARTSM Ch 13 Vol 2. Stop/Go controllers are not to exceed specified shift hours	3	3	2	18

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				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
1503(b)	Erection of signage	Yes	Digging of holes and mounting of signs on poles, planting of poles, use of lifting equipment	3	3	3	27	PPE, Method Statement, Training, Lifting equipment to be certified as per DMR and other requirements of the OHS Act	3	3	2	18
1511	Dust from vehicles on the road	Yes	Dust suppression to be carried out in built areas and where employees are working and to improve driving visibility	3	3	3	27	Water tankers to spray roads as and when required	3	3	2	18
1700	Clearing and Grubbing	Yes	All Material to be stock piled for further use. Conservation of top soil	3	3	3	27	Permission from the Employer's Agent for the disposal of materials TMS and Environmental approval	3	3	2	18
SERIES 2000 – DRAINAGE												
2100	Drains	Yes	Open earth drains, Banks and dykes and sub-soil drains	2	2	2	8	Trenches kept to a minimum depth/ Excavations checked on a daily basis by competent person TMS, Risk Assessments, PPE	2	2	1	4

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				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
2200	Prefabricated culverts Concrete kerbing, concrete	Yes	Where insitu casting is not preferred	2	2	2	8	Prefabricated culverts are to be to design specification. PPE, moving of castings with lifting equipment, Method Statement and Risk Assessment	2	2	1	4
2300	channelling, chutes and down pipes and concrete linings for open drains	Yes	Pre-cast kerbs, insitue concrete pavement construction in rural areas	2	2	2	8	Trenches kept to a minimum depth/ Excavations checked on a daily basis by competent person TMS, Risk Assessments, PPE	2	2	1	4
SERIES 3000 - EARTHWORKS AND PAVEMENT LAYERS OF GRAVEL OR CRUSHED STONE												
3100	Borrow Pits	Yes	Borrow pits will be spread to cover most of the site.	3	3	2	18	All borrow pits are to be fenced and only authorised personnel granted access. TMS All operators to be competent in their specific operations Rehabilitation of borrow pits	3	2	1	6

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				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
3200	Stock piling	Yes	Stock piling will take place at the different sites along the route	3	3	2	18	Permission from the Employer's Agent for the disposal of materials TMS and Environmental approval are to be fenced and are to comply with the relevant safety regulations	3	2	1	6
3300	Haulage of material in tipper trucks	Yes	Material will be hauled on the entire project from a commercial source and borrow pits	3	3	2	18	Dust management, suppression, daily registers and competent operators TMS and SWP required	3	2	1	6
3400	Pavements	Yes	Excavation, compaction and placement of pavement	3	2	2	12	Alternative safe pedestrian passage is required where pavements are under construction TMS and SWP required	3	2	1	6
3500	Stabilization	Yes	Use of chemicals to be in line with safety regulations and MSDS's	2	3	3	18	PPE, MSDS, Method statements and SWP required	2	3	2	12
3600	Crushed stone base	Yes	Transportation and storage on site Hauled from commercial source and stock piles	3	2	2	12	TMS and SWP required	3	2	1	6
SERIES 4000 - ASPHALT PAVEMENTS AND SEALS												

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				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
4102 4300 4600	Single and double layer seals will be used with slurry will be used. Mixes may change during the project. Applications may be "hot" or "cold" mixes	Yes	SDS's, fire fighting and first aid equipment, bunded storage areas and correct disposal from site	3	3	3	27	First aiders, PPE, training, induction, medical surveillance, SWP and supervision	3	3	2	18
4103a,b,c,d 4303	Use of binders, water carts, rotary brooms, hand tools, spreaders, cutters, rollers and hand spraying	Yes	Operation may be conducted by Principal Contractor or Contractor	3	3	3	27	Noise Levels, PPE, supervision, training, induction	3	3	2	18
4302	Chips will be coated on site	Yes	Inhalation of fumes, exposure to dust	3	3	3	27	Limit exposure, Training, Induction, medical surveillance and PPE. Correct storage, washing facilities	2	3	1	6
4400	Cationic spray emulsion bitumen will be used. Material will be used at different temperatures 0C to 220C	Yes	SDS's, Inhalation of fumes, burns	3	3	3	27	First aiders, PPE, training, induction, medical surveillance, SWP and supervision	3	3	2	18
SERIES 5000 - ANCILLARY WORKS												
5100	Stonework	Yes	Transportation of material to site. Manual labour. Vehicle traffic	3	3	3	27	TMS and SWP required PPE, DD Green gloves	3	3	2	18

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				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
5200	Gabions	Yes	Transportation of material to site. Manual labour. Vehicle traffic	3	3	3	27	TMS and SWP required PPE, DD Green gloves	3	3	2	18
5400	Guardrails	Yes	Working on roadway while open to the traffic. PPE required and traffic control Steep drop offs	3	3	3	27	TMS and SWP required Workers are to be issued with DD Green gloves, PPE,	3	3	2	18
5600/5700	Road signs & markings	Yes	Manual labour on roadway while open to traffic Use of crane truck - Use of ladders	3	3	3	27	Competent contractor should be employed for this task Inspections of equipment and inspector of equipment to be appointed Load test of equipment required Approved traffic control and daily plans	3	3	2	18
5800	Landscaping	Yes	Use of chemicals and manual labour Poisons, Phosphates and Herbicides	3	3	3	27	TMS and SWP required SDS's, PPE and training	3	3	2	18
SERIES 6000 – STRUCTURES												
6100	Foundations	Yes	Transportation of material to site Excavations, Structures and culverts	3	3	3	27	TMS, SWP Operators to be competent	3	3	2	18
6113	Foundation Piling	Yes	Use of certified contractor for the piling works	3	3	3	27	TMS, SWP Operators to be competent	3	3	2	18

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6200	Formwork	Yes	Manual construction of formwork Shutter oil Manual labour	2	3	2	12	All formwork to be inspected and certified TMS, SWP, Training and SDS's	2	3	2	12
6300	Steel reinforcement	Yes	Steel fixing	3	3	3	27	Training, TMS, medical surveillance and working at height	3	3	2	18
6400	Concrete	Yes	Precast lintels, beams and culverts Batch plant and pouring	3	3	3	27	Mixing and Transportation is to be conducted with compliance to all safety and road regulations All operators to be competent in their specific operations	3	3	2	18
	Demolitions	Yes	Demolish existing concrete culverts and bridges	3	3	3	27	SWP and TMS are to be submitted before demolition is started Competent personnel, PPE, Correct disposal of rubble	3	2	1	6
6500	Pre-stressing	Yes	Pre-stressed beams and bridge beams	3	3	3	27	TMS, SWP, PPE, Specialised personnel	3	3	2	18
6600	Bearings and Joints	Yes	Bridges will have bearings and joints	3	3	3	27	TMS, SWP, PPE, Specialised personnel	3	3	2	18
SERIES 7000 - SUNDRY STRUCTURES												
7100	Concrete Pavements	Yes	Excavations, compacting and pouring of concrete	3	3	3	27	TMS, SWP, PPE, Specialised personnel	3	2	1	6

APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034 FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
7200	Reinforced earth	Yes	Retainer walls and Gabions	3	3	3	27	To be to Employer's Agents design. Checked on a regular basis	3	3	2	18
7400	Earth retaining systems	Yes	Retainer walls and Gabions	3	3	3	27	To be to Employer's Agents design. Checked on a regular basis	3	3	2	18
F1200	Concrete extensions	Yes	Some bridges and culverts will be lengthened and widened	3	3	3	27	To be to Employer's Agents design. Checked on a regular basis	3	3	2	18
OHS SPECIFICATIONS												
OHS Specification	Drilling	Yes	Holes for blasting will take place as follows; Borrow Pits and Road, TMS	3	3	3	27	Use of competent blasting and drilling company, TMS, PPE, Risk Assessments, SANS Codes	3	3	2	18
OHS Specification	Weather	Yes	High as well as low temperatures as well as humidity will be encountered	3	3	3	27	Weather station to monitor weather conditions	2	3	2	12
	Labour	Yes	Local labour as well as SMME's will be used	3	3	3	27	Local labour to have a medical. SMME's to produce H&S Plans before commencement of work on site	2	3	2	12

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	Preparation of blast areas	Yes	Preparation as per TMS	3	3	3	27	Use of competent blasting and drilling company, TMS, PPE, Risk Assessments, SANS Codes	3	3	2	18
	Blasting	Yes	Blasting on the road	3	3	3	27	Use of competent blasting and drilling company, TMS, PPE, Risk Assessments, SANS Codes, OHS Act and SWP. Approval of blasting plan from the ER and CHSA at least 48 hours before the planned blast	2	3	2	12
	All materials will be considered containing Silica	Yes	Risk Assessments, medical surveillance and chest x-rays for all workers and operators	3	3	3	27	PC is to ensure compliance and medical surveillance is adequately managed	3	3	2	18
	Crane Work	Yes	Cranes could be used to position bridge beams and / or culverts	3	3	3	27	Certified contractor, TMS, certified operators	3	2	1	6

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OHSSpecification	Transportation	Yes	Vehicles will be used on entire project	3	3	3	27	All operators to have a valid licence, PrDP (P.G.D.) Certificate of competence and a valid medical certificate issued by an Occupational Health Practitioner Vehicles to have amber flashing lights, reverse warning hooters and daily check checks	3	3	2	18
	Hazardous Chemicals	Yes	HCS's will be used during the project Construction Vehicles	3	3	3	27	Medicals are required for persons using HCS Medical certificate issued by an Occupational Health Practitioner TMS and SWP are to be in place	3	3	2	18
	Transportation	Yes	All vehicles to be identified as	3	3	3	27	Amber flashing lights, licensed competent operators	3	3	2	18
	Lifting Equipment	Yes	Lifting equipment will be used on the project	3	3	3	27	All lifting equipment is to be on a register All equipment to be tested according to DMR 18	2	3	1	6
	Fire Fighting Equipment	Yes	Fire fighting equipment will be used on site	2	3	2	12	All fire fighting equipment to be recorded and tested according to SANS 1475	3	2	1	6

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OHSSpecification	First Aid Equipment	Yes	First Aid equipment will be used on site	3	3	3	27	All first aid equipment to be recorded and checked according to OHS Act GSR 3 Rural area and availability to emergency services is to be taken into account. Injuries resulting from the type of operations are to be taken into consideration for the provision of first aid equipment	3	2	1	6
	River work will be required in the dry season	Yes	There may be a need to construct coffer dams or pump water from excavations	3	3	3	27	Work in dry season, emergency plan, risk assessment, method statements and safe work procedures	3	2	2	12
	Hazardous Chemicals	Yes	SEE ANNEXURE	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12

PROVINCE OF THE EASTERN CAPE
ANNEXURE J DESIGN HAZARD IDENTIFICATION AND RISK ASSESSMENT

DESIGN HAZARD IDENTIFICATION AND RISK ASSESSMENT				Low	Med	High
Risk Rating Multiplier: Low = 1; Medium = 2; High = 3				1	4	12
Baseline Raw Design Risk - Typical behaviour given the design / factors present				2	6	18
Residual Risk - The extra factors noted that must be in place to reduce the risk				3	8	27
Low Risk - Does not mean that the activity is safe, or that potential injuries and / or fatalities are eliminated Key Risks will be assessed and reported on in the Site Specific H&S Specification New tasks require re-assessment as the project progresses						
GAR	General Administration Regulations	GMR	General Machinery Regulation			
GSR	General Safety Regulations	OHS Act	Occupational Health and Safety Act and Regulations 85 of 1993			
SANS	South African National Standards	SWP	Safe Work Procedures			
SABS	South African Bureau of Standards	MS	Technical Method Statements			
NIHL	Noise Induced Hearing Loss	HCS	Hazardous Chemical Substances			
		PrDP	Professional Driving Permit			

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences f an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
SERIES 1000 - GENERAL REQUIREMENTS AND PROVISIONS												
1202	Services- Eskom, Telkom lines, underground water, and sewage. Telkom and Eskom will remove own services where required.	Yes	PC will expose and protect services.	2	2	2	8	Competent supervision and adequate pre-task training will be required	2	2	1	4

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
1202		Yes	May be illegal connections	2	2	2	8	Removal of asbestos pipe to be according to the Asbestos Regulations	2	2	1	4
1202		Yes	Asbestos pipes	2	2	2	8	All excavations open longer than 1 shift are to be demarcated with netting or similar, at least 1m from the edge of the excavation. MS and SWP are required for the exposure of services, and are to be approved by the ER prior to commencing the activity	2	2	1	4
1219	Water	Yes	All water will be treated as contaminated and maybe unfit for human consumption	3	2	2	12	Treatment of contaminated water will be required, water testing will take place regularly. Tankers of water may be required to be brought in from other sources	3	2	1	6
1219		Yes	Potable water is available in the towns and rural water schemes are available for use. Alternate water sources/supplies will have to be approved by DWA	3	2	2	12		3	2	1	6

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
1302	Construction plant workshops and camps to be established and maintained by the contractor for the duration of the contract	Yes	A number of camps may be established and maintained for various activities to construct what is required to undertake the works	2	3	3	18	The PC will be required to submit with his pre-tender H&S plan the TMS, risk assessments and supporting documentation to ensure overall activities are managed.	2	3	2	12
1402	Offices and Laboratories	Yes	Offices required for staff and a Laboratory for onsite testing	2	3	3	18	All buildings to be to SANS requirements and according to specifications in the tender document	2	3	2	12
1403	Housing	Yes	Housing for the Employer's Agents employees who operate the laboratory	2	3	3	18	All buildings to be to SANS requirements and according to specifications in the tender document	2	3	1	6

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
1404	Electricity, Telkom, Water, Sewerage, Gas and Sanitation	Yes	Depends on the site chosen by the PC. May be septic tanks and or French drainage system. Temporary chemical toilets for use by workers Local or imported water supply, ESKOM, Telkom and gas supply River water is to be treated as contaminated, and workers may well be exposed when working around bridges and culverts	2	3	2	12	The ECO to provide the requirements relative to sanitary requirements on site. The PC will be required to submit with his pre- tender H&S plan the TMS, risk assessments and other supporting documentation to ensure start up activities are adequately managed. Please ensure adequate servicing of portable toilets in the very hot months, as the chemicals deteriorate more rapidly. Formaldehyde is used in the portable toilets	2	3	1	6

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
1502(a)	Traffic Safety	Yes	The whole site will require traffic accommodation All deviations and Stop/Go controls to be conspicuously sign posted There will be public and construction traffic on the road during construction	3	3	3	27	Construction drawings to be provided, all accommodation in line with SARTSM Ch. 13 Vol. 2. TMS and risk assessments to reflect management of same. Dedicated Traffic Safety Officer is to be employed to control these requirements	3	3	2	18
1502(b)(f)	Temporary deviations	Yes	All deviations and Stop/Go controls to be conspicuously sign posted There will be public and construction traffic on the road during construction	3	3	3	27	Construction drawings to be provided, all accommodation in line with SARTSM Ch. 13 Vol. 2. TMS and risk assessments to reflect management of same. Dedicated Traffic Safety Officer is to be employed to control these requirements	3	2	1	6

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
1502(e)(h)	Are there specific concerns regarding public access?	Yes	All deviations and Stop/Go controls to be conspicuously sign posted There will be public and construction traffic on the road during construction	3	3	3	27	Construction drawings to be provided, all accommodation in line with SARTSM Ch. 13 Vol. 2. TMS and risk assessments to reflect management of same. Dedicated Traffic Safety Officer is to be employed to control these requirements	3	3	2	18
1502(i)	Traffic Safety Officer (TSO) will be appointed?	Yes	All deviations and Stop/Go controls to be conspicuously sign posted There will be public and construction traffic on the road during construction	3	3	3	27	Adequate competent TSO's to be appointed. TSO shall not be H&S Officer	3	3	2	18
1503(a)	Construction will be under traffic?	Yes	Construction in half widths and single lane closures will be used for the project (24 hr) Stop/Go required	3	3	3	27	Traffic safety teams to maintain 24 hour closures, construction drawings to be provided, all accommodation in line with SARTSM Ch 13 Vol 2. Stop/Go controllers are not to exceed specified shift hours	3	3	2	18

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
1503(b)	Erection of signage	Yes	Digging of holes and mounting of signs on poles, planting of poles, use of lifting equipment	3	3	3	27	PPE, Method Statement, Training, Lifting equipment to be certified as per DMR and other requirements of the OHS Act	3	3	2	18
1511	Dust from vehicles on the road	Yes	Dust suppression to be carried out in built areas and where employees are working and to improve driving visibility	3	3	3	27	Water tankers to spray roads as and when required	3	3	2	18
1700	Clearing and Grubbing	Yes	All Material to be stock piled for further use. Conservation of top soil	3	3	3	27	Permission from the Employer's Agent for the disposal of materials TMS and Environmental approval	3	3	2	18
SERIES 2000 – DRAINAGE												
2100	Drains	Yes	Open earth drains, Banks and dykes and sub-soil drains	2	2	2	8	Trenches kept to a minimum depth/ Excavations checked on a daily basis by competent person TMS, Risk Assessments, PPE	2	2	1	4

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
2200	Prefabricated culverts Concrete kerbing, concrete	Yes	Where insitu casting is not preferred	2	2	2	8	Prefabricated culverts are to be to design specification. PPE, moving of castings with lifting equipment, Method Statement and Risk Assessment	2	2	1	4
2300	channelling, chutes and down pipes and concrete linings for open drains	Yes	Pre-cast kerbs, insitue concrete pavement construction in rural areas	2	2	2	8	Trenches kept to a minimum depth/ Excavations checked on a daily basis by competent person TMS, Risk Assessments, PPE	2	2	1	4
SERIES 3000 - EARTHWORKS AND PAVEMENT LAYERS OF GRAVEL OR CRUSHED STONE												
3100	Borrow Pits	Yes	Borrow pits will be spread to cover most of the site.	3	3	2	18	All borrow pits are to be fenced and only authorised personnel granted access. TMS All operators to be competent in their specific operations Rehabilitation of borrow pits	3	2	1	6

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
3200	Stock piling	Yes	Stock piling will take place at the different sites along the route	3	3	2	18	Permission from the Employer's Agent for the disposal of materials TMS and Environmental approval are to be fenced and are to comply with the relevant safety regulations	3	2	1	6
3300	Haulage of material in tipper trucks	Yes	Material will be hauled on the entire project from a commercial source and borrow pits	3	3	2	18	Dust management, suppression, daily registers and competent operators TMS and SWP required	3	2	1	6
3400	Pavements	Yes	Excavation, compaction and placement of pavement	3	2	2	12	Alternative safe pedestrian passage is required where pavements are under construction TMS and SWP required	3	2	1	6
3500	Stabilization	Yes	Use of chemicals to be in line with safety regulations and MSDS's	2	3	3	18	PPE, MSDS, Method statements and SWP required	2	3	2	12
3600	Crushed stone base	Yes	Transportation and storage on site Hauled from commercial source and stock piles	3	2	2	12	TMS and SWP required	3	2	1	6
SERIES 4000 - ASPHALT PAVEMENTS AND SEALS												

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
4102 4300 4600	Single and double layer seals will be used with slurry will be used. Mixes may change during the project. Applications may be "hot" or "cold" mixes	Yes	SDS's, fire fighting and first aid equipment, bunded storage areas and correct disposal from site	3	3	3	27	First aiders, PPE, training, induction, medical surveillance, SWP and supervision	3	3	2	18
4103a,b,c,d 4303	Use of binders, water carts, rotary brooms, hand tools, spreaders, cutters, rollers and hand spraying	Yes	Operation may be conducted by Principal Contractor or Contractor	3	3	3	27	Noise Levels, PPE, supervision, training, induction	3	3	2	18
4302	Chips will be coated on site	Yes	Inhalation of fumes, exposure to dust	3	3	3	27	Limit exposure, Training, Induction, medical surveillance and PPE. Correct storage, washing facilities	2	3	1	6
4400	Cationic spray emulsion bitumen will be used. Material will be used at different temperatures 0C to 220C	Yes	SDS's, Inhalation of fumes, burns	3	3	3	27	First aiders, PPE, training, induction, medical surveillance, SWP and supervision	3	3	2	18
SERIES 5000 - ANCILLARY WORKS												
5100	Stonework	Yes	Transportation of material to site. Manual labour. Vehicle traffic	3	3	3	27	TMS and SWP required PPE, DD Green gloves	3	3	2	18

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
5200	Gabions	Yes	Transportation of material to site. Manual labour. Vehicle traffic	3	3	3	27	TMS and SWP required PPE, DD Green gloves	3	3	2	18
5400	Guardrails	Yes	Working on roadway while open to the traffic. PPE required and traffic control Steep drop offs	3	3	3	27	TMS and SWP required Workers are to be issued with DD Green gloves, PPE,	3	3	2	18
5600/5700	Road signs & markings	Yes	Manual labour on roadway while open to traffic Use of crane truck - Use of ladders	3	3	3	27	Competent contractor should be employed for this task Inspections of equipment and inspector of equipment to be appointed Load test of equipment required Approved traffic control and daily plans	3	3	2	18
5800	Landscaping	Yes	Use of chemicals and manual labour Poisons, Phosphates and Herbicides	3	3	3	27	TMS and SWP required SDS's, PPE and training	3	3	2	18
SERIES 6000 – STRUCTURES												
6100	Foundations	Yes	Transportation of material to site Excavations, Structures and culverts	3	3	3	27	TMS, SWP Operators to be competent	3	3	2	18
6113	Foundation Piling	Yes	Use of certified contractor for the piling works	3	3	3	27	TMS, SWP Operators to be competent	3	3	2	18

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
6200	Formwork	Yes	Manual construction of formwork Shutter oil Manual labour	2	3	2	12	All formwork to be inspected and certified TMS, SWP, Training and SDS's	2	3	2	12
6300	Steel reinforcement	Yes	Steel fixing	3	3	3	27	Training, TMS, medical surveillance and working at height	3	3	2	18
6400	Concrete	Yes	Precast lintels, beams and culverts Batch plant and pouring	3	3	3	27	Mixing and Transportation is to be conducted with compliance to all safety and road regulations All operators to be competent in their specific operations	3	3	2	18
	Demolitions	Yes	Demolish existing concrete culverts and bridges	3	3	3	27	SWP and TMS are to be submitted before demolition is started Competent personnel, PPE, Correct disposal of rubble	3	2	1	6
6500	Pre-stressing	Yes	Pre-stressed beams and bridge beams	3	3	3	27	TMS, SWP, PPE, Specialised personnel	3	3	2	18
6600	Bearings and Joints	Yes	Bridges will have bearings and joints	3	3	3	27	TMS, SWP, PPE, Specialised personnel	3	3	2	18
SERIES 7000 - SUNDRY STRUCTURES												
7100	Concrete Pavements	Yes	Excavations, compacting and pouring of concrete	3	3	3	27	TMS, SWP, PPE, Specialised personnel	3	2	1	6

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
7200	Reinforced earth	Yes	Retainer walls and Gabions	3	3	3	27	To be to Employer's Agents design. Checked on a regular basis	3	3	2	18
7400	Earth retaining systems	Yes	Retainer walls and Gabions	3	3	3	27	To be to Employer's Agents design. Checked on a regular basis	3	3	2	18
F1200	Concrete extensions	Yes	Some bridges and culverts will be lengthened and widened	3	3	3	27	To be to Employer's Agents design. Checked on a regular basis	3	3	2	18
OHS SPECIFICATIONS												
OHS Specification	Drilling	Yes	Holes for blasting will take place as follows; Borrow Pits and Road, TMS	3	3	3	27	Use of competent blasting and drilling company, TMS, PPE, Risk Assessments, SANS Codes	3	3	2	18
OHS Specification	Weather	Yes	High as well as low temperatures as well as humidity will be encountered	3	3	3	27	Weather station to monitor weather conditions	2	3	2	12
	Labour	Yes	Local labour as well as SMME's will be used	3	3	3	27	Local labour to have a medical. SMME's to produce H&S Plans before commencement of work on site	2	3	2	12

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
	Preparation of blast areas	Yes	Preparation as per TMS	3	3	3	27	Use of competent blasting and drilling company, TMS, PPE, Risk Assessments, SANS Codes	3	3	2	18
	Blasting	Yes	Blasting on the road	3	3	3	27	Use of competent blasting and drilling company, TMS, PPE, Risk Assessments, Sans Codes, OHS Act and SWP. Approval of blasting plan from the ER and CHSA at least 48 hours before the planned blast	2	3	2	12
	All materials will be considered containing Silica	Yes	Risk Assessments, medical surveillance and chest x-rays for all workers and operators	3	3	3	27	PC is to ensure compliance and medical surveillance is adequately managed	3	3	2	18
	Crane Work	Yes	Cranes could be used to position bridge beams and / or culverts	3	3	3	27	Certified contractor, TMS, certified operators	3	2	1	6

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
OHSSpecification	Transportation	Yes	Vehicles will be used on entire project	3	3	3	27	All operators to have a valid licence, PrDP (P.G.D.) Certificate of competence and a valid medical certificate issued by an Occupational Health Practitioner Vehicles to have amber flashing lights, reverse warning hooters and daily check checks	3	3	2	18
	Hazardous Chemicals	Yes	HCS's will be used during the project Construction Vehicles	3	3	3	27	Medicals are required for persons using HCS Medical certificate issued by an Occupational Health Practitioner TMS and SWP are to be in place	3	3	2	18
	Transportation	Yes	All vehicles to be identified as	3	3	3	27	Amber flashing lights, licensed competent operators	3	3	2	18
	Lifting Equipment	Yes	Lifting equipment will be used on the project	3	3	3	27	All lifting equipment is to be on a register All equipment to be tested according to DMR 18	2	3	1	6
	Fire Fighting Equipment	Yes	Fire fighting equipment will be used on site	2	3	2	12	All fire fighting equipment to be recorded and tested according to SANS 1475	3	2	1	6

COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Raw Design Risk				Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category		Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating Risk Category
OHSSpecification	First Aid Equipment	Yes	First Aid equipment will be used on site	3	3	3	27	All first aid equipment to be recorded and checked according to OHS Act GSR 3 Rural area and availability to emergency services is to be taken into account. Injuries resulting from the type of operations are to be taken into consideration for the provision of first aid equipment	3	2	1	6
	River work will be required in the dry season	Yes	There may be a need to construct coffer dams or pump water from excavations	3	3	3	27	Work in dry season, emergency plan, risk assessment, method statements and safe work procedures	3	2	2	12
	Hazardous Chemicals	Yes	SEE ANNEXURE	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**UPGRADING TO A SURFACE STANDARD ROAD DR08034 - N2 TO R61 VIA CLARKEBURY (20KM)
PHASE 1**

PART C3 : SCOPE OF WORK

SECTION D: HIV/AIDS AWARENESS EDUCATION SPECIFICATION

CONTRACT NO. SCMU10-23/24-0001

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034
FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034
FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

PART C3: SCOPE OF WORK

SECTION D : HIV/AIDS AWARENESS EDUCATION SPECIFICATION

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**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034
FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

D1 SCOPE

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

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

D2 DEFINITIONS AND ABBREVIATIONS

D2.1 Definitions

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

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

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

Representative / Agent: The Employer's Agent as defined in the Contract Data.

D2.2 Abbreviations

HIV : Human Immunodeficiency Virus
AIDS : Acquired Immune Deficiency Syndrome
STI : Sexually Transmitted Infection

D3 BASIC METHOD REQUIREMENT

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



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

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

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

The Contractor shall submit the Service Provider Workshop Plan for approval within 21 days after the commencement date. After approval by the Representative/Agent, the Contractor shall make available a suitable venue that will be conducive to education and training

The Service Provider Workshop Plan shall address, but will not be limited to the following:

- (j) The nature of the disease;
- (k) How it is transmitted;
- (l) Safe sexual behaviour;
- (m) Post exposure services such as voluntary counselling and testing (VCT) and nutritional plans for people living with HIV/AIDS;
- (n) Attitudes towards other people with HIV/AIDS;
- (o) Rights of the Worker in the workplace;
- (p) How the Awareness Champion will be equipped prior to commencement of the HIV/AIDS awareness programme with basic HIV/AIDS information and the necessary skills to handle questions regarding the HIV/AIDS awareness programme on site sensitively and confidentially;
- (q) How the Service Provider will support the Awareness Champion;
- (r) Location and contact numbers of the closest clinics, VCT facilities, counselling services and referral systems;
- (s) How the workshops will be presented, including frequency and duration;
- (t) How the workshops will fit in with the construction programme;
- (u) How the Service Provider will assess the knowledge and attitude levels of attendees to structure workshops accordingly;
- (v) How the video will be used;
- (w) How the Service Provider will elicit maximum participation from the Workers;
- (x) A questions and answers slot (interactive session)

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



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D4 HIV/ AIDS AWARENESS EDUCATION AND TRAINING

D4.1 Workshops

The Contractor shall ensure that all Workers attend the workshops.

The workshops shall adequately deal with all the aspects contained in the Service Provider Workshop Plan.

A video of HIV/AIDS in the construction industry, which can be obtained from all Regional Offices of the National Department of Transport, is to be screened to Workers at workshops. In order to enhance the learning experience, groups of not exceeding 25 people shall attend the interactive sessions of the workshops.

D4.2 Recommended practice

D4.2.1 Workshop Schedule

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

D4.2.2 Service Providers

A database of recommended Service Providers is available from all Regional Offices of the National Department of Transport.

D4.2.3 HIV/AIDS Specific Learning Outcomes and Assessment Criteria

Workers shall be exposed to workshops for a minimum duration of two-and-a-half hours. In order to set a minimum standard requirement, the following specific learning outcomes and assessment criteria shall be met.

(a) UNIT 1: The nature of HIV/AIDS

After studying and understanding this unit, the Worker will be able to differentiate between HIV and AIDS and comprehend whether or not it is curable. The Worker will also be able to explain how the HI virus operates once a person is infected and identify the symptoms associated with the progression of HIV/AIDS.

Assessment Criteria:

- (i) Define and describe HIV and AIDS.
- (ii) List and describe the progression of HIV/AIDS.



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(b) UNIT 2: Transmission of the HI virus

After studying and understanding this unit, the Worker will be able to identify bodily fluids that carry the HI virus. The Worker will be able to recognise how HIV/AIDS is transmitted and how it is not transmitted.

Assessment Criteria:

- (i) Record in what bodily fluids the HI virus can be found.
- (ii) Describe how HIV/AIDS can be transmitted.
- (ii) Demonstrate the ability to distinguish between how HIV/AIDS is transmitted and misconceptions around transmittance of HIV/AIDS.

(c) UNIT 3: HIV/AIDS preventative measures

After studying and understanding this unit, the Worker will comprehend how to act in a way that would minimise the risk of HIV/AIDS infection and to use measures to prevent the HI virus from entering the bloodstream

Assessment Criteria:

- (i) Report on how to minimise the risk of HIV/AIDS infection.
- (ii) Report on precautions that can be taken to prevent HIV/AIDS infection.
- (iii) Explain or demonstrate how to use a male and female condom.
- (iv) List the factors that could jeopardize the safety of condoms provided against HIV/AIDS transmission.



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(d) UNIT 4: Voluntary HIV/AIDS counselling and testing

After studying and understanding this unit, the Worker will be able to recognise methods of testing for HIV/AIDS infection. The Worker will be able to understand the purpose of voluntary HIV/AIDS testing and pre- and post-test counselling

Assessment Criteria:

- (i) Describe methods of testing for HIV/AIDS infection.
- (ii) Report on why voluntary testing is important.
- (iii) Report on why pre- and post-test counselling is important.

(e) UNIT 5: Living with HIV/AIDS

After studying and understanding this unit, the Worker will be able to recognise the importance of caring for people living with HIV/AIDS and be able to manage HIV/AIDS

Assessment Criteria:

- (i) List and describe ways to manage HIV/AIDS.
- (ii) Describe nutritional needs of people living with HIV/AIDS.
- (iii) Describe ways to embrace a healthy lifestyle as a person living with HIV/AIDS.
- (iv) Explain the need for counselling and support to people living with HIV/AIDS.

(f) UNIT 6: Treatment options for people with HIV/AIDS

After studying and understanding this unit, the Worker will be familiar with the various treatments available to HIV/AIDS infected or potentially HIV/AIDS infected people.

Assessment Criteria:

- (i) Discuss anti-retroviral therapy.
- (ii) List methods of treatment to prevent HIV/AIDS transmission from mother-to-child.
- (iii) Describe the need for treatment of opportunistic diseases for people living with HIV/AIDS.
- (iv) Describe post exposure prophylactics.

(g) UNIT 7: The rights and responsibilities of Workers in the workplace with regard to HIV/AIDS

After studying and understanding this unit, the Worker will be able to identify the rights and responsibilities of the Worker living with HIV/AIDS in the workplace. The Worker will recognise the importance of accepting colleagues living with HIV/AIDS and treating them in a non-discriminative way.

Assessment Criteria:

- (i) Discuss the rights of a person living with HIV/AIDS in the workplace.
- (ii) Discuss the responsibilities of a person living with HIV/AIDS in the workplace.
- (iii) Report on why acceptance and non-discrimination of colleagues living with HIV/AIDS is important.

D4.3 Displaying of plastic laminated posters and distribution of information booklets

The Contractor shall obtain a set of four laminated posters conveying different key messages and information booklets, which are available from all Regional Offices of the Department of Transport



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The above-mentioned posters and information booklets have been prepared to raise awareness and to share information about HIV/AIDS and STIs

Posters or display stands shall be displayed on site as soon as possible, but not later than 14 days after the date of site handover

Posters shall be displayed in areas highly trafficked by Workers, including toilets, rest areas, the site office and compounds

The posters on display must always be intact, clear and readable

Information booklets must be distributed to all Workers as soon as possible, but not later than 14 days after site handover, or as soon as the Worker joins the site

D5 PROVIDING WORKERS WITH ACCESS TO CONDOMS

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

At least one male and one female condom dispenser and a sufficient supply of condoms, all to the approval of the Representative/Agent, shall be made available on site within 14 days of site hand over. Contractors should note that arrangements to obtain condoms from the Department of Health Clinics prior to site hand over may be necessary, to ensure that condoms are available within 14 days of site handover

Condoms shall be made available in areas highly trafficked by Workers, including toilets, the site office and compounds

D6 ENSURING ACCESS TO HIV/AIDS TESTING AND COUNSELLING FACILITIES AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS (STI)

The Contractor shall provide Workers with the names of the closest Service Providers that provide HIV/AIDS testing and counselling and Clinics providing Sexually Transmitted Infection (STI) diagnosis and treatment. Information on these Service Providers and Clinics must be displayed on a poster of a size not smaller than A1 in an area highly trafficked by Workers.

D7 APPOINTMENT OF AN HIV/AIDS AWARENESS CHAMPION

Within 14 days of site handover the Contractor shall appoint an Awareness Champion from amongst the Workers, who speaks, reads and writes English, who speaks and understands all the local languages spoken by the Workers and who shall be on site during all stages of the construction period. The Contractor shall ensure that the Awareness Champion has been trained by the Service Provider on basic HIV/AIDS information, the support services available and the necessary skills to handle questions regarding the HIV/AIDS programme in a sensitive and confidential manner.

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The Awareness Champion shall be responsible for:

- (a) Liaising with the Service Provider on organising awareness workshops;
- (b) Filling condom dispensers and monitoring condom distribution;
- (c) Handing out information booklets;
- (d) Placing and maintaining posters

D8 MONITORING

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

The Contractor must report problems experienced in implementing the HIV/AIDS requirements to the Representative/Agent.

D9 REPORTING

D9.1 The contractor shall prepare and attach to his claims for payment a compliance report which outlines how the actions taken by the contractor in the period for which payment is claimed comply with the requirements, and a schedule which lists the names, identity numbers, trade/occupation and the name of the employer of all the construction workers exposed to the programme (refer Annexure A for a pro-forma for the report).

D9.2 The employer shall certify the report and schedule described in D9.1 whenever a claim for payment is issued to the employer.

NOTE: In the event that the contractor fails to comply with the requirements of D9, the employer may apply any of the sanctions provided for in the contract. Sanctions may include the application of a financial penalty.

D10 MEASUREMENT AND PAYMENT

Schedule C [Item EB1.01 to EB1.12] in the BoQ will be followed for Health and Safety of this specific tender. The pricing must include awareness, induction, training on all communicable diseases and health and safety in the work place etc.



Province of the
EASTERN CAPE
TRANSPORT

CONTRACT NO. SCMU10-23/24-0001

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FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**UPGRADING TO A SURFACE STANDARD ROAD DR08034 - N2 TO R61 VIA CLARKEBURY (20KM)
PHASE 1**

PART C3: SCOPE OF WORK

SECTION E: LABOUR SPECIFICATIONS

**APPOINTMENT OF CIVIL ENGINEERING CONTRACTOR FOR THE UPGRADING OF ROAD DR08034
FROM N2 TO R61 VIA CLARKEBURY (20KM) PHASE 1**

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10- 23/24-0001

**UPGRADING TO A SURFACE STANDARD ROAD DR08034 - N2 TO R61 VIA CLARKEBURY (20KM)
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PART C3: SCOPE OF WORK

SECTION E : LABOUR SPECIFICATIONS

This part of the project Specifications contains comprehensive additional specifications for matters not covered by and work which is not carried out in terms of the Standard Specifications. The number of each clause and each payment item in this part of the Project Specification is prefixed with an E to differentiate these clauses and items as additional works.

The following additional specifications are covered under this part of the Scope of Work:

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E1 EMPLOYMENT OF LOCAL LABOUR AND TRAINING REQUIREMENTS

E1.1 SCOPE

The specification sets out the requirements relating to the employment of local labour by involving the community through the established structures as well as the training requirements for these labourers.

E1.2 DEFINITIONS

The definitions given in the conditions of contract, the Contract Data and the Works specifications, together with the following additional definitions shall, unless the context dictates otherwise, apply:

'Key Personnel' means all contract managers, site agents, materials and survey technicians, trainers, supervisors, foremen, skilled plant operators 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.

'Labourer' means a worker statutorily defined as employees in the Basic Conditions of Employment Act, 1997, who is temporarily or permanently employed by the Contractor and subcontractors (SMME's) to perform prescribed work on this Contract. 'Labour' means labourers or workers.

'Labour Register' means the list of available Local Labourers compiled by the Community Liaison Officer (CLO) in co-operation with the Project Steering Committee (PSC) in accordance with the results of their negotiations with the Contractor and the Local Community subsequent to the awarding of the Contract.

'Local Labourer' means a worker who is normally permanently residing in the target area(s) as defined by the Employer in the Works Specifications and who is available to be temporarily employed by the Contractor and subcontractors to perform prescribed tasks that form part of the Works.

'Targeted Labour' means the Local Labourers, who are defined as the target group for the Contract as normally permanently residing in the target area(s) as defined by the Employer in the Works Specifications. It is incumbent on individuals defined as Target Labour to demonstrate their claims to such residency on the basis of identification and association with and recognition by members of the community residing within the target area. It is incumbent on individuals to provide evidence of qualifying for the target groups.

'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 and paid on an hourly paid basis to participate in the execution of any part of the contract works and shall include unskilled labour, semi-skilled and skilled labour, artisans, clerical workers and the like.

'Workforce' means the aggregate body comprising of all workers and shall, unless the context dictates otherwise, include the workforces of the Contractor and all subcontractors.



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E1.3 ENGAGEMENT OF LOCAL LABOUR

The temporary workforce shall, as far as practically possible, and with the exception of key personnel, be recruited/selected from the local communities living in close proximity to the project.

Prior to the award of the Contract, the Employer shall, at his own cost, take all necessary actions to advertise within the local communities of the fact that the Contract will provide temporary employment opportunities and preference will be given to the use of the Local Labour on this Contract. Labourers and workers of the local community required by the Contractor shall be recruited/chosen from a Labour Register and appointed for work to enable the Contractor to comply with the specific minimum target value set for the Local Labour Goal (LLG) for the Contract. Labourers and workers of the Local community who are engaged by other employers, other sub-Contractors in paid positions of employment shall not be eligible for inclusion on the Labour Register.

E1.3.1 Employment of Local Labourers

Upon the award of the Contract the Contractor shall without delay consult with the Project Steering Committee (PSC), the Employer's Agent and the Employer, and appoint a Community Liaison Officer (CLO) from a shortlist provided by the PSC, if so instructed, who is mutually acceptable to all parties. The Community Liaison Officer shall negotiate with the Contractor and the PSC and compile the required list of available Local Labourers called the Labour Register (Labour Desk).

The Contractor shall select and appoint temporary contract workers required for work included in the Contract from the available Local Labourers listed in the Labour Register with due observance of the skills required for the work in question.

E1.3.2 Selection of Local Labourers

The Contractor shall advise the CLO and the PSC in writing of the various categories of Local Labourers required for construction and the number of Local Labourers required in each category, together with the personal attributes which he considers desirable that each category of Local Labourers shall possess, taking due cognisance of the provisions of the Contract relating to Training.

The Contractor shall make his selection of Local Labourers from the applicants in the Labour Register, taking due cognisance of his requirements for the workforce and the provisions of the Contract in regard of the provision of Training to the workforce and in accordance with the following principles:

- (a) No potential Local Labourer 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 labourers who already possess suitable skills; or
 - (ii) The completion period allowed in the Contract, or the remaining portion of the Contract period (as the case may be) is sufficient to facilitate the creation of the necessary skills;
- (c) Preference shall be given to the long-term and single heads of households;

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- (d) The Contractor shall, in so far as is reasonably practicable, accommodate the applicant's expressed preferences regarding the types of work for which they are selected;
- (e) The selection process shall make provision for, but shall not be limited to, the inclusion in the Labour Register of disabled Local Labourers who are deemed capable to perform selected tasks, youths who are older than sixteen but not older than thirty five years and women.

After making his selection, the Contractor shall advise the CLO and the Employer's Agent thereof in writing, and the Employer's Agent, with the assistance of the CLO has the right to call a meeting with PSC and the Local Community for the purpose of ratifying the Contractor's selection. The Contractor shall attend such meeting and where reasonably required, shall motivate his selection. Should the Employer's Agent or the Local Community make reasonable objection to the selection of any particular applicant by the Contractor, the Contractor shall not employ such applicant and shall select another suitable applicant acceptable to the Employer's Agent and the Local Community as a replacement of the rejected applicant, in order to finalize the composition of the workforce.

The provisions this clause shall also apply in respect of the selection of additional or replacement members of the workforce as may be necessary from time to time for the execution and completion of the Works.

E1.4 CONTRACTUAL REQUIREMENTS

E1.4.1 Legislation

The onus shall be on the Contractor to ensure that all statutory requirements applicable to the employment of Labour are observed.

E1.4.2 Labour content

The Labour Content (LC) of the Contract shall be determined as follows:

LC = total value of wages, allowances and costs paid to local labourers, including those employed by subcontractors and selected subcontractors.

The total Rand value of the Labour Content, expressed as a percentage of the total Award Value (Contract Price exclusive of VAT, and allowances for contingencies and escalation), shall be defined as the Labour Content Percentage or the local labour goal as stated in Part C4. .

E1.4.3 Targeted labour

The targeted labour shall be as specified above. The definitions, provisions and specifications of the South African National Standard Specification SANS1914-52002, Targeted Construction Procurement : Part 5 : Participation of Targeted Labour will apply to this contract. Should there however be conflict between SANS1914-5:2002 and the Works Specification, the latter shall take precedence and prevail.



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The Contractor shall engage targeted labour directly in the execution of the Works to the extent that the monetary value (Labour Content) of such engagement, expressed as a percentage of the Award Value (Contract Price exclusive of VAT, Provisional Sums, Prime Cost Sums and allowances for contingencies and escalation), is not less than that specified in Part C 4. of this tender document.

E1.4.4 Records and reporting

The Contractor shall maintain accurate and comprehensive records of all local labourers engaged on the contract. Forms 1 to 3 (of which pro-formas are included in Part C1: Agreements and Contract Data) shall be completed and submitted to the Employer's Agent at the end of each month, from the Commencement date up to the completion of the Contract. Form 3 may be substituted by the use of electronic banking records provided that the system can be audited.

The completed forms shall accompany the Contractor's monthly claim presented to the Employer's Agent for payment of certified completed work. The Employer reserves the right to delay payments due to the Contractor should the Contractor fail to provide any item of required documentation to the approval of the Employer's Agent.

The Contractor's Labour Content performance will be measured at the end of each month in order to monitor the extent to which he is striving to reach the Local Labour Goal specified in Part A of the Works Specification.

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 Employer's Agent with independently audited documentary evidence of the total actually paid to the workforce and the number of workers days generated during the contract.

E1.4.5 SANCTIONS

In the event that the Contractor fails to substantiate that any failure to achieve the Local Labour Goal was due to quantitative under runs, the elimination of items, or any other reason beyond the Contractor's control which may be acceptable to the Employer, the Contractor shall be liable to pay to the Employer a financial penalty (P) calculated in accordance with the following formula:

$$P = 1,05 \times (L_M - L_A) \times V_A.$$

Where:

P = Rand value of penalty payable.

V_A = Award value (Contract Price exclusive of VAT, and allowances for contingencies and escalation)

L_M = Local Labour Goal % stated in the Project Document

L_A = The local labour component % which the Employer's Representative certifies as being achieved upon completion of the contract.



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E1.5 PROJECT STEERING COMMITTEE

When required a Project Steering Committee (PSC) shall be established to manage the project, consisting of members elected from each of the wards along the project road. The Contractor will have one senior member of his staff as representative on the PSC without any voting powers.

The Contractor will report all progress, deviations from the Contract, deviations from the programme, labour related matters, and financial progress to the PSC.

The PSC will act as liaison channel between the Contractor and the community. The PSC will assist the Contractor in identifying and recruiting local labour for the project.

The Contractor shall hold meetings with the PSC on a regular basis (at least once per month but not more than twice per month) to ensure that the PSC is informed and aware of progress and problems that may arise.

Allowance is made for the payment of subsistence/travel allowances to the members of the PSC attending meetings with the Contractor, by the Contractor in the Schedule of Quantities.

E1.6 COMMUNITY LIAISON OFFICER

E1.6.1 Appointment

The Contractor shall appoint a Community Liaison Officer (CLO) after consultation with the Project Steering Committee (PSC), the Employer's Agent and the Employer, as a link between the PSC and the Contractor. The Community Liaison Officer shall be nominated by the PSC and shall be appointed as a member of the Contractor's management personnel and the Contractor's normal employment conditions shall be applicable to the appointment. The Contractor shall disclose his normal employment conditions to the Employer's Agent when called upon to do so.

E1.6.2 Duties of the Community Liaison Officer

The Community Liaison Officer shall:

- (a) be available on Site daily between the hours agreed on by the Contractor, the Employer and the Employer's Agent from time to time;
- (b) assist the Contractor in the identification of suitable trainees and shall attend one of each of the training sessions;
- (c) communicate with the Contractor and the Employer's Agent to determine the labour requirements with regard to the numbers and skills;
- (d) assist in maintaining good labour relations, and when applicable partake in Labourers' grievances and dispute procedures;
- (e) assist in and facilitate the recruitment of suitable temporary labour and the establishment of the Labour Register (Labour Desk);
- (f) attend all meetings in which the Local Community and/or Labourers are present or are required to be represented;



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- (g) assist in the identification, and screening of Labourers from the Local Community in accordance with the Contractor's requirements;
- (h) inform temporary Labourers of their conditions of temporary employment, and inform temporary Labourers as early as possible when their period of employment will be terminated;
- (i) attend disciplinary proceedings to ensure that hearings are fair and reasonable;
- (j) keep a daily written record of his interviews and community liaison activities;
- (k) carry out specific tasks ordered by the Employer's Agent;
- (l) perform such other duties as required and agreed upon between all parties concerned.

E1.6.3 Remuneration

The remuneration of the Community Liaison Officer shall be determined jointly by the Contractor, Employer's Agent and the Employer. A Provisional Sum is provided in the Schedule of Quantities to cover the remuneration of the Community Liaison Officer.

The Community liaison Officer shall only be employed and paid for the period in which the duties of a Community Liaison Officer are required as agreed on by the Employer's Agent and the Contractor.

E1.6.4 Transport of the Community Liaison Officer

The Contractor shall provide transport for the Community Liaison Officer as agreed upon between the Employer, the Employer's Agent and the Contractor.

A Provisional Sum is provided in the Bill of Quantities to cover the provision of transport for the Community Liaison Officer.

E1.7 TRAINING REQUIREMENTS

Where training is specified in the Contract, the Contractor shall implement a formal training programme in which the various skills required for the execution and completion of the works are imparted to the workers, and where applicable, subcontractors engaged therein, in a programmed and progressive manner. Workers shall be trained progressively throughout the duration of the contract in the various stages of a particular type of work.

All Training shall take place during normal working hours and the Contractor shall make adequate allowance in his programme of work to accommodate the Training to be provided in terms of the Contract and shall ensure that the workers are available at the appropriate times to undergo such Training.

The Contractor shall submit with his tender full details of the formal training which he intends to implement on the Contract. Details of the proposed Training shall be provided on Schedule of Proposed Training in the: Returnable Schedules and shall include the following:

- (i) The name of the training institution and course programme.
- (ii) Each type of training and course content synopsis.
- (iii) The manner in which the training is to be delivered.



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The cost of the Training in accordance with the Contractor's Schedule of Proposed Training programme shall not exceed the sums provided for Training in the relevant pay items in the Bill / Schedule of Quantities.

The Contractor's Training schedule shall be subject to the approval of the Employer's Agent, and the Contractor shall, if so instructed by the Employer's Agent, alter or amend the Training schedule and its contents to suit changing conditions on the Site and changes in the Contractor's programme of work.

E1.7.1 Training of Local Labourers

Depending on the requirements of the Contract the Training shall make provision for on-site hands-on Training, courses presented in-house by the Contractor, and selected courses presented by institutions accredited by the Construction, Education and Training Authority (CETA) or other institution recognized by the Department of Labour and the Employer.

Each Labourer shall receive basic instructions and on-site hands-on training for the category of work required to be executed by him/her.

An approved number of Local Labourers chosen by the Contractor in conjunction with the Employer's Agent shall attend in-house courses conducted by trainers in the employ of the Contractor in accordance with the approved Training programme to satisfy the need for trained Labourers on the Site.

Where formal accredited training is specified in the Contract, Local Labourers with the required aptitude shall be nominated by the Contractor, and subject to the approval of the Employer's Agent, shall attend approved formal training courses presented by accredited institutions and considered essential for the execution of the Works.

For this purpose the Contractor shall submit a selection of courses from known training institutions accredited by the Construction, Education and Training Authority (CETA) or other institution recognized by the Department of Labour and the Employer from which the Employer's Agent will choose the courses to be attended by the nominated and approved Local Labourers.

E1.7.2 Training for Emerging Contractors (SMME's)

The Contractor shall closely monitor the performance of the principals of Emerging Contractors (SMME's), the execution of their subcontracts and shall identify those who, in his opinion, display the potential to benefit from formal Training provided for in the Contract, and when required by the Employer's Agent, the Contractor shall make recommendations in this regard. The final list of candidates will be decided on between the Contractor and the Employer's Agent.

Where required, Emerging Contractors engaged by the Contractor shall receive training and guidance according to an approved formal training programme which comprises both management skills and business development skills.

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The Contractor shall, when requested provide full details of any additional accredited and in-house training, viewed to be necessary by the Contractor, which he intends to implement at his own cost.

If so indicated, the Contractor shall alter or amend the formal training programme and its contents to suit changing conditions on Site and changes in the Contractor's programme of work.

E1.7.3 Labourers remunerated during training

All Local Labourers employed by the Contractor shall be remunerated in respect of the time spent undergoing formal training. Payment for Labourers in respect of training periods during which no productive work is executed, shall be reimbursed to the Contractor as provided for in the Bill / Schedule of Quantities.

E1.7.4 Non-compliance

If at any stage the Employer's Agent notifies the Employee in writing that the Contractor is not complying with the requirements of the Contract in respect of the training to be provided to Local and other Labourers and to the Emerging Contractors, then the Employer is entitled to appoint competent firms or persons to conduct the specified training at the Contractor's expense and the amounts paid to such firms or persons will be deducted from the Contractor's payment.

The Contractor shall be obliged to make Local Labourers and other employees available for Training when so required by the Employer's Agent.

E1.8 FORMAL TRAINING

E1.8.1 General

The formal skills training programme to be implemented by the Contractor shall comply with the following minimum standards:

- (a) Be accredited by the Construction, Education and Training Authority (CETA) or other institution recognized by the Department of Labour, as being appropriate for this project.
- (b) Be delivered by suitably qualified and experienced trainers accredited to do so.
- (c) Be delivered in the modules as described by an authorized Training Centre. The modules listed are those considered applicable to most civil Employer's Agenting projects and shall serve as a guide only for planning purposes. The actual training needs, training agency and programme shall be agreed with the Employer's Agent prior to implementation.

The Contractor shall be responsible for the provision of everything necessary for the delivery of the skills training programme, including the following:

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- (i) Sufficient skilled, competent and accredited trainers to deliver the training programme to all workers in accordance with the training programme;
- (ii) A suitably furnished venue (if required)
- (iii) Transport to and from the works (as necessary)
- (iv) Tools, equipment and teaching aids;
- (v) Stationery and all other necessary materials

All members of the workforce will initially receive training in the module. Road safety for construction workers followed by training in the various work activity modules depending on the activities for which they will be employed. Each worker employed must be given the opportunity of completing at least one of the work activity modules during the initial training period, with further training being given on merit.

The Contractor shall keep comprehensive records of the training given to each worker as well as the nature and number of work tasks executed by the worker and whenever required shall provide copies of such records to the Employer's Agent.

The Contractor shall in so far as it is reasonable and practical taking due and cognisance of the nature of the works to be executed at any given time, use training workers on those aspects of the works for which they have been trained.

E1.8.2 Accredited training and attendance

Only qualified trainers employed by training agencies that are accredited by the Construction, Education and Training Authority (CETA), or other institution recognized by the Department of Labour shall deliver all training. Accredited training referred to both the trainers as well as to the training material. Certificates affirming the successful participation in the various courses shall be presented to each attendant.

The Contractor shall facilitate in the delivery of training by instructing and motivating the hired local Labour, supervisors and subcontractors regarding attendance and participation.

All training shall take place within normal working hours or as agreed with the trainees.

E1.8.3 Supervisors

Attention shall be given to the formal and informal training of supervisors.

Candidates having the potential to become supervisors shall be selected from amongst the workforce and be given additional formal and informal training as outlined above. This selection will take place only once the initial skills training have been completed and workers have been given sufficient opportunity to prove their worth.



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E1.8.4 Training records and certificates

The Contractor shall keep comprehensive records of the formal training given to each Labourer and principal of the Emerging Contractor and whenever required shall provide copies of such records to the Employer's Agent. At the successful completion of each course each participant shall be issued with certificate indicating the course contents as proof of attendance and completion.

E1.8.5 Labour / Training Agent

If specified in the Contract, the Contractor shall appoint a Labour / Training Agent, subject to the written approval of the Employer's Agent. The Labour / Training Agent shall be on the Site at all times when Local and other Labourers are executing work allocated to them.

The labour / Training Agent shall report in writing to the Employer's Agent on a daily basis on the work executed by the Local and other Labourers in the employ of the Contractor, the quality of the work the progress and all other information that the Employer's Agent may require. The Labour / Training Agent shall also be responsible for those aspects of training which are assigned to him the Contract.

E1.8.6 Training centre

If so specified in the Contract a suitable onsite Training centre shall be provided by the Contractor to the satisfaction of the Employer's Agent. The Training centre shall comply with the specifications for site offices as specified in the Specifications Measurement and payment of the Training centre and the required equipment shall be as specified in the Project Specification.

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E2 SPECIFICATION FOR LABOUR-INTENSIVE CONSTRUCTION

E2.1 SCOPE

In order to reduce unemployment the Government has initiated the promotion of labour-intensive construction through the Department of Transport projects.

This is a short-term, non-permanent, labour-intensive programme initiated by Government and funded whether fully or partially, from public resources to provide a public asset.

This specification sets out the provisions and requirements relating to labour-intensive construction works.

E2.2 DEFINITIONS

For the purpose of this Contract, the definitions given in the Contract Data, the Standard Specifications, and the Works Specifications, together with the following additional definitions shall, unless the context dictates otherwise, apply:

‘Labour-intensive’ means the economically efficient employment of as many unskilled or semi-skilled Local Labourers as is technically feasible for an identifies portion or section of the Works.

‘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.

‘Workforce’ means the aggregate body comprising of all workers and shall, unless the context dictates otherwise, include the workforces of the Contractor and all subcontractors.

Standard specifications (those normally used by the public bodies) are to be utilised. It is necessary, however, to include certain requirements in the scope of work to implement labour-intensive works in accordance with the provisions of these Guidelines.

E2.3 LABOUR-INTENSIVE COMPETENCIES OF CONTRACTOR’S STAFF

E2.3.1 Eligibility requirements

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

The tenderer shall, when requested by the Employer to do so, submit with his tender the names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements.



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E2.3.2 Labour-intensive competencies of supervisory and management staff

Established Contractors shall only engage supervisory and management staff in labour intensive works who have either completed, or for the period 1 April 2004 to 30 June 2005, are registered for training towards, the skills programme outlined in Table 1.

Emerging Contractors shall have personally completed, or be registered on a skills programme for the NQF level 2 unit standard. All other site supervisory staff in the employ of emerging Contractors must have completed, or be registered on a skills programme for, the NQF level 2 unit standards or NQF level 4 unit standards.

Table 1: Skills programme for supervisory and management staff

Personnel	NQF level	Unit standard titles	Skills programme description
Team leader / supervisor	2	Apply Labour Intensive Construction Systems and Techniques to Work Activities	This unit standard must be completed, and
		Use Labour Intensive Construction Methods to Construct and Maintain Roads and Stormwater Drainage	} any one of these 3 unit standards
		Use Labour Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour Intensive Construction Methods to Construct, Repair and Maintain Structures	
Foreman/ supervisor	4	Implement labour Intensive Construction Systems and Techniques	This unit standard must be completed, and
		Use Labour Intensive Construction Methods to Construct and Maintain Roads and Stormwater Drainage	} any one of these 3 unit standards
		Use Labour Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour Intensive Construction Methods to Construct, Repair and Maintain Structures	
Site Agent / Manager (i.e. the Contractor's most senior representative that is resident on site)	5	Manage Labour Intensive Construction Processes	Skills Programme against this single unit standard
Details of these skills programmes may be obtained from the CETA ETQA manager (e-mail: gerard@ceta.co.za , tel: 011-265 5900)			



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**E2.4 STANDARD CONDITIONS OF EMPLOYMENT FOR DEPARTMENT OF TRANSPORT
PROJECTS**

E2.4.1 Introduction

- (a) This document contains the standard terms and conditions for workers employed in elementary occupations. These terms and conditions do NOT apply to persons employed in the supervision and management of ECDoT Projects.
- (b) Additional Definitions:
The following additional definitions shall, unless the context dictates otherwise, apply:
 - (i) **“department”** means any department of the State, implementing agent or Contractor;
 - (ii) **“employer”** means any department, implementing agency or Contractor that hires workers to work in elementary occupations on a ECDoT project;
 - (iii) **“worker”** means any person working in an elementary occupation on the Project;
 - (iv) **“elementary occupation”** means any occupation involving unskilled or semi-skilled work;
 - (v) **“management”** means any person employed by a department or implementing agency to administer or execute a ECDoT project.
 - (vi) **“task”** means a fixed quantity of work;
 - (vii) **“task-based work”** means work in which a worker is paid a fixed rate for performing a task;
 - (viii) **“task-rated worker”** means a worker paid on the basis of the number of tasks completed;
 - (ix) **“time-rated worker”** means a worker paid on the basis of the length of time worked.

E2.4.2 Terms of Work

- (a) Workers are employed on a temporary basis.
- (b) A worker may NOT be employed for longer than 36 months in any five-year cycle.
- (c) Employment does not qualify as employment as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

E2.4.3 Normal Hours of Work

- (a) An employer may not set tasks or hours of work that require a worker to work–
 - (i) More than forty hours in any week;
 - (ii) On more than five days in any week; and
 - (iii) For more than eight hours on any day.
- (b) An employer and worker may agree that a worker will work four days per week. The worker may then work up to ten hours per day.
- (c) A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks allocated (based on a 40-hour week) to that worker.



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E2.4.4 Meal Breaks

- (a) A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.
- (b) An employer and worker may agree on longer meal breaks.
- (c) A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.
- (d) A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

E2.4.5 Special Conditions for Security Guards

- (a) A security guard may work up to 55 hours per week and up to eleven hours per day.
- (b) A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

E2.4.6 Daily Rest Period

Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

E2.4.7 Weekly Rest Period

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work ("emergency work").

E2.4.8 Work on Sundays and Public Holidays

- (a) A worker may only work on a Sunday or public holiday to perform emergency or security work.
- (b) Work on Sundays is paid at the ordinary rate of pay.
- (c) A task-rated worker who works on a public holiday must be paid:
 - (i) The worker's daily task rate, if the worker works for less than four hours;
 - (ii) Double the worker's daily task rate, if the worker works for more than four hours.



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- (d) A time-rated worker who works on a public holiday must be paid:
 - (i) The worker's daily rate of pay, if the worker works for less than four hours on the public holiday;
 - (ii) Double the worker's daily rate of pay, if the worker works for more than four hours on the public holiday.

E2.4.9 Sick Leave

- (a) Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.
- (b) A worker who is unable to work on account of illness or injury is entitled to claim one day's paid sick leave for every full month that the worker has worked in terms of a contract.
- (c) A worker may accumulate a maximum of twelve days' sick leave in a year.
- (d) Accumulated sick-leave may not be transferred from one contract to another contract.
- (e) An employer must pay a task-rated worker the worker's daily task rate for a day's sick leave.
- (f) An employer must pay a time-rated worker the worker's daily rate of pay for a day's sick leave.
- (g) An employer must pay a worker sick pay on the worker's usual payday.
- (h) Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is:
 - (i) Absent from work for more than two consecutive days; or
 - (ii) Absent from work on more than two occasions in any eight-week period.
- (i) A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorized to issue medical certificates indicating the duration and reason for incapacity.
- (j) A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

E2.4.10 Maternity Leave

- (a) A worker may take up to four consecutive months' unpaid maternity leave.
- (b) A worker is not entitled to any payment or employment-related benefits during maternity leave.
- (c) A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.
- (d) A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.
- (e) A worker may begin maternity leave:
 - (i) Four weeks before the expected date of birth; or



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- (ii) On an earlier date:
 - If a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or
 - If agreed to between employer and worker; or
- (iii) On a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.
- (f) A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.
- (g) A worker who returns to work after maternity leave, has the right to start a new cycle of twenty-four months employment, unless the project on which she was employed has ended.

E2.4.11 Family responsibility leave

Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances:

- (a) When the employee's child is born;
- (b) When the employee's child is sick;
- (c) In the event of a death of:
 - (i) The employee's spouse or life partner;
 - (ii) The employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.

E2.4.12 Statement of Conditions

- (a) An employer must give a worker a statement containing the following details at the start of employment:
 - (i) The employer's name and address and the name of the ECDOT;
 - (ii) The tasks or job that the worker is to perform; and
 - (iii) The period for which the worker is hired or, if this is not certain, the expected duration of the contract;
 - (iv) The worker's rate of pay and how this is to be calculated;
 - (v) The training that the worker will receive during the ECDOT project.
- (b) An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.
- (c) An employer must supply each worker with a copy of these conditions of employment.

E2.4.13 Keeping Records

- (a) Every employer must keep a written record of at least the following:
 - (i) The worker's name and position;
 - (ii) In the case of a task-rated worker, the number of tasks completed by the worker;



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- (iii) In the case of a time-rated worker, the time worked by the worker;
- (iv) Payments made to each worker.
- (b) The employer must keep this record for a period of at least three years after the completion of the project.

E2.4.14 Payment

- (a) An employer must pay all wages at least monthly in cash or by cheque or into a bank account.
- (b) A task-rated worker will only be paid for tasks that have been completed.
- (c) An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the Contractor having submitted an invoice to the employer.
- (d) A time-rated worker will be paid at the end of each month.
- (e) Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.
- (f) Payment in cash or by cheque must take place:
 - (i) at the workplace or at a place agreed to by the worker;
 - (ii) during the worker's working hours or within fifteen minutes of the start or finish of work;
 - (iii) in a sealed envelope which becomes the property of the worker.
- (g) An employer must give a worker the following information in writing:
 - (i) the period for which payment is made;
 - (ii) the numbers of tasks completed or hours worked;
 - (iii) the worker's earnings;
 - (iv) any money deducted from the payment;
 - (v) the actual amount paid to the worker.
- (h) If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it
- (i) If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

E2.4.15 Deductions

- (a) An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law.
- (b) An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.
- (c) An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned.

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- (d) An employer may not require or allow a worker to:
 - (i) repay any payment except an overpayment previously made by the employer by mistake;
 - (ii) state that the worker received a greater amount of money than the employer actually paid to the worker; or
 - (iii) pay the employer or any other person for having been employed.

E2.4.16 Health and Safety

- (a) Employers must take all reasonable steps to ensure that the working environment is healthy and safe.
- (b) A worker must:
 - (i) work in a way that does not endanger his/her health and safety or that of any other person;
 - (ii) obey any health and safety instruction;
 - (iii) obey all health and safety rules of the SPWP;
 - (iv) use any personal protective equipment or clothing issued by the employer;
 - (v) report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

E2.4.17 Compensation for Injuries and Diseases

- (a) It is the responsibility of the employers (other than a Contractor) to arrange for all persons employed on a SPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.
- (b) A worker must report any work-related injury or occupational disease to their employer or manager.
- (c) The employer must report the accident or disease to the Compensation Commissioner.
- (d) An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

E2.4.18 Termination

- (a) The employer may terminate the employment of a worker for good cause after following a fair procedure.
- (b) A worker will not receive severance pay on termination.
- (c) A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.



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- (d) A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.
- (e) A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

E2.4.19 Certificate of Service

- (a) On termination of employment, a worker is entitled to a certificate stating:
 - (i) The worker's full name;
 - (ii) The name and address of the employer;
 - (iii) The Project on which the worker worked;
 - (iv) The work performed by the worker;
 - (v) Any training received by the worker;
 - (vi) The period for which the worker worked on the project; and
 - (vii) Any other information agreed on by the employer and worker.

E2.5 VARIATIONS TO STANDARD CONDITIONS OF EMPLOYMENT

Notwithstanding the provisions of the above-mentioned conditions, the Contractor shall comply with the following relevant statutory legislation:

- (a) Basic Conditions of Employment Act 75 of 1997
- (b) Labour Relations Act 66 of 1995
- (c) Employment Equity Act 55 of 1998 (Chapters 1 and 2)
- (d) Occupational Health and Safety Act 85 of 1993
- (e) Compensation for Occupational Injuries and Diseases Act 130 of 1993
- (f) Skills Development Act of 1998

The statutory Department of Labour's Government Notice No. R204 of 2 March 2001: Basic Conditions of Employment Act (No. 75 of 1997): Sectoral Determination 2: Civil Employer's Agenting Sector, South Africa as amended shall apply in respect of any employer or employee associated with the contract.

For the purposes of this contract, the following variations to the above-mentioned Ministerial Determination, Expanded Transport Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No. R63 of 25 January 2002 shall apply. The Sub clause numbers refer to the relevant Sub clause number under Sub clause E2.4 above.

Delete Sub clause E2.4.3 and replace with the following:



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"Clauses 8, 9 and 10 of the Department of Labour Government Notice No. R204 of 2 March 2001: Basic Conditions of Employment Act (No. 75 of 1997): Sectoral Determination 2: Civil Employer's Agenting Sector, South Africa shall apply. Clause 8 makes provision for 45 hours/week."

Delete Sub Sub clauses E2.4.6 and E2.4.7 and replace with the following:

"Clause 12 of the Department of Labour Government Notice No. R204 of 2 March 2001: Basic Conditions of Employment Act (no. 75 of 1997): Sectoral Determination 2: Civil Employer's Agenting Sector, South Africa shall apply. Clause 12 makes provision for a daily rest period of 12 consecutive hours and a weekly rest period of 36 consecutive hours."

Delete Subsubclause E2.4.14 and replace with the following:

"Subclause 5(1) (a) of the Department of Labour Government Notice No. R204 of 2 March 2001: Basic Conditions of Employment Act (No. 75 of 1997): Sectoral Determination 2: Civil Employer's Agenting Sector, South Africa shall apply. Subclause 5(1) (a) makes provision for employees to be paid weekly, fortnightly or monthly."

E2.6 EMPLOYMENT OF UNSKILLED AND SEMI-SKILLED WORKERS IN LABOUR INTENSIVE WORKS

E2.6.1 Requirements for the sourcing and engagement of labour.

- (a) Unskilled and semi-skilled labour required for the execution of all labour intensive works shall be engaged strictly in accordance with prevailing legislation, SANS 1914-5, Participation of Targeted Labour and the Works Specification.
- (b) The rate of pay shall be the latest minimum hourly rate set by the Sectoral Determination : Civil Engineering Sector : South Africa
- (c) If required tasks established by the Contractor must be such that:
 - (i) The average worker completes 5 tasks per week in 40 hours or less; and
 - (ii) The weakest worker completes 5 tasks per week in 55 hours or less.
- (d) The Contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of sub-clause E2.6.1 (c) above.
- (e) 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:
 - (i) Where the head of the household has less than a primary school education;
 - (ii) That have less than one full time person earning an income;



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- (iii) Where subsistence agriculture is the source of income; and
- (iv) Those that are not in receipt of any social security pension income
- (f) The Contractor shall endeavour to ensure that the expenditure on the employment of temporary workers is in the following proportions:
 - (i) 40% women;
 - (ii) 20% youth who are between the ages of 18 and 35; and
 - (iii) 2% persons with disabilities.

E2.6.2 Specific provisions pertaining to SANS 1914-5

(a) Definitions

Targeted labour: Unemployed persons who are employed as local labour on the project is stated in Part C4. .

(b) Contract participation goals

- (i) The specified contract participation goal for the contract is the percentage of the award value as stated in Part C4: Site Information. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.
- (ii) The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.

(c) Terms and conditions for the engagement of targeted labour

Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

(d) Variations to SANS 1914-5

- (i) The definition for net amount shall be amended as follows:
Financial value of the contract upon completion, exclusive of any value added tax or sales tax which the law requires the employer to pay the Contractor.
- (ii) The schedule referred to in clause 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

E2.6.3 Training of targeted labour

- (a) The Contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.



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- (b) The cost of the formal training of targeted labour, will be funded by the local office of the Department of Labour. This training will take place as close to the project site as practically possible. The Contractor must access this training by informing the relevant regional office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required.
- (c) The Contractor shall do nothing to dissuade targeted labour from participating in training programmes and shall take all reasonable steps to ensure that each beneficiary is provided with two days of formal training for every 22 days worked.
- (d) An allowance equal to 100% of the task rate or daily rate shall be paid by the Contractor to workers who attend formal training, in terms of sub clause E2.6.3(c) above.
- (e) Proof of compliance with the requirements of sub clause E2.6.3 (b) to (d) must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

E2.7 GENERIC LABOUR-INTENSIVE SPECIFICATION

E2.7.1 Applicable Standardized Specification

The Construction and Management Requirements for Works Contracts:

Specification SANS 1921-5 : 2004, Part 5 : Earthworks Activities which are to be Performed by Hand shall apply as additional Works Specifications to this contract. The South African National Standard SANS 1921-5 : 2005 Specification is not bound in this document and it may be obtained from South African Standards (website www.sansa.co.za) or viewed by appointment at the offices of the Employer's Representative during normal working hours.

E2.7.2 Variations to SANS 1921-5: 2004, Part 5: Earthworks activities which are to be performed by hand

Clause 4.2: Trench excavation

Add the following to sub-clause 4.2.1:

"The trenches which are to be excavated by hand are up to 1,5m deep."

Clause 4.4: Excavations other than in trenches

Replace sub-clause 4.4.1 with the following:

"All material excavatable by hand related to the items listed in Table 4.13/1 shall be excavated by hand."

Clause 4.7: Loading

Delete and replace with the following:

"Loading of material in areas difficult for the specialised equipment (restricted areas) shall be done by hand."

Clause 4.8: Haul



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Add the following:

“This clause shall not apply to this contract.”

Clause 4.10: Spreading

Add the following:

“This clause shall apply to this contract only provided the material can be economically spread by hand.”

Add the following new clauses:

“4.13 : Labour-intensive Work

The items/activities that shall be done by hand are listed/provided in Part C4: Site Information. These listed items and others indicated by the prefix LI in the Bill of Quantities are compulsory and may not be executed in any other way.

The Contractor may identify further activities to increase the labour component of the contract.

4.14 : Manufactured Elements

Elements manufactured or designed by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320kg. In addition the items shall be large enough so that four workers can conveniently and simultaneously acquire a proper hand-hold on them.

The Contractor may also propose to the Employer's Agent additional labour based activities, or alternative activities in place of any of the above mentioned activities that cannot be executed using labour based methods due to unforeseen and abnormal circumstances.

The Contractor shall take cognisance of his General Obligations and the contribution of Targeted Labour to the Contractor Participation Goal (CPG) specified for the contract.

Before commencing with any labour-intensive operations the Contractor shall discuss his intentions with the Employer's Agent, and shall submit to the Employer's Agent on a weekly basis, daily labour returns indicating the numbers of temporary personnel employed on the works and the activities on which they were engaged.”

E2.8 MEASUREMENT AND PAYMENT

Prescribed Labour-intensive work

Those parts of the Works included in the contract, including those parts requiring the use of selected subcontractors, which are to be constructed using labour-intensive methods have been marked in the Schedule / Bill of Quantities.



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The numbers of the pay items or sub-items of the works, or parts of the works which are to be constructed using labour-intensive methods only are prefixed by the letters LI .

The use of plant to provide such works, other than plant specifically provided for in the Scope of Work, is a variation to the contract.

The items marked with the prefixed LI are not necessarily an exhaustive list of all the activities which may be done by hand, and this clause does not over-ride any of the requirements in the generic labour intensive specification in this Works Specifications.

Payment for items which are designated to be constructed labour-intensively (either in the Schedule / Bill of Quantities or in the Scope of Work) will not be made unless they are constructed using labour-intensive methods.

Any unauthorized use of plant to carry out work, which is to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.



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DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

**UPGRADING TO A SURFACE STANDARD ROAD DR08034 - N2 TO R61 VIA CLARKEBURY (20KM)
PHASE 1**

PART C3: SCOPE OF WORK

SECTION F : SPECIFICATION FOR SMME SUB CONTRACTOR EMPLOYMENT

CONTRACT NO. SCMU10-23/24-0001

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PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-23/24-0001

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PART C3: SCOPE OF WORK

SECTION F: SPECIFICATION FOR SMME SUB CONTRACTOR EMPLOYMENT

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ACRONYMS

CETA	-	CONSTRUCTION EDUCATION AND TRAINING AUTHORITY
CIDB	-	CONSTRUCTION INDUSTRY DEVELOPMENT BOARD
CM	-	CONTRACTS MANAGER (MENTOR)
DoL	-	DEPARTMENT OF LABOUR
EC DoT	-	EASTERN CAPE DEPARTMENT OF TRANSPORT
GCC	-	GENERAL CONDITIONS OF CONTRACT FOR CONSTRUCTION WORKS
IA	-	IMPLEMENTING AGENT
MC	-	MAIN CONTRACTOR (MENTOR)
PM	-	PROJECT MANAGER (MENTOR)
PMT	-	PROJECT MANAGEMENT TEAM
PS	-	PROJECT SPONSOR
SARS	-	SOUTH AFRICAN RECEIVER OF REVENUE
SMME	-	SMALL MEDIUM & MICRO ENTERPRISE
SANS	-	SOUTH AFRICAN NATIONAL STANDARDS

1 DEFINITIONS AND INTERPRETATIONS

For the purposes of this section of the Project Specification, the definitions given in the General Conditions of Contract for Construction Works 2015, the Standard Specifications and the Project Specifications, together with the following definitions shall apply:

- (a) Main Contract: Any contract for the execution of civil engineering or building or similar construction works, in which the liabilities and responsibilities of the two parties thereto are assigned essentially in a manner which is consistent with that set out in the General Conditions of Contract for Construction Works 2015.
- (b) Project Management Team (PMT): A team that is set up after award of the contract, consisting of a delegate from each of the Main Contractor, the Employer's Agent and the Employer. The function of the PMT will be to consult regarding the management of the subcontracts involving SMMEs. The PMT will also evaluate the Main Contractor's performance regarding the goals set for SMME involvement. The Employer's Project Manager will decide which party is to chair and lead the team. Minutes of these meetings will be taken by the Employer's Agent.
- (c) SMME Construction Manager: Person provided by Main Contractor to guide, assist and mentor all eligible potential SMMEs tendering and awarded a contract as SMME Sub Contractors as per section 2.2 of this section of the Specification.
- (d) Small, Medium and Micro Enterprises: An Affirmable Business Enterprise which adheres to statutory labour practices, is a legal entity, registered with SARS and the Compensation Commissioner or FEMA and continues to operate as an independent enterprise for profit.



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- (e) SMME Sub Contractor: An Emerging Contractor referred to as an SMME, who has been identified through an Expression of Interest and chosen by the Main Contractor to tender for and, if successful, to provide works as part of the total service required by the Employer for the Contract.
- (f) Sub Contractor: A Contractor who contracts with the Main Contractor to provide works as part of the total services required by the Employer for that Contract.
- (g) SMME Package: Specified work package identified for execution by SMMEs. The identifiers are Employer, Employer's Agent and Main Contractor.
- (h) Joint Venture: An association of firms, companies or businesses for which purpose they combine their expertise, efforts, skills and knowledge to execute the Contract.

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2. SMME TENDER PHASE

2.1 Identification of SMME Contractors

Immediately upon the award of the Contract the Main Contractor in conjunction with the Client and the Employer's Agent shall place an advertisement for Expressions of Interest for CIDB grade 6 class CE SMME Contractors to undertake part of the works. It is intended that 4(four) SMME sub-contracts shall be issued covering certain items of the work which will be identified as set out below. The SMME Contractors will be required to carry out such items of work that will provide continuous employment for approximately 1 year.

2.2 Identification of Works Opportunities

Work opportunities will be selected from the list below.

The Main Contractor will note that all work measured in the Bills of Quantities is the Main Contractor's sole responsibility. This also applies where SMMEs have been identified for a particular portion of works in its entirety.

The SMMEs will be responsible for procuring all required materials, labour, equipment and any other incidentals to undertake the works subcontracted to them unless otherwise specified by Employer before tender or approved by the Project Management Team during construction.

The Main Contractor will supervise and manage the SMME work at all times to ensure compliance with the specifications and drawings.

The list of work packages summarised below has been identified as possible work packages for the sub-contractors. These packages are not all inclusive and contractors are encouraged to exceed the minimum requirements.

ITEM NO	DESCRIPTION	ACTIVITY
SCHEDULE A: ROADWORKS		
1500	Accommodation of Traffic	(i) Erection and relocation / moving of traffic control facilities. (ii) Operating of Stop/Go facilities. (iii) Operation of traffic signals. (iv) Gravel bypass construction. (v) Excavation, laying and backfilling of temporary culverts. (vi) 2 km closures with 2km opening
1700	Clearing and grubbing	(i) Felling of trees.
2100	Drains	(i) All open drain and subsoil drain items.
2200	Prefabricated culverts	(i) All items.
2300	Concrete kerbing, concrete channelling, chutes and downpipes and concrete linings for open drains.	(i) All kerbing items. (ii) All concrete lined drain items.
5100	Pitching, stonework and protection against erosion.	(i) All pitching items. (ii) All concrete sidewalk items.
5200	Gabions	(i) All gabion items.



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ITEM NO	DESCRIPTION	ACTIVITY
SCHEDULE A: ROADWORKS		
5400	Guardrails	(i) All guardrail items.
5500	Fencing	(i) All fencing items including concrete post manufacture.
5600	Road Signs	(i) Erection of supports and road signs.
5700	Road Markings	(i) All road marking items.
5800	Landscaping and Grassing	(i) Planting and trimming.

2.3 Tender process for SMMEs

A minimum of 8 (eight) potential SMME Sub Contractors chosen from the replies to the Expression of Interest shall be invited to tender.

2.4 Compilation and issue of tender documents

The Employer's Agent shall compile the tender documents in such a manner that it will facilitate the achievement of all objectives and principles pertaining to procurement and development of SMMEs as stated in or as may reasonably be inferred from the conditions of this contract.

All tender documentation shall be reviewed, approved and issued by the Main Contractor with all copies of tender documents compiled deemed to be included in the tendered rates or mark-up provision allowed for the various SMME work packages. The tender or quotation document will be issued to invited SMMEs at NO COST and the Main Contractor is to make due allowance for such cost in his tendered rates.

2.5 Site Briefing Session

The Main Contractor shall facilitate a Site Briefing Session for the invited SMMEs. The Main Contractor will also make sure that all relevant parties including the PMT are present and given an opportunity to present specific aspects of the requirements pertaining to their tender requirements.

2.6 Pre-Tender Assistance to the SMMEs

At the briefing session, the Main Contractor assisted by the PMT will be responsible for ensuring that prospective SMME Tenderers fully comprehend the:

- implications of the liabilities and responsibilities inherent in the subcontract applicable;
- scope and extent of the portion of the works included in the subcontract;
- the requirements for quality control of works;
- the requirements for occupational health and safety;
- proper procedures for the submission of the tenders;
- procedures and basis on which tenders will be adjudicated and the subcontracts awarded.

2.7 Adjudication

- (a) The Main Contractor shall receive all tenders at a location identified by him. All sealed tender submissions will be placed in a proper tender box provided by the Main Contractor for this purpose. A submission register is will be maintained by the Main Contractor for all tenders received.



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- (b) All tenders received shall be evaluated by the Main Contractor for final approval. The draft tender evaluation report shall be distributed to the PMT members 5 working days prior to the PMT meeting for comments and perusal in order to finalize the evaluation before the meeting. The format of the tender evaluation report must be agreed upon at the first PMT meeting.

The evaluation of the Occupational Health and Safety plans will be done by the Main Contractor SHE Officer.

- (c) The PMT shall have the right to interview any tenderer for the purpose of:
- clarifying any aspect of the tender;
 - querying abnormally high or low rates and prices, and
 - clarifying rates and prices which are not in balance with other tendered rates and prices.
- (d) The Main Contractor shall provide all reasonable opportunity to such tenderers who have been interviewed, to correct obvious and patent errors, provided always that this can be achieved without altering the total tendered sum.

2.8 Award of Tender

The Main Contractor will award the work to the successful SMME Tenderers and a subcontract agreement will be signed between the Main Contractor and the successful SMME Tenderers.

2.9 Sub-Contract Agreement

A Sub-Contract Agreement in accordance with the SAFCEC Sub Contractor Agreement (2003) will be compiled by the Main Contractor with the assistance of the Employer's Agent. They shall be responsible for ensuring that the terms and conditions are consistent with all requirements as specified in or reasonably may be inferred from the provisions of this Contract. All costs associated with the tender process including the conclusion of the agreement are for the Main Contractor's account.

The final terms and conditions of each subcontract agreement shall be subject to the approval of the PMT, prior to entering into the subcontract agreement. The Main Contractor may not enter into any subcontract agreement that contains terms more onerous or disproportionate to the risks inherent in the main contract for either the SMME or the Main Contractor.

The terms and conditions of the subcontract agreement shall specifically ensure that the provisions of the main contract pertaining to:

- (a) The allowable sources from which workers may be drawn in terms of the contract;
- (b) The terms and conditions relating to the recruitment, employment and remuneration of workers engaged on the contract works; and
- (c) Any training to be provided to the temporary workforce;
- (d) Occupational health and safety.
- (e) The use of labour intensive methods.

Shall apply in respect of all SMME Contracts.

3. CONSTRUCTION PHASE

3.1 Mentorship



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The Main Contractor shall closely manage and supervise and assist all SMMEs in all aspects of management, execution and completion of subcontracts. This shall typically include assistance with planning the works, sourcing and ordering of materials, labour relations, monthly measurements and invoicing procedures, etc. The extent and level of such management, guidance and assistance to be provided by the Main Contractor shall be directed at enabling the SMMEs to achieve the successful execution and completion of the subcontract. Payment for such on-going assistance is deemed included in the rate tendered for the administrative cost of SMMEs.

3.2 Guide, Assist and Mentor SMMEs

(a) SMME Construction Manager for the SMME Sub Contractors

The Main Contractor shall employ on a full-time basis a SMME Construction Manager. The CV of the proposed individual must be submitted to the Employer's Agent for approval based on the requirements shown below.

The SMME Construction Manager will manage the SMMEs and report monthly on progress of each SMME to the Project Management Team (PMT)

Such Construction Manager must be adequately experienced with SMME work(s) concern and the development thereof and will be subject to the approval of the Employer. The SMME Construction Manager will render fulltime assistance to and mentor the SMMEs and shall:

- (i) Possess a minimum of five years site-based experience in the civil engineering construction industry and have a sound knowledge of the minimum requirements to carry out construction work effectively and efficiently.
- (ii) Possess 3 years Civil Engineering administrative experience.
- (iii) Be registered with ECSA as at least a professional technician
- (iv) Would preferably hold a mentoring certificate.
- (v) Maintain the program of the subcontract; ensure continuous supervision and assistance to the SMME sub contractors.

The SMME Construction Manager will report on performance of the SMME on a monthly basis. On completion, the Main Contractor will issue a Final Certificate as given in the SAFCEC Sub Contractor Agreement within seven days after the final completion.

3.3 Dispute Resolution Procedures

The Main Contractor shall at all times:

- (a) apply the terms and conditions of the subcontract fairly and justly, taking due cognisance of the level of sophistication and experience of the particular SMME concerned, as well as the level of subcontract applicable;
- (b) closely manage and supervise all SMMEs and wherever feasible, shall give reasonable warning to SMMEs when any contravention of the terms of the subcontract has occurred or appears likely to occur. The Main Contractor shall, whenever feasible, give the SMMEs reasonable opportunity to rectify any such contravention or to avoid such contravention and shall render all reasonable assistance to the SMME in this regard.
- (c) If no agreement can be reached between the Main Contractor and the sub-Main Contractor, the matter shall be referred to a mutually acceptable mediator as required in Section 15 of the SAFCEC Sub Contractor Agreement.

When taking any actions or imposing any penalties as are provided for in the subcontract, the Main Contractor shall explain fully to the SMMEs that such actions are provided for in the subcontract.



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3.4 Quality of Work and Performance of the Sub-Main Contractor

If the Sub Contractor, in the opinion of the Main Contractor, fails to comply with the criteria as listed below, the Main Contractor shall issue a written warning to the Sub Contractor, stating all the areas of non-compliance. A copy of the letter of warning shall be forwarded to the Employer's Agent. These criteria include:

- (a) Acceptable standard of works as set out in the specifications in the subcontract tender document.
- (b) Progress in accordance with the time constraints in the Sub Contractor's tender document.
- (c) Punctual and full payment of the workforce and suppliers.
- (d) Occupational health and safety compliance.
- (e) Compliance with environmental requirements.

The Sub Contractor shall have 14 days from the date of receipt of the warning letter from the Main Contractor to satisfactorily rectify the issues raised by the Main Contractor, with the exception of point (d) and (e), for which the response time shall be 24 hours. If a satisfactory solution cannot be reached after the mediation process this will be sufficient grounds for the Main Contractor to terminate the contract provided the Project Management Team is satisfied that the Main Contractor has made every effort to correct the performance by the Sub Contractor.

3.5 Payment of SMMEs

- 3.5.1 SMME Sub Contractors are to be invited to submit their payment certification or claim monthly and are to be paid by the Main Contractor within 14 (fourteen) days of receipt of invoice.
- 3.5.2 Payment to SMMEs may not be delayed pending payment of the Main Contractor by the Employer.
- 3.5.3 Payment to SMMEs may not be subjected to set off costs unless provided for in law, and may not exceed 5% of the payment, unless approved by the Employer.
- 3.5.4 Payment to SMMEs may not be discounted for early payment.
- 3.5.5 No interim payment of the SMME invoice may be unfairly withheld or delayed for whatever reason.
- 3.5.6 The Main Contractor must acknowledge and honour cessions in favour of recognised financiers or suppliers of the SMME if presented to the PMT and approved.

3.6 Main Contractor's Liability

No provision or requirement set out in this specification shall be deemed to relieve the Main Contractor of any liability or obligation under the contract, and in accordance with the provisions of Clause 4.4 of the General Conditions of Contract for Construction Works 2015, the Main Contractor shall be fully liable for the acts, defaults and negligence of any SMMEs, his agents or employees, as fully as if they were the acts, defaults and negligence of the Main Contractor, his agents or employees save as specified in the SAFCEC Sub Contractor Agreement.

Any failure or neglect by the Main Contractor to comply with the provision of the specifications, or any omission or neglect by the Main Contractor in adhering to or applying the principles as are described and inherent in the specifications, shall be deemed to constitute a warrant for the Employer's Agent to act in terms of Clause 9.2 of the General Conditions of Contract for Construction Works 2015.

3.7 Performance Guarantee:

The following Performance Guarantees will be applied on the SMME Sub Contracts;

3.7.1	up to R1 000 000	shall be zero percent	(0%);
3.7.2	R1, 000, 001 to R4, 000, 000	shall be five percent	(5%);
3.7.3	Exceeding R4, 000, 000	shall be ten percent	(10%)



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All the above will be of the accepted SMME Sub-Contract Value and will be required from SMMEs as stated in the SAFCEC Sub Contractor Agreement.

Where such guarantees are provided by SMME, the return of same will be related to the time when the work carried out by the SMME is complete to the satisfaction of the Main Contractor and the Employer's Agent.

3.8 Retention

Five percent (5%) of the Sub Contract Value (excluding VAT) will be deducted as retention on SMME, with half to be released on issue of the Completion Certificate for the specific SMME Sub-Contract with the remaining retention released on issuing of the Final Approval Certificate after the 12 months Defects Liability Period. This deduction will be made from each payment certificate till it reaches the maximum of 5% of the Sub Contract Value.

3.9 Measurements & Payments

An item has been measured in Bill of Quantities allowing the Main Contractor to price for the cost of the Main Contractor to manage and supervise the SMMEs during the execution of their works. The price tendered will be deemed to include all incidentals by the Main Contractor to comply with the conditions of this specification. No other claims will be entertained should SMMEs affect the contract works in any way, and the Main Contractor shall deem to include such effects in the handling cost percentage for the different SMME work packages above.

3.10 Sub-Contracting by SMME

The Main Contractor shall not permit SMME Sub Contractors to further subcontract on any other conditions than those applying in the project specification to Sub Contractors or SMME Sub Contractors.

3.11 Joint Venturing & Consortium

The Main Contractor shall not permit the SMME Sub Contractor to enter into a Joint Venture or form a consortium with an external SMME(s) unless PMT approves so before the tender award. The SMME may only be allowed to enter into Joint Venture or form a consortium with the other invited SMME(s) on the package concerned.

4 PORTFOLIO OF EVIDENCE & UP-GRADE SUPPORT

4.1 Keeping of Records

The Main Contractor shall assume responsibility for the compilation and maintenance of comprehensive records detailing each SMME's progress during the construction period, starting from the award of a subcontract to an SMME until the successful completion of the subcontract work or termination of the subcontract. To this end the Main Contractor shall arrange for the completion, on behalf of the SMME Sub Contractor, of the Employer's pro-formas C 1.3.3 Form 1; C1.3.4 Form 2 and C 1.3.5 Form 3 in the Main Contract. The Main Contractor must also keep a register of the details of each SMME engaged.

The Main Contractor shall keep comprehensive records of the training given to each trainee and SMME, at the successful completion of each course; each trainee shall be issued with a certificate indicating the course contents as proof of attendance and completion. The Main Contractor shall keep a register of certificates issued. Whenever required, the Main Contractor shall provide copies of such records to the Employer's Agent.

4.2 Monthly Returns



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The Main Contractor's participation performance will be measured monthly in order to monitor the extent to which he is striving to reach the targets in this contract. The Main Contractor shall complete and return on a monthly basis the following pro-forma forms of the Employer.

- Report on employment. Forms C 1.3.3 Form 1; C1.3.4 Form 2 and C 1.3.5 Form 3
- Report on the SMME's Plant and Equipment.
- Report on progress against programme.
- Report on financial status.
- Report on Employer's Agent training.
- Report on development training.
- Report on safety training.

The completed forms shall be presented to the Employer's Agent at each site meeting. Failure to adhere to this requirement shall result in the delay of any payment due until the Employer's Agent confirms that the forms have been received.

4.3 Main Contractor's duties upon completion of each subcontract

The Main Contractor shall, on completion of each and every subcontract completed in accordance with the provisions of this specification, issue free of charge to the SMME within 7 days of the completion of the subcontract, a Certificate of Experience on a single A4 page containing the following:

(a) Contract data.

- (i) Contract title;
- (ii) Main Contractor's full name and address;
- (iii) Employer's Agent's name and address;
- (iv) Employer's name.

(b) Subcontract data.

- (i) SMME name and address;
- (ii) Scope or extent of the subcontract works;
- (iii) Value of the subcontract works;
- (iv) Applicable level of the subcontract;
- (v) Duration of the subcontract;
- (vi) Date of completion of the subcontract;
- (vii) Description of the training undergone by the SMME.

In addition the SMME Construction Manager must provide comments of the performance of the SMME Sub Contractor in respect of contract execution, Labour management and OHS principles.

(c) Certifying the SMME's successful completion of the subcontract.



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5. MEASUREMENT AND PAYMENT

Item	Unit

G1.1 Provision of an SMME Construction Manager	Month

The monthly tendered rate must include for all costs arising from the full time mentoring, guidance and supervision of the SMME Sub Contractors, including salary, accommodation, transport and all other expenses incurred.

G1.2 Tenders for SMME's	Number (No)

Payment under this item shall be the number of SMME sub contract, tender processes which the Contractor carries out. The tendered rate shall include full compensation for the compilation and issue of tender documents, tender invitation, training and provision of assistance to tenderers, evaluation of tenders and award of sub contracts.

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THE CONTRACT

PART 4 (OF 4) : SITE INFORMATION

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SECTION C4: SITE INFORMATION

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C4.1 MISCELLANEOUS

The works specifications form an integral part of the contract documents and shall be deemed to supplement the Standard Specifications.

In the event of any discrepancy or conflict with any part or parts of the Standard Specifications, the Bill of Quantities or the Drawings, the Project Specifications shall take precedence.

The Standard Specifications, which form part of this Contract, have been written to cover all phases of work normally required for road contracts and they may therefore include items not applicable to this particular contract.

C4.2 EMPLOYER'S OBJECTIVES

The Employer's objectives are to deliver public infrastructure and provide limited work opportunities for labour and SMME's. In this specific instance the Employer's objective is to upgrade to surface standard 20 kilometres of gravel road.

Temporary employment opportunities coupled to training for the communities in close proximity of the road is part of this project. Labour-intensive construction methods will be used on those items of the work that are suitable to be executed in this manner.

The description of the project contained in the Scope of Work is merely an outline of the Contract Works and shall not limit the work to be carried out by the Contractor under this Contract. Details of some of the major items are given in this section and detailed quantities for each type of work to be carried out in accordance with the Contract Documents are included in the Bill of Quantities.

C.4.3 OVERVIEW

The Department of Transport (DoT) is responsible for the management of provincial roads in the Eastern Cape. As part of the DoT's Management Strategy, road DR08034 is planned to be upgraded from a gravel road to a surface road.

Road DR08034 is located in the Eastern Cape in the District Municipality of Engcobo near Idutywa. It is a +/- 40 km road, that links the N2 to the R61 via CLARKEBURY. CLARKEBURY is where the late President Nelson Mandela studied and has thus become a tourism destination. This makes the DR08034 an important route as it provides access not only for tourists travelling to CLARKEBURY, but also act as a collector road from many of the rural towns of the Eastern Cape and provides access to National Road N2 and provincial road R61.

Currently, the road carries medium-low traffic volumes, but upon surfacing will attract significant additional traffic from the R61 and the N2.

The topography of the area is undulating with moderately steep hills, intermittent copies, and narrow alluvial plains. The route was laid out to generally follow water sheds, crossing the Bholotwa River valley and a number of smaller streams.



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The road elevation at the southern limit is 757m. It gradually rises to a ridge of 865m high at km 6, from where it gradually descends in a rolling trajectory to its lowest elevation of 617m at the Bholotwa River near the northern limit. The maximum height difference on the existing road is 248m.

The graph below is a *Google Earth* rendering of the elevation all along the existing route.

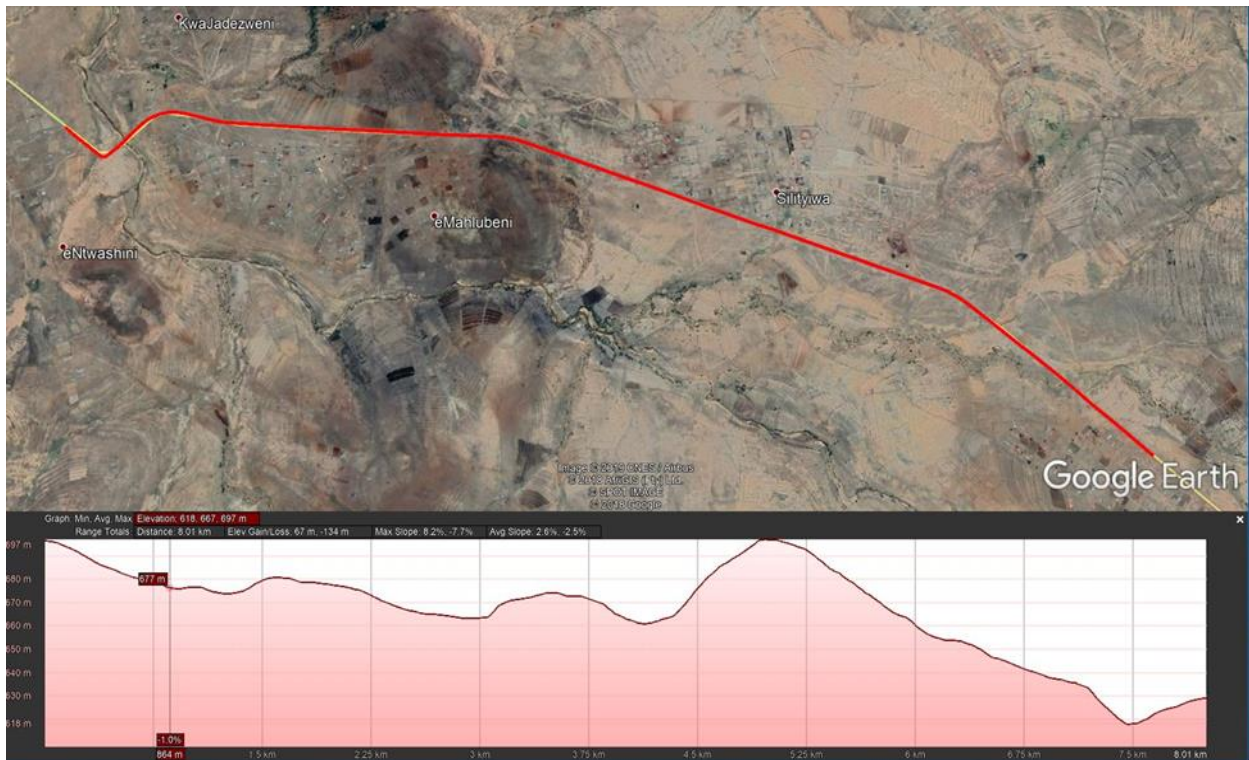


Figure 4.3.1:DR08034

The area falls within the summer rainfall region of Southern Africa. The area further lies within the lower rainfall midlands belt, skirted between the higher rainfall coastal belt to the south-east and the higher rainfall Drakensberg escarpment to the north-west.

The Average Annual Rainfall measured at Idutywa to the south-west and at Mthatha in the north-west is 520mm and 590mm respectively. For drainage design purposes, the Mthatha weather station is deemed most applicable.

The project area lies within the Beaufort Group under the Karoo sequence. More specifically, the area falls within the Tarkastad Subgroup where the Katberg formation is predominant. This formation consists of layered mudstones and sandstones, with dolerite intrusions in the form of dykes, sills and koppies. To the east and parallel to the route, there is reminiscences of an older sandstone plateau. A number of dolerite koppies intrude the alluvial plain towards the northern end of the project road.

Bridge foundations are likely to be medium-soft mudstone to medium-hard sandstone (at best). Base course sources are likely to be dolerite, since sandstone might be inadequate in quality.

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Objectives during construction are to provide black economic enterprise contractors with a substantial portion of the work, provide training to local and other labourers and to execute the work with a high degree of safety

C4.4 EXTENT OF THE WORKS

C4.4.1 Roadworks

The scope of work includes construction of pavement layers, construction of five 1.2 m rectangular culvert, one 3m wide x 3m high major culvert and 24m long bridge; construction of lined side drains, provision of erosion protection works, surfacing the road with Cape Seal as well as provision of bus bays and pedestrian crossings. The description of the works shall inter alia contain the following particulars regarding the work to be constructed and maintained under the contract:

The main aspects of the work are as follows:

- (a) Establishment on site.
- (b) Accommodation of traffic (including half-width construction) during construction.
- (c) Clearing and grubbing in the road reserve, borrow pits and quarry
- (d) Relocation and protection of services
 - electricity
 - telephone
 - water main
- (e) Drainage works, including culverts and open drains
- (f) Earthworks and roadbed preparation.
- (g) Pavement layers, including stabilised sub-base.
- (h) Surfacing using a Cape Seal.
- (i) Gabion retaining structures
- (j) Road signage, pavement markings, guardrails and other safety features
- (k) The construction of accesses and intersections
- (l) The construction of pedestrian footpaths
- (m) Community and stake holder liaison
- (n) The rehabilitation, landscaping and finishing of borrow pits and roadway
- (o) Training programmes for local residents

The above is merely an overview of the Contract Works and shall in no way limit the work to be carried out by the Contractor.

C4.4.1.1 Existing Road

The existing is a gravel road with a nominal 5-6m width.

C4.4.1.2 Proposed Road Cross Section

The road cross section shall be as shown on the drawings. The surfaced width of the upgraded road will be 8.6 m including 0.9m shoulder in both sides.

C4.4.1.3 Batter Policy

- (a) Fill Slopes



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All fills shall be constructed to a constant batter of 1 vertical to 2 horizontal unless otherwise ordered by the Employer's Agent.

(b) Cut Slopes

Cut slopes will generally be constructed at the following batters:

- (i) 1 vertical to 1.2 horizontal in soft material and mudstone.
- (ii) 1 vertical to 1.5 horizontal in soft rock; and
- (iii) 1 vertical to 1.1 horizontal in competent rock.

C4.4.1.4 Road Geometry

The design speed of the upgraded road is 60km/h.

C4.4.1.5 Passing Lanes / Opportunities

No passing lanes will be constructed. This is low traffic road servicing-Clarkebury Community.

C4.4.1.6 Widening of Fills

The widening of all fills will be constructed as per drawings and instructions from the Engineer.

C4.4.1.7 Construction of High Fills

Construction of high fills will be undertaken at bridge approaches.

C4.4.1.8 Major Intersections

The turn off to other District road will be regarded as a major Intersection.

C4.4.1.9 Minor Intersections

There are a number of intersections with minor access and other Divisional Roads as well as accesses to properties along the road. The intersection bell mouths shall usually be surfaced up to the end of the bell mouths, but in some cases the drawings indicate surfacing beyond the bell mouths. At the limit of the surfacing concrete edge beams shall be constructed to prevent surfacing damage.

Some of the minor accesses will include culverts crossings.

C4.4.2 Road Pavement

C4.4.2.1 Pavement Design

Roads component covers the following construction elements:

The road is a Class 3 rural road, with two 3,4 m lanes, 0.9m surface shoulders on each side.



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Surfacing:	19mm Cape Seal including layers of slurry – 76146m ² .
Base:	125mm thick G3 base course compacted to 98% of Mod. AASHTO density.
Subbase:	150mm thick C4 cement stabilized gravel layer compacted to 95% of Mod. AASHTO density
Roadbed:	150mm thick G9 quality insitu material compacted to 90% of Mod. AASHTO density .
Fill:	Minimum G9 quality gravel material from cut or borrow areas, compacted to 90% of Mod. AASHTO density as ordered by the Employer's Agent

Stormwater component covers the following construction elements:

- i) Construction of five 1.2 m rectangular culvert,
- ii) Construction of one 3m wide x 3m high major culvert
- iii) Construction of 24m long bridge
- iv) The construction of stone pitched Trapezoidal drain;
- v) The construction of Storm water structures, i.e. grating inlets, manholes and head walls;
- vi) Mitre drains

C4.4.3 Ancillary Roadworks

- (i) Bus / Taxi Embayments

The Bus/Taxi Embayment will be located at settlements along the road..

- (ii) Fencing

The road reserve will not be fenced.

Borrow pits and quarries shall be fenced during the construction period. Such fences and gates shall remain in place at the completion of the contract. Any damage caused to these fences and gates during construction shall be repaired and restored to their original condition at completion of the contract to the satisfaction of the Employer's Agent.

- (iii) Erection of new road signs.

New road signs are to be installed in accordance with the drawings.

- (iv) Finishing, Landscaping and Grassing



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All cut and fill slopes and all borrow pits and quarries shall be top soiled and grassed using an approved seed mix after they have been properly shaped / finished to the satisfaction of the Engineer.

.Road DR08034 starts in the south at the junction with national route N2, approximately midway between Butterworth and Mthatha. It ends in the north at the junction with national route R61, between Engcobo and Mthatha. From start to end, Road DR08034 covers a distance of approximately 40km.

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C4.4.3 Temporary Works

The Contractor is responsible for the design of all temporary works including accommodation of traffic, support and formwork. He shall supply full working plans supported by a professional Employer's Agent's design certificate.

C4.5 ACCOMMODATION OF TRAFFIC

DR08034 connects traffic travelling from the R61 to the N2, passing adjacent to various villages and the famous town CLARKEBURY. Thus the type of construction advised for this road is half widths phased construction as to ensure public traffic is catered for throughout the contract, with the exception of short term closures in certain areas for 'blasting'. Stop and Go control will be utilized as required and is of great importance.

Access to properties shall at all times be provided for all residents and businesses whose accesses are affected by construction activities. The contractor should ensure that all aspects of traffic accommodation are shown on the Construction Programme.

The Contractor shall submit to the Employer's Agent for approval a method statement detailing traffic accommodation of area concerned and under no circumstance shall the contractor work in a hazardous area without an approved method statement from the Employer's Agent or his representative on site.

C4.6 MAINTENANCE OF EXISTING SERVICES

The requirements of Clauses 1511 and 1512 shall apply to all existing gravel roads, temporary gravel roads, existing surfaced roads and newly surfaced roads used as temporary deviations on this contract.

The Contractor shall be responsible for all routine maintenance operations along the entire length of road reserve, from the date of handing over of the site until the date of issue of the certificate of completion of the works. The maintenance of the existing gravel road is to be carried out using labour intensive methods for as many required activities as practical and as agreed by the Employer's Agent.

Once the certificate of completion of the works has been issued the responsibility for normal maintenance of the road (e.g. collection of litter, clearing of drains, repair of road signs damaged by the public, etc.) shall revert back to the District Roads Engineer

C4.7 SERVICES

Refer to Section B sub-clause B1202 in the Scope of Work in respect of services requirements for this Contract.

C4.8 DRAWINGS

The reduced drawings that form part of the tender document shall be used for tender purposes only.

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The Contractor will be supplied with three (3) paper copies of each of the drawings. These paper copies are issued free of charge and the Contractor shall only be provided additional copies on request and for his account.

Any information in the possession of the contractor, which the Employer's Agent Representative requires for completing his record drawings, shall be supplied to the Employer's Agent Representative before a certificate of completion will be issued.

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

The levels given on drainage/structural drawings are subject to confirmation on site, and the Contractor shall submit all levels to the Employer's Agent for confirmation before he commences any structural construction work. The Contractor shall also check all clearances given on the drawings and shall inform the Engineer of any discrepancies.

C4.9 POWER 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 thereof shall be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.

The Contractor must liaise with the regional offices of Telkom, Eskom and Amathole DM (water) to confirm the position of all above and underground services, before commencing with the works.

Note should be taken of any Eskom restrictions on the supply of electricity as no claims in respect of power outages will apply.

C4.10 CONSTRUCTION IN RESTRICTED AREAS

It may be necessary for the Contractor to work within restricted areas. Except where provided for in the Specifications, no additional payment will be made for work done in restricted areas. In certain places the width of the fill may decrease to zero and the working space may be confined. The method of construction in these confined areas largely depends on the Contractor's constructional plant.

However, the Contractor must note that measurement and payment will be in accordance with the specified cross-sections and dimensions only, irrespective of the method used for achieving these cross-sections and dimensions and that the tendered rates and amounts shall include full compensation for all special equipment and construction methods and for all difficulties encountered when 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 additional payment be considered in such cases.

C4.11 CONTRACTOR'S CAMP SITE

The Contractor will make his own arrangements regarding the location of his campsite, housing for site staff and facilities for the Employer's Agent. The Contractor will have to liaise with the local council and/or the local community to find a suitable site. The chosen site shall also be subject to the approval of the Employer's Agent and the Environmental Control Officer (ECO).

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Prior to the establishment of the construction site, the Contractor shall produce a plan showing the positions of all buildings, yards, vehicle wash areas, fuel storage areas and other infrastructure. This plan shall be subject to the approval of the Employer's Agent and the ECO.

At the end of the contract, the site shall be restored as closely as possible to its natural state. The camp area shall be top soiled and grassed.

C4.12 SECURITY

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 no claims in this regard will be considered by the Employer. The Contractor will also be responsible for the security of the areas around the Employer's Agent's offices and the laboratories.

C4.13 PROCESS AND ACCEPTANCE CONTROL

A combined laboratory will be established on site and will perform all the process control and acceptance control testing on this Contract.

The Employer shall not pay claims for delays to the works resulting from the awaiting of test results. Testing in the combined laboratory will be affected as promptly as is reasonable but it is in the Contractor's own interest to submit material samples, concrete cubes or other components for testing in good time to assist in avoiding or reducing delays.

The procedure for requests for testing, frequency of tests, testing and reporting of results will be finalised by the Employer's Agent on site in collaboration with the Contractor. The combined laboratory will be under the control of the Employer's Agent.

The Contractor shall be responsible for certain costs with regard to the establishment and running of the combined laboratory (refer to Clause B1205 of these Project Specifications).

C4.14 ENVIRONMENTAL MANAGEMENT

The Contractor will be responsible for managing the Environmental Management Plan (EMP) as included in Volume 7. Apart from the aforementioned, the Contractor shall also adhere to an Environmental Management Plan applicable to the use of material from borrow pits, which is included in Volume 7. The EMP's are legally binding and shall be adhered to at all times.

The Contractor shall take the utmost care to minimize the impact of his establishment and other construction activities on the environment and shall adhere to the requirements as set out in the EMP's. The Contractor will be required to submit a Method Statements to the Environmental Control Officer (ECO) detailing his construction activities and what measures will be implemented to prevent the pollution of streams, rivers and countryside through the spilling of fuels, bituminous binders, sewage from the temporary toilets and other deleterious materials. Where in the opinion of the Employer's Agent, the Contractor has not adhered to these requirements, the Contractor shall rectify the damage at his cost and to the satisfaction of the Employer's Agent.

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In addition to aspects of the design which are intended to avoid or reduce environmental impact, and in addition to normal good construction practice expected of the Contractor, the following requirements shall also be observed:

- (a) The Contractor shall comply with the requirements of the Environmental Management Specification contained in Section C.
- (b) Clearing shall be limited to the road prism and, where applicable, to detours, which shall be sited in consultation with the Employer's Agent and the local communities.
- (c) No littering by construction workers shall be allowed. A refuse control system shall be established for the collection and removal of refuse to the satisfaction of the Employer's Agent.
- (d) Adequate provision shall be made for temporary toilet requirements in construction areas. Use of the veld for this purpose shall not be allowed under any circumstances.
- (e) 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 bituminous products. In the event of spillage, prompt action shall be taken to clear the affected area. Emergency measures in the event of spillage shall be set out and the responsible person shall be made aware of the required action. The construction of temporary and / or permanent dams shall be done with the necessary approvals from the Department of Water Affairs and Forestry and the Department of Environmental Affairs and Tourism.
- (f) Bituminous and / or other hazardous products shall not be spoiled on site and shall only be disposed of at licensed authorised disposal facilities.
- (g) Provision shall be made to prevent excessive erosion and siltation throughout the Contract and in particular on adjacent land. Should excessive erosion and / or siltation take place outside the road reserve as a direct result of the Contractor's construction activities, the Contractor shall be responsible for making good the erosion / siltation to the satisfaction of the landowner and the Employer's Agent.
- (h) Invader species of plants shall be controlled.
- (i) Dust and noise pollution shall be restricted to acceptable levels

No separate payment shall be made for observing these requirements as such payment shall be deemed to be included in the amount tendered for item B13.01(c) (The contractor's general obligations: Time-related obligations). Any avoidable non-compliance with these requirements shall be considered sufficient grounds for withholding payment of part or all of the amounts to be paid for the above item in order to pay for the repairs to any damages.

C4.15 PROJECT LIAISON COMMITTEE (PLC)

A Project Liaison Committee (PLC) will be established to manage this project in accordance with the provisions of Part E: Labour Specifications. The Contractor shall have one senior member of his staff as representative on the PLC without any voting powers.

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C4.16 COMMUNITY LIAISON OFFICER (CLO)

It will be required from the Contractor to employ a Community Liaison Officer (CLO) during the execution of the Works as specified in Part E: Labour Specification of this Works Specification.

C4.17 PROMOTING SMALL, MEDIUM AND MICRO ENTERPRISES

It is required that as much of the construction work as possible be undertaken by Small, Medium and Micro Enterprises (SMME's) qualifying as Affirmable Business Enterprises (ABE's). For this purpose SMME's shall be employed wherever possible and accountable for a minimum of 30 % of the award value excluding Contingencies, Provisional Sums, CPA and VAT.

C4.18 LABOUR INTENSIVE CONSTRUCTION METHODS

C4.18.1 General

It is a requirement of this contract that certain activities shall be constructed by means of labour-intensive construction methods.

It is therefore required that as much of the construction works as practically possible and feasible be undertaken by labour-intensive construction methods in accordance with the provisions of Part E: Labour Specification of the Works Specification.

C4.18.2 Targeted Labour

The targeted labour for the purpose of this project will be South African citizens who permanently reside within a direct distance of approximately 5 km from the road centre line. In the recruitment of local labour preference shall be given to persons residing closest to the road.

The Contractor shall therefore employ labourers, artisans and subcontractors for the execution and completion of the Works from the local communities within the above target area in accordance with the provisions of Part E: Labour Specifications.

C4.18.3 Local Labour Goal

The minimum local labour goal for this contract, as defined in Part E shall be 10% of the award value excluding Contingencies, Provisional Sums, CPA and VAT.

Failure to comply to this minimum local labour goal will result in the payment of a penalty in accordance with subclause E1.4.5 in Part E of this Works Specification.

If required, after consultation with the community, rotation of labour may be necessary. This will take place on a 4 to 6 month basis and will be limited to general labourers. Additional costs incurred to provide protective clothing for newly rotated workers will be paid in the Schedule of Quantities. All other costs incurred due to labour rotation will be deemed to be allowed for in the tendered rates and no additional payments will be made.

The Contractor and his subcontractors shall ensure that they enter into a Contract of Employment with each employee engaged on this contract. A copy of the Contract of Employment completed for

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each employee engaged shall be given to the Employer's Agent prior to their commencing work on this Contract.

Skilled workers and competent subcontractors may only be recruited elsewhere if not available locally. SMME's will also be required to carry out work by labour-intensive construction.

The portions of the Works listed in clause C4.18.4 below and those marked by LI in the Bill of Quantities shall, unless otherwise instructed by the Employer's Agent, be constructed under this Contract using labour-intensive construction methods only.

In respect of those portions of the Works which are not listed in clause C4.18.4 and marked as LI in the Bill of Quantities, the construction methods adopted and plant used shall be at the discretion of the Contractor, provided that the construction methods adopted and plant used by the Contractor are appropriate in respect of the nature of the Works to be executed and the standards to be achieved in terms of the Contract.

C4.18.4 Activities to be executed by means of Labour-intensive Construction methods

At least the activities in the table below shall be executed by hand (labour-intensive construction methods).

ITEM NO	DESCRIPTION	ACTIVITY
ROADWORKS		
1500	Accommodation of traffic	(i) Erection and relocation / moving of traffic control facilities. (ii) Operating of Stop/Go facilities. (iii) Operation of traffic signals. (iv) Excavation, laying and backfilling of temporary culverts.
1700	Clearing and grubbing	(i) Felling of trees.
2100	Drains	(i) Excavation for open drains up to 1.5m deep. (ii) Excavation for subsoil drainage systems up to 1.5m deep. (iii) Installation of subsoil drainage systems complete including backfilling. (iv) Outlet structures for subsoil drainage.
2200	Culverts	(i) Excavation for small culverts and service ducts. (ii) Formwork for small culverts. (iii) Steel reinforcement for small culverts. (iv) Backfilling and compaction (with small equipment) of small culverts and service ducts. (v) Catch pits and manholes. (vi) Benching in manholes and catch pits. (vii) Excavation and placing of duct markers. (viii) Excavation to determine position of existing services. (ix) Filling of joints.
2300	Concrete kerbing, concrete channeling, chutes and downpipes and concrete linings for open drains.	(i) Laying of concrete kerbs / kerbs and channel combination including excavation and backfilling complete. (ii) Excavation and backfilling for chutes / downpipes. (iii) Concrete chutes including inlet and outlet structures (formwork and placing of concrete).

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ITEM NO	DESCRIPTION	ACTIVITY
		(iv) Installation of chutes / downpipes including inlet and outlet structures. (v) Trimming of excavations for concrete-lined open drains. (vi) Concrete lining for open drains including placing of concrete, formwork etc.
2400	Asphalt and concrete berms	(i) Construction / placing of asphalt berms.
3300	Mass earthworks	(i) Finishing of cut and fill slopes.
3500	Stabilization	(i) Spreading stabilizer by hand.
4600	Bituminous single seal with slurry	(i) Application of slurry.
5100	Pitching, stonework and protection against erosion.	(i) Excavation, trimming and packing of stones for all types of stone pitching.
5200	Gabions	(i) Foundation trench excavation and backfilling in soft material. (ii) Surface preparation for bedding the gabions in soft material. (iii) Packing stones in gabion boxes and mattresses. (iv) Placing of filter fabric for gabions.
5400	Guardrails	(i) Excavation, erection and backfilling of guardrail posts. (ii) Installation of guardrails.
5500	Fencing	(i) Manufacturing of pre-stressed concrete straining posts stays and intermediate posts for fencing. (ii) Excavation, erection and backfilling for all posts. (iii) Completion of fence wiring and fixing of droppers. (iv) Installation of gates. (v) Dismantling of existing fences. (vi) Moving of existing fences and gates. (vii) Excavation and backfilling for motor grid gates.
5600	Road signs	(i) Excavation and backfilling for road sign supports. (ii) Erection of supports and road signs. (iii) Excavation, erection and backfilling of danger plates at culvert structures.
5800	Landscaping and grassing	(i) Trimming. (ii) Scarifying for loosening topsoil. (iii) Removal of undesirable vegetation. (iv) Hand sowing.

The activities listed in the above table are compulsory activities and shall be done by hand. The Contractor may identify further activities to increase the labour component of the contract.

C4.19 RESTRICTIONS ON THE USE OF PERSONNEL IN THE PERMANENT EMPLOYMENT OF THE CONTRACTOR

- (a) The Contractor shall limit the use of his permanently employed personnel to that of key personnel only (as defined in Section E of PART C3 of the Works Specifications) and shall, subject to the further provisions of Section E of the Works Specification execute and complete the works using a temporary workforce working directly for the Contractor and/or for subcontractors.

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- (b) The Engineer may at his discretion, upon receipt of a written and fully motivated application from the Contractor and where he deems the circumstances to warrant authorize in writing that the Contractor may use workers not being his key personnel but who are in his permanent employ in the execution of the Works. Without limiting the generality of application of this sub clause, circumstances which may be considered by the Employer's Agent to warrant the authorization of the use of the Contractor's permanent employees not being key personnel, include:
- (i) The unavailability of sufficient numbers of temporary workers and/or subcontractors to execute the Works, provided always that the Contractor has proved that he has exercised his best endeavours and taken all reasonable actions to recruit sufficient numbers of temporary workers and subcontractors and has exhausted all reasonable recruitment options;
 - (ii) The unavailability within the temporary worker pool and/or subcontractor sources available to the Contractor in terms of the Contract, or sufficient of the required knowledge and skills necessary for the execution of the Works or specific portions thereof, in cases where the time of completion allowed in the Contract is insufficient to facilitate the creation of the necessary skills through the provision of training as contemplated in this Contract; and
 - (iii) Any other circumstances which the Employer's Agent may deem as constituting a warrant.

C4.20 TRAINING

Training of laborers employed locally shall be done strictly in accordance with the provisions of Part E of the Works Specifications.

C4.21 SAFETY

Refer to Section B clause B1230 in the Work Specifications as well as the OHS specification in respect of the safety requirements for this contract.

C4.22 AREAS AVAILABLE FOR TEMPORARY STOCKPILES

The areas within the road reserve but outside the road prism are available as temporary stockpile sites. The Contractor may under his own initiative, identify additional sites, but no additional sites will be permitted unless approved under the Environmental Management Plan and by the Employer's Agent

C4.23 DUMP OR SPOIL SITES

The Contractor shall arrange his own dump or spoil sites and shall ensure that he conforms to all relevant legislation and regulations which terms of compliance should be for the Contractor's cost. The site must be approved under the Environmental Management Plan and by the Employer's Agent. All dumping costs will be borne by the Contractor.

The Environmental Management Plan may designate areas of erosion and old quarries in the proximity of the works as dump or spoil sites.

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C4.24 BITUMINOUS PRODUCTS

The Employer's Agent and the Environmental Control Officer must approve all storage sites for bituminous products in the road reserve, or on private property prior to use. The containers used for storage must be free of leaks and placed on a firm surface. No spoiling of any bituminous products will be allowed in any area. Unused or rejected products will be removed from site and returned to the supplier. Solvents used for flushing spray tankers, will be treated likewise. No additional payment will be made for the preparation of storage sites and the disposal of materials.

The Contractor shall comply with all the requirements of the Environmental Management Plan in this regard.

C4.25 FAUNA AND FLORA

Indigenous fauna is limited to invertebrates (insects) and avifauna (birds). Domestic livestock that dominate the current fauna of the region includes pigs, donkeys, goats, cattle, sheep, dogs, ducks, geese and chickens.

The Contractor shall cause no damage to fauna and flora. If, in the opinion of the Employer's Agent, this happens, the Employer's Agent is entitled to initiate prosecution by the relevant authorities.

C4.26 CLIMATE

Average daily maximum temperatures range between 18.3°C in July to 25°C in January, as shown on the distribution diagram below (Idutywa weather station).

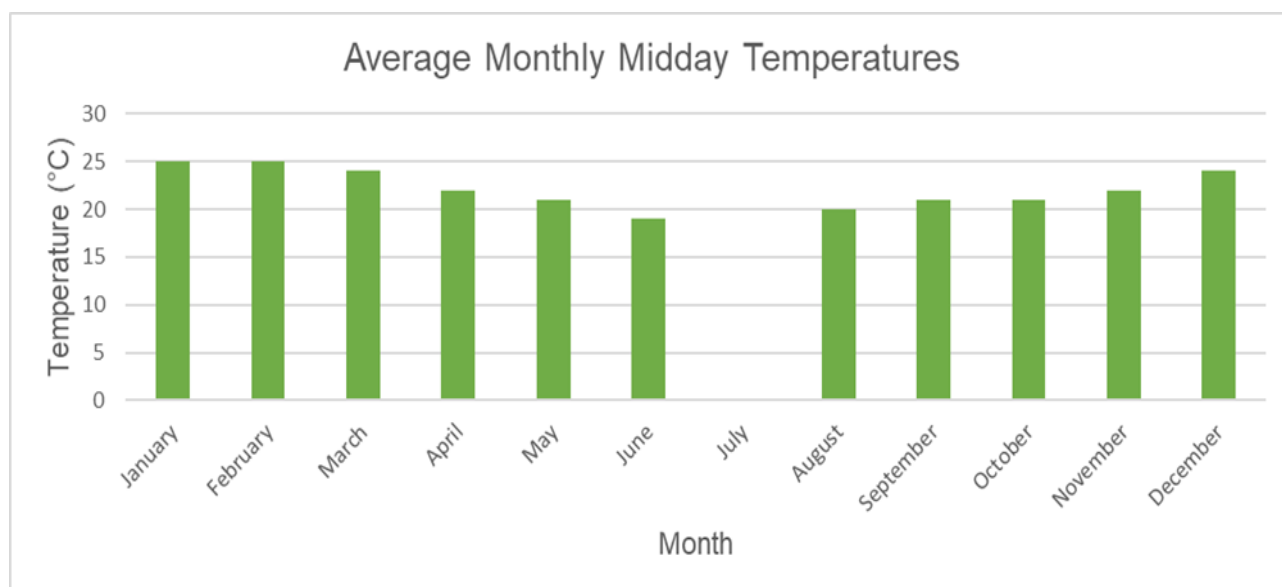


Figure 4.26.1: Average Maximum Midday Temperatures

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CLARKEBURY PHASE 1 (20KM)

The region is coldest in July, when the average daily minimum temperature drops to about 5°C during the night

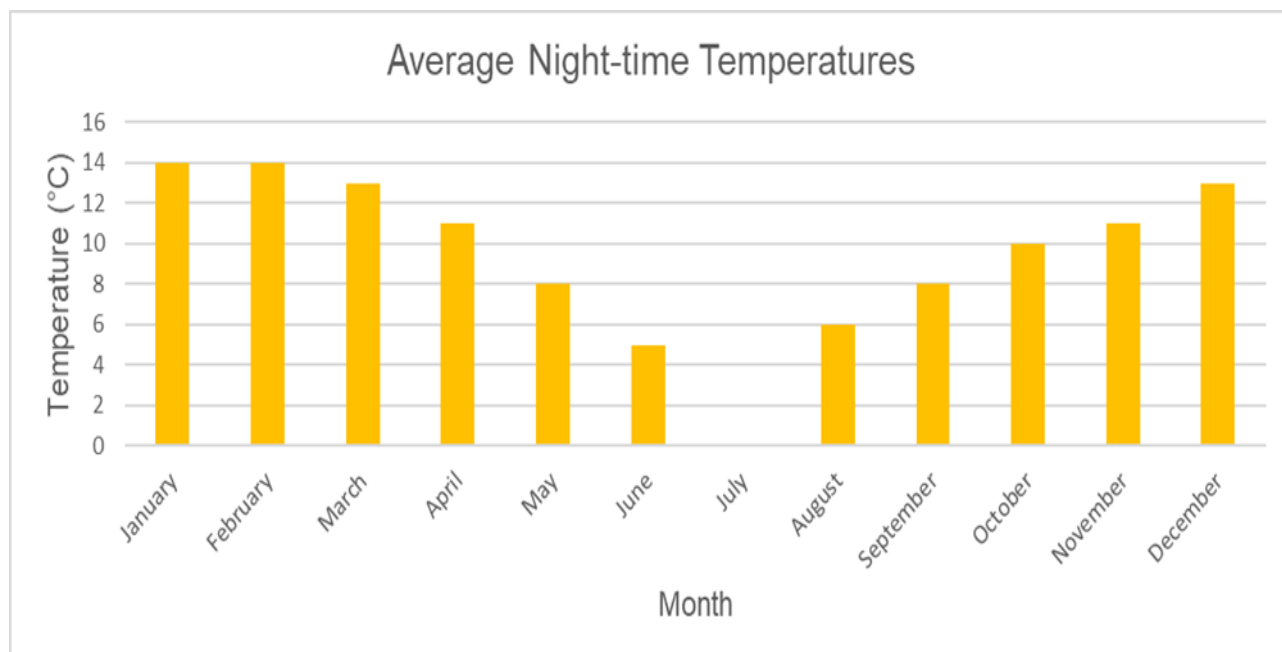


Figure 4.26.2: Average Minimum Night-time Temperatures

The area falls within the summer rainfall region of Southern Africa. The area further lies within the lower rainfall midlands belt, skirted between the higher rainfall coastal belt to the south-east and the higher rainfall Drakensberg escarpment to the north-west.

The Average Annual Rainfall measured at Idutywa to the south-west and at Mthatha in the north-west is 520mm and 590mm respectively. For drainage design purposes, the Mthatha weather station is deemed most applicable.

The graph below shows the rainfall distribution through the year. The lowest rainfall month is June (average 7mm) and the highest rainfall is March (77mm).

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CLARKEBURY PHASE 1 (20KM)

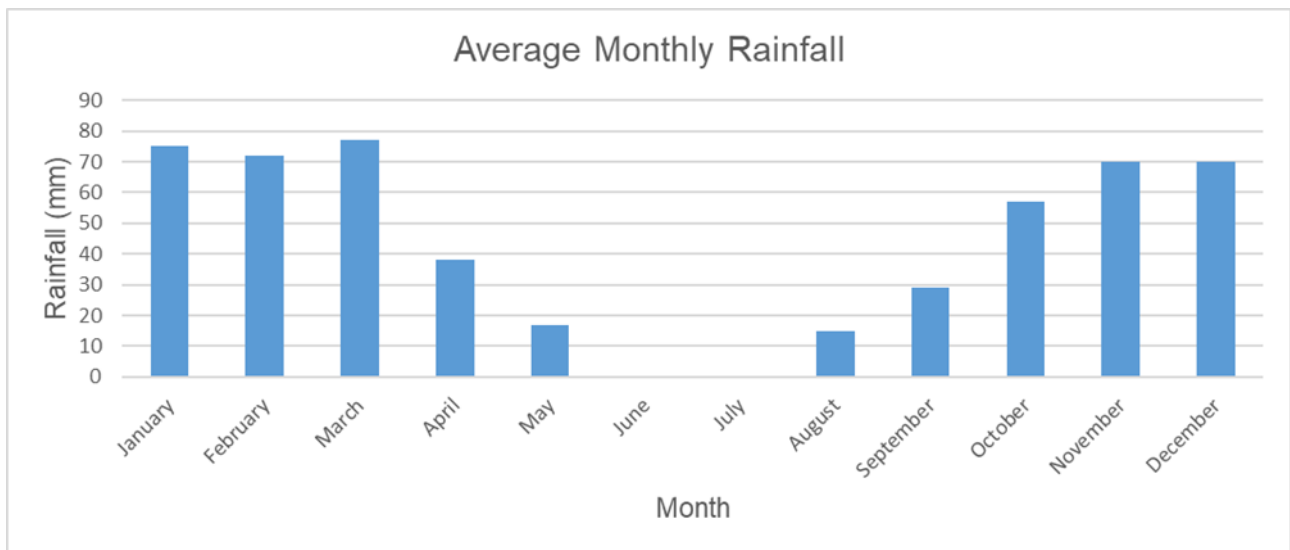


Figure 4.26.3: Average Monthly Rainfall