



**TENDER NO: SCMU10-23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months**

**VOLUME 3**

---

**Issued by:**

Province of the Eastern Cape  
Department of Transport  
32 Cowan Close  
Stellenbosch Park  
Schornville  
Qonce  
5605

**Prepared by:**

Province of the Eastern Cape  
Department of Transport  
In-House Construction Unit  
1 Reynolds Street  
Industrial Area  
Makhanda  
6139

---

**Name of Tenderer :** .....

**CIDB CRS Number :** .....

**Closing Date :** .....

---

# **PART T1: TENDERING PROCEDURES**

---



Province of the  
**EASTERN CAPE**  
TRANSPORT

**CONTRACT NO. SCMU10 - 23/24-0010**

**FOR**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS IN THE EASTERN CAPE PROVINCE FOR A PERIOD OF 36 MONTHS**

**PART T1: TENDERING PROCEDURES**

<b>TABLE OF CONTENTS</b>	<b>PAGE</b>
T1.1 TENDER NOTICE	T1.3
T1.2 CONDITION OF TENDER	T1.6
T1.3 TENDER DATA	T1.7

T1-2

[SCMU10-23/24-0010](#)

[Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months](#)



Province of the  
**EASTERN CAPE**  
TRANSPORT

**CONTRACT NO. SCMU10 - 23/24-0010**

**FOR**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS IN THE EASTERN CAPE PROVINCE FOR A PERIOD OF 36 MONTHS**

**T1.1 TENDER NOTICE**

T1-3

SCMU10-23/24-0010

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months



**CONTRACT NO. SCMU10 - 23/24-0010**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS IN THE EASTERN CAPE PROVINCE FOR A PERIOD OF 36 MONTHS**

**T1.1 : TENDER NOTICE AND INVITATION TO TENDER**

Tenders are hereby invited by the **Department of Transport, Eastern Cape Province** from civil engineering contractors with a CIDB contractor grading designation in the **7CE/PE and above** class for: Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the **Eastern Cape Province** for a period of 36 months

Tender documents will be available for download as of 12H00 on 11 August 2023 from the Eastern Cape Department of Transport website ([www.ectransport.gov.za](http://www.ectransport.gov.za)) and e-tender portal ([www.e-tenderportal.gov.za](http://www.e-tenderportal.gov.za))

A compulsory clarification meeting will be held **at the Department of Transport Offices in Bhisho Old Pick n Pay building (Large Boardroom)** on the 24 August 2023 at **11H00**. All prospective tenderers will be required to sign an attendance register at the clarification meeting.

**No tender documents will be available at the Clarification Meeting,**

Completed tender documents as well as any supporting documentation must be placed in sealed envelope clearly marked "TENDER NO: "**SCMU10 – 23/24-0010**" "**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS IN THE EASTERN CAPE PROVINCE FOR A PERIOD OF 36 MONTHS** " and deposited in the Tender Box situated at **32 Cowan close, Stellenbosch Park, Schornville, King Williams Town (Qonce)** not later than **11h00 on 08 September 2023** when tenders will be opened in public.

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

The Department of Transport will not sign a contract with any service provider before the Registration on the Central Supplier Database (CSD) has been confirmed. All tenderers are therefore requested to complete the document: "CSD Confirmation" to confirm registration on the CSD or that a request for registration has been submitted.

**This bid does not have bills of quantities. Bills of quantities will only be issued (to service providers that are successful and are included in this panel of service providers) as and when work will be required to be priced over the 36 months duration.**

**Tenderers must take particular note of the following tender conditions:**

- Only tenderers complying with the requirements as specified in the Conditions of Tender will be considered.
- The tender will be evaluated according to the preferential procurement model in the Preferential Procurement Policy Framework Act (PPPFA Act 5 of 2000): Preferential Procurement Regulations, 2022 as well as the Supply Chain Management Policy of the Department of Transport.

T1-4

[SCMU10-23/24-0010](#)

[Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months](#)

- The 80/20 preference point system will be applicable with 80 points allocated to Price and 20 points towards specific goals.
- The successful tenderer must have Registered Professionals (i.e. Pr. Eng., Pr. Tech., Pr. Techni., Pr. CPM, Pr. CM, Pr. OHSO.).
- 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.
- Tenderers are required to submit copies of current detailed CESD.
- Failure to supply all supplementary/clarification information in terms of the PPPFA may result in the tender being deemed an incomplete tender and shall not be considered for award.
- Penalties will be applied as defined in Clause 5.13 of the Conditions of Contract (GCC 2015).
- All tenders shall remain valid for a period of 90 days after the tender closing date. Telegraphic, telephonic, telex, facsimile, e-mail and late tenders will not be considered.
- The Department reserve the right to **appoint any number** of service providers into this panel.
- Goods and Services shall comply with the relevant SABS / ISO 9001 standards and guidelines stipulated in COLTO 1998

Enquiries should be directed to:

**Procurement Contact Official**  
**P. Nqikashe**  
**Tel: 067 419 8001**

**Technical Enquiries**  
**M. Goxa**  
**064 880 1945**

**For complaints, fraud and tender abuse:**  
**Call: 0800 701 701**

T1-5

SCMU10-23/24-0010

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months



Province of the  
**EASTERN CAPE**  
TRANSPORT

**CONTRACT NO. SCMU10 - 23/24-0010**

**FOR**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS IN THE EASTERN CAPE PROVINCE FOR A PERIOD OF 36 MONTHS**

**T1.2 CONDITIONS OF TENDER**

Notes to tenderer

1. The legislated Standard Conditions of Tender (as published and amended from time to time by the Construction Industry Development Board) are not included in their entirety. The full set of CIDB publications can be obtained from the CIDB website ([www.cidb.org.za](http://www.cidb.org.za)).

T1-6

SCMU10-23/24-0010

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months



**CONTRACT NO. SCMU10 - 23/24-0010**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS IN THE EASTERN CAPE PROVINCE FOR A PERIOD OF 36 MONTHS**

### **T1.3 TENDER DATA**

Notes to tenderer

1. The full conditions of Tender are those published by the CIDB.
2. The full set of CIDB publications can be obtained from the CIDB website ([www.cidb.org.za](http://www.cidb.org.za)).



### T1.3 TENDER DATA

The conditions of tender are the **Standard Conditions of Tender** as contained in Annexure F of the CIDB Standard for Uniformity in Construction Procurement, as printed in the **Government Gazette No 38960** dated **10 July 2015**.

The Standard Conditions of Tender for procurement 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 in the Standard Conditions of Tender to which it mainly applies. There are many other clauses in which the data is required.

<b>CLAUSE NUMBER</b>	<b>DESCRIPTION</b>
----------------------	--------------------

<b>F.1</b>	<b>General</b>
------------	----------------

<b>F.1.1</b>	<b>Actions</b>
--------------	----------------

*Add the following:*

“The Employer is the Head of Department, Department of Transport, Province of the Eastern Cape.”

<b>F.1.2</b>	<b>Tender Documents</b>
--------------	-------------------------

*Add the following:*

“The tender documents issued by the employer comprise:

**VOLUME 1:**

GENERAL CONDITIONS OF CONTRACT FOR CONSTRUCTION WORKS (THIRD EDITION GCC 2015)

\* See note below

**VOLUME 2:**

THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS FOR STATE ROAD AUTHORITIES (COLTO 1998 EDITION)

\* See note below

**VOLUME 3:**

PROJECT DOCUMENT

**VOLUME 4:**

BOOK OF DRAWINGS: ROAD WORKS AND STANDARD DRAWINGS

Note: Volumes 1 and 2 are available and tenderers must obtain copies at their own cost from the South African Institution of Civil Engineering (SAICE), Private Bag x 200, Halfway House, 1685. Tel no (011) 805 5947, Fax (011) 805 5971, email: [civilinfo@saice.org.za](mailto:civilinfo@saice.org.za)

### **F.1.3 Communication and employer's agent**

*Add the following:*

“Attention is drawn to the fact that verbal information, given by the employer or the employer's agent during site visits/clarification meetings or at any other time prior to the award of the Contract, will not be regarded as binding on the employer. Only information issued in writing by the employer or the employer's agent to tenderers will be regarded as amending the Tender Documents.

The employer's agent is In House Construction Unit through a Director, authorized thereto in writing:

Enquiries                      Mr. M. Goxa    e-mail: [mvuyisi.goxa@ectransport.gov.za](mailto:mvuyisi.goxa@ectransport.gov.za)

Address:                      In House Construction Unit  
   32 Cowan Close  
   Stellenbosch Park  
   Schornville  
   Qonce

*Add the following:*

**F.1.4**                      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.

### **F.1.5 Communication and employer's agent**

“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.”

## **F.2 Tenderer's obligations**

### **F.2.1.1 Necessary expertise**

The employer will only consider tenders from tenderers who can prove to the satisfaction of the employer that they:

- (a) have the necessary financial resources to undertake and complete the work;
- (b) are experienced in the performance of work of a similar scope, complexity, extent and duration in the event that physical work may have to be carried out. In making an assessment in this regard, the employer shall be entitled to consider inter alia the scope, complexity, extent and duration of previous work undertaken. Should the employer require more information in order to permit a full appraisal of the tenderer's experience and capacity to execute these works satisfactorily, such information shall be provided within one week of being called upon to do so; and

- (c) have sufficient employees who possess the high level of skill and expertise commensurate with the type of work tendered for, which skill and expertise must be detailed in the tender.
- (d) Have adequate plant and equipment to provide the necessary plant or equipment, requested, within period of 24 hours of being instructed, in writing, to do so.

**F.2.1.2 Construction Industry Development Board (CIDB) Registration**

Only those tenderers who are registered with the CIDB or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a minimum of **7 CE/PE** class of construction work, are eligible to submit tenders.

Joint ventures are eligible to submit tenders provided that:

- (a) every member of the joint venture is registered with the CIDB in the CE class of construction work;
- (b) the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to a contractor grading designation determined in accordance with the sum tendered for a **7 CE/PE** class of construction work.

**F.2.1.3 Labour-intensive competencies for supervisory and management staff**

Only those tenderers who have in their employ management and supervisory staff satisfying the requirements of the Scope of Work for labour intensive competencies for supervisory and management staff are eligible to submit tenders.

“The employer reserves to himself the right, in his sole discretion, to reject any tender where it appears to the employer that the tenderer does not comply with any of the requirements set out above.”

Where required the requirements for site staff are:	Construction Manager	NQF 5
	General Foreman	NQF 4
	Team Leader	NQF 2

**F.2.2 Acknowledge addenda**

*Insert* “in the manner stated in the Tender Data,” *after* “Acknowledge”.

*Add the following:*

“Addenda / amendments to the tender documents will be issued to tenderers in the form of Addenda/Notice(s) issued to tenderers and as such will form part of the tender documents. The Acknowledgement of Receipt of Addenda/Notice(s) Issued to tenderers shall be completed where applicable by the tenderers, signed, dated and returned to the employer’s agent.”

**F.2.3 Clarification meeting**

*Add the following:*

“A compulsory clarification meeting will be held at the time, date and place stated in the tender advertisement.

No compensation for attendance at this meeting will be paid. Tenderers must be represented at the clarification meeting by a person who is suitably qualified and experienced to comprehend the implications of the work involved and in the direct employ of the prospective tenderer.

The tenderer’s representative must sign the attendance register in the name of the tendering entity. Addenda will be issued to and tenders will be received only from those tendering entities appearing on the attendance list and who have acquired tender documents.

**No tender documents will be available at the site meeting.”**

**F.2.4 Alternative tender offers**

*Add the following:*

**No alternative tender offers will be accepted and considered.**

**F.2.4 Submitting a tender offer**

**F.2.4.1** *Add the following:*

“Parts of each tender offer communicated on paper shall be submitted as one original only.”

**F.2.4.2** *Add the following after the first sentence:*

“The tender shall be signed by a person duly authorized to do so. Tenders submitted by joint ventures of two or more firms shall be accompanied by the document of formation of the joint venture, authenticated by a notary public or other official deputed to witness sworn statements, in which is defined precisely the conditions under which the joint venture will function, its period of duration, the persons authorized to represent and obligate it, the participation of the several firms forming the joint venture, and any other information necessary to permit a full appraisal of its functioning. A letter of intent conforming to the above conditions may also be submitted and will be binding on the signatories.”

**F.2.4.3** *Add the following:*

“The employer’s address for delivery of tender offers and identification details to be shown on each tender offer package are:

**Location of tender box:**  
**Physical address:**  
**Department of Transport**  
**32 Cowan Close**  
**Stellenbosch Park**  
**Schornville**  
**Qonce**

**Identification details:**            **All tenders shall be submitted in sealed envelopes, clearly marked as shown below:**

**SCMU10 - 23/24-0010**  
**APPOINTMENT OF A PANEL OF MANAGING CONTRCATORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS IN THE EASTERN CAPE PROVINCE FOR A PERIOD OF 36 MONTHS**

**F.2.4.4** *Add the following:*

“A two-envelope system will not be followed.”

**F.2.5**            **Closing time**

**F.2.5.1** *Add the following:*

“The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.  
Telephonic, telegraphic, telex, facsimile, or e-mailed tender offers will not be accepted.  
Late tenders will not be accepted.”

**F.2.6**            **Tender offer validity**

**F.2.6.1** *Add the following:*

“The tender offer validity period is **90 days**.”

## **F.2.7 Clarification, modification or withdrawal of tender offer after submission**

*Add the following new sub-clauses:*

**F.2.7.1** Accept that the Employer may, at its sole discretion, accept a less favorable tender from those already received or invite fresh tenders if a tenderer, at any time after the opening of his tender offer but prior to the signing of a contract based on his tender offer:

- withdraws his tender; or
- gives notice of his inability to execute the contract in terms of his tender; or
- fails to sign a contract or furnish the performance security within the period fixed in the letter of award or any extended period fixed by the Employer; or
- fails to comply with a request made in terms of standard condition F.2.18.1.

**F.2.7.2** In the event that a tenderer acts as described in Special Condition F.2.17.2 he/she shall pay the difference between a less favorable tender offer and his/her own tender offer and/or pay the Employer's wasted and additional cost incurred in inviting fresh tenders; provided that the Employer may fully or partly exempt a tenderer from the provisions of this special condition if he/she is of the opinion that the circumstances justify the exemption.

## **F.2.8 Provide other material**

**F.2.8.1** *Add the following:*

"The tenderer shall, when requested by the employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the labour-intensive construction portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements of the Expanded Public Works Programme.

All written information submitted by the tenderer, together with and in support of his tender, or subsequently in response of a request for additional information from the employer, shall be considered to form the basis on which the tender has been prepared and submitted."

## **F.2.9 Inspections, tests and analysis**

*Add the following:*

"Access shall be provided for the following inspections, tests and analysis:  
Additional geotechnical and related investigations."

## **F.2.10 Certificates**

*Add the following:*

"Shall submit the following with his tender:

- (a) an original valid Tax Clearance Certificate issued by the South African Revenue Services;
  - (b) an original bank rating from the tenderer's bank;
  - (c) a print-out from the CIDB web site showing the CIDB rating of the tenderer/s.
  - (d) a project specific Health and Safety Plan; **will not be required at this initial stage of bidding.**
  - (e) proof of valid registration with the Compensation Commissioner or FEM or a letter from the Department of Labour indicating that the tenderer has applied for the letter of good standing
- Items (a), (c), (d) and (e) above must be complied with otherwise the tender shall be deemed to be non-responsive."

In the case of a joint venture all members must provide the above.

*Add the following new sub-clause:*

**F.2.12 “Tender withdrawal or modification prior to closing date**

Any tenderer has the right to withdraw, modify or correct his tender after it has been delivered, provided that the written request for such withdrawal, modification or correction, together with full details of such modification or correction is received at the address given for the submission of tenders before the closing date and hour set for the receipt of tenders.

The original tender as amended by such written communication shall be considered the tenderer’s offer.”

**F.3 The Employer’s undertakings**

**F.3.1 Opening of tender submissions**

*Add the following:*

“The time and location for opening of the tender offers is:

Date : 08 September 2023

Time : 11H00

Location : 32 Cowan Place, Stellenbosch Park, Schornville, Qonce

**F.3.2 Two-envelope system**

*Change clause F.3.5 to read as follows:*

“A two-envelope system **will not be** followed.”

**F.3.3 Test for responsiveness**

*Add the following to F.3.8.1 (c):*

“Tenders might be considered non-responsive if:

- (i) the tenderer has failed to clarify or submit any supporting documentation within seven (7) days of being requested to do so in writing.
- (ii) In order for a tenderer to be considered, the tenderer must be able to demonstrate the completion of at **least two road projects, which include surfacing works (Cape seal, asphalt, etc.), in the last 10 years and each with a minimum value of R30 million.**

All such projects shall be located within the SADC (South African Development Community) region. A tenderer who has been in a JV partner before, should note that he/she will only be considered when the value of his/her previous work had a minimum value of thirty (30) million Rands on each of the projects.

T1-14

**Tenderers that fail to provide proof (final certified completion certificates/ reference letters from Clients/ Principal Agents with value, nature of work and period clearly reflected) of at least two completed projects with a minimum value of R30 million each shall be considered non-responsive and will be eliminated.**

- (iii) The tenderer **MUST** show that he/she has in his/her employ the following skills. Failure to provide evidence (CV with contactable references, copies of qualifications & proof of registration) **will render the bid non-responsive:**

<b>Position</b>	<b>Qualification (Minimum)</b>	<b>Prof. Registration</b>	<b>Years of experience (Minimum)</b>
Construction Manager	National Diploma: Civil Engineering (NQF 6)	Pr. Techni. or Tech. (ECSA) or Pr.CM or Pr. CPM (SACPCMP)	10 years in road upgrade from gravel to surface projects or heavy rehabilitation of surfaced roads
Construction Safety Officer	Advanced SAMTRAC certificate. (National Diploma in Safety Management/ Built Environment will also be acceptable)	Pr. CHSO or CHSM or CHSA (SACPCMP)	2 years in roads construction or maintenance projects

- (iv) The bidder **MUST** show that it has the following construction machinery or intends to hire the following construction machinery. Failure to provide evidence (eNatis certificate/ Proof of purchase & Delivery/ Letter of intent to hire with eNatis certificate) **will render the bid non-responsive:**

<b>Plant item</b>	<b>Allowable age</b>	<b>Capacity</b>
2 x Motor graders	Not older than 2013	140H/G
10 x Tipper trucks	Not older than 2013	10 cub
5 x Water trucks	Not older than 2013	11000L
2 x Track Excavator	Not older than 2013	20 tonne

#### **F.3.4 Evaluation of tender offers**

*Replace the contents of the entire sub-clause with the following:*

The 80/20 preference point system will only be applied on the tenderers that satisfy the functionality criteria and will be applied as follows:

- (a) 80 points for the tender price (P<sub>s</sub>)

T1-15

SCMU10-23/24-0010

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months



(b) 20 points for specific goals (N<sub>ep</sub>).”

The contract will be awarded to the responsive Tenderer that scores the highest number of points on the basis of the Preferential Procurement Policy Framework Act, Act 5 of 2000 and subsequent regulations

**a) Points Awarded for Price (N<sub>p</sub>)**

A total of 80 points will be awarded to the Tenderer with the lowest balanced price. The other tenders will be awarded points on the ratio of the price to the benchmark (lowest balanced) price as follows:

**Calculation of Points for Price (P<sub>s</sub>)**

The points scored for Price will be calculated using the following formula:

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

P<sub>s</sub> = Points scored for price by tender under consideration  
P<sub>min</sub> = Lowest acceptable tender price  
P<sub>t</sub> = Price of tender under consideration.

Fractions will be rounded off to two decimal places after the decimal comma.

**b) Points Awarded for specific conditions (Max 20 points) (N<sub>ep</sub>)**

The tender will then be evaluated in terms of the specific goals scorecard based on the preferential procurement model in the preferential Procurement Policy Framework Act (PPPFA 5 of 2000): Preferential Procurement Regulations, 2022 as well as the SCM Policy of the Eastern Cape Department of Transport

A trust, consortium or joint venture will qualify for points for their specific goals as an unincorporated entity, provided that such entity submits their consolidated specific goals scorecard as if they were a group structure and that such a consolidated specific goals scorecard is prepared for every separate tender.

A total of 20 points may be scored by a contractor or Joint Venture who submits a specific goals scorecard.

**Calculation of points for specific goals:**

PREFERENTIAL SPECIFIC GOALS POINTS TABLE		
The specific goals allocated points in terms of this tender	Number of points allocated (80/20 system) (To be completed by the organ of state)	Number of points claimed (80/20 system) (To be completed by the tenderer)
<b>Historically Disadvantaged Individuals</b>		
(a) % black ownership	2	
<b>Women ownership: -</b>		
(b) % women ownership	2	
<b>Youth ownership: -</b>		
(c) % youth ownership	2	
<b>People with Disability: -</b>		
(d) % or more disabled people ownership	2	
<b>Locality: -</b>		
(e) Within the Eastern Cape Province	6	
<b>Military Veterans</b>		
(f) % Ownership by Military veterans	6	

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.

**F3.5 Acceptance of tender offer**

**F.3.5.1** *Add the following:*

“Tender offers will only be accepted if:

- (a) the tenderer is validly registered with the Construction Industry Development Board (CIDB) in an appropriate contractor’s grading designation;
- (b) the tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;
- (c) the tenderer has not:
  - (i) abused the employer’s Supply Chain Management System; or
  - (ii) failed to perform on any previous contract and has been given a written notice to this effect;
- (d) Joint ventures are eligible to submit tenders that:
  - every member of a joint venture is registered with the CIDB Civil Engineering (CE) class of construction works; and
  - the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to the contractor grading designation of a minimum of 7 CE/PE.
  - there is a signed JV agreement.

T1-17

**F.3.5.2 Provide copies of the contract**

*Add the following:*

“The number of paper copies of the signed contract to be provided by the employer is zero, all documents will be electronically available.”

**F.4 Additional Conditions of Tender**

**F.4.1** *Add the following:*

It is also a Condition of Tender that, when physical work is to be executed by the contractor and/ or its sub-contractors, the successful tenderer (managing contractor) will be required to engage (and provide SAQA accredited training) local labour on the project as advised by the employer. A minimum of 12.5% of the accepted tender sum less VAT and contingencies will be required to be spent on the local labour on all physical work with a labour component. A financial penalty will be applicable should the contractor fail to meet this minimum targeted goal. For further details in this regard refer to Part C3 Section F - Labour Specification in the Project Document.

**F.4.2** *Add the following:*

**F.4.2.1** **It is a Condition of Tender that the successful tenderer (contractor) will be required to engage and mentor SMME contractors (CIDB levels 1 – 4 CE) as sub-contractors where physical work is carried out. The construction risk in this respect will fall on the successful tenderer (managing contractor) for all work to be carried out by SMME contractors A financial penalty will be applicable should the contractor fail to meet this minimum targeted goal. For further details in this regard refer to Part C3 Section F – Specification for Development of SMME Contractors of the Project Document.**

**F.4.2.2** **It is a Condition of Tender that the successful tenderer (contractor) must submit a proof of appointment of a registered professionals.**

**F.4.2.3** **The successful tenderer (contractor) must submit contractor’s performance report from CIDB.**

---

## **PART T2: RETURNABLE SCHEDULES**

---

T2-1

SCMU10-23/24-0010

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months



Province of the  
**EASTERN CAPE**  
TRANSPORT

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**T2.1 LIST OF RETURNABLE SCHEDULES**

T2-2

SCMU10-23/24-0010

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**PART T2.1: LIST OF RETURNABLE SCHEDULES**

TABLE OF CONTENTS	PAGE
A: CERTIFICATE OF TENDERER'S VISIT TO THE SITE.....	T2.24
B: CERTIFICATE OF AUTHORITY FOR SIGNATORY .....	T2.6
C: SCHEDULE OF CONSTRUCTION PLANT .....	T2.7
D: SCHEDULE OF WORK CARRIED OUT BY THE TENDERER .....	T2.10
E: SCHEDULE OF SPECIALIST SUBCONTRACTORS	<b>T2.ERROR! BOOKMARK NOT DEFINED.</b>
F: SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE .....	<b>T2.ERROR! BOOKMARK NOT DEFINED.</b>
G: PRELIMINARY PROGRAMME .....	<b>T2.ERROR! BOOKMARK NOT DEFINED.</b>
H: CONTRACTOR'S ESTABLISHMENT ON SITE .....	T2.12
I: AMENDMENTS OR QUALIFICATIONS BY THE TENDERER.....	T2.13
J: RATES FOR SPECIAL MATERIALS .....	T2.14
K: SURETY AND BANK DETAILS.....	T2.15
L: NOTICES TO TENDERERS .....	T2.16
M: KEY PERSONNEL .....	T2.17
N: B-BBEE STATUS .....	T2.18
O: JOINT VENTURE DISCLOSURE FORM.....	T2.19
T2.2R: COMPULSORY ENTERPRISE QUESTIONNAIRE .....	T2.24
SBD 2: TAX CLEARANCE CERTIFICATE REQUIREMENTS.....	T2.27
SBD 4: DECLARATION OF INTEREST .....	<b>T2.ERROR! BOOKMARK NOT DEFINED.</b>
SBD 6.1: PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2011.....	<b>T2.ERROR! BOOKMARK NOT DEFINED.</b>
SBD 8: DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICE	<b>T2.ERROR! BOOKMARK NOT DEFINED.</b>
SBD 9: CERTIFICATE OF INDEPENDENT BID DETERMINATION .....	<b>T2.ERROR! BOOKMARK NOT</b>

[SCMU10-23/24-0010](#)

[Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months](#)

**DEFINED.**

T2-3

SCMU10-23/24-0010

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**PART T2.2: RETURNABLE DOCUMENTS**

T2-4

SCMU10-23/24-0010

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months



**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**A: CERTIFICATE OF TENDERER'S ATTENDANCE OF CLARIFICATION MEETING**

This is to certify that I, .....

Representative of (Tenderer).....

of (address)

.....

telephone No. ....

facsimile No.

in the company of (Employer's Agent's Representative) .....

visited and examined the site on (date) .....

Having previously studied the Contract Documents, I carefully examined the site. I have made myself familiar with all local conditions likely to influence the work and the cost thereof.

I further CERTIFY that I am satisfied with the description of the work and explanations given by the said Employer's Agent and that I understand perfectly the work to be done, as specified and implied, in the execution of this Contract.

TENDERERS REPRESENTATIVE: .....  
(Signature)

EMPLOYER'S AGENT'S REPRESENTATIVE: .....  
(Signature)

NAME: .....  
(Print)

**T2-4**

**SCMU10-23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months**

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**B: CERTIFICATE OF AUTHORITY FOR SIGNATORY**

**The tenderer shall attach to this page a Certificate of Authority for Signatory.**

The certificate shall be printed on the tendering entity's letterhead and shall be a duly signed and dated copy of the relevant resolution of the board of directors/partners duly authorising the person to sign all documents in connection with the tender.

In the event that the tenderer is a joint venture or consortium, a certificate is required from each member of the joint venture or consortium clearly setting out the following:

- a) authority for signatory,
- b) undertaking to formally enter into a joint venture/consortium contract should an award be made to the joint venture/consortium,
- c) name of designated lead member of the intended joint venture/consortium, as required by Clause F2.13.4 of the Conditions of Tender.

**NB:** The resolution below is given as **an example** of an acceptable format for authorisation. Submission of this page with the example completed shall not be accepted as authorisation of the tenderer's signatory.

**EXAMPLE**

"By resolution of the board of directors / partners passed at a meeting held on *(insert place and date)*,  
Mr/Mrs, ..... whose signature appears below, has been duly authorised to  
sign all documents in connection with the tender for Contract No .....  
*(insert Contract No and Description)* and any contract which may arise therefrom on behalf of .....  
*(insert tenderer Company name in block capitals)*

SIGNED ON BEHALF OF THE COMPANY: .....

IN HIS / HER CAPACITY AS: .....

DATE: .....

SIGNATURE OF DULY AUTHORISED SIGNATORY:.....

**WITNESSES:**

1) .....  
Signature Name (Print)

2) .....  
Signature Name (Print)

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**C: SCHEDULE OF CONSTRUCTION PLANT**

The Tenderer must state below what relevant items of construction plant will be immediately available for this Contract, what relevant construction plant will become available by virtue of outstanding orders, and what further relevant construction plant will be acquired or hired should he be awarded the Contract. The Contractor must also state which plant is owned by him, and which is leased or subject to hire purchase agreement. Additional sheets may be attached if necessary. Only plant that is relevant for carrying out the works should be listed and it is the discretion of the employer to decide whether the plant is relevant or adequate. Tenderers who submit a list of plant that is deemed to be inadequate by the employer will be considered to be non-responsive.

**(a) Construction Plant Immediately Available**

<b>DESCRIPTION, SIZE, CAPACITY</b>	<b>REGISTRATION NUMBER</b>

SIGNED ON BEHALF OF TENDERER .....

**C: SCHEDULE OF CONSTRUCTION PLANT (cont)**

**(b) Construction Plant on Order**

The TENDERER must state the arrangements made and the delivery dates.

DESCRIPTION, SIZE, CAPACITY	REGISTRATION NUMBER

SIGNED ON BEHALF OF TENDERER .....

**C: SCHEDULE OF CONSTRUCTION PLANT (cont)**

**(c) Construction Plant that will be Hired or Acquired**

Where plant will be hired, the tenderer must provide a letter of confirmation from the plant hire company on their letterhead and stating clearly the details of each plant which will be hired. The contact person at the plant hire and their contact details must be clear on the letterhead for verification purposes. The TENDERER must state the arrangements made and the intended delivery date.

DESCRIPTION, SIZE, CAPACITY	OWNED OR HIRED	REGISTRATION NUMBER

SIGNED ON BEHALF OF TENDERER .....

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**D: SCHEDULE OF WORK CARRIED OUT BY THE TENDERER**

The Tenderer shall enter in the spaces provided below a list of road construction projects with a minimum value of R15 million and successfully completed in the last 7 years, including completion certificates and reference letters from the employers and on employer's letterheads (Reference from employer reps will not be considered). This information is deemed to be material to the award of the contract. Failure to provide at least three completed surfaced road projects will lead to the Tender being declared non responsive.

Refer to Clause F.3.8 of the Tender Data. It is essential that full details of the projects and of the Employer / Engineer / Employer's Agent references be provided in order for the projects to be evaluated.

The date of the certificate of completion must be provided.

<b>EMPLOYER (NAME, TEL. NO. OR FAX NO.)</b>	<b>EMPLOYER'S AGENT / CONSULTING ENGINEER (NAME, TEL. NO. OR FAX NO.)</b>	<b>DETAILS OF PROJECT (LENGTH, SCOPE OF WORK ETC)</b>	<b>VALUE OF WORK R MILLIONS</b>	<b>YEAR COMPLETED</b>

SIGNED ON BEHALF OF TENDERER: .....

**D: SCHEDULE OF WORK CARRIED OUT BY THE TENDERER (cont.)**

EMPLOYER (NAME, TEL. NO. OR FAX NO.)	EMPLOYER'S AGENT / CONSULTING ENGINEER (NAME, TEL. NO. OR FAX NO.)	DETAILS OF PROJECT (LENGTH, SCOPE OF WORK ETC)	VALUE OF WORK R MILLIONS	YEAR COMPLETED

SIGNED ON BEHALF OF TENDERER : .....

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**H: CONTRACTOR'S ESTABLISHMENT ON SITE**

The Contractor will be issued with work orders for various requirements either for the supply of materials, plant or equipment or for physical work to be carried out. No establishment cost shall be paid for the supply of materials or plant and equipment items. If the contractor feels that these should be included, he shall factor these in his/her rates. Should physical work be carried out, a percentage rate of the required work shall be tendered, and the tendered percentage rate for item B13.01 Contractor's Establishment on Site and General Obligations

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

shall not exceed **a maximum of 0% (Not required at this of bidding)** of work to be carried out (excluding VAT, excluding the allowances for dayworks, contingencies and contract price adjustment, and excluding Section 1200 of the bill of quantities). Should this percentage allowance be exceeded, the Tenderer shall clearly set out his reasons for tendering in this manner in a letter attached to this page.

The Employer will duly consider these reasons but reserves the right to consider the tendered rates to be imbalanced and to deal with them in terms of Clause F.3.9.5 of the Tender Data.

The tendered rate for item B13.01 expressed as a percentage of the Contract Sum (excluding VAT, excluding the allowances for dayworks, contingencies and contract price adjustment, and excluding Section 1200 of the bill of quantities) :

.....%

(Tenderer to enter figure here, calculated from his Tender amounts)

SIGNED ON BEHALF OF TENDERER:



**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**I : AMENDMENTS OR QUALIFICATIONS BY THE TENDERER**

Should the Tenderer desire to make any departure from or modifications to the General Conditions of Contract, Contract Data, the Standard or Works Specifications or Bill of Quantities, or to qualify his Tender in any way, he shall set out his proposals clearly hereunder. Alternatively the Tenderer may state the departures or modifications in a covering letter attached to his Tender and referred to hereunder. If there is no entry or reference made in the table below, then the Tender will be deemed to have no qualifications. Tenderers shall note the requirements of Clause F.2.12 of the Tender Data with regard to alternative tenders.

If no departures or modifications are desired, this schedule is to be marked NIL and signed by the Tenderer.

PAGE	DESCRIPTION

SIGNED ON BEHALF OF TENDERER:.....

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**J : RATES FOR SPECIAL MATERIALS**

Each material dealt with as a special material in terms of Clause 6.8.3 of the Conditions of Contract (GCC 2015) is stated in the list below. All bitumen products that might be used must be stated in the list below.

The rates and prices for the Special Materials shall be furnished by the Tenderer, which rates and prices shall exclude VAT but shall include all other obligatory taxes and levies.

<b>SPECIAL MATERIALS</b>	<b>UNIT</b>	<b>RATE OR PRICE FOR THE BASE MONTH</b>
Reinforce steel	Kg	
Cement	Kg	

When called upon to do so, the Contractor shall substantiate the above rates or prices with acceptable documentary evidence.

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

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**K: SURETY AND BANK DETAILS**

The Surety we intend providing is from .....

.....

Contact Person .....

Contact Telephone numbers .....

Contractor's Bank Details -

Bank Name: .....

Address: .....

Branch Name: .....

Branch Number: .....

Account Number: .....

Contact Person: .....

Tel No.: .....

Fax No.: .....

**A letter of intent from the proposed guarantor is attached to this page.**

**The Tenderer must attach a letter from the bank stating the company's current bank code rating.**

SIGNED ON BEHALF OF THE TENDERER:

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**L : NOTICES TO TENDERERS**

In submitting my/our Tender, the Contract Sum given in the Form of Offer and Acceptance has been based on the following Addenda/Notice(s) to Tenderers.

<b>NOTICE NUMBER</b>	<b>SUBJECT MATTER OF NOTICE</b>

SIGNED ON BEHALF OF TENDERER: .....

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**M : KEY PERSONNEL**

Tenderers shall enter in the table below information in respect of the key personnel who will be engaged on the project should the contractor be allocated physical work to execute or should the contractor be required to provide the resource for a limited time on site. Curricula Vitae, including the relevant certificates, must be attached. Only one person may be entered against each category. Failure to provide any one of the key personnel will render the tender non-compliant and the tenderer will be disqualified.

<b>Designation</b>	<b>Name</b>	<b>Qualification</b>	<b>Relevant Years of Experience</b>	<b>Registration Number and body</b>	<b>NQF Level of Qualifications</b>
Contracts Manager					
Construction Manager					
Occupational Health and Safety Officer					

**SIGNED ON BEHALF OF THE TENDERER** .....

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**N : SPECIFIC GOALS**

**SIGNED ON BEHALF OF THE TENDERER** .....

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**P : JOINT VENTURE DISCLOSURE FORM**

**GENERAL**

- i) All the information requested must be filled in the spaces provided. If additional space is required, additional sheets may be used and attached to the original documents.
- ii) A copy of the joint venture agreement must be attached to this form in order to demonstrate the Affirmable, Joint Venture Partner's share in the ownership, management responsibilities, risks and profits of the joint venture. The proposed joint venture agreement must include specific details relating to:
  - a) the contributions of capital and equipment
  - b) work items to be performed by the Affirmable Joint Venture Partner's own forces
  - c) work items to be performed under the supervision of the Affirmable Joint Venture Partner.
- iii) The joint venture must be formalised. All pages of the joint venture agreement must be signed by all the parties concerned. A letter/notice of intention to formalise a joint venture once the contract has been awarded will not be considered.
- iv) Should any of the above not be complied with, the joint venture will be deemed null and void and will be considered non-responsive.

**1. JOINT VENTURE PARTICULARS**

- a) Name
- b) Postal address .....
- .....
- .....
- c) Physical address .....
- .....
- .....
- d) Telephone .....
- e) Fax .....

**2. IDENTITY OF EACH NON-AFFIRMABLE JOINT VENTURE PARTNER**

- 2.1(a) Name of Firm .....
- Postal Address .....
- Physical Address .....
- Telephone .....
- Fax .....

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

.....

- 2.2(a) Name of Firm .....
- Postal Address .....
- Physical Address .....
- Telephone .....
- Fax .....

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

.....

*(continue as required for further non-Affirmable Joint Venture Partners)*



**3. IDENTITY OF EACH AFFIRMABLE JOINT VENTURE PARTNER**

**3.1(a)** Name of Firm .....

Postal Address .....

Physical Address .....

Telephone .....

Fax .....

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

.....

**3.2(a)** Name of Firm .....

Postal Address .....

Physical Address .....

Telephone .....

Fax .....

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

.....

**3.3(a)** Name of Firm .....

Postal Address .....

Physical Address .....

Telephone .....

Fax .....

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

.....

**4. BRIEF DESCRIPTION OF THE ROLES OF THE AFFIRMABLE JOINT VENTURE PARTNERS IN THE JOINT VENTURE**

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

**5. OWNERSHIP OF THE JOINT VENTURE**

a) Affirmable Joint Venture Partner ownership percentage(s) ..... %

b) Non-Affirmable Joint Venture Partner ownership percentage(s)..... %

c) Affirmable Joint Venture Partner percentages in respect of: \*

(i) Profit and loss sharing .....

(ii) Initial capital contribution in Rands .....

.....

(\*Brief descriptions and further particulars should be provided to clarify percentages).

(iii) Anticipated on-going capital contributions in Rands .....

.....

.....

.....

(iv) Contributions of equipment (specify types, quality and quantities of equipment) to be provided by each partner

.....

.....

.....

.....

The undersigned warrants that he/she is duly authorised to sign this Joint Venture Disclosure Form and affirms that the foregoing statements are true and correct and include all material information necessary to identify and explain the terms and operations of the Joint Venture and the intended participation of each partner in the undertaking.

The undersigned further covenants and agrees to provide the Employer with complete and accurate information regarding actual Joint Venture work and the payment therefore, and any proposed changes in any provisions of the Joint Venture agreement, and to permit the audit and examination of the books, records and files of the Joint Venture, or those of each partner relevant to the Joint Venture, by duly authorised representatives of the Employer.

Signature .....

Duly authorised to sign on behalf of .....

Name

Address .....

Telephone .....

Date .....

---

Signature .....

Duly authorised to sign on behalf of .....

Name

Address .....

Telephone .....

Date .....

---

Signature .....

Duly authorised to sign on behalf of .....

Name

Address .....

Telephone .....

Date .....

T2-22

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**T2.2R: 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 or the tender will be declared non responsive		
Section 1: Name of enterprise: . . . . .		
Section 2: VAT registration number, if any: . . . . .		
Section 3: CIDB registration number, if any: . . . . .		
Section 4: Particulars of sole proprietors and partners in partnerships		
<b>Name*</b>	<b>Identity number*</b>	<b>Personal income tax number*</b>

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

**Section 5: Particulars of companies and close corporations**

Company registration number .....

Close corporation number .....

Tax reference number .....

**Section 6: Record in the service of the state**

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

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

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

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

\*insert separate page if necessary

**Q: COMPULSORY ENTERPRISE QUESTIONNAIRE (cont)**

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

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

Signed

Date

Name

Position

*Enterprise  
name*

T2-25

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**SBD 2: TAX CLEARANCE CERTIFICATE REQUIREMENTS**

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

1. The original Tax Clearance Certificate must be submitted together with the bid. Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be acceptable.
2. In bids where Consortia / Joint Ventures / Sub-contractors are involved; each party must submit a separate Tax Clearance Certificate.

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**SBD4**

**BIDDER'S DISCLOSURE**

**1. PURPOSE OF THE FORM**

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

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

**2. Bidder's declaration**

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest<sup>1</sup> 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.

<b>Full Name</b>	<b>Identity Number</b>	<b>Name of State institution</b>

<sup>1</sup> 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.



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:

.....  
.....

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 consortium<sup>2</sup> 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

3.7 terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

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

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

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

T2-29

---

<sup>2</sup> Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract. T2-28  
[SCMU10-23/24-0010 Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months](#)

**SBD4:**

**DECLARATION OF EMPLOYEES OF THE STATE OR OTHER STATE INSTITUTIONS**

**1. In terms of section 30 of the Public Service Act;**

No employee shall perform or engage himself or herself to perform remunerative work outside his or her employment in the relevant department, except with the written permission of the executive authority of the department.

**2.**

Are any of the shareholders/ directors of your company employed by the State?	Yes/No
---	--------

**3. "State" means -**

- (a) Any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
- (b) Any municipality or municipal entity;
- (c) Any provincial legislature;
- (d) national Assembly or the national Council of provinces; or
- (e) Parliament.
- (f) Any Parastatal (A company or agency owned or controlled wholly or partly by the government).

**4. Should you indicate "yes" above, please provide the following details:**

No	NAME & SURNAME OF DIRECTOR	STATE INSTITUTION WHERE EMPLOYED	ID NUMBER	EMPLOYEE/ PERSAL NUMBER
1				
2				
3				
4				
5				

**5. Please note: The "state" is clearly defined in paragraph 3 above. In the event that "no" is selected and subsequently any false declaration are detected, the non-disclosure of such "state employment" will be deemed as "fraud". Therefore the state may reject the Quotation and in addition may proceed with further action should this declaration prove to be false.**

**6. DECLARATION**

I, (NAME & SURNAME).....ID NUMBER.....

CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 2 AND 4 ABOVE IS CORRECT.

.....  
Signature

.....  
Date

.....

.....

Position Name of Bidder

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

CONTRACT No: SCMU10 - 23/24-0010

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

SBD 6.1

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

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

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

---

**1. GENERAL CONDITIONS**

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

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

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

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

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

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

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

The maximum points for this tender are allocated as follows:

T2-31

	POINTS
PRICE	80
SPECIFIC GOALS	20
<b>Total points for Price and SPECIFIC GOALS</b>	<b>100</b>

- 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 PREFERENCE POINT SYSTEMS

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

80/20

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

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

### 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 points is allocated for price on the following basis:

$$Ps = 80 \left( 1 + \frac{Pt - P_{max}}{P_{max}} \right)$$

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 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 the 80/20 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

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

then the organ of state must indicate the points allocated for specific goals for the 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 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.)*

<b>PREFERENTIAL SPECIFIC GOALS POINTS TABLE</b>		
<b>The specific goals allocated points in terms of this tender</b>	<b>Number of points allocated (80/20 system) (To be completed by the organ of state)</b>	<b>Number of points claimed (80/20 system) (To be completed by the tenderer)</b>
<b>Historically Disadvantaged Individuals</b>		
(a) black ownership	4	
<b>Women ownership:-</b>		
(b) women ownership	4	
<b>Youth ownership:-</b>		
© youth ownership	4	
<b>People with Disability:-</b>		
(d) Disabled people ownership	4	
<b>Locality:-</b>		
(e) Within the Eastern Cape Province	4	

**5. DECLARATION WITH REGARD TO COMPANY/FIRM**

- 5.1. Name of company/firm.....
- 5.2. Company registration number: .....

5.3. 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]

5.4. 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

T2-35

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



.....  
**SIGNATURE(S) OF TENDERER(S)**

**SURNAME AND NAME:** .....

**DATE:** .....

**ADDRESS:** .....  
.....  
.....

---

# **PART C1: AGREEMENTS AND CONTRACT DATA**

---

C1-1

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

**CONTRACT NO.SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**PART C1: AGREEMENTS AND CONTRACT DATA**

TABLE OF CONTENTS	PAGE
C1.1 FORMS OF OFFER AND ACCEPTANCE.....	C1.3
C1.2. CONTRACT DATA.....	C1.8
C1.3 OTHER CONTRACT FORMS.....	C1.16

## C1.1 FORMS OF OFFER AND ACCEPTANCE

### C1.1.1 FORM OF OFFER

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

#### **Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

The Tenderer, identified in the Offer signature block, has examined the documents listed in the tender data and addenda thereto as listed in the tendered schedules, and by submitting this offer has accepted the Conditions of Tender.

By the representative of the Tenderer, deemed to be duly authorized, signing this part of this Form of Offer and Acceptance, the Tenderer offers to perform all 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 deemed in accordance with the Conditions of Contract identified in the Contract Data.

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

NOT APPLICABLE  
Rand (in words);  
R. (in figures)

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

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

Name .....Capacity .....

For the Tenderer

(Name and address of organization) .....

AS WITNESSES

Witness 1

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

Name .....

Witness 2

Signature .....

Date .....

Name .....

C1.1.2 FORM OF ACCEPTANCE

By signing this part of this Form of Offer and Acceptance, the Employer 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 Volume 3 which contains the tendering procedure, returnable schedule, agreement and contract data, pricing data, scope of work, site information.

Including Annexures, drawings and documents or parts thereof, bound as Volumes 4 to 5, which may be incorporated by reference into this Volume.

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 shall be signed by the authorized representative(s) of both parties.

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

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

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

Name .....Capacity .....

For the Employer

(Name and address of organization) .....

AS WITNESSES

Witness 1

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

Name .....

Witness 2

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

Name .....

C1.1.3 SCHEDULE OF DEVIATIONS

Notes:

1. The extent of deviations from the tender documents issued by the employer before the tender closing date is limited to those permitted in terms of the conditions of tender.
2. A tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid, become the subject of agreements reached during the process of offer and 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 .....

.....

By the duly authorised representatives signing this agreement, the Employer and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the 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.

**For the Tenderer:**

Signature(s) .....

Name(s) .....

Capacity .....

(Name and address of organization/  
tenderer) .....

Name and signature  
of witness .....

Date .....

**For the Employer:**

Signature(s) .....

Name(s) .....

Capacity .....

(Name and address of organization)  
.....

Name and signature  
of witness .....

Date .....



## C1.2 CONTRACT DATA

### CONTRACT NO. SCMU10 - 23/24-0010

#### **Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

##### C1.2.1 PART 1: DATA PROVIDED BY THE EMPLOYER

###### CONDITIONS OF CONTRACT

The *General Conditions of Contract for Construction Works*, Third Edition, 2015, published by the South African Institution of Civil Engineering Private Bag X200, Halfway House, 1685, is applicable to this Contract and is obtained from [www.saice.org.za](http://www.saice.org.za).

The pro-formas bound with the *General Conditions of Contract for Construction Works*, Third Edition, 2015, shall not apply to this Contract and shall be replaced with the documentation bound into this document.

The *General Conditions of Contract for Construction Works* make several references to the Contract Data for specific data, which together with these conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the *General Conditions of Contract*.

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

Where reference is made to the standard specifications in this contract, it shall mean the COLTO Standard Specifications for Road and Bridge Works for State Road Authorities 1998, prepared by the Committee of Land Transport Officials complete with any corrections and amendments applicable at the time of tendering. Amendments to the standard specifications are bound in the contract documents in Part C3 : Section B : Project Specifications.

The COLTO Standard Specifications for Road and Bridge Works for State Road Authorities 1998, prepared by the Committee of Land Transport Officials, may be obtained / purchased from the South African Institution of Civil Engineering (SAICE), Private Bag X200, Halfway House 1685, Tel: (011) 805 5947, Fax: (011) 805 5971, e-mail: [civilinfo@saice.org.za](mailto:civilinfo@saice.org.za).

This COLTO Standard Specification may also be inspected, by appointment, at the offices of the Employer and the Consulting Engineer's during normal office hours.

## CONTRACT SPECIFIC DATA

The following contract specific data, referring to the *General Conditions of Contract for Construction Works*, Third Edition, 2015, are applicable to this Contract:

### Clause 1.1: Definitions

*Add to Clause 1.1.1 - Definitions- the following:*

"The terms *Client, Principal Contractor, Contractor and Designer*, as used in the *Occupational Health and Safety Act - Construction Regulations* are synonymous with the terms *Employer, Contractor, Sub-Contractor and Employer's Agent* respectively as defined in this Clause 1.1 of the *GCC*."

#### Clause 1.1.1.13:

The Defects Liability Period is 12 months.

#### Clause 1.1.1.14:

The time for achieving shall be as advised in the work order for any physical work and shall include all special non-working days and the year end breaks as determined by SAFCEC.

#### Clause 1.1.1.15:

The name of the Employer is the DEPARTMENT OF TRANSPORT, represented by the Head of Department: DEPARTMENT OF TRANSPORT and/or such other person or persons duly authorized thereto by the Employer in writing.

#### Clause 1.1.1.16:

The name of the Employer's Agent is the firm of In House Construction Unit, acting through a director or an official authorised thereto in writing.

#### Clause 1.1.1.26:

The Pricing Strategy is a Re-measurement Contract

#### Clause 1.2.1.2:

The Employer's address for receipt of communications and notices is:

Physical address : 32 Cowan Close  
Stellenbosch Park,  
Schornville  
King William's Town

Postal address : Private Bag X0023  
Bhisho,  
5605

Clause 2.4.1:

*Add the following:*

"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. The Forms of Offer and Acceptance
2. Contract Forms
3. The Contract Data
4. General Conditions of Contract (GCC 2015)
5. Scope of the Work
6. Standard Specification for Road and Bridge Works (COLTO 1998)
7. Site Information
8. Construction Drawings
9. Bill of Quantities
10. The Returnable Schedules

Clause 3.2.3:

The Employer's Agent shall obtain specific approval from the Employer before executing any of his functions or duties according to the following Clauses of the General Condition of Contract: GCC 2015 Third Edition

1. Nominating the Employer's Agent's Representative in terms of Clause 3.3
2. The issuing of instructions for dealing with fossils and the like in terms of Clause 4.7
3. Authorising the Contractor to repair and make good excepted risks in terms of Clauses 7.5.5 and 7.6.22
4. The issuing of variation orders in terms of Clause 6.3.2
5. The issuing of an instruction to accelerate progress in terms of Clause 5.12.4
6. The approval of any extension of time for completion in terms of Clause 5.12.1
7. The reduction of a penalty for delay in terms of Clause 5.13.2
8. The determination of additional or reduced costs arising from changes in legislation in terms of Clause 6.8.4
9. The giving of a ruling on a Contractor's claim in terms of Clause 10.1.5
10. The agreeing of the adjustment of the sums for general items in terms of Clause 6.11

Clause 3.2.4:

*Delete the last sentence of the Clause.*

Clause 3.3.6:

*Add the following:*

"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".

Clause 4.3.3:

*Add the following new clause:*

"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;

C1-10

- (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 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 (Notice No. 37305, dated 7 February 2014) to the Act:
  - (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 Regulation of 2014, and prepare a suitably and sufficiently documented health and safety plan as contemplated in regulation 7(1)(a) of the Construction Regulation 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 the Letter of 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, such time as the Employer or his Agents are satisfied that the issues in which the Contractor has been in default have been rectified."

Clause 4.4.4:

*Add the following:*

- 1 All specialists' merchants, tradesmen and others executing any work or supplying any goods for which provisional or prime cost sums are provided in the Schedule of Quantities and who are selected for this purpose by the Contractor and the Employer as specified hereafter, shall in the execution of such work be subcontractors of the Contractor and are herein referred to as "Selected Subcontractors".
- 2 The contractual relationship between the Contractor and the selected sub contractor shall be the same as those which normally apply between contractors and ordinary subcontractors as specified inter alia in clause 3 hereafter.
- 3 Unless another procedure is specified in the Special Conditions of Contract, the procurement of Selected Subcontractors by the Contractor is to be carried out using the legislated Standard Conditions of Tender (as published and amended from time to time by the Construction Industry Development Board).

It is intended that the Subcontract Agreement and Provisions of Subcontract First Edition (2018) Incorporating General Conditions of Sub Contract 2018 for use in accordance with Subcontractors Works of Civil Engineering Construction as provided by the South African Federation of Civil Engineering Contractors be used as the basis of the subcontract between the Contractor and each selected subcontractor

The Contractor shall incorporate in the subcontract provisions that:

- (a) In respect of the work of the goods that are subject of the subcontract the Selected Subcontractor undertakes to the Contractor *mutatis mutandis* the obligations and liabilities as are imposed upon the Contractor by the Employer in terms of the Contract, and hold the Contractor harmless from and indemnifies him against the same and in respect of all claims, demands, lawsuits, damages, costs, charges and expenses whatsoever arising out of or in connection therewith, or arising out or in connection with any failure to perform such obligations or to fulfil such liabilities, and
- (b) the Selected Subcontractors hold the Contractor harmless from and indemnifies him against:
  - (i) shortcomings in the subcontract works if and where the works were designed by the Selected Subcontractor;
  - (ii) defects in the goods if and where the goods were manufactured and/or supplied by the Selected Subcontractor;
  - (iii) any negligence by the Selected Subcontractor; his agents, workmen and servants;
  - (iv) any misuse by the Selected Subcontractor of any Construction Plant, Temporary Works or materials provided by the Contractor for the purposes of the Contract; and
  - (v) any claims as aforesaid
- (c) entitles him to pay direct to local and other labourers all payments the selected subcontractor has failed to make to any local and other labourers and to deduct, by way of settlement, the amounts paid by the Contractor from money owing to or that may become owing to selected subcontractor.

Clause 5.3.1:

The documentation required before commencement with Works execution are:

Project Specific Health and Safety Plan (Refer Clause 4.3)

Initial programme (Refer Clause 5.6)

Security (Refer Clause 6.2)

Insurance (Refer Clause 8.6)

Clause 5.3.2:

The time to submit the documentation required before commencement with Works execution is within 14 days of receipt of the signed Form of Offer and Acceptance.

Clause 5.4.4:

*Add the following new clause:*

"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 purposes of the Works."

Clause 5.8.1:

The non-working days are Sundays.

The special non-working days are:

All gazetted public holidays and the Contractor's year-end break as specified by SAFCEC.

C1-12

Clause 5.13.1:

The penalty for failing to complete the Works is 2.75 cent per R 100 per day of the contract sum or part thereof excluding escalation and VAT.

Clause 5.16.3:

The latent defects period is ten (10) years.

Clause 6.2.1:

*Add the following:*

"The Contractor shall deliver the Form of Guarantee selected in the Contract Data to the Employer within 14 days of receipt of the signed Form of Offer and Acceptance. Any expenditure incurred in doing so shall be borne by the Contractor."

Clause 6.8.2:

"The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule. Where actual work is carried out, the following values shall be used:

- x = 0,15
- a = 0,30 (Labour)
- b = 0,30 (Contractors Equipment)
- c = 0,25 (Material)
- d = 0,15 (Fuel)

The urban area nearest the site is East London.

The base month and year is the month prior to the month in which tenderers close.

The base date for the purposes of calculating Contract Price Adjustment (CPA) shall be one month prior to Tender Closing Date.

NOTE: The contract price adjustment factor shall be calculated to six decimal places".

Clause 6.8.3:

*Add the following:*

"Special materials (such as steel products) shall be considered with supporting documentary evidence. Details of special materials are indicated in the Contract Data."

Clause 6.10.1.5:

Where the contractor is carrying out physical work and not just supplying material, the percentage advance on materials not yet built into the Permanent Works is 80%.

Clause 6.10.2:

*Add the following:*

"Payment to the Contractor for any materials on site shall only be authorized after proof of ownership by the Contractor has been lodged with the Employer's Agent in the form of receipted invoices or other acceptable documents, or if ownership is ceded to the Employer."

Clause 6.10.3:

The percentage retention on the amounts due to the Contractor is 10% and which is only applicable of physical work carried out by the contractor and not material and equipment supply invoices.

A Retention Money Guarantee in lieu of retention is not permitted."

C1-13

Clause 8.2.1:

*Add the following:*

"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."

Clause 8.6.1.1.2:

The value of Plant and materials supplied by the Employer to be included in the insurance sum is zero (R 0.00) rand.

Clause 8.6.1.1.3:

The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is zero (R 0.00) rand.

Clause 8.6.1.3:

The limit of indemnity for liability insurance is ten million (R10 000 000.00) rand for any single claim with the number of claims to be unlimited during the construction and defects liability periods.

Clause 8.6.1.6:

*Add the following as 8.6.1.6: Insurances to be effected*

"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 and/or fabrication. In the event of 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."

Clause 10:

*Add the following:*

"Dispute resolution shall initially be by means of ad-hoc adjudication as per Clause 10.5.2. Should adjudication not be successful, then the dispute shall be referred to Arbitration under the provisions of Clause 10.7.1."

Clause 10.5.3:

The number of Adjudication Board Members to be appointed is three (3).

C1.2.3 CONTRACT DATA PROVIDED BY THE TENDERER

Sub-sub clause 1.1.1.9: Definitions, Contractor

*Add the following:*

"The name of the Contractor is: ....."

Sub-sub-clause 1.2.1.2:

*Add the following:*

"The address of the Contractor is

Physical Address: .....

.....

.....

Postal Address: .....

.....

.....

Telephone No: .....

Fax No: .....

E-mail: ....."

CLAUSE 6.8: ADJUSTMENT IN RATES AND/OR PRICES

Clause 6.8.3: Variation in the cost of special materials

*Add the following:*

"Refer Form J".



## C1.3 OTHER CONTRACT FORMS

### C1.3.1 PERFORMANCE GUARANTEE

#### GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means: .....

Physical address: .....

"Employer" means: .....

"Contractor" means: .....

"Employer's Agent" means: .....

"Works" means: .....

"Site" means: .....

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

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

Amount in words: .....

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

Amount in words: .....

"Expiry Date" means.....

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

#### PERFORMANCE GUARANTEE

- 1 The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.
- 2 The Guarantor's period of liability shall be from and including the date of issue of this Performance Guarantee and up to the date of issue by the Employer's Agent of the Certificate of Completion of the Works. The Employer's Agent and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.
- 3 The Guarantor hereby acknowledges that
  - 3.1 Any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;
  - 3.2 Its obligation under this Performance Guarantee is restricted to the payment of money.
- 4 Subject to the Guarantor's maximum liability referred to in 1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.1 to 4.3:
  - 4.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the 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 4.2;
  - 4.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.1 and the sum certified has still not been paid;

- 4.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.
- 5 Subject to the Guarantor's maximum liability referred to in 1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee. such demand stating that:
  - 5.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 5; or
  - 5.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 5; and
  - 5.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.
- 6 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.
- 7 Where the Guarantor has made payment in terms of 5, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.
- 8 Payment by the Guarantor in terms of 4 or 5 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.
- 9 Payment by the Guarantor in terms of 5 will only be made against the return of the original Performance Guarantee by the Employer.
- 10 The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.
- 11 The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
- 12 This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 2, where after no claims will be considered by the Guarantor, The original of this Guarantee shall be returned to the Guarantor after it has expired.
- 13 This Performance Guarantee, with the required demand notices in terms of 4 or 5, shall be regarded as a liquid document for the purposes of obtaining a court order.
- 14 Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at..... Date.....

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

Capacity.....

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

Capacity.....

Witness signatory (1) .....

Witness signatory (2) .....

**C1.3.2 CESSION OF OWNERSHIP**

**PRO FORMA CESSION OF OWNERSHIP**

**TO: ..... (CONTRACTOR)**

**SUBJECT : CONTRACT NO. SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

Re MATERIALS SUPPLIED TO SITE

.....

In order to facilitate payment for materials on site in terms of Clause 6.10.(2) of the *General Conditions of Contract*, it is hereby confirmed that, although materials may have been supplied on Credit to

..... (Contractor)

ownership of such materials, when delivered for use in the above Contract will vest with

..... (Contractor)

In the event of such materials being delivered on site or any authorised extended site in terms of the Contract, ownership thereof will then vest with

.....

(the Employer) in terms of Clause 8.2.(1) of the said *General Conditions of Contract*.

Yours faithfully

(SUPPLIER)

**BENEFICIARY LIST**

Name of Contractor  
 Project Name  
 Project Number  
 Month:

Youth = 35yrs and less

Number of workers	Surname	Initials	Name	ID Number	Date of Birth	Male/Female	Has Disability (Y?N)	Is Youth (Y/N)	Education Level*	Date Start	Contact Number
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											

\_\_\_\_\_  
 Signature of CLO

**PAYMENT REGISTER**

Contractor Name  
 Period  
 Project Number  
 Month:

Name and surname	ID Number	Contact no	Number of Workdays	Task Rate	Payment Due	Signature for Payment Received	Comments

\_\_\_\_\_ Signature of CLO ???

\_\_\_\_\_ Signature of Contractor to verify accuracy

Signature of Consultant

Signature of Contractor for receipt of monies

C1.3.5 FORM 3: DAILY SITE ATTENDANCE REGISTER FORM

CONTRACT NO. SCMU10 - 23/24-0010

DAILY SITE ATTENDANCE REGISTER

Name of Contractor  
Project Name

Validation: Cannot be more than 23 days per person per month.

Project Number  
Month:

1 = At Work      A = Absent      L = Leave      SC = Site Closed  
SL = Sick Leave    P = Public Holiday    2 = Training

	Surname	Initials	ID Number	Birth Date	Rate per day ( R)																																Total Work days	Total Training Days	Total work days & training days		
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
1																																					0	0	0		
2																																					0	0	0		
3																																					0	0	0		
4																																					0	0	0		
5																																					0	0	0		
6																																					0	0	0		
7																																					0	0	0		
8																																					0	0	0		
9																																					0	0	0		
10																																					0	0	0		
11																																					0	0	0		
12																																					0	0	0		
13																																					0	0	0		
14																																					0	0	0		
15																																					0	0	0		
15	<b>TOTALS</b>																																					<b>TOTALS</b>	0	0	0

\_\_\_\_\_  
Signature of CLO

\_\_\_\_\_  
Week 1: Signature of Contractor

Validation: Total work days 0  
Total training days 0  
Total work days + training days 0  
Variance 0  
Variance must be 0

\_\_\_\_\_  
Week 1-2: Signature of Contractor Organisation

\_\_\_\_\_  
Week 2: Signature of Contractor

\_\_\_\_\_  
Week 3-4: Signature of Contractor Organisation

\_\_\_\_\_  
Week 3: Signature of Contractor

\_\_\_\_\_  
Week 4: Signature of Contractor

**LABOUR MONTHLY SUMMARY SHEET**

Name of Contractor  
 Project Name  
 Project Number  
 Applicable Month

No of Working Days: Maximum including training = 23 days per month

Number of workers	Surname	Initials	First Name	ID Number	Birth Date	(M)ale / (F)emale	(D)isabled	Rate per day	Number of days worked this month	Number of training days this month	Total amount paid to beneficiary	Course name	Course Code	
1											0			
2											0			
3											0			
4											0			
5											0			
6											0			
7											0			
8											0			
9											0			
10											0			
11											0			
12											0			
13											0			
14											0			
15											0			
16											0			
17											0			
18											0			
19											0			
20											0			
<b>20</b>	<b>Totals for month</b>										<b>0</b>	<b>0</b>	<b>0</b>	

\_\_\_\_\_  
 Signature Consultant

C1.3.7 CERTIFICATE OF AUTHORITY FOR SIGNATORY TO AGREEMENT IN TERMS OF OCCUPATIONAL HEALTH AND SAFETY ACT 1993 (ACT No 85 OF 1993 AS UPDATED IN GOV. GAZETTE 7721 OF 18 JULY 2003)

The signatory for the company in terms of the above-mentioned Act shall confirm his / her authority thereto by attaching to this page a duly signed and dated copy of the relevant resolution of the Board of Directors.

An example is given 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 the AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT 1993 (ACT 85 OF 1993 as updated) on behalf

of.....

SIGNED ON BEHALF OF THE COMPANY:.....

IN HIS/HER CAPACITY AS:.....

DATE:.....

SIGNATURE OF SIGNATORY:.....

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

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



3) THIS AGREEMENT is made at ..... on this the ..... day

of.....in the year..... between

the PROVINCE OF THE EASTERN CAPE, DEPARTMENT OF TRANSPORT

(hereinafter called "the Employer") of the one part, herein represented by

.....in his/her capacity as .....

and delegate of the Employer in terms of the Employer's standard powers of delegation pursuant to the provisions of Act No 7 of 1998.

and .....

(hereinafter called "the Mandatory") of the other part, herein represented by

.....in his/her capacity as .....

and being duly authorised by virtue of a resolution appended hereto as Annexure A.

WHEREAS the Employer is desirous that certain works be constructed, viz

**CONTRACT NO. SCMU10 - 23/24-0010: Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months** and has accepted a tender by the Mandatory for the construction, completion & maintenance of such works and whereas the Employer and the Mandatory have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatory with the provisions of the Occupational Health and Safety Act 1993 (Act 85 of 1993 as updated);

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

- 1 The Mandatory shall execute the work in accordance with the contract documents pertaining to this contract.
- 2 This Agreement shall hold good from its commencement date, which shall be the date determined under Sub clause 5.4.1 of the Contract Data, to either:
  - a) the date of the final certificate issued in terms of Sub clause 5.16.1 of the General Conditions of Contract (hereinafter referred to as "the GCC"), or
  - b) the date of termination of the Contract in terms of Sub clause 9.2.1 of the GCC.
- 3 The Mandatory declares himself/herself to be conversant with the following:-
  - a) All the requirements, regulations and standards of the Occupational Health and Safety Act (Act 85 of 1993 as updated), hereinafter referred to as "The Act", together with its amendments and with special reference to the following Sections of The Act.
    - i) Section 8: General duties of employers to their employees.
    - ii) Section 9: General duties of employers and self-employed persons to persons other than employees.

C1-24

- iii) Section 37: Acts or omissions by employees or mandatories and
  - iv) Sub-section 37(2) relating to the purpose and meaning of this Agreement.
- b) The procedures and safety rules of the Employer as pertaining to the Mandatory and to all his/her sub contractors.
- 4 In addition to the requirements of **Clause 8.2** of the GCC (as amended by the Contract Data contained in Volume 3 of the contract documents pertaining to this Contract) and all relevant requirements of the above mentioned Volume 3, the Mandatory agrees to execute all the works forming part of this Contract and to operate and utilize all machinery, plant and equipment in accordance with The Act.
- 5 The mandatory is responsible for the compliance with the Act by all his/her sub-contractors, whether or not selected and/or approved by the Employer.
6. The mandatory warrants that all his/her own and his/her sub-contractors workmen are covered in terms of the Compensation for Occupational Injuries and Diseases Act 1993 which cover shall remain in force whilst any such workmen are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Employer upon signature of the agreement.
7. The mandatory undertakes to ensure that he/her and/or subcontractors and/or their respective employers will at all times comply with the following conditions:
- a) The mandatory shall assume the responsibility in terms of Section 16.1 of the Occupational Health and Safety Act. The mandatory shall not delegate any duty in terms of Section 16.2 of this Act without the prior written approval of the Employer. If the mandatory obtains such approval and delegates any duty in terms of section 16.2 a copy of such written delegation shall immediately be forwarded to the Employer.
  - b) All incidents referred to in the Occupational Health and Safety Act shall be reported by the mandatory to the Department of Labour as well as to the Employer. The Employer will further be provided with copies of all written documentation relating to any incident.
  - c) The Employer hereby obtains an interest in the issue of any formal enquiry conducted in terms of section 32 of the Occupational Health and Safety Act into any incident involving the mandatory and/or his/her employees and/or his/her sub-contractors.

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

SIGNED FOR AND ON BEHALF OF THE EMPLOYER:.....

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

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

SIGNED FOR AND ON BEHALF OF THE MANDATORY:.....

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

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

C1.3.9 CERTIFICATE OF AUTHORITY FOR SIGNATORY TO AGREEMENT IN TERMS OF THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, ENVIRONMENTAL CONSERVATION ACT AND ENVIRONMENTAL MANAGEMENT ACT

The signatory for the company in terms of the above-mentioned Act shall confirm his or her authority thereto by attaching to this page a duly signed and dated copy of the relevant resolution of the Board of Directors.

An example is given 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 the AGREEMENT IN TERMS OF THE  
CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, ENVIRONMENTAL  
CONSERVATION ACT AND ENVIRONMENTAL MANAGEMENT ACT on behalf of  
.....(the Contractor)

SIGNED ON BEHALF OF THE COMPANY .....  
IN HIS/HER CAPACITY AS .....

DATE .....

SIGNATURE OF SIGNATORY .....

Witness ..... Witness.....

Name ..... Name .....

THIS AGREEMENT made at.....

on this the .....day of .....in the year .....

between THE PROVINCE of the EASTERN CAPE, DEPARTMENT OF TRANSPORT  
(hereinafter called "the Employer") of the one part,  
herein represented by ..... in his/her capacity as  
.....

and delegate of the Employer in terms of the Employer's standard powers of delegation  
and .....

(hereinafter called "the Mandatory") of the other part,

herein represented by .....in his/her capacity as .....

and being duly authorised by virtue of a resolution appended hereto as Annexure B;

WHEREAS the Employer is desirous that certain works be constructed, viz.

**CONTRACT NO. SCMU10 - 23/24-0010:** Appointment of a panel of managing  
contractors for all upgrade projects implemented using In House Construction teams for  
a period of 36 months, and has accepted a tender by the Mandatory for the construction, completion &  
maintenance of such works, and whereas the Employer and the Mandatory have agreed to certain arrangements  
and procedures to be followed in order to ensure compliance by the Mandatory with the provisions of the  
Constitution of the Republic of South Africa, the Environmental Conservation Act and the Environmental  
Management Act;

NOW THEREFORE THIS AGREEMENT WITNESSES AS FOLLOWS:

1. The Mandatory shall execute the work in accordance with the contract documents pertaining to this Contract.
2. This Agreement shall hold good from its commencement date, which shall be the date determined under Sub clause 5.4.1 of the Contract Data to either:
  - a) the date of the final certificate issued in terms of Sub clause 5.16.1 of the General Conditions of Contract (hereinafter referred to as "the GCC"), as contained in this volume of the contract documents pertaining to this Contract, or
  - b) the date of termination of the Contract in terms of Sub clause 9.2.1 of the GCC.

.....

C1-27

SCMU05-23/24-XXXX

Appointment of a managing contractor for all upgrade projects implemented using In House Construction teams for a period of 36 months

3. The Mandatory declares himself/herself to be conversant with the following:-  
All the requirements, regulations and standards of Section 24 of the Constitution of the Republic of South Africa (Act No 108 of 1996)<sup>2</sup> \* the Environmental Conservation Act (Act No 73 of 1989) and the National Environmental Management Act (Act No 107 of 1998), hereinafter referred to as "The Act", together with its amendments of The Act.
4. In addition to the requirements of **Clause 8.2** of the GCC (as amended in the Contract Data contained in Volume 3 of the contract documentation pertaining to this Contract) and all relevant requirements of the above mentioned Volume 3, the Mandatory agrees to execute all the works forming part of this Contract and to operate and utilize all machinery, plant and equipment in accordance with an Environmental Management Plan.
5. The Mandatory is responsible for the compliance with the Act and Environmental Management Plan by all his/her sub-contractors, whether or not selected and/or approved by the Employer.

\* Refer to note <sup>2</sup> overleaf for Section 24 of the Constitution.

<sup>2</sup>Environment: Extract from Section 24 of the Constitution of the Republic of South Africa.

24. Everyone has the right -
  - (a) to an environment that is not harmful to their health or well-being; and
  - (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -
    - (i) prevent pollution and ecological degradation;
    - (ii) promote conservation; and
    - (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

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

SIGNED FOR AND ON BEHALF OF THE EMPLOYER:.....

WITNESS:           1..... 2.....

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

SIGNED FOR AND ON BEHALF OF THE MANDATORY:.....

WITNESS:           1..... 2.....

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

---

## **PART C2: PRICING DATA**

---

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**TENDER NO.: SCMU10 - 23/24-0010**

**Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months**

**PART C2: PRICING DATA**

TABLE OF CONTENTS		PAGE
C2.1	PRICING INSTRUCTIONS .....	C2.3
C2.2	BIL OF QUANTITIES .....	C2.6

# PROVINCE OF THE EASTERN CAPE

## DEPARTMENT OF TRANSPORT

### TENDER NO.: SCMU10 - 23/24-0010

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

#### C2.1: PRICING INSTRUCTIONS

C2.1.1 For the purposes of this Bill of Quantities, the following words shall have the meanings hereby assigned to them.

- Unit: The unit of measurement for each item of work as defined in the Standard Specifications or the Project Specifications.
- Quantity: The number of units of work for each item.
- Rate: The payment per unit of work for which the Tenderer tenders to do the work.
- Amount: The product of the quantity and the rate tender for an item.
- Lump Sum: An amount tender for an item, the extent of which is described in the Bill of Quantities, the Specifications or elsewhere, but of which the quantity of work is not measured in units.

C2.1.2 This Bill of Quantities forms part of the contract documents and must be read in conjunction with all the other documents comprising the contract documents.

C2.1.3 The quantities set out in the Bill of Quantities are only approximate quantities. The quantities of work finally accepted and certified for payment, and not the quantities given in the Bill of Quantities, will be used to determine payments to the Contractor.

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

C2.1.4 Rates and lump sums shall include full compensation for overheads, profits, incidentals, tax (other than VAT), etc. and for the completed items of work as specified, all in accordance with sub clause 1209 (b) of the Standard Specifications. Full compensation for completing and maintaining, during the defects liability period, all the work shown on the drawings and specified in the Standard Specifications and Project Specifications and for all the risks, obligations and responsibilities specified in the General Conditions of Contract, Special Conditions of Contract, Standard Specifications and Project Specifications shall be considered as provided for collectively in the items of payment given in the Bill of Quantities, except in so far as the quantities given in the Bill of Quantities are only approximate.

C2-3



C2.1.5 The Tenderer shall fill in a rate or a lump sum for each item where provision is made for it even where no quantities are given. Items against which no rate or lump sum has been entered in the tender will not be paid for when the work is executed, as payment for such work will be regarded as being covered by other rates or lump sums in the Bill of Quantities.

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

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

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

C2.1.6 The works executed are measured for payment in accordance with the methods described in the contract documents under the various payment items, notwithstanding any custom to the contrary. Attention is directed to the provisions of Clause 1220 of the Standard Specifications regarding the measurements of quantities for payment. Except where specified otherwise than in Clause 1220, the nett measurement or mass of the finished work in place shall be taken for payment, and any volume or mass of work in excess of that prescribed, shall be excluded.

C2.1.7 The amount of work or the quantities of material stated in the Bill of Quantities shall not be considered as restricting or extending the amount of work to be done or quantity of material to be supplied by the Contractor.

C2.1.8 The statement of quantities of material or the amount of work in the Bill of Quantities shall not be regarded as authorisation for the Contractor to order material or to execute work. The Contractor shall obtain the Employer's Agent's detailed instructions for all work before ordering any materials or executing work or making arrangements in this regard.

C2.1.9 The short descriptions of the payment items in the Bill of Quantities are only given to identify the items and to provide specific details. Reference shall, inter alia, be made to the drawings, Standard Specifications, Project Specifications, General Conditions of Contract and Special Conditions of Contract for more detailed information regarding the extent of work entailed under each item.

C2.1.10 The provisions of Clause 6.6 of the General Conditions of Contract shall apply to provisional sums and prime cost sums.

C2.1.11 Subject to the conditions stated in paragraph C2.1.12 below, the rates and lump sums filled in by the Tenderer in the Bill of Quantities shall be final and binding with regard to submitting the tender, and may not be adjusted should there be any mistakes in the extensions thereof and in the total sums appearing in the tender. Adjustment of the rates will take place prior to the signing of the contract. In their own interest, Tenderers must make doubly sure of the correctness of their tender rates, the extensions and the Tender Sum.

Arithmetical errors of responsive tenders will be corrected in the following manner:

- Where there is a discrepancy between an amount shown in figures, and the corresponding amount stated in words, the amount stated in words shall take preference.
- In the Bill of Quantities, if there is an error in the line item total resulting from the product of the quantity and the unit rate, the line item total shall govern, and the rate shall be corrected. Where there is a misplacement of the decimal point in the unit rate, the line item total shall govern and the unit rate will be corrected.
- Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the bidder's addition of prices, the total of the prices shall govern and the bidder will be asked to revise selected item prices (and their rates in the Bill of Quantities) to achieve the bid total of the prices.

Should a tenderer be unwilling to make the corrections ordered by the Employer's Agent, the tender may be disqualified.

C2.1.12 A tender may be rejected if the unit rates or lump sums for some of the items in the Bill of Quantities are, in the opinion of the Employer, unreasonable or out of proportion, and if the Tenderer fails, within a period of seven (7) days of having been notified in writing by the Employer to adjust the unit rates or lump sums for such items, to make such adjustments

C2.1.13 The units of measurement indicated in the Bill of Quantities are metric units

The following abbreviations are used in the Bill of Quantities:

mm	=	millimetre
m	=	metre
km	=	kilometre
km-pass	=	kilometre-pass
m <sup>2</sup>	=	square metre
m <sup>2</sup> -pass	=	square metre pass
ha	=	hectare
m <sup>3</sup>	=	cubic metre
m <sup>3</sup> -km	=	cubic metre kilometre
ℓ	=	litre
kℓ	=	kilolitre
kg	=	kilogram
t	=	ton (1000 kg)
No	=	number
mn	=	meganewton
mn-m	=	meganewton-metre
%	=	percent
kW	=	kilowatt
kN	=	kilonewton
PC sum	=	prime cost sum
Prov sum	=	provisional sum
hr	=	hour
P	=	Pocket
Dia	=	Diameter

C2.1.14 All rates and sums of money quoted in the Bill of Quantities shall be in Rands and whole cents. Fractions of a cent shall be discarded

C2.1.15 The item numbers appearing in the Bill of Quantities refer to the corresponding item numbers in the Standard Specifications. Item numbers prefixed by the letter B refer to payment items described under Part B of the Project Specifications, those with C to payment items described under Part C, and so on for further parts of the project specifications.

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**TENDER NO.: SCMU10 - 23/24-0010**

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

**C2.2: BILL OF QUANTITIES**

PART A: PRELIMINARY AND GENERAL.....C2-7

PART B: ROAD WORKS .....C2-16

# PART C3 : SCOPE OF WORK

---

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**TENDER NO.: SCMU10 - 23/24-0010**

**APPOINTMENT OF A MANAGING CONTRACTOR FOR ALL UPGRADES IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS FOR A PERIOD OF 36 MONTHS**

<b>PART C3 SCOPE OF WORK</b>	<b>PAGE</b>
SECTION A: STANDARD AMENDMENTS ISSUED BY COLTO .....	C3-38
SECTION B: PROJECT SPECIFICATION AMENDMENTS TO THE PROJECT SPECIFICATION .....	C-3.4
SECTION C: ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION SPECIFICATION .....	C-3.50
SECTION D: OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION .....	C3.79
SECTION E: HIV/AIDS AWARENESS EDUCATION SPECIFICATION .....	C3.142
SECTION F: LABOUR SPECIFICATIONS.....	C3.149
SECTION G: QUALITY ASSURANCE FRAMEWORK FOR ROAD WORKS.....	C3.172
SECTION H: DESCRIPTION OF WORK TO BE PERFORMED ON THIS CONTRACT.....	Last page

## PROVINCE OF THE EASTERN CAPE

### DEPARTMENT OF TRANSPORT

TENDER NO.: SCMU10 - 23/24-0010

### APPOINTMENT OF A MANAGING CONTRACTOR FOR ALL UPGRADES IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS FOR A PERIOD OF 36 MONTHS

#### 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 "General Conditions of Contract for Construction Works (2015 3<sup>rd</sup> Edition), issued by the South African Institution of Civil Engineering (SAICE) 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.
4. The term "Engineer" used throughout the Standard Specifications is synonymous with "Employer's Agent"
5. The terms "Resident Engineer" and "Engineer's Representative" are synonymous with "Employer's Agent's Representative".

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**TENDER NO.: SCMU10 - 23/24-0010**

**APPOINTMENT OF A MANAGING CONTRACTOR FOR ALL UPGRADES IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS FOR A PERIOD OF 36 MONTHS**

**SECTION B: PROJECT SPECIFICATION AMENDMENTS TO THE PROJECT SPECIFICATION**

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 this COLTO General Conditions of Contract shall need to be exchanged for the equivalent clause in the General Conditions of Contract for Construction Works (third edition) 2015 (SAICE), as published by the South African Institute of Civil Engineering, as amended in the Contract Data (C1.2) of this document. The employer assumes/accept no responsibility for the Contractors' interpretation of which is the correct relevant clauses.



## PROJECT SPECIFICATIONS

<b>CONTENTS</b>	<b>PAGE</b>
SECTION 1100 : DEFINITIONS AND TERMS	C3.6
SECTION 1200 : GENERAL REQUIREMENTS AND PROVISIONS	C3.10
SECTION 1300 : CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS	C3.26
SECTION 1400 : HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL	C3.28
SECTION 1500 : ACCOMMODATION OF TRAFFIC	C3.34
SECTION 1600 : OVERHAUL	C3.47
SECTION 1700 : CLEARING AND GRUBBING	C3.49
SECTION B1800 : DAY WORKS	C3.51
SECTION 4100 : PRIME COAT	C3.59
SECTION 4600 : BITUMINOUS SINGLE SEAL WITH SLURRY (CAPE SEAL)	C3.61
SECTION 5700 : ROAD MARKINGS	C3.63
SECTION 7300 : CONCRETE BLOCK PAVING FOR ROADS	C3.67
SECTION 8100 : TESTING MATERIALS AND WORKMANSHIP	C3.69

**SECTION 1100:            DEFINITIONS AND TERMS**

*Add the following to the contents:*

“B1156        PROCESS CONTROL  
B1157        ACCEPTANCE CONTROL”

**B1115        GENERAL CONDITIONS OF CONTRACT**

*Replace Clause 1115 with the following:*

“The General Conditions of Contract for Construction Works (third edition) 2015 (SAICE), published by the South African Institute of Civil Engineering, as amended in the Contract Data (C1.2) 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 1115/1 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, as amended in the Contract Data (C1.2), shall apply and the Contractor shall be responsible for interpretation of the equivalent clause.

**TABLE 1115/1: REFERENCES IN COLTO STANDARD SPECIFICATIONS TO THE COLTO GENERAL CONDITIONS OF CONTRACT AND RELEVANT CLAUSES IN THE SAICE GENERAL CONDITIONS OF CONTRACT**

COLTO Standard Specifications		COLTO General Conditions of Contract		SAICE General Conditions of Contract	
Clause No	Page No	Clause No	Description or Reference	Clause No	Description or Reference
1115	1100-2		Definition of COLTO		Definition of SAICE
1204	1200-2	15	Construction programme	5.6.1	Programme of the Works
1204	1200-2		General reference to COLTO		Applicable to SAICE
1206	1200-3	14	Setting out of works		Omitted
1209(a)	1200-4		General references to COLTO		Applicable to SAICE
1209(e)	1200-5	52(2)	Valuation of material brought onto site	6.10.2	Valuation of material brought onto site
1210	1200-5	54	Certificate of practical completion	5.14.1	Practical Completion
1212(1)	1200-7	49 (2)	CPA on alternative designs	6.8.2	Application of the CPA factor
1215	1200-9	45	Extension of time for completion due to abnormal rainfall.	5.12	Extension of time for practical completion
1217	1200-10	35	Care of the works	8.2	Care of the works
1303(ii)	1300-1		General reference to COLTO		Applicable to SAICE
1303(iii)	1300-1	49	Price adjustment Item 13.01 (a)	6.8	Price adjustment Item 13.01 (a)
1303 (iii)	1300-2	49	Price adjustment Item 13.01 (b)	6.8	Price adjustment Item 13.01 (b)
1303 (iii)	1300-1	53	Variations exceeding 20%	6.11	Variations exceeding 15%
1303 (iii)	1300-2	53	Variations exceeding 20%		Variations exceeding 15%
1303	1300-2	12	Payment Item 13.01 (c)	5.3	Commencement of the Works
1303	1300-2	45	Payment Item 13.01 ( c )	6.8	Payment Item 13.01 ( c )
1403(c) (ii)	1400-4	40 (1)	Variation for rented accommodation	6.4.1	Variation for rented accommodation
1505	1500-3	40 (1)	Variation for temporary drainage	6.4.1	Variation for temporary drainage
Item 15.08	1500-8	48	Payment of Provisional Sum	6.6.1	Payment of Provisional Sum
Item 15.09	1500-8	48	Payment of Provisional Sum	6.6.1	Payment of Provisional Sum
Item 15.11	1500-8	48	Payment of Provisional Sum	6.6.1	Payment of Provisional Sum
Note (2)	3100-4	40	Payment for prospecting for materials	6.4	Payment for prospecting for materials
3204(b) (iii)	3200-2	40	Payment for oversize material	6.4	Payment for oversize material
3303(b)	3300-2	2	Engineer's decisions, with reference to materials classification	3.1	Engineer's decisions, with reference to materials classification
Item 44.06	4400-3		General reference to COLTO, PC Sums	6.6.2	Prime Cost Sums in SAICE
Item 45.06	4500-3		General reference to	6.6.2	Prime Cost Sums in SAICE

SCMU05-23/24-XXXX

Appointment of a managing contractor for all upgrade projects implemented using In House Construction teams for a period of 36 months

COLTO Standard Specifications		COLTO General Conditions of Contract		SAICE General Conditions of Contract	
Clause No	Page No	Clause No	Description or Reference	Clause No	Description or Reference
			COLTO, PC Sums		
5803 (c)	5800-3	40	Variation, for landscaping	6.4	Variation, for landscaping
5805 (d)	5800-4	40	Variation, for grassing	6.4	Variation, for grassing
Item 58.10	5800-10	48	Payment for Extra Work	6.10	Payment for Extra Work
8103 (c)	8100-1	40	Variation, for testing material	6.4	Variation, for testing material
Item 81.02	8100-26		General reference to COLTO, Provisional Sums		Applicable to SAICE, Provisional Sums
Item 81.03	8100-26	22	Clearance of site on completion, with reference to core drilling	5.15	Clearance of site on completion, with reference to core drilling

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 2015: Sub-clause 1.1 Definitions

*Replace Sub-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 his prices.”

*Replace Sub-clause 1.1.1.28 with the following:*

“1.1.1.28 **“Scope of Work”** means the document(s) containing the Works Specifications (Standard Specifications, the Project Specifications and other documents) and the Drawings, that specifies and describes the Works, which are to be provided, and any other requirements and constraints relating to the manner in which the work is to be performed.”

*Add the following new Definitions:*

C3-6

“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.”

“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.

*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.

#### **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.

Both process and acceptance control testing will be carried out by an onsite laboratory for the Employer's Agent. Process control tests can be used as acceptance control if the Employer's Agent is satisfied with the results as presented to him.

## **SECTION 1200: GENERAL REQUIREMENTS AND PROVISIONS**

### **B1202 SERVICES**

*Add the following after the first paragraph of Clause 1202 of the Specifications:*

Various types of services, both overhead and underground, exist within the boundaries of the site. It is not envisaged that it will be necessary for the Contractor to arrange for the removal, relocation or protection of existing services. Should any work become necessary due to unforeseen circumstances then all work shall be done strictly in accordance with the requirements of the relevant service owner and in accordance with the requirements of these Project Specifications and the Standard Specifications where applicable.

*Add the following to the second paragraph:*

All the known services inside the limits of the works are indicated on the drawings. The Contractor shall however, immediately inform the Employer's Agent's Representative of any underground service which is not shown on the drawings 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 Engineer 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 Engineer'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 be effected by the Contractor. Special attention is drawn to the exclusions in this insurance policy and particularly to the exclusions regarding consequential damage.

*Add the following:*

### **EXISTING SERVICES**

Prior to commencing work, the Contractor shall confer with all Authorities and Departments concerned and obtain the necessary wayleaves for both overhead and underground services affected by the Works and shall satisfy himself that he has obtained all the relevant information required to complete the Contract. The Contractor shall carry out the works with the minimum interference to existing services. He shall co-operate with all Authorities and Departments concerned and he shall be solely responsible for carrying out the following operations and checks:

- (1) He shall inform all Authorities and Departments in good time before the correct stage of the construction is reached for the laying and/or relaying of any particular services.
- (2) He shall set out the lines and levels of kerbs, pipes, culverts and any other necessary features of the Contract in order that Authorities and Departments are able to lay and/or relay services correctly.

It shall be clearly understood that obtaining the necessary wayleaves and any extra work, such as the removal of any portion of the Works already executed either by the Contractor or other Authority or Department and its subsequent re-execution, which is caused by the Contractor's failure to observe and carry out his responsibilities as specified, will be at his own cost.

If the Contractor considers that the progress of the works is being retarded by the failure of any Authority or Department to lay, remove or divert pipes, ducts, services, cables or poles within a reasonable time, he shall immediately notify the Employer's Agent in writing, stating clearly the number of days of delay claimed. The Employer's Agent will then decide whether such a claim is justifiable, and in the event of the claim being accepted he will hand to the Contractor a certificate stating clearly the number of days of delay sanctioned.

The cost of repairing any damage to services, due to miscalculations or negligence on the part of the Contractor or his failure to carry out the duties set out in this Clause, shall be borne by the Contractor.

**(a) Protection of Overhead and Underground Services**

Services and sub-surface obstructions likely to be affected by the work, based on available records and surveys, have been shown on the drawings. Although every care has been exercised in the presentation of the available data, the Employer cannot and does not vouch for the accuracy or completeness of the information shown. Whenever the Contractor deems it necessary to determine the exact location of an existing service or obstruction, he shall, at his own expense, make any examination that he may consider desirable in advance of the work, and the Employer does not accept any liability for loss, damage or delay to the Contractor as a result of the non-location or inaccurate location of services or obstructions.

Where no underground services are shown on the drawings or scheduled, but the possibility of their presence can be reasonably inferred, the Contractor shall in collaboration with the Employer's Agent, search for such services to establish their positions well in advance of the work. A full report shall then be submitted in good time to the Employer's Agent, to enable the necessary arrangements for the protection, removal or diversion of the services before work is commenced in their vicinity.

In the event of damage to existing services, the Contractor shall take such immediate action as is necessary to prevent further damage or danger to life or property and shall immediately notify the Employer's Agent who will issue instructions as to the necessary repairs or protective measures to be taken. The cost thereof shall be borne by the Contractor irrespective of whether the repairs or protective measures were carried out by him or by or on behalf of the service authority or department concerned.

As soon as an underground service not shown on the drawings is discovered, it shall be deemed to be a known service and the Contractor will be held responsible for any subsequent damage to it if such service is damaged during the course of its discovery, the Contractor will be reimbursed for the cost of making good such damage, unless it is established by the Employer's Agent that the Contractor did not exercise reasonable diligence and care and that the damage was avoidable.

**(b) Existing Services**

"Existing service" shall include any service which has been temporarily taken out of service to allow for the execution of the works or which has been taken out of service as a result of an event which necessitated the execution of the works.

**(c) Condition of Existing Services**

The Contractor acknowledges that he has inspected and examined all known existing services and all existing services subsequently discovered, as contemplated in (a) above and is satisfied that all such services were in an acceptable and serviceable state at the commencement of the works, alternatively, upon discovery thereof as contemplated in (a) above.

In the event of a dispute as to the acceptability and/or serviceability of an existing service at the commencement of the works or upon the discovery of such service, the Contractor shall bear the onus of proving that the service in question was not in an acceptable and/or serviceable state at the commencement of the works.

**(d) Maintenance, Protection and Relocation of Existing Services**

During the course of the works, all existing services including traffic signals, watermains, sewers and stormwater reticulation, electricity transmission and telephone lines, cables, poles and conduits whether in service or not shall be protected, supported and maintained to the satisfaction of the service authority or department concerned and the Employer's Agent. The Contractor shall bear all costs in this regard.

Where a bank of underground ducts, cables, etc are crossed over a distance of less than 1.0m they shall be regarded as a single crossing. Hydrants under pressure, watermain valve covers and manholes shall be kept unobstructed and accessible at all times.

Where the existing stormwater system is affected by the roadworks, drainage pipes and structures will have to be upgraded, adapted or demolished and new drainage pipes and structures constructed.

The covers and frames of service manholes and catchpits will have to be adjusted where they are affected by the roadworks.

**(e) Work in Close Proximity to Existing Services**

The Contractor shall note that no mechanical excavators or vibratory type compactors may be used within three (3) metres of any telecommunications or electrical services. No pegs or stakes shall be driven into the ground in the vicinity of underground services unless their exact positions have been determined.

The Contractor's attention is drawn to the following with regard to work done in the proximity of ESKOM and other electrical services:

MACHINERY AND OCCUPATIONAL SAFETY ACT (Act No 6 of 1983) WITH REGULATIONS

D16 (7) Excavations

"The builder or excavator shall ascertain as far as practicable the location and nature of underground services likely to be affected by the excavation and take such steps as may be necessary to prevent danger to persons."



## THE ELECTRICITY ACT (Act No 40 of 1958)

### Section 51(3) : Offences and Penalties

Any person who without legal right (the proof of which shall be upon him) cuts or damages or interferes with any apparatus for generating, transmitting or distributing electricity, shall be guilty of an offence and liable on conviction to a fine not exceeding R1 000,00 or to imprisonment for a period not exceeding twelve months.

The Contractor shall take the above into account in the drawing up of his construction programme and in the calculation of his tendered rates, and shall note that no additional payment or compensation will be allowed for any additional costs or delays incurred as a result of compliance with these regulations, except as measured and paid under the Items listed in the Schedule of Quantities.

The Contractor shall allow all reasonable access to the representatives of any Authority or Department for the purpose of maintaining, laying and/or relaying any services, cables or mains during the period of the Contract.

Permanent alterations to existing services ordered in writing by the Employer's Agent, and for which no separate provision has been made in the Bill of Quantities, will be paid for under dayworks if required.

### **B1204 PROGRAMME OF WORK**

#### **(a) General requirements**

*Delete the first paragraph and replace with the following:*

The Contractor shall submit his programme to the Employer's Agent for approval within the time stated in the Contract Data. The programme shall be in the form of a bar chart (Gantt chart) or any other time-activity form acceptable to the Employer's Agent, and shall clearly show:

- (i) The proposed rate of progress in order to complete the Works within the required period as tendered, showing the various activities, their durations and proposed resourcing levels (major plant and labour) for each element of the Works. Sufficient detail shall be provided to enable the Employer's Agent to be able to gauge construction progress. All activities, including establishment on site, trimming and finishing and the completion of all minor ancillary works are to be included in the programme.
  - (ii) A Work breakdown structure that identifies all major work activities,
  - (iii) Scheduled start and end dates for each activity,
  - (iv) The linkage of activities and any dependencies (time or resource related) between them.
  - (v) The sequence of activities clearly identifying floats and critical path activities.
  - (vi) Key dates in respect of work to be carried out, information required or due delivery,
  - (vii) The anticipated value of work to be done during each month.

C3-10

(viii) Other information specifically required by the Employer's Agent.

When drawing up his programme, the Contractor shall take into consideration and make allowance for:

- (i) All special non-working days, shut-down periods and breaks defined in the Contract Data.
- (ii) Expected weather conditions and their effects; in particular expected delays defined in Clause B1215.
- (iii) Known physical conditions and artificial obstructions.
- (iv) The accommodation and safeguarding of public traffic.
- (v) Dealing with, altering and installing services.
- (vi) All other actions required in terms of this contract.

In particular the Contractor shall make allowance in his programme for the following:

**Restricted working conditions:**

The maximum lengths of a section of road that may be closed half width to traffic shall be 2 000 metres. Such lengths which are closed half width to traffic shall be separated by a minimum length of road open full width to traffic, of a minimum of 500 metres. The Contractor shall be allowed to construct new works on only three (3) sections of the existing road at any one time.

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 initial programme of work on the scope of the work as described in the project specification and the Schedule of Quantities. This programme shall be reviewed on a regular basis by the Contractor in accordance with changing circumstances, delays and amendments to the work ordered by the Employer's Agent as a result of further examinations made by him.

This initial programme shall realistically account for the forecast cash flow within the defined contract period, and as provided on Form F: Schedule of estimated monthly expenditure. If an alternative contract period is offered, the Contractor shall submit a separate programme with the alternative tender."

Minor revisions to the approved programme may be introduced from time to time by mutual agreement between the Contractor and the Employer's Agent. Should the Employer's Agent believe that a major revision of the programme is required, the Contractor will be notified in writing and a revised programme shall be submitted within two weeks of receipt of such notification.

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, since the approved programme may be used to evaluate any claims in terms of the General Conditions of Contract for extensions of time.

C3-11

The Contractor shall submit to the Employer's Agent, at least one working day before each monthly site meeting copies of the following:

- (i) The contract programme with progress charts and programme graphs updated to reflect the actual progress to date and a summary of progress on site over the month preceding the site meeting.
- (ii) 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.
  - (iii) A report on all labour, plant and materials on site.

*Add the following new sub-clause:*

**(c) 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 request from the Contractor a major revision of the programme. Such a revision shall be submitted for approval within fourteen (14) days of the request.

**B1205: WORKMANSHIP AND QUALITY CONTROL**

*Add the following after the title:*

The Contractor shall implement a quality assurance system in accordance with ISO 9001 and appoint a quality manager who shall ensure that members of the Contractor's staff comply with the requirements of the quality system. The quality system and the methods used to implement it shall be described in a quality plan produced by the Contractor.

The quality manager shall be resident on site full time. No construction activities shall take place on site before the Employer's Agent approves the quality plan.

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

The Contractor shall submit the quality assurance system he proposes using to the 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.

*Add the following at the end of this clause:*

The Employer's Agent shall for the purpose of acceptance control and products on workmanship, assess test results and measurements in accordance with the provisions of Section 8200 of the standard specifications (quality control scheme 1).

Where small quantities of work are involved, a lot shall mean a full day's production for a specific item of work subject to acceptance control testing.

A joint laboratory will be established on site and will perform all the process control and acceptance control testing on this Contract. The joint laboratory will be under the control of the Employer's Agent.

The employer shall not pay claims for delays to the works resulting from the awaiting of test results. Testing in the joint laboratory will be effected as promptly as is reasonable but is in the Contractor's own interest to submit material samples, concrete cubes or other components for testing in good time to assist avoiding or restricting delays.

The Contractor shall erect the necessary buildings required for the laboratory – refer to Section 1400 in this specification and the Bill of Quantities.

C3-13

## **B1206: THE SETTING OUT OF WORK AND PROTECTION OF BEACONS**

*Add the following after the first paragraph of Clause 1206 of the Specifications:*

A system of reference beacons has been established by the Employer alongside the route. The positions of the reference beacons are shown on the drawings and the Engineer shall indicate the reference beacons within any specific area to the Contractor prior to the commencement of Works. However, it is a specific requirement of this Contract that the Contractor will have to establish additional reference and control beacons for the setting-out and control of the Works.

*Add the following at the end of the fourth paragraph:*

Road markings, particularly painted islands and no overtaking lines 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.

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

*Add the following after the eighth paragraph of Clause 1206 of the Specifications:*

The Contractor shall indicate his own reference and control beacons to the Employer's Agent at least one week before work is programmed to commence. The Employer's Agent may take control measurements to determine the accuracy and adequacy of the reference/control beacons, and may instruct the Contractor to correct any faulty work and to take and provide such additional measurements and details as may be deemed necessary by him.

No payment will be made for any inconvenience or delay caused by compliance with these requirements.

*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 included in the tender rates.

## **B1207 NOTICES SIGNS AND ADVERTISEMENTS**

*Delete the last 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.

## **B1209 PAYMENT**

### **(b) Rates to be inclusive**

*Add the following to the first paragraph:*

No value added tax shall be included in the Contractor's tendered rates or amounts. Payment of value added tax (VAT) shall be made under a separate item in the Summary of Schedule(s) in C2.2 Bill of Quantities in C2 Pricing Data.

### **(c) The meanings of certain phrases in payment clauses**

#### **(i) Procuring and furnishing (material)**

*Add the following:*

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

*Add the following new sub-clauses:*

#### **(g) Work in confined areas**

Except where provided for in the Specification and the Bill / Schedule of Quantities in the Pricing Data 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 / Schedule of Quantities shall be taken to be deliberate and any additional costs incurred shall be included in the bulk rate.

#### **(h) Rates to remain unchanged when Scope of Work changes**

Dependent on the rates and prices offered in the Bill / Schedule of Quantities in the Pricing Data, the Employer intends to increase or reduce the scope of work to match the budget allowed for this project. To this end the Contractor has been provided the opportunity to price separately for unit rates of work and the establishment of major plant. 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, provided that:

- (i) Notification of the change to the scope of work is given in writing within 28 days of the tender closing date.
- (ii) The value of the increase or reduction in the scope of work does not alter the tendered sum by more than 15%.

#### **(i) Trade names**

Where materials are specified under trade names, tenders must be based on these materials. Equivalent materials may be submitted as alternative tender offers in the tender and the Employer's Agent may, after receipt of tenders, approve the use of equivalent materials.

**(j) 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-sized paper copies of the monthly statement for payment.

Additional payment items to cover the requirements of the project specifications are listed below.

**Add the following new payment items :**

**B 12.01 Relocation of and raising Eskom overhead lines at locations of road crossings**

<b>Item</b>	<b>Unit</b>
(a) Direct payment to ESKOM	Prov. Sum
(b) Handling costs and profit in respect of B 12.01 (a)	%

Expenditure under this item will be made in accordance with the general conditions of contract.

The submitted percentage is a percentage of the amount actually spent under Item B 12.01 (a), which shall include full compensation for the handling costs of the Contractor, plus the profit and all other incidentals, in connection with paying Eskom or its appointed agent for carrying out the work.

**B 12.02 Relocation/realignment and raising of overhead and underground Telkom services by Telkom**

<b>Item</b>	<b>Unit</b>
(a) Direct payment to TELKOM	Prov. Sum
(b) Handling costs and profit in respect of B 12.02 (a)	%

Expenditure under this item will be made in accordance with the general conditions of contract.

The submitted percentage is a percentage of the amount actually spent under Item B 12.02 (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.

**B12.06 Provision of Community Liaison Officer**

<b>Item</b>	<b>Unit</b>
(a) Wages, salaries and allowances etc	Prov Sum
(b) Handling costs and profit in respect of B12.06(a)	%

Expenditure under this item will be made in accordance with the general conditions of contract.

C3-16

Payment under Item B12.06 shall be made monthly. The amount due to the Contractor will be equal to the total of the actual amount paid to the Community Liaison Officer plus the direct cost of medical and pension benefits, Workmen's Compensation, sick leave and holiday pay, accommodation and transport incurred by the Contractor in respect of the CLO.

The submitted percentage is a percentage of the amount actually spent under Item B12.06 (a), and shall include full compensation for the handling costs and profit of the Contractor, plus all other incidentals, in connection with paying the CLO.

**B 12.07 Relocation of graves**

<b>Item</b>	<b>Unit</b>
(a) Direct payment to affected families or communities	Prov. Sum
(b) Handling costs and profit in respect of B 12.07 (a)	%

Expenditure under this item will be made in accordance with the general conditions of contract. The submitted percentage is a percentage of the amount actually spent under Item B 12.07 (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 relocation of graves.

**B 12.08 Project Steering Committee and disbursements to members of the PSC**

<b>Item</b>	<b>Unit</b>
(a) Direct payments for expenses to members.	Prov. Sum
(b) Handling costs and profit in respect of B 12.08 (a)	%

Expenditure under this item will be made in accordance with the general conditions of contract.

The submitted percentage is a percentage of the amount actually spent under Item B12.08(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 respective members for costs of travelling and subsistence for each meeting attended. Expenditure on this item will be closely monitored and must be approved in writing by the Engineer.

**B 12.09 Relocation and reinstatement of homesteads and of miscellaneous infrastructure such as tanks, boundary walls, stock pens, sheds and fences.**

<b>Item</b>	<b>Unit</b>
(a) Direct payment to individual owners or co-operatives	Prov. Sum
(b) Handling costs and profit in respect of B 12.09 (a)	%

Expenditure under this item will be made in accordance with the general conditions of contract.

The submitted percentage is a percentage of the amount actually spent under Item B 12.09 (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 individual owners / community, or its appointed agent, for carrying out the work or for supplying materials and equipment.



## **B 12.10 Provision for Training - being undertaken separately**

(a)	Management skills, including tendering	Prov sum
(b)	Road construction methods and skills	Prov sum
(c)	Road maintenance methods and skills	Prov sum
(d)	Concrete technology for contractors	Prov sum
(e)	Experiential Training for Technikon students	Prov sum
(f)	Generic training such as adult literacy	Prov sum
(g)	Road safety training for schools	Prov sum
(h)	Generic occupational health & safety training.	Prov sum
(i)	Handling costs and profit in respect of B 12.10 (a), (b), (c), (d), (e), (f), (g) and (h)	%

Payment under the provisional sums for training shall be made in accordance with the general conditions of contract.

The submitted percentage for Sub-item B 12.10(i) is a percentage of the amounts actually spent under Sub-items B12.10(a) to B 12.10(h). The percentage submitted shall include full compensation for the handling costs of the Contractor, plus the profit and all other charges and incidentals, in connection with the provision of training courses and ancillary requirements.

Sub-items (a), (b), (c) and (d) above will differentiate between training courses for individual workers and for selected emerging contractors (SMME's)

Payment will be made on successful completion of each course, or on a monthly basis for students actually employed under B 12.10 (e). A tax invoice from the course provider and proof of payment by the Contractor must be provided.

Details of the training required are contained in Clause 1.8 of Part C3-8 of this procurement document.

## **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.

C3-18

- (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.

**B1211 TRAFFIC OVER COMPLETED PAVEMENT LAYERS**

*Add the following:*

It is a specific requirement of this contract that traffic may have to be accommodated on completed pavement layers on certain road sections during peak hours and overnight. The final decision regarding the timing of opening of the completed pavement layers to traffic shall rest with the Employer’s Agent. Repair work required to the completed pavement layers shall be included in the rates for accommodation of traffic and no additional payment will be made for work required to repair damage.

Completed final surfacing shall not be opened to traffic until the final surfacing has sufficiently cooled. The Contractor shall not allow construction equipment or public traffic, which is likely to cause damage, over the completed final surfacing.

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

*Add the following to the last paragraph of sub-clause (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.

**B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL**

*Delete the entire clause and replace with the following:*

For the purposes of calculating an extension of time due to climatic conditions in terms of clause 5.12. as amended on the General Conditions of Contract, the number of days in excess of the number of working days anticipated to be lost due to climatic conditions shown in Table B1215/1 shall be taken into account:

**Table B1215/1 Anticipated days lost due to normal climatic conditions**

Month	“n” Working Days	Month	“n” Working Days
January	5	July	2
February	6	August	3
March	5	September	4
April	3	October	4
May	2	November	6
June	2	December	4

The Employer's Agent will certify a day lost due to climatic conditions only if:

- no work on the critical path according to the latest approved programme for completion of the works could be carried out during that specific working day or if
- only 30% or less of the work force and plant planned for that specific day, could work.

The extension of time as a result of climatic conditions will be calculated monthly as being equal to the absolute value of number of days certified by the Employer's Agent as lost due to climatic conditions, less the number of days in Table B1215/1.

The total extension for the contract will be the sum of the monthly extensions. Extension of time for six-day working weeks and parts of a month shall be calculated pro rata.

The Contractor shall submit to the Employer's Agent claims for all time lost due to inclement weather within 1 working day of the claim day. A record of inclement weather shall be kept by the Contractor and recorded at site meetings on a regular basis. The onus is on the Contractor to prove these claims.

## **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 Roadworks and Structures) 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 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 Engineer for confirmation before he commences with the construction of drainage and/or structures. The Contractor shall also check all clearances given on the drawings and shall inform the Engineer of any discrepancies.

*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 Engineer'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 6.3: Variations 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) The Contractor shall submit to the Employer's Agent for approval a method statement for the execution of that part which is subject to traffic accommodation on completed works. 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 program 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.

- (i) Concrete elements adjoining the road, which is designated for resurfacing, shall be covered with protective material prior to any spraying operations to prevent the concrete from being stained with bituminous binder. The protection of concrete elements shall be to the Employer's Agent satisfaction and no additional payment will be applicable for taking the specified protection measures.

**B1219 WATER**

*Add the following:*

The onus is on the Contractor to negotiate with the local landowners and authorities to obtain water. All water sources shall be tested for suitability for the use which it is intended.

**B1224 THE HANDING-OVER OF THE ROAD RESERVE**

*Add the following:*

Upon being given access to 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 Agent 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 gaining access or 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 reference beacons.
- (3) 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.).
- (4) The method of accommodation of public traffic with regard to safety, sight distances and providing advance warning before the work area.
- (5) The method of construction and supervisory control measures.

The entire road reserve of DR08021 as well as all other roads within the construction limits of the contract will be handed-over to the Contractor on 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.

C3-21

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. The Contractor shall, however, still be responsible for the contractual maintenance during the Defects Liability Period.

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 Health and Safety representative and will need to complete a site inspection register on a monthly basis. Payment for the Construction Safety officer will be made under Item C3-6/04(a). Payment for the Traffic Safety officer will be under Item B15.16. The two posts must be held by two separate people.

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

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 the road.

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 danger tape, etc.

### **B 1231 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, similar products may be used subject to the prior written approval of the Employer's Agent.

C3-22

Unless otherwise specified, all proprietary materials shall be used and placed strictly 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 authorized 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 5. Apart from the EMP in Volume 5, 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 5. 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.

## **B1234 WORKMEN'S COMPENSATION ACT**

All labour employed on the site shall be covered by the Workmen's Compensation Act. The contractor shall pay in full, including the payment of the necessary levies, such amounts, as are due in terms of the Act.

The contractor at the commencement of the contract shall resolve the manner in which Workmen's Compensation will be handled. Amounts paid by the contractor shall not be included in the wage rates but shall be an extra payment allowed for by the contractor, and deemed to be included in the tendered rates.

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

### B1302 GENERAL REQUIREMENTS

Add the following new sub-clause:

#### (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.

### 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 20% 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 H, (bound in this Volume), to be completed by the tenderer.

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

The tendered percentage rate 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 paid monthly pro rata for the duration of the applicable work order and 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 5.12 of the general conditions of contract, provided that the total of the monthly amounts so paid for each item is not more than in proportion to the progress of the works as a whole."

e.g.

$\frac{\text{Net Value of Work Completed} \times \text{Time Related Tendered Costs}}{\text{Net Value of the Contract}}$
---

Add the following after the 19<sup>th</sup> 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" as well as for time related obligations which are calculated as a percentage and which will be proportioned and paid for the extension.



Amend item 13.01 to read as follows:

**B13.01 Contractor's general obligations**

<b>Item</b>	<b>Unit</b>
(a) Fixed obligations	%
(b) Value-related obligations	%
(c) Time-related obligations	%

Item B13.01(c) should exclude contractor's staff. Payment for items B13.01(a) to (c) shall be a percentage of the value of each work order issued for physical work to be carried out by the contractor. This shall not be applicable for work orders where no physical work is carried out on site by the contractor or for work orders for supply of goods, materials, plant and services.

**B13.04 Contractor's staff**

<b>Item</b>	<b>Unit</b>
(a) Contracts Manager - Part Time	Months
(b) Construction Manager - Full time	Months
(c) General Foreman - Full time	Months

Payment for items B13.04(a) to (c) shall be on a monthly basis for the duration of a work order issued by the employer for physical work to be carried out by the contractor on site. Where two or more work orders overlap, the only one of each resource shall be paid for for the duration of the overlap. No additional costs shall be paid separately for the provision of these resources,

## **SECTION 1500:ACCOMODATION OF TRAFFIC**

### **B1501 SCOPE**

*Add the following:*

It is a condition of this contract that traffic is accommodated taking into account the provisions of the latest edition of the South African Road Traffic Signs Manual (SARTSM). The latest version for use in the accommodation of traffic is volume 2, chapter 13 of the June 1999 edition. Copies of this publication are available from Government Printers attention Anna Steyn Tel. (012) 334-4500, e-mail: asteyn@print.pwv.gov.za.

This section also covers the provision of additional information signs for motorists and the release of any notices to the media and public.

### **B1502 GENERAL REQUIREMENTS**

#### **(a) Safety**

*Add the following:*

The Contractor shall be responsible for maintaining the existing road surface and deviations, both within the works area and the advance warning and termination areas in a safe and trafficable condition for the duration of the contract. Requirements for safety and accommodation of traffic as set out in the Project Specifications shall be strictly enforced.

#### **(i) Traffic Safety Officer**

*Add the following after the second paragraph:*

The Contractor shall submit a CV of the candidate to the Engineer 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 Engineer.

*Replace sub-sub-clauses (ii) and (iii) with the following:*

- (ii) Record on neat and dimensioned sketches and submit to the Engineer 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 Engineer.

The records shall be amended whenever changes are made in the field and the amended detailed sketches shall be submitted to the Engineer. Such amendments shall record the position(s) of flagmen and stop/go control men and their associated traffic accommodation equipment wherever they are used.

C3-27

- (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 Engineer 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 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-clauses:*

- (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 1,5m above ground level. The proposed sign with size of letters shall be submitted to the Engineer 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 Engineer and that the roads are safe for night traffic.
- (xi) Be responsible for the removal of broken down vehicles off the roadway and implementing actions requested 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.

Add the following sub-clauses:

**(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 traveling 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 Engineer, shall be sufficient cause for the Engineer to apply penalties as follows:

- (i) A fixed penalty of R 5 000,00 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 R 500,00 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 Engineer. The Engineer'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) Provision of traffic safety equipment for the Engineer**

The Contractor shall provide the Engineer with the following safety equipment:

- (i) Amber-coloured rotating flashing lights for mobile use which shall be approved by the Engineer;
- (ii) Magnetic stickers for vehicles with the wording "CONSTRUCTION SUPERVISION" in 100 mm high red letters on white background;
- (iii) Safety jackets (not bibs) shall be of an approved type, orange/yellow in colour and shall be in accordance with the SARTSM, Vol 2, Chapter 13, Figure 13.30 (details 13.30.2) for the Engineer's personnel and visitors for moving around the site

**(l) 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 Engineer, ineffective shall be immediately replaced by the Contractor.

**(m) 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 traveling public.

**(n) Extension of time for completion**

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 a reason for an extension of time in terms of the general conditions of contract.

**(o) Traffic diversions**

The method of accommodating traffic shall be in accordance with the layouts of the traffic-control facilities for the traffic diversions on the respective roads as shown on the drawings or as directed by the Engineer.

The Contractor shall submit a drawing showing details concerning each traffic diversion to the Engineer for approval at least 7 days prior to the scheduled commissioning of such diversions to allow him sufficient time to inform and obtain the approval of the traffic officials of the relevant authorities concerned for such diversions.

**(p) Parking of construction vehicles and plant**

Where there is no working space off the road, construction vehicles may be parked on the shoulder only during working hours in which case flagmen and traffic cones shall be utilised to warn public traffic of the hazard. During non-working hours all obstructions to traffic shall be removed from the road.

The parking of construction plant within the road reserve outside working hours will be permitted. The minimum clearance between the parked vehicles / plant and the edge of any carriageway shoulder shall be 5 metres.

**(q) Staging of construction**

The work in this Contract will necessitate traffic having to be deviated onto a temporary deviation on a reduced width carriageway and channelized into traffic lanes routed past / through the construction work areas.

Temporary closure or occupation of traffic lanes will only be permitted as specified and the Contractor shall ensure that all traffic control facilities no longer applicable to the situation are removed or effectively covered.

Amber flashing warning lights shall be placed on traffic lane deviations at night and when instructed by the Engineer to warn motorists of lane closures and occupation of lanes for work operation areas.

It is a condition of this contract that the Contractor shall programme and arrange for adequate accommodation of traffic within the following operational limitations:

- (i) Individual work areas shall be clearly demarcated with traffic signs and delineators / cones as specified.
- (ii) Only one lane per direction may be closed to traffic at a time. A lane may be closed to traffic on a directional two-lane road carriageway section and such working areas shall not exceed 2 000 metres in length when closed to half width to the traffic. Such lengths which are closed half width to traffic shall be separated by a minimum length of road open full width to traffic, of a minimum of 500 metres. The Contractor shall be allowed to construct new works on only three (3) sections of the existing road at any one time. Closure of a single traffic lane or partial lane will only be permitted once the traffic control facilities and temporary traffic diversions / deviations have been approved.

C3-31

- (iii) A minimum single trafficable width of 3.9 m shall be maintained on the half width sections from approximately km 6.0 to km 13.0
- (iv) Signage which does not apply during construction shall be removed or effectively covered.
- (v) Signage erected for traffic accommodation purposes which are not applicable (e.g. speed limits at weekends etc.) shall be effectively covered.
- (vi) Signs and traffic accommodation devices for closures shall always be placed furthest away from the work area first and then by working inwards in the direction of traffic.
- (vii) On completion of the work remove delineators/cones/signs by starting at the work area and work outwards against the flow of traffic.

Any costs related to these construction limitations and restrictions will be deemed to be covered in scheduled rates.

Whenever possible, the Contractor shall ensure that the full road width or carriageway shall be open at night and all signs no longer applicable to the situation removed or effectively covered. If the road or carriageway is not in a safe trafficable condition over the full width at the end of each day's work, the Contractor shall provide adequate flagmen, signs, barriers, lights and necessary personnel / staff to ensure a reasonable free flow of traffic on the specified traffic lanes throughout the night and the whole period that the roadway is open to traffic.

### **B1503 TEMPORARY TRAFFIC-CONTROL FACILITIES**

*Add the following before the first paragraph:*

Where reference is made to low or high traffic volumes on the drawings, the high traffic volumes condition shall apply to this contract.

*Replace the first sentence of the first paragraph with the following:*

The Contractor shall provide, erect and maintain 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.

*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 Engineer. 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 Engineer where deemed necessary to accommodate local site geometry and traffic conditions.

**C3-32**

SCMU05-23/24-XXXX

Appointment of a managing contractor for all upgrade projects implemented using In House Construction teams for a period of 36 months

**(a) Traffic-control devices**

*Add the following new paragraphs:*

An all-weather shelter of at least three (3) square metres 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,

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**

*Add the following paragraphs:*

All road signs shall be new or approved by the Engineer 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 utilizing 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 shall be included in the tendered rates for items B15.01 and 15.10.

All temporary road signs required to remain in position for some time shall be pole mounted as indicated 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 portable sign supports shall consist of durable sand bags filled with sand of adequate mass to prevent signs from being blown over by wind.

**(c) Channelization devices and barricades**

*Add the following:*

Drums shall not be used as channelization devices.

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;
- (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 m<sup>2</sup> and ballasted by sandbags filled with sand;
- (v) together with its mounting be designed such that it will collapse in a safe manner under traffic impact.

C3-33



High visibility fluorescent yellow (diamond / prismatic grade) retro-reflective material shall be used delineators placed in advance transition zone areas.

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 Engineer.

**(i) Vehicle mounted flashing lights**

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 traveling 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.

The Contractor shall apply and maintain lights together with temporary mounting brackets, to the approval of the Engineer. Vehicles and plant that do not comply with these requirements shall not enter the site.

**(ii) Sign mounted flashing lights**

Two amber flashing lights shall be vertically mounted on top of the traffic signs at each end of each traffic accommodation section. Amber rotating flashing lights shall be operated during the hours of darkness and stroboscopic lights shall be used in the daylight hours.

*Add the following sub-clauses:*

**(g) Other traffic control measures ordered by the Engineer**

The Engineer 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 Engineer.

Similarly, in order to ensure that the traveling 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 Engineer may arrange for advertising in the press and/or for other forms of publicity.

**(h) Flagmen**

Flagmen shall be provided where shown on the drawings, required by the specification or as directed by the Engineer. 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 60 km/h sign and a second roving flagman to indicate to the traffic at the end of the queue to stop. 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 60-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.

Flagmen shall be adequately trained in the standard flagging techniques as described in the SARTSM (refer to figure 12.23 of detail 13.23.1) and be provided with conspicuous clothing such as safety jackets utilizing retro-reflecting 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.

**(i) Temporary traffic-control signal systems**

A complete traffic control signal system set shall consist of four traffic control signals each with three aspects and shall include the control devices, power supplies and mountings.

Temporary traffic-control signals shall be erected where indicated on the drawings or as directed by the Engineer and shall comply with the following requirements:

- (i) the provisions of SARTSM, Volume 4, Chapter 10.
- (ii) signals shall be capable of operating under manual control and if required linked manual control, while amber times shall be a minimum of 3 seconds.
- (iii) signals and the power supply shall be capable of operating under all weather conditions for uninterrupted periods of at least 15 hours.
- (iv) standard signal faces with 210 mm diameter red, amber and green aspects shall be provided.
- (v) traffic-control signal lights shall comply with SANS 1459:2015 and aspects shall be fitted with 50 W tungsten halogen lamps.

C3-35

- (vi) two standard signal faces, both erected on the centreline of the road, shall be provided to control each direction of traffic.

Traffic-control signal systems shall be used during the period of half an hour before sunset to half an hour after sunrise every day 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 (10) ten hours. The same personnel shall not be on duty throughout an entire night.

The Contractor shall provide backup power supply such that the traffic control signals can be operated continuously throughout the night. 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.

**(j) Maintenance**

All temporary traffic control facilities shall be kept clean and maintained in good order at all times.

If the coefficient of retro-reflection of any of the Contractor's signs falls below 80% of the value given in Table 1 of –SANS 1519-1:2014 (observation angle 0,33° , entrance angle 5,0° ) for the grade and colour of the material used the sign shall be considered defective and shall either be rectified or removed and replaced.

**(k) Sufficiency**

The Contractor shall determine, from his proposed programme of works, the number of temporary traffic-control facilities required and shall not commence with any accommodation of traffic before sufficient traffic-control facilities have been delivered to the site.

The Contractor shall keep sufficient surplus barricades, signs and delineators on or around the site to allow for the replacement of damaged or missing items within a period of two (2) hours of the deficiency being discovered.

**B1504 WIDTH AND LENGTH OF TEMPORARY DEVIATIONS**

*Replace “10 m” and “5 m” in the first paragraph with “7 m” and “4 m” respectively.*

*Replace the second paragraph with the following:*

Where the existing road is repaired, resurfaced or reconstructed in half widths or in partial width with single direction traffic, the roadway width for accommodating one-way traffic shall be at least 3.9 m wide. The length of the half-width construction or partial width construction shall not exceed 2 000 metres.

The traffic shall be single direction controlled by STOP and GO/RV signs during daytime and manually operated temporary traffic signals at night.

In particular the Contractor shall take cognisance of the following **restricted working conditions:**

The maximum lengths of a section of road that may be closed half width to traffic shall be 2 000 metres. Such lengths which are closed half width to traffic shall be separated by a minimum length of road open full width to traffic, of a minimum of 500 metres. The Contractor shall be allowed to rework and carry out repairs to **only three (3) sections** of the existing road at any one time.

C3-75

**B1513 ACCOMMODATION OF TRAFFIC WHERE THE ROAD IS CONSTRUCTED IN HALF WIDTHS**

SCMU05-23/24-XXXX

Appointment of a managing contractor for all upgrade projects implemented using In House Construction teams for a period of 36 months

*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 manually operated temporary traffic signals at night.

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 Engineer.

#### **B1517 MEASUREMENT AND PAYMENT**

*Amend item 15.01 to read as follows:*

<b>Item</b>	<b>Unit</b>
<b>B15.01 Accommodating traffic and maintaining temporary deviations</b>	<b>Month</b>

Amend the unit of measurement for Payment Item 15.01 to the month. Delete the first paragraph of Payment Item 15.01 and replace with :

The unit of measurement shall be the month or part thereof that traffic is accommodated in accordance with the specification. The Engineer will advise the Contractor in writing where traffic control is inadequate. Failure to rectify this within 3 hours will result in a penalty being applied and in payment being reduced. A pro-rata proportion of the tendered monthly rate will be deducted for each day in any calendar month that traffic control does not meet the requirements of the specifications. Refer also to Item B15.17 below for details of penalties.

Delete the second paragraph and replace with :

The tendered rate shall include full compensation for the specified general requirements and all incidental costs which are required under the provisions of Section 1500 and which are not specifically paid for under the other pay items provided in Section 1500. Such general requirements and incidentals are deemed to include for half width construction, which will not be measured separately. In addition, the tendered rate shall include for all costs associated with constructing the road under traffic and for complying with the restricted working conditions.

The tendered rate shall also include for the preparation of traffic management plans and their submission to the Engineer for approval, including for any amendments required during the course of construction.

### **B15.03 Temporary traffic - control facilities**

*Add the following new sub-items:*

#### **(n) Other traffic control measures ordered by the Engineer:**

<b>Item</b>	<b>Unit</b>
(i) Provision of other traffic control measures	Prov sum
(ii) Handling costs and profit in respect of sub-sub-item B15.03(n)(i)	%

*Delete the first sentence under (a) flagmen and replace with the following:*

“The unit of measurement shall be a 24 hour day worked by a flagman.”

Expenditure under item (n) shall be made in accordance with the General Conditions of Contract, sub-clause 5.9.5, for the supply and installation of any additional signs or other traffic control measure ordered by the Engineer in accordance with clause B15.03(n).

The tendered percentage is a percentage of the actual amount spent under sub-sub-item B15.03(n)(i), which shall include full compensation for the handling costs of the Contractor, and the profit in connection with providing other signs and traffic control measures ordered by the Engineer.”

<b>Item</b>	<b>Unit</b>
<b>B15.04 Relocation of traffic control facilities</b>	<b>Lump sum</b>

“The submitted lump sum shall cover all costs regardless of how many times the traffic control facilities are relocated. The Contractor can anticipate frequent relocations due to the nature of the site and restrictions on working space. Details of how often traffic control facilities need to be moved should be set out in the traffic management plans.

Payment of this item will be made on a monthly basis over the duration of the Contract, starting when traffic control measures are first implemented. The submitted lump sum shall be divided by the construction period to obtain a monthly claim.”

*Amend item 15.11 to read as follows:*

C3-77

**B15.11 Traffic Signals for road closures, including at bridges**

Add the following new sub-items:

Item	Unit
(a) Provision, erection and final removal on completion, of temporary traffic signals per set, including all accompanying equipment as specified	No
(b) Dismantle, move and re-erect temporary traffic signals	No

The submitted lump sum for B15.11(a) shall include full compensation to provide equipment for construction areas, namely traffic signal lights on 2,5 m high steel poles complete with all electrical wiring, 3 m<sup>2</sup> all weather shelter complete with lighting, portable chemical latrines, generators and standby generators to provide electricity to traffic signals and floodlights, 2 x 400 w metal halide floodlights mounted onto a 9 m wooden pole or a typical street light pole bolted to a 1,5 m buried galvanized stem complete with electrical wiring, and the necessary personnel approved by the Engineer to operate these traffic signals during night time. The two way communication devices are measured separately in Item 15.03(m)." The Lump Sum shall cover a pair of signals, that is, the signals at each end of a road section for which such control is required."

The submitted rate for B15.11(b) 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.

Additional payment items to cover the requirements of the project specifications are listed below.

**Add the following new payment items :**

Item	Unit
<b>B15.14 Amber flashing lights mounted on signs</b>	<b>No</b>

The tendered amount shall include full compensation to provide, erect, operate and maintain two amber flashing lights per sign at each end of the traffic accommodation sections. It shall also include the provision of power to operate the lights, replacing bulbs as required and keeping the lenses clean and visible.

**B15.15 Provision of traffic safety equipment for use by the Engineer**

Item	Unit
(a) Safety jackets	No
(b) Rotating amber lights for the Engineer's vehicles	No
(c) First aid boxes for the Engineer's vehicles	No
(d) Hard hats	No

The unit of measurement shall be the number of each item provided and approved by the Engineer.

The tendered rates for the various safety items shall include full compensation for provision thereof and maintenance in good working order for the duration of the contract.

Item	Unit
	C3-78

**B15.16 Traffic safety officer****Month**

The unit of measurement shall be per month that the approved traffic safety officer is working on site. The bid sum shall include for the cost of a Traffic and Safety Officer on a full time basis, his overheads, transport and all others items necessary for the proper carrying out of his duties as specified in Sub-Clause B1502(i).

The tendered rate will be paid monthly, pro rata for parts of a month, from the date that he has commenced his duties until his duties are no longer required, as agreed between the Engineer and the Contractor.

**B15.17 Penalties for non-compliance with traffic management plans**

Item	Unit
(a) Fixed penalty per occurrence	No
(b) Time related penalty	Hr

The following penalties are applicable for non-compliances with the traffic management plans, in addition to the payment deductions described in Payment Item B15.01 above.

In sub-item B15.17(a) a fixed penalty of R 5 000.00 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 project specifications.

In addition in sub-item B15.17(b), a time-related penalty of R 500.00 per hour over and above the fixed penalty in sub-item B15.17(a) shall be deducted for non-compliance to rectify any defects in the accommodation of traffic within reasonable time after the engineer has given an instruction to this effect. The Engineer's instruction shall state the time in hours for re-instatement of the defects. Should the contractor fail to adhere to the instruction, the time-related penalty will be applied from the time the instruction was given.

## **SECTION 1600: OVERHAUL**

### **B1602 DEFINITIONS**

#### **(a) Overhaul Material**

*Add the following:*

Overhaul shall not apply in the case of:

- (i) Material to be obtained from commercial sources or sources to be supplied by the Contractor.
- (ii) Material to be disposed of to commercial spoil dump sites or suitable approved spoil dump sites to be provided by the Contractor off the site of the Works.
- (iii) Items salvaged on the site of the works such as vegetation removed from concrete-lined v-drains, and pipe culvert inlets/outlets existing pipes, culverts, manhole covers, grates, guardrails and signs.

The Contractor's tendered rates for all materials from commercial sources or other Contractor sources of supply shall be deemed to include full compensation for hauling the materials to its point of use on the site of Works. The Contractor shall make his own arrangements for the procurement of materials and shall pay all royalties and other costs in this connection.

Where material is required to be spoiled, the Contractor shall pay any dumping charges which may become payable.

#### **(b) Overhaul**

*Delete the sub clause 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 overhauled distance.

#### **(c) Haul distance**

*Add the following:*

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:*

The free-haul distance in regard to any material which is removed from existing pavements shall be 1,0 km. In the case of material hauled to a stockpile and then hauled again for re-use, the free-haul distance shall apply only once.

**B1603 MEASUREMENT AND PAYMENT**

**SECTION 1700: CLEARING AND GRUBBING**

**B1701 SCOPE**

*Add the following:*

This section also covers the demolition of ancillary concrete structures, including the subsequent removal of all rubble and debris from the demolition, to the Contractor's off-site spoil dump.

**B1703 EXECUTION OF WORK**

**(a) Areas to be cleared and grubbed**

*Delete "normally" in the second line of the second paragraph.*

**(c) Disposal of Material**

*Add the following to the first paragraph:*

The Contractor shall remove all debris, rubble and rubbish to a suitable off-site spoil area supplied by the Contractor. No haul or overhaul will be measured under this section.

**B1704 MEASUREMENTS AND PAYMENT**

<b>Item</b>	<b>Unit</b>
<b>B17.01 Clearing and grubbing</b>	

*Add to Payment Item 17.01 the following :*

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 contractor's general obligations and site establishment.

Within the road reserves, clearing and grubbing will only be measured and paid for where required for road works. All topsoil removed in this process must be stockpiled in heaps not exceeding 2.0 m in height for later use during rehabilitation and landscaping.

No clearing and grubbing will be paid where the Engineer instructs the direct removal and conservation of topsoil. Grasses and other minor plants will be removed with the topsoil and their removal is deemed to be included in the topsoil rate.

Add the following new sub-items:

<b>Item</b>	<b>Unit</b>
(c) Remove grass and build-up of soil along road edge to 2 000 mm outside the edge of seal.	m <sup>2</sup>

*Add the following to the measurement and payment paragraphs:*

The unit rate for Item B17.01(c) shall include full compensation for removing grass, roots, soil and other detritus from the road surface and from a 2,000 mm wide strip parallel to the edge of seal, and for disposing of the material within a freehaul distance of 1 km. The work shall be effected prior to the shoulder reconstruction and in-situ recycling operation for a particular section of road.

## **B1800: DAY WORK**

*Add the following section to Series 1000: General of the standard specifications:*

### **SERIES 1000: GENERAL**

#### **SECTION B1800: DAY WORK**

##### **CONTENTS**

B1801	SCOPE
B1802	GENERAL REQUIREMENTS
B1803	LABOUR
B1804	MATERIALS
B1805	PLANT
B1806	MEASUREMENT AND PAYMENT

##### **B1801 SCOPE**

This section covers the evaluation and method of measurement and payment for work, ordered by the Engineer in writing, carried out on a day work basis, all in accordance with sub clause 6.5 of the General Conditions of Contract.

##### **B1802 GENERAL REQUIREMENTS**

Work will be classified as day work only if the Engineer considers no other rate in the schedule of quantities appropriate for payment purposes.

Only work ordered in writing by the Engineer to be executed as day work shall be measured and paid for at the rates tendered in the Schedule of Quantities.

The Contractor shall keep and submit records of the work performed in accordance with the requirements of 6.5 of the General Conditions of Contract.

##### **B1803 LABOUR**

The tendered rates for labour to be included as day work charges shall include the salaries and wages of gangers or charge hands working with their gangs but shall exclude the costs of the time of the foremen or supervisors which will be deemed to have been included in the sums tendered for the relevant items in Section 1300 of the schedule of quantities.

Gross remuneration, as specified in clause 6.5 of the general conditions of contract, will be deemed to include the following:

- (a) Basic salary/wage
- (b) Overhead charges such as fringe benefits not reflected in basic salary and wages which may include:
  - normal annual bonus
  - employer's contribution to medical aid
  - group life assurance premiums
  - employer's contribution to pension/provident fund
  - all other costs as per letter of appointment

and costs payable due to statutory requirements, which may include:

- Workmen's Compensation Fund contribution
- Unemployment Insurance Fund contributions
- District Council levies or the equivalent thereof

The rates tendered for labour shall include for the actual cost of salaries and wages, all overhead charges, profit, liabilities, obligations, risks and incidentals for all workmen to execute work by day works.

#### **B1804 MATERIALS**

The nett cost price of materials (exclusive of VAT) actually delivered to the site to be included as day work charges shall include the costs of delivery to the usual points at which materials are received on the site.

Before ordering any material, the Contractor shall submit quotations to the Engineer for his approval, and shall submit such receipts or vouchers to the Engineer as may be necessary for proving the amount claimed.

The percentage tendered as an on-cost on the net cost price of materials shall include for all handling, overheads, profit, liabilities, obligations, risks, incidentals and other on-costs for the supply, delivery and distribution of material for day work to the individual site(s) where day work is in progress.

#### **B1805 PLANT**

The full inclusive hourly cost of operational plant which is available on site or which has been removed without written authorization of the Engineer, to be included as day work charges will be taken to be the tendered rate which, in the opinion of the Contractor, will be applicable in all respects to the situation and terms of the contract.

The hourly rate tendered or agreed shall constitute the day work rate for the plant and will be deemed to include all costs for plant operators, consumable stores, fuel, maintenance, depreciation, ground-engaging tools and all other incidentals necessary to operate the plant for the purposes for which it was designed.

Failure on the part of the Contractor to state in the schedule of quantities the plant on which his tender is based, shall be considered as a firm agreement on the part of the Contractor that he waives all rights to distinguish between the different types and capacities of plant falling within the description and/or category given, and the Engineer shall have the right to call upon the Contractor to supply any such plant to the site and perform the work as directed by him at the particular tendered rate.

Sixty percent (60%) of the hourly rate tendered or agreed will be paid in respect of plant which is being employed for day work, but standing idle on the specific instructions of the Engineer, as full compensation for idle costs of day work plant.

For plant not on site, the costs of establishing items of plant on the site for day work on specific instruction of the Engineer will be negotiated with the Contractor at the time that such day work is contemplated.

**B1806 MEASUREMENT AND PAYMENT**

<b>Item</b>	<b>Unit</b>
<b>B 18.01 Labour</b>	
(a) Unskilled labourer .....	Hr
(b) Semi-skilled labour.....	Hr
(c) Skilled labour .....	Hr
(d) Gang leader .....	Hr
(e) Artisan or mechanic .....	Hr
(f) Flagman .....	Hr

<b>Item</b>	<b>Unit</b>
-------------	-------------

**B18.02 Personnel engaged outside normal working hours:**

(1) Outside normal working hours and Saturdays:

(a) Unskilled labourer .....	Hr
(b) Semi-skilled labour.....	Hr
(c) Skilled labour.....	Hr
(d) Gang leader .....	Hr
(e) Artisan or mechanic .....	Hr
(f) Flagman .....	Hr

(2) Sundays and public holidays:

(a) Unskilled labourer .....	Hr
(b) Semi-skilled labour.....	Hr
(c) Skilled labour.....	Hr
(d) Gang leader .....	Hr
(e) Artisan or mechanic .....	Hr
(f) Flagman .....	Hr

The unit of measurement shall be the hour of time worked by the particular employee on the designated work on instruction by the Engineer.

The daywork rates submitted for labour in the schedule of quantities shall be the cost of labour for each skill level and shall apply only to the number of workers approved in writing by the Engineer.

The rates shall be for normal working hours and shall be increased pro rata for overtime at the standard rate applicable if the work performed outside working hours is approved in writing by the Engineer.

The tendered rates shall include full compensation to cover overhead charges, profit, costs for salaries and wages, use and maintenance of tools and equipment, sick pay, leave pay, holidays with pay and financial charges of any description incurred by the Contractor and his subcontractors as well as for all insurance, accommodation, travelling, travelling time, supervision, overheads, profit, obligations, risks and any other emoluments and incidentals necessary for labour to execute work as day work.

<b>Item</b>	<b>Unit</b>
<b>B18.03 Construction Plant</b>	
Individual items of plant and equipment as listed in the Bill of Quantities).....	
(a) Tractor loader backhoe (TLB).....	Hr
(b) Grader 140G or equivalent .....	Hr
(c) Wheeled front end loader .....	Hr
(d) 5 m <sup>3</sup> tipper truck.....	Hr
(e) 10 m <sup>3</sup> tipper truck.....	Hr
(f) Articulated dump truck .....	Hr
(g) 1 tonne pedestrian roller .....	Hr
(h) 10 tonne smooth drum vibrating roller .....	Hr
(i) 29 tonne smooth drum roller .....	Hr
(j) Pneumatic tyred roller.....	Hr
(k) Water-cart: motorised 10 000 l.....	Hr
(l) Backhoe excavator with interchangeable bucket and breaker units .....	Hr
(m) Compressor unit with capacity to generate 3 m <sup>3</sup> /min at 650 kpa .....	Hr
(n) Flatbed truck – 7 tonne with built-in lifting unit (crane truck) .....	Hr
(o) Mobile crane .....	Hr
(p) Bulldozer – minimum 250 kW, mass 35 tonne	Hr

The unit of measurement shall be the hour actually worked by each item of plant (vehicle, machine or equipment) on the designated work on instruction by the Engineer.

The Contractor and the Engineer will agree on the method of recording the working hours prior to the commencement of work. Any long period of idling at any one time which in the opinion of the Engineer or his representative is beyond that required for normal operating conditions will not be paid for as working time. Non-working hours for any reason shall not be measured for payment.

The tendered rates include full compensation for furnishing and using the plant, including the cost of plant operators, consumable stores, fuel, ground-engaging tools, maintenance, profit and for all other incidentals necessary to execute the authorized day work as specified.

Where there is ambiguity between the power developed at the flywheel and mass of machine, the power shall govern the measurement category.

**Item** **Unit**

**B18.04 Materials and Equipment**

- (a) Procurement of material and equipment ..... Prov Sum
- (b) Handling costs and profit in respect of B18.04 (a) ..... %

Expenditure under this item shall be made in accordance with clause 1802 . The provisional sum allowed shall include for the actual cost incurred for materials used in authorised day work. The actual costs for materials shall not be subject to contract price adjustment.

The tendered percentage is a percentage of the amount actually spent under sub-item B18.04(a) and shall include full compensation for the handling costs of the Contractor, profit, overheads and incidentals in connection with materials used for daywork on the instructions of the Engineer.

Payment for expenditure under this item will be made in full as and when the money is expended subject to written proof by the Contractor of payment of invoiced amounts.

**Item** **Unit**

**B18.05 Transport**

- (a) LDV or bakkie – 1 tonner ..... km
- (b) Flatbed truck - 7 tonne ..... km
- (c) Lowbed transporter ..... km
- (d) Bus or similar for transporting labour ..... km

The unit of measurement for sub-items B18.05 (a), (b), (c) and (d) shall be the kilometre distance that the vehicle travelled for transporting personnel and/or plant. The Engineer shall approve all traveling.

The tendered rate for item B18.05 shall include full compensation for the cost of the vehicle including fuel, maintenance, depreciation, insurance and running costs.

**Item** **Unit**

**B18.06 Hire of construction plant to augment the In-House Construction Unit’s production on site**

- (a) Arrange for plant hire, delivery to site and payment thereof ..... Prov Sum
- (b) Percentage mark-up on item B18.06(a) to cover the contractor’s ..... %  
handling costs and profit

Expenditure under this item shall be made in accordance with clause 1802 above . The provisional sum allowed shall include for the actual cost incurred for hire of construction plant to augment the In-House Construction Unit’s production on site used in authorised day work. The actual costs for hire of construction plant to augment the In-House Construction Unit’s production on site shall not be subject to contract price adjustment.

The tendered percentage is a percentage of the amount actually spent under sub-item B18.06(a) and shall include full compensation for the handling costs of the Contractor, profit, overheads and incidentals in



connection with hire of construction plant to augment the In-House Construction Unit's production on site used for daywork on the instructions of the Engineer.

Payment for expenditure under this item will be made in full as and when the money is expended subject to written proof by the Contractor of payment of invoiced amounts.

<b>Item</b>	<b>Unit</b>
<b>B 18.07 Minor repairs and daily maintenance costs associated with the In-House Construction Unit's plant</b>	
(a) Arrange for spares, servicing and minor repairs to the Unit's plant on site, ..... Prov Sum and payment thereof.....	
(b) Percentage mark-up on item B18.07(a) to cover the contractor's ..... % handling costs and profit.....	

Expenditure under this item shall be made in accordance with clause 1802 above. The provisional sum allowed shall include for the actual cost incurred for minor repairs and daily maintenance costs associated with the In-House Construction Unit's plant in authorised day work. The actual costs for minor repairs and daily maintenance costs associated with the In-House Construction Unit's plant shall not be subject to contract price adjustment.

The tendered percentage is a percentage of the amount actually spent under sub-item B18.07(a) and shall include full compensation for the handling costs of the Contractor, profit, overheads and incidentals in connection with minor repairs and daily maintenance costs associated with the In-House Construction Unit's plant for daywork on the instructions of the Engineer.

Payment for expenditure under this item will be made in full as and when the money is expended subject to written proof by the Contractor of payment of invoiced amounts.

<b>Item</b>	<b>Unit</b>
<b>B 18.08 Rates for the supply and delivery of specific materials to the site for incorporation into the works. Materials may be used either by the In-House Unit or by the SMME sub-contractors</b>	
(a) Cement – bulk delivered to silos.....	t
(b) Cement – per 50 kg standard pocket.....	P
(c) Road lime for stabilisation.....	t
(d) Reinforcing.....	t
(e) 19 mm surfacing stone.....	m <sup>3</sup>
(f) Slurry aggregate .....	m <sup>3</sup>
(g) Crushed stone basecourse .....	m <sup>3</sup>
(h) Concrete aggregate – stone .....	m <sup>3</sup>
(i) Concrete aggregate – sand .....	m <sup>3</sup>
(j) Ready mixed concrete .....	m <sup>3</sup>
(k) Prime coat for road surfacing.....	ℓ
(l) Hot bitumen for use as tack coat in Cape Seal .....	ℓ
(m) Bitumen emulsion for slurry .....	ℓ

SCMU10-23/24-0010

C3.88

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

- (n) Precast concrete pipe culvert – 600 mm dia..... m
- (o) Precast concrete pipe culvert – 750 mm dia..... m

The submitted rates shall include full compensation for the procuring the materials and for the delivery costs to the site. All profit and administrative costs shall also be included. No mark-up will be paid for the supply and delivery of these specific items.

The materials purchased under this payment item may be for use in the works by the In-House Construction Unit or by the SMME's.

**B 18.09 Provision of direct support to IHCU :**

<b>Item</b>	<b>Unit</b>
(a) Direct payment to the IHCU's workforce.....	PC Sum
(b) Procurement and provision of materials for use by the IHCU .....	PC Sum
(c) Provision of plant and equipment, including any transportation to and from site. ....	PC Sum
(d) Provision of additional personnel to assist the IHCU in technical and administrative matters.	PC Sum
(e) Direct financial support, including inter alia, provision of surety, insurances, UIF payments , workman's compensation. ....	PC Sum
(f) Handling costs and profit in respect of B18.09(a) to (e) above. ....	%

Payment under the prime cost sums for direct support shall be made in accordance with the general conditions of contract.

The submitted percentage for Sub-item B 18.09 (f) is a percentage of the amounts actually spent under Sub-items B18.09(a) to B18.09(e). The percentage submitted shall include full compensation for the handling costs of the Contractor, plus the profit and all other charges and incidentals, in connection with the provision of direct support to the IHCU.

No such direct support will be rendered without the written approval of the Engineer and IHCU management committee.

Payment will be made on the successful completion of the agreed support to the satisfaction of the IHCU management committee.

**SECTION 2100: DRAINS****B2101 SCOPE**

Add to Clause 2101 the following :

Tasks associated with open drains and with banks & dykes will be carried out using labour intensive methods.

**B2104 SUBSOIL DRAINAGE****(a) Materials****(i) Pipes**

Add to sub-clause 2104(a)(i) the following :

Perforated or slotted unplasticised PVC pipes shall be used for subsurface drainage. The pipes shall be heavy duty to SANS 1601:2017, stiffness class 350.

**(ii) Natural Permeable Material**

Add to sub-clause 2104(a)(ii) the following :

The crushed stone shall be clean, coarse graded (19mm nominal size) and shall conform to the following requirements:

- Percentage passing through a 26,5mm sieve : 100 %.
- Percentage passing through a 19,0mm sieve : 85 - 100 %.
- Percentage passing through a 13,2mm sieve : 0 – 30 %.

**(iii) Synthetic fibre filter fabric**

Delete Sub-clause 2104(a)(iii)(1) and replace it with the following :

**(1) Composition and manufacturing**

Geo-textile shall consist of a synthetic polymer material manufactured in a continuous permeable homogenous sheet (in rolls) by one of the following methods:

- woven
- non-woven, mechanically bonded (continuous fibre spun-bounded, needle- punched)
- non-woven, chemically bonded
- combination of woven and non-woven.

The synthetic polymer shall be one or more of the following:

- Polyester
- Polypropylene

- polyethylene

Add to sub-clause 2104(a)(iii)(2) – Classification – the following :

Geo-textiles shall be classified into the following main grades according to typical usage.

Grade 1: Very good installation conditions e.g. subsurface drains with relatively smooth trench walls, small to medium size filter stone (9,5 to 19mm) dumped from the edge of a shallow drain, and where careful handling of the geo-textile is expected.

Grade 2: Normal installation conditions, not as good as Grade 1, e.g. larger sub-surface drains with rough trench walls, large size filter stone (37,5mm) dumped from a height onto the geo-textile-lined drain, and where normal handling of geo-textile is expected.

Grade 3: Adverse conditions e.g. foundation, gabions and gabion mattresses, light rock protection, rock fills and light separation of materials, separation works, and where rough handling of the geo-textile is expected.

Grade 4: Adverse conditions where strength is more important than permeability e.g. foundation drainage, gabions and gabion mattresses, rock protection, earth encapsulation, separation and reinforcement of fill and rockfill layers, heavier river protection works, and where rough handling of the geo-textile is expected.

Grade 5: As for Grade 4 but where additional strength is required e.g. in heavy separation, earth and rock encapsulation, river protection works and shore revetment works.

Grade 6: As for Grade 5 but where maximum strength is required and where permeability will be relatively important.

The minimum requirements for each grade are listed hereafter in Table B2104/2 Under normal circumstances grades 1, 2, 3, 4, and 5 will be specified while grade 6 will be specified in special cases where maximum strength is required by special design considerations.

The various grades and the corresponding typical usage above shall be regarded as a guideline only. The actual grade of geo-textile to be used in the work will be as stated in the schedule of quantities as required by the designer.

Add to Sub-clause 2104(a)(iii)(3) – Durability – the following :

The various grades of geo-textiles as classified above, shall comply with the general requirements as listed in Table B2104/2 hereafter.

Table B2104/2: Grade of geo-textile

Grade of Geo-textile						
Properties	Limiting Values					
	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
	As specified by the manufacturer					

Thickness (mm)						
Mass per unit area (g/m <sup>2</sup> )	100	140	200	240	300	350
Tensile strength (kN/m)	6	10	13	18	25	30
Penetration load (kN)	1,0	1,5	2,5	3,0	4,0	5,0
Puncture resistance (mm)	35 max	30 max	25 max	18 max	16 max	10 max
Permeability (l/s/m <sup>2</sup> )	25	20	15	15	10	5

Notes: The minimum values of properties are listed except for puncture resistance where the maximum values are given.

Thickness shall be as specified by the manufacturer for the specific product offered.

The values given in the table shall apply to all geo-textiles, irrespective of the type of material used. Where these values differ from the values in Table 1 of SANS 10221:2007, the values of Table B2104/1 shall apply.

Add the following new sub-clause 2104(a)(iii)(5) – Testing.

### General

The tests to be carried out on geo-textiles relate to the material and the method of manufacture and are mainly to ascertain that the correct grade of geo-textile is supplied, and that the material is equivalent in quality to that selected and specified for use in the works. The contractor will be required, on the request of the engineer, to submit a certificate by an approved laboratory to prove compliance with specified qualities without additional cost to the employer.

Tests for various properties

#### *Thickness (mm)*

The thickness of the material shall be specified by the contractor (or supplier). Thickness and compressibility tests shall be carried out in accordance with Code of Practice SANS 10221:2007. The Testing of Geo-textile, to check that the material supplied conforms to the thickness specified by the contractor.

#### *Mass per unit area (g/m<sup>2</sup>)*

Testing shall be carried out in accordance with Code of Practice SANS 10221:2007.

Tensile strength (kN/m) – Testing shall be carried out in accordance with Code of Practice SANS 10221:2007.

Penetration load (kN) – Testing shall be carried out in accordance with Code of Practice SANS 10221:2007.

#### *Puncture resistance (mm)*

Testing shall be done in accordance with test procedures laid down by CSIR, Pretoria.

#### *Permeability (l/s/m<sup>2</sup>)*

Testing shall be carried out in accordance with Code of Practice SANS 10221:2007.

(iv) Composite in-plane drainage system

Add to sub-clause 2104(a)(iv) the following :

Composite in-plane drains shall consist of a drainage core connected to a drainage pipe, all of which shall be enclosed in a geotextile. The materials used will depend on the manufacturer proposed by the contractor and approved by the engineer. The following minimum materials specifications shall apply.

- G  
eotextile: Shall comply with the requirements of a Grade 3 geotextile as per the table B2104/2 above.
- D  
rainage Core: The core shall act as a flow net and shall have the properties tabulated overleaf. The egg box configured core will also be considered.
- Pi  
pes for subsoil drainage shall have an internal diameter of 100/150 mm. The pipe shall be manufactured from High Density Polyethylene (HDPE) with a solid 5.0 mm wall thickness. It shall be extruded into an open lattice wall structure, with 70% of the diameter consisting of open area and a 30% solid area along the invert. Perforations in the open structure of the pipe shall be greater than 3 mm but less than 12mm.

<b>Drainage Core Spacer</b>			
<b>Properties</b>	<b>Units</b>	<b>Core</b>	<b>Test Method</b>
Polymer Type		HDPE	
Mass	g/m <sup>2</sup>	700	SANS 10221-88
Thickness under 2 kPa	mm	4.0	SANS 10221-88
Tensile Strength	kN	4.0	SANS 10221-88
Discharge Capacity under 200 kPa	l/s/m	0.5	ASTM D4716

Note: Tensile strength represents MARV in the weaker principal direction

Installation shall be carried out in accordance with the manufacturer's instructions.

**(b) Construction of Subsoil Drainage Systems**

Add the following new sub-clause to 2104(b)

(v) Proving of pipes in the sub-soil drainage system

On completion of the pipe laying and backfilling, the pipes shall be proved by pulling through a cylindrical cleaning brush followed by a wooden mandrill  $\pm$  400 mm long and having a diameter 5 mm less than the bore of

the pipe. Proving of pipes shall not be paid for separately and the cost thereof shall be deemed to be included in the rate tendered for laying the pipe.

**B2107 MEASUREMENT AND PAYMENT**

**B21.04 Impermeable backfilling to subsoil drainage systems**

Add the following new sub-item:

<b>Item</b>	<b>Unit</b>
(a) Using stabilised G6 quality natural gravel	m <sup>3</sup>

The unit of measurement for B21.04(a) shall be the cubic metre of completed stabilised backfill, measured in place in the subsoil drainage systems and calculated in accordance with the authorised dimensions.

The tendered rate for B21.04(a) shall include full compensation for procuring and mixing the G6 material with the stabilising agent and any extra water required, placing and compacting the backfilling and a free haul of 1.0 km.

Amend item 21.19 as follows:

<b>Item</b>	<b>Unit</b>
<b>B21.19 Selected backfill material, G6 quality or better, under concrete-lined side drains compacted to 93% of modified AASHTO density.</b>	<b>m<sup>3</sup></b>

The unit of measurement for B21.19 shall be the cubic metre of completed backfill with G6 quality material or better as approved by the Engineer, measured in place and calculated in accordance with the authorised dimensions.

The tendered rate for B21.19 shall include full compensation for procuring, furnishing, placing and compacting the backfilling and a free haul of 1.0 km.

**SECTION 2200: PREFABRICATED CULVERTS****B2201 SCOPE**

Add to Clause 2201 the following :

The use of prefabricated culverts is generally not specified on this project. Brick and / or block culverts will generally be used in order to maximise local resources and labour. Details and payment items for the brick / block culverts are included in Section B7600 of these project specifications. Nevertheless, prefabricated pipes have been scheduled for comparative pricing purposes.

This section also covers work associated with the removal of existing pipes and their inlet and outlet structures. In particular, existing 450 diameter pipes will be removed and replaced with minimum dimensions 600 x 600 rectangular brick or block culverts. Due to the nature of the project, the Contractor can expect that works associated with the removal and installation of pipe and block culverts will have to be carried out under traffic.

**B2204 CONSTRUCTION METHODS**

Add to Clause 2204 the following :

Generally, prefabricated stormwater drainage pipes and rectangular culverts will be installed using the 'trench method'. Installation in half widths can be anticipated. Labour intensive methods shall be used where practical.

**B2210 LAYING AND BEDDING OF PREFABRICATED CULVERTS****(f) General**

Add to sub-clause 2210(f) the following :

Pipe culverts have been designed to the positions, lengths and elevations shown on the drawings. However, site conditions may dictate that changes are necessary. Any such changes will be agreed with the Engineer and recorded in writing.

**B2211 BACKFILLING OF PREFABRICATED CULVERTS**

Add to the fourth paragraph of Clause 2211 the following :

Where backfilling is done in the upper layers of the road formation, the quality and strength of the backfill material shall at least match that of the surrounding layers.

**B2212 INLET AND OUTLET STRUCTURES, CATCHPITS AND MANHOLES**

Add to Clause 2212 the following new sub-clause (j) :

**(j) Subsurface drain outlet into catchpits and manholes**

SCMU10-23/24-0010

C3.95

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months



Where required, sub-surface drain pipes shall be led into standard stormwater catchpits or manholes, as shown on the drawings or as directed by the Engineer. This shall be done either by making provision during the construction of the chamber, or by breaking out and making good after completion of the chamber.

## **B2218 MEASUREMENT AND PAYMENT**

Amend Payment Item 22.12 to read as follows:

### **B22.12 Removing existing concrete, brickwork and stonework**

Add the following new sub-items:

<b>Item</b>	<b>Unit</b>
(a) Plain concrete	m <sup>3</sup>
(b) Reinforced concrete	m <sup>3</sup>
(c) Brickwork	m <sup>3</sup>
(d) Masonary walls and grouted stone pitching	m <sup>3</sup>

Add to the first paragraph, which describes the unit of measurement, the words “brickwork and stonework” after the word “concrete”.

Paragraphs 2, 3 and 4 of Payment Item 22.12 in the standard specifications shall apply to this item B22.12

### **B22.23 Service ducts:**

Add the following new sub-item:

- (3) Unplasticised PVC pipes

<b>Item</b>	<b>Unit</b>
(i) 110 mm Diameter	m
(ii) 160 mm Diameter	m
(iii) 200 mm Diameter	m
(iv) 375 mm Diameter	m

Paragraphs 1 and 2 of Payment Item 22.23 in the standard specifications shall apply to this item B22.23

**SECTION 2300: CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES, AND CONCRETE LININGS FOR OPER DRAINS**

**B2302 MATERIALS**

**(b) Kerbing and channeling**

Add to Sub-clause 2302(b) the following:

Precast kerbs shall preferably be manufactured on site, provided that the contractor can demonstrate that the specified quality can be achieved.

**(d) Bedding material**

Add to Sub-clause 2302(d) the following :

Where shown on the drawings, or ordered by the engineer, precast kerbing and channeling may be bedded on concrete Class 20/19. The minimum thickness shall be 75 mm. Concrete bedding will generally be used where vehicles are expected to drive across the kerbs and channels.

**B2304 CONSTRUCTION**

Add at the start of Clause 2304 the following:

The description below notwithstanding, it is a condition of this contract that all kerbing, channeling, lined side drains, and any other concrete works adjacent to the road shall be installed prior to the new road surface being applied.

The Contractor shall take this into account when programming the works.

**(b) Prefabricated concrete kerbing and channelling**

Add to sub-clause 2304(b) the following :

Kerbing of radius 1 m and less shall be cast in situ in accordance with sub-clause 2304(e) and as shown on the drawings.

All precast 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  $\frac{2}{3} \times h$  and the width of the haunch is equal to h.

**(e) Cast in in-situ kerbs and channels**

Add to Sub-clause 2304(e) the following :

SCMU10-23/24-0010

C3.97

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

Where new kerbing and channeling has to be laid in an existing bitumen surface, the surface shall be neatly cut to a straight line with a walk behind saw cutting machine or similar 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.

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.

**(i) Construction sequence**

Add to Sub-clause 2304(i) the following:

With reference to sub-item (iii), kerbs and channeling will NOT be installed after asphalt or other specified surfacing has been laid. Should the need arise, the contractor shall apply to the Engineer in writing and shall demonstrate his methodology for installing the kerbs or channeling. No additional payment will be made for saw cutting or for sealing the longitudinal joint where the contractor willfully decides to surface first and install the kerbs, channeling or side drains later.

Add the following new sub-clauses to Clause 2304:

**(l) Expansion joints for cast in-situ concrete work.**

Unless shown otherwise on the drawings, cast in situ side drains shall be provided with construction joints spaced a maximum of 2.5 m apart. Expansion joints with 10 mm softboard spacers shall be constructed at 10.0 m intervals in the longitudinal direction. The drains shall be cast in alternate panels. Sections of channel which have cracked between construction joints shall be removed and replaced by the contractor at his own cost.

**(m) Formwork and finish**

All visible edges of cast in-situ channels shall be rounded with a rounding tool.

**B2307 MEASUREMENT AND PAYMENT**

**B23.07 Trimming of excavations for concrete-lined open drains:**

Add the following new sub-item:

Item	Unit
(c) Backfilling below side drains	m <sup>3</sup>

The unit of measurement for B23.07(c) shall be the cubic metre of completed backfill, measured in place and calculated in accordance with the authorised dimensions.

The tendered rate for B23.07(c) shall include full compensation for procuring, placing and compacting the backfilling and a free haul of 1.0 km.

SCMU10-23/24-0010

C3.98

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

<b>Item</b>	<b>Unit</b>
<b>B23.14 Cutting bituminous surfacing and pavement layers for concrete kerbing, channelling or concrete-lined drains (100 mm depth), on written instruction from the Engineer</b>	<b>m</b>

Paragraphs 1 and 2 of Payment Item 23.14 in the standard specifications shall apply to this item B23.14

Remove "irrespective of the depth cut" in the first paragraph, and replace with "to the depth of 100 mm."

Payment will only be made where saw cutting is carried out on written instruction from the Engineer. Where the contractor has applied to the Engineer and been permitted to programme his work such that kerbs and channels are constructed after the road is surfaced, then no payment will be made for saw cutting or for sealing the joint. These operations are deemed to be included in the rate for the kerb and/or channels."

**SECTION 3100: BORROW MATERIALS****B3102 NEGOTIATIONS WITH OWNERS AND AUTHORITIES**

Add to Sub-clause 3102(a) the following :

Notwithstanding the contents of Clause 3102, the contractor and engineer shall liaise with the relevant landowners, traditional leaders, councilors and in particular the King Sabata Dalindyebo Municipality, regarding access to, and operations at, the borrow pits.

The Contractor may be required to effect the payment of compensation to the affected land owners when ordered to do so by the Engineer. In this case, the costs will be recovered via the Provisional Sum allowed in Section 1200 of the Schedule of Quantities.

The Contractor will be responsible for the arrangements associated with constructing suitable accesses to the borrow pits.

Insert the following additional Sub-clause 3102 (d)

The Contractor shall comply with the requirements of the Environmental Scoping Report and the Environmental Management Programme Report with regard to his activities at borrow pits and the rehabilitation thereof before completion of the contract. The contractor shall prepare a mining plan for the approval of the Department : Minerals and Energy with regard to any hard rock quarry being opened under the contract.

**B3103 OBTAINING BORROW MATERIALS****(a) General**

Add to Sub-clause 3103(a) the following :

The Contractor shall note that natural materials which meet the requirements for the selected and sub-base layers are scarce, even when the properties are improved via stabilisation. Therefore, careful selection of materials will be required in the borrow pits. The Contractor shall refer to Section 3200 of the standard specifications with regard to his liabilities in respect of the contamination of good quality materials.

**B3104 OPENING AND WORKING BOROW PITS AND HAUL ROADS****(a) Removing topsoil**

Add to Sub-clause 3104(a) the following :

The topsoil and overburden to be stockpiled shall be suitably placed so as to provide a temporary visual screen in front of the borrow activities. The topsoil and overburden shall not be stockpiled for longer than 6 months, nor shall the stockpile be higher than 2,0 m, unless otherwise specified by the Engineer.

**(b) Clearing and grubbing**

Add to Sub-clause 3104(b) the following :

Where indigenous vegetation has to be cleared, the environmental control officer may order that certain plants be removed and preserved for future reinstatement. The contractor shall comply with the directives of the ECO and the engineer in this regard. Payment will be made via the provisional sum in Section 5800.

**(d) Excavating borrow material**

Add to Sub-clause 3104(d) the following :

It can be anticipated that a single stage crusher will be required to break down the material in BP1 and BP2 for layerworks. The contractor shall plan the excavation of material from the borrow pits accordingly. Dust suppression is a requirement and the contractor will have to demonstrate that his equipment is effective to the satisfaction of the environmental and health & safety agents.

**(g) Unproclaimed private access roads**

Add to Sub-clause 3104(g) the following :

The Contractor is responsible for the improvement and proper maintenance of haul roads in cases where the material from the borrow pit areas has to be transported over public secondary, tertiary, or access roads and over private roads. Improvements may be left in place on completion with the approval of the relevant road owner. Where a new temporary haul road has been created then, at the completion of activities in the borrow pits, the temporary haul roads shall be restored to their original state and to the satisfaction of the Engineer.

Only one access road / haul road will be permitted per borrow pit.

Expropriation of borrow pits on private property by the Employer, will include access roads to the borrow pits. However, the Contractor is fully responsible for negotiating details of the right of access to the borrow pits with the private owners as well as for the building, maintenance and later removal of all access roads.

Payment will be made for this work under the payment item B31.05. Full remuneration will be deemed to be included in the tendered rates for the various sub-items.

Add the following new Sub-clause 3104 (h) :

**3104(h) Hard rock quarry**

The identified quarry site is located approximately 0.5 km from the south-western limit of the project (Phase 3), near the intersection with the Zithulele Hospital access road. It is approximately 19 km by road from km 5.6 on this particular contract.

The same quarry has been utilised for the hospital access road contract. It is understood that some excess crushed material has been left over from that contract and could be used on the rehabilitation of the 5.6 km of DR08031 envisaged under this contract. There may be a question of 'ownership' of the material, however, and quantities are not known. Should the pre-crushed material be insufficient or contaminated, or have been utilized elsewhere, then the required aggregates will be obtained from commercial sources.

Normally, separate haulage is not paid for crushed aggregates from commercial sources. However, on this contract haulage will be paid separately due to the potential different sources of crushed materials. The Contractor shall liaise with the Engineer in respect of the materials sources so that haulage costs are optimised.

Although the establishment of a multi-stage crusher specifically for the rehabilitation is not envisaged, a crusher may be established for the project as a whole. This option is being investigated by the Employer.

The quarry has not been fully rehabilitated as it may be re-opened for future phases and projects in the region. The contractor shall ensure that he does not affect the drainage and safety measures put in place at the quarry. The collection of the pre-crushed materials will be monitored to ensure that environmental and safety measures are maintained.

The contractor will have to programme his use of materials from this quarry very carefully and submit a schedule of requirements to the engineer. It may be expedient to move the stockpiled materials to a site within the limits of this contract. However, no additional payment will be made for double handling.

### **B3105 FINISHING OFF BORROW AREAS and HAUL ROADS**

Add to Clause 3105(a) – Borrow areas – the following :

“The rehabilitation and finishing off of borrow areas and quarries is not considered to be an item for inclusion in a snag list at the end of construction.

Failure to finish of the borrow areas, including the hard rock quarry, to the satisfaction of the Engineer, and satisfying all aspects of the contract documents as well as all legal requirements, will result in the issue of the Certificate of Practical Completion being delayed. Refer to Clause 1210 of the standard specification as amended in these project specifications.

The contractor shall indicate the date on which rehabilitation will be completed in good time, so that a visit by the ECO and representatives from the relevant environmental departments (DEDEA), as well as mines & energy (DME), can be arranged. Such visits are necessary to obtain official Closure of the borrow pits and quarry.

The contractor shall take note of these provisions in his contract programme. No additional time or payments will be allowed for obtaining the necessary Closure certificates.

The contractor shall also take note that an additional retention sum of R 500,000 will be held specifically for obtaining closure. This sum will not be reduced with the issue of Practical Completion, Completion or Final Approval Certificates.”

Add to the notes at the end of the payment items under Clause 3108 the following :

“(1) The tendered rates shall include full compensation for all moneys payable and all expenses incurred by the Contractor. rom additional borrow pits identified by the Engineer, from commercial sources, or from borrow pits obtained by the Contractor himself.”

Add the following new items:

SCMU10-23/24-0010

C3.102

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

<b>Item</b>	<b>Unit</b>
<b>B31.04 Rehabilitation of hard rock quarry</b>	<b>Prov sum</b>

Expenditure under this item will be made in accordance with the general conditions of contract.

Once the extent of rehabilitation required is known, and this will depend on future use of the quarry, the contractor will be asked to price the necessary work. The Engineer will assess the pricing based on relevant rates for similar work items in the Bill of Quantities.

The Employer reserves the right to have the rehabilitation carried out by an independent contractor.

**B31.05 Haul roads to borrow pits and hard rock quarry.**

The improvements to existing roads and the construction of new haul roads will be paid for under the relevant payment items listed below. All of the items have payment clauses in the standard specification and will be paid according to those clauses. Items included in the construction of the haul road are :

<b>Item</b>	<b>Unit</b>
B31.05/15.02 (a) Shaping of the haul road	km
B31.05/15.02 (b) Cut and borrow to fill	m <sup>3</sup>
B31.05/15.02 (c) Cut to spoil	m <sup>3</sup>
B31.05/33.01 (d) Cut and borrow to fill compacted to 93% Mod AASHTO	m <sup>3</sup>
B31.05/33.01 (e) Pioneer layer	m <sup>3</sup>
B31.05/33.07 (f) Removal of unsuitable / unstable material	m <sup>3</sup>
B31.05/34.02 (g) Gravel wearing course compacted to 95% Mod AASHTO	m <sup>3</sup>
B31.05/15.12 (h) Temporary pipe culverts, 600 mm diam.	m

All of the provisions of the relevant payment clauses and specifications shall apply.



**SECTION 3200: SELECTION, STOCKPILING AND BREAKING DOWN THE MATERIAL FROM BORROW PITS, CUTTINGS AND EXISTING PAVEMENT LAYERS, AND PLACING AND COMPACTING THE GRAVEL LAYERS**

**B3201 SCOPE**

*Add to Clause 3201 the following :*

This particular contract generally involves the rehabilitation of a section of existing bitumen road. Nevertheless, the localised widening of cuts and fills, the reconstruction of shoulders, and the backfilling at bridge abutments, will all require the selection and breaking down of materials.

**B3203 STOCKPILING THE MATERIAL**

*Add to Clause 3203 the following :*

“Where ordered by the Engineer, the stockpile areas shall be graded smooth with an adequate slope to ensure proper drainage of water and all topsoil so removed must be suitably stockpiled for use in rehabilitation. Where so instructed by the engineer, the surface shall be watered and compacted to a depth of at least 150 mm to a density of 90% of modified AASHTO density. The compacted surface shall be firm with no loose patches. Upon completion of the preparation of the stockpile site, the surface shall be swept clean.

Stockpile sites shall be sufficiently large to allow the placing of stockpiles of different types of material without the stockpiles overlapping or the limits of the prepared site being exceeded. The enlargement of the stockpile site after the stockpiles have already been placed will not be permitted without the approval of the Engineer.

Upon completion of the work, the stockpile sites shall be rehabilitated in accordance with the instructions of the Engineer. Rehabilitation shall include scarifying, applying fertilisers as may be necessary, and hydroseeding with a blend of grass seed approved by the Engineer, all in accordance with the specifications set out in Section 5800. Payment for the rehabilitation of stockpile areas is deemed to be included in the prices tendered for stockpiling of material.”

**B3205 CRUSHING AND SCREENING**

*Add to Clause 3205 the following :*

“Single stage crushing can be anticipated for materials from borrow pits intended for use in the pavement layers. Crushing may take place within the borrow pit or at a site adjacent to the road. Environmental and safety considerations will determine the site of the crusher.

Precautionary measures required in terms of The Environmental Conservation Act (Act 73 of 1989), The Environmental Management Act (Act 107 of 1998) and The National Water Act (Act 36 of 1998) shall also be deemed to be included in the rates tendered for the relevant products.

The Contractor’s attention is drawn to the Environmental Management Procedures, Part C3 C of these Project Specifications, as well as to the Health & Safety specifications in Part C3 D. There are specific requirements in respect of silica levels and precautions for the health of workers at the quarry and borrow pits.”

**B3207 LAYER THICKNESSES AND SPREADING THE MATERIALS**

Add to Clause 3207 the following new sub-clause :

**(c) Recovered material**

Where material obtained from the existing road pavement is to be re-used, the contractor shall plan his work so as to avoid double handling, and place the material directly into position. Payment for temporary stockpiling of material will only be made if unavoidable and if approved by the Engineer in writing.

**B3209 PLACING AND COMPACTING THE MATERIALS IN LAYER THICKNESSES IN EXCESS OF 200 MM AFTER COMPACTION**

Add to Clause 3209 the following :

“It is imperative that the classification of the fill, and the methodology for placing and compacting, be determined before a particular fill is commenced. The maximum sizes for the different fill classes will be strictly controlled, as will the processing of the fill materials. With regard to hard-material and rock fills, specific attention is drawn to the requirements for thorough mixing and for having sufficient fine materials to fill the voids.

Particular attention must be paid to achieving a homogeneous fill across the full cross section, and to preventing differential settlement in the flanks.”

**B3212 MEASUREMENT AND PAYMENT****B32.01 Providing a crushing and/or screening plant**

Add the following new payment sub-item:

<b>Item</b>	<b>Unit</b>
(e) Provision of dust suppression system for crushing plants	No

The unit of measurement and tendered rates are as described under payment item 32.01.

The dust suppression system shall be proposed in writing by the contractor for the approval of the Engineer and of the Employer’s Health & Safety Agent.

**SECTION 3300: MASS EARTHWORKS****B3301 SCOPE**

*Add the following:*

“Mass earthworks shall also include drainage excavation where such excavation is classified as “cut” in terms of Clause 2102 of Section 2100: Drains.”

**B3302 MATERIALS****(a) Roadbed and cut**

*Add the following:*

The minimum CBR of the G10 subgrade layer shall be 3 at 90% of modified AASHTO density. The G10 subgrade layer and all fill widening shall be compacted to a minimum of 93% of modified AASHTO density.

**(b) Fill**

*Add the following:*

(ii) The maximum CBR swell at 100% of modified AASHTO density shall be as follows:

DEPTH BELOW FINAL ROAD SURFACE (mm)	MAXIMUM CBR SWELL (%)
800-3000	1,5
over 3000	2,0

**B3305 TREATING THE ROADBED**

*Add the following before sub-clause (a):*

“Depending on the conditions of the in-situ material, details on roadbed treatments hwill be furnished on the drawings. These treatments will be based on the information from pre-design testing. Actual conditions during construction may result in changes to the treatments. These changes will be instructed by the engineer and may not be made by the contractor without prior approval.”

**B3306 CUT AND BORROW****(e) The temporary stockpiling of materials**

*Replace the contents of this sub-clause 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 will not be paid for separately unless instructed by the Engineer, and full compensation will be deemed to have been included in the rates tendered for the various payment items for the work for which the stockpiled material is to be used.”

SCMU10-23/24-0010

C3.106

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

**(f) The disposal of surplus material**

*Add the following:*

The Engineer will select spoil sites during the contract. For pricing purposes contractors should allow for the full amount of overhaul. Before commencing to use a spoil site, the topsoil shall be stripped from the site and placed in temporary storage on the site for later use in top soiling the completed spoil, as referred to in the Project Specification Section 1700, Clearing and Grubbing.

**B3307 FILLS****(d) Benching**

*Add the following after the second paragraph:*

“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 Engineer.”

**B3312 MEASUREMENT AND PAYMENT****General directions**

Delete Note (3) 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.

*Amend item 33.01 to read as follows:*

**B33.01 Cut and borrow to fill, including free-haul up to 1,0km**

- (e) Pioneer layer (as specified in sub-clause 3307(c)):

Add the following new sub-sub-items:

<b>Item</b>	<b>Unit</b>
(i) With material from borrow	m <sup>3</sup>
(ii) With material from commercial sources	m <sup>3</sup>

The unit of measurement and tendered rates are as described under payment item 33.01.

*In the fifth paragraph of the description change the free-haul distance of 0,5km to 1,0 km.*

*Amend item 33.04 to read as follows:*

**B33.04 Cut to spoil, including free-haul up to 1,0km. Material obtained from:**

The unit of measurement and tendered rates are as described under payment item 33.04.

*In the fourth paragraph of the description change the free-haul distance of 0,5km to 1,0km*

*Amend item 33.07 to read as follows:*

**B33.07 Removal of unsuitable material (including free-haul of 1,0km)**

The unit of measurement and tendered rates are as described under payment item 33.07.

*In the last line of the description change the free-haul distance to 1,0km*

*Amend item 33.17 to read as follows:*

<b>Item</b>	<b>Unit</b>
<b>B33.17 Extra over item B33.04 for spoiling material excavated from benches constructed for widening existing fills.</b>	<b>m<sup>3</sup></b>

The unit of measurement and tendered rates are as described under payment item 33.04.

**Note:**

Replace the second paragraph with "Item 16.01 & 16.02 Overhaul (extra over itmes B33.01, B33.04 and B33.07)

Replace "Item 35.09" with "Item B35.09"

**SECTION 3400: PAVEMENT LAYERS OF GRAVEL MATERIAL****B3401 SCOPE**

*Add to Clause 3401 the following :*

This section also covers the rehabilitation of existing pavement layers via the process of in-situ recycling. Specific items of plant are required for this process as described in the project specifications below.

Reference shall be made to Part C4 of this document for a description as to which sections of the road are concrete paved and block paved.

**B3402 MATERIALS****(a) General**

*Add to Clause 3402(a) the following :*

The pavement for the upgraded road shall generally consist of:

Basecourse: 150mm emulsion and cement treated materials consisting of a blend of imported and in-situ materials, processed via in-situ recycling.

Sub-base : In-situ materials.

Where reconstruction work is done on the existing shoulders, the pavement will generally consist of :

Sub-base : 200mm G4 or G5 material from approved borrow areas, from in-situ recycled layers, or from a combination of borrow and in-situ materials.

The Engineer may order that the sub-base be stabilised

Upper selected : 150mm G7 to G9 material, in-situ layer

Lower selected : 150mm G8 to G10 material, in-situ layer

If necessary, the upper and lower selected layers below the shoulders will be imported, depending on the quality and width of the materials below the existing shoulders.

It should be noted that the sub-base will be placed and compacted up to the existing road level. The imported base will then be spread over the full width of the new cross section for the reconstructed road.

All layers shall comply with the requirements of Tables 3402/1, 3402/2, 3402/4 and 3402/5 of the Standard Specification. The requirements of Section 3500 : Stabilization and Section 3600 : Crushed Stone Base, shall also apply to the relevant layers.

In areas with a weaker sub-grade, it may be necessary to undercut the roadbed and replace the unsuitable material with selected quality material from borrow. Where new construction is carried out, pioneer layers may be required.

An indication of cross sections through the pavement layers for various reconstruction scenarios is included in the tender drawings accompanying this document. It should be noted that there are different cross sections within this Phase 1.

**(b) Compaction Requirements**

Add to Clause 3402(b) the following:

The compaction requirements of the pavement layers shall be:

Basecourse : 98% of modified AASHTO density for stabilised material  
 Sub-base : 96% of modified AASHTO density for natural and for stabilized materials.  
 Upper selected : 95% of modified AASHTO density  
 Lower selected : 93% of modified AASHTO density  
 Shoulders : 95% of modified AASHTO density

**B3403 CONSTRUCTION**

Add the following new sub-clauses:

**(f) In-Situ Recycling of Existing Layers**

The sections of road where in-situ recycling is required to form the new basecourse layer are given in the site information, Part C4, Clause 5.1. Sections where in-situ material is to be blended with imported material will be identified.

Specific requirements in respect of the recycling process are outlined below. Otherwise, the construction tolerances and all other aspects of the standard specifications, Sections 3400 and 3500, are applicable.

**(i) Materials**

The existing pavement material after treatment shall meet the following requirements:

- Aggregate particle size : 53.0 mm max
- Grading Modulus : 1.75 min and 2.50 max.
- Plasticity Index : 8 max
  - CBR @ 98% Mod AASHTO : 80 min

Should the recycled material not meet the final specified requirements, new aggregate in the form of granular material or crusher dust shall be added in predetermined proportions to ensure that the requirements are met.

The new base material to be added will be a minimum G4 natural gravel material or a crushed stone product, as described in "TRH 14 : Guidelines for Road Construction Materials" published by the National Institute for Transport and Road Research of the Council of Scientific and Industrial Research, Pretoria and specified in Section 3400 of the Standard Specifications.

Soil binder for mechanical modification shall be taken from within the limits of an approved source and shall be subject to such requirements regarding grading, plasticity index or other properties as prescribed by the engineer. If the untreated material lacks fines, crushed sand may also be used.

## (ii) Stabilising Agent

The principle stabilising agent will consist of a 60% spray grade emulsion, diluted 50/50 with water, and applied uniformly by tanker during the recycling process. The residual bitumen content shall be 2% by volume of the final compacted layer.

The stabilising additive shall be CEM II (A-L)(32.5) Cement, which shall comply with the requirements of SABS ENV 197-1: "Cement Composition, specifications and conformity Criteria Part 1: Common Cements".

Rapid-hardening Portland cement shall NOT be used.

From the time of purchase to the time of use, all stabilising agents and additives shall be kept under proper cover and protected from moisture. Consignments of the agents shall be used in the same sequence as that of their delivery at the works. Stocks stored on the site in excess of three months shall not be used in the work.

Cement or road lime shall be spread out evenly before the recycler. Water shall not be sprayed onto the spread cement or lime. Cementitious agents shall NOT be spread out more than 200 metres in front of the recycling machine and shall not be left out overnight. Limitations in terms of climatic conditions shall be adhered to.

## (iii) Plant and Equipment

Only an approved in-situ recycling plant may be used. The plant shall be capable and equipped to:

- scarify and mill the surface and the underlying pavement layers of the road to a pre-determined depth and to a maximum nominal aggregate size of 63.0 mm;
- mix the scarified/milled material and new granular materials in pre-determined proportions;
- blend homogeneously into the recycled mix, the cement and any other additives, as well as the imported sub-base material, in pre-determined proportions;
- spread and initially compact the mixed materials to the correct profile by means of a floating screed;

The machine shall have a double spray mechanism in order to supply the water necessary to increase the moisture condition of the material. Both spray mechanisms shall have control equipment to control the output of the water while the machine is moving and to measure the quantities being applied. Both spray mechanisms shall also be equipped with mechanisms to take samples of the bituminous stabilising agent for control purposes.

Scarifying shall be by means of rotary scarifier which operates in a milling mode. The scarifier must be capable of being controlled automatically for depth, slope and width whilst the equipment is in operation.

The plant shall be so equipped that it will be able to mill out and recycle asphalt and/or cemented material to depths up to at least 300 mm, including the addition of bitumen emulsion, in one operation. The milling depth shall be controlled electronically and the width of milling drum shall be at least 2.4 metres. The direction of the forward speed of the machine shall be adjustable. The recycling machine shall be capable of making a neat vertical cut at the outer edges conforming to the specified tolerances. The machine shall also be equipped with



flashing lights and warning devices necessary to operate safely under adverse traffic conditions. The unit shall be equipped with flow meters to accurately determine the quantity of emulsion and water being applied.

Alternative plant may be approved provided that the Contractor can demonstrate that his methodology will achieve the requirements of the specification for the recycled layers.

(iv) Setting Out and Control of the Work

Generally existing road levels shall be used for level control, with the finished surface approximately 100 mm above the existing. There are no sections where the vertical alignment is being amended by raising fills or deepening cuts. Tie ins on the bridge approaches will be effected using a localised rip and reconstruction of the pavement. The tie-ins will be tapered over a length of 50 metres on each approach.

The contractor shall construct the tie ins such that an effective minimum emulsion & cement basecourse depth of 200 mm is achieved, compacted to 98% Mod AASHTO density. The thicker layer is required to strengthen the pavement on the approaches.

The Contractor shall survey and reference the existing centre line, lane lines and edge of seal and ensure that the recycled road is returned to the correct profile. Attention is drawn to the desired longitudinal profile and super-elevations, as well as the cross-sections in the book of drawings.

(v) Protection and Maintenance

Traffic or further construction activity will not be allowed on the recycled layer for a period of 24 hours after compaction. This is to provide time for the curing of the stabilised material. Specific traffic control measures will be required during the curing period. The Contractor shall take the curing time into account when programming the work.

The Contractor's attention is drawn to Clause 3503 of the standard specifications.

(vi) Traffic Accommodation

Traffic shall be accommodated on the opposite lane or climbing lane (if applicable) or on the shoulder (where possible) by means of appropriate traffic control devices. The Contractor shall note the provisions of Section B1500 and Payment Items B15.01 and B15.10, of the Project Specifications, with specific reference to the Traffic Management Plan (TMP).

Where possible, the road shall be open to two way traffic between sunset and sunrise. Naturally, this will not be possible in the vicinity of recycling operations. The TMP must also make provision for the road not being open to two-way traffic in the event of unforeseen circumstances.

(vii) Surplus Material

Recovered pavement material shall be removed from the site or to stockpile if instructed by the engineer. Any surplus material could be used as selected fill below new concrete lined side drains, or for backfilling trenches, and the contractor should take cognisance of this in his programming.

Surplus materials not required for re-use on site, including waste or oversize material, bladed or skimmed off the road, shall be disposed of. Alternatively, it may be stockpiled for use by the local municipality for road maintenance. The engineer will issue directives in this regard.

### **B3406 QUALITY OF MATERIALS AND WORKMANSHIP**

Add to Clause 3406 the following:

Test results and re-measurements shall be assessed in accordance with the provisions of Section 8300 : Quality Control (Scheme 2) of the standard specifications, as amended in these project specifications.

### **B3407 MEASUREMENT AND PAYMENT**

#### **B34.01 Pavement layers constructed from gravel taken from cut or borrow, including free haul up to 1,0 km**

- (a) Gravel selected layer compacted to:

Add the following new sub-sub-item:

<b>Item</b>	<b>Unit</b>
(iii) 93% of modified AASHTO for sidewalk and bellmouths	m <sup>3</sup>

The unit of measurement and tendered rate for item B34.01(a)(iii) are as described under payment item 34.01.

Amend sub-item (a) to read as follows:

- (c) Gravel subbase (unstabilised material - new construction) compacted to:

Amend sub-sub-item (ii) to read as follows:

<b>Item</b>	<b>Unit</b>
(ii) 97% of modified AASHTO density, compacted layer to be 200 mm, for sidewalks and widened shoulders	m <sup>3</sup>

The unit of measurement and tendered rate for item B34.01(c)(ii) are as described under payment item 34.01.

Amend sub-item (d) to read as follows:

(d) Gravel subbase (chemically stabilized material), minimum G5 quality material crushed to G4 grading, compacted to:

Add the following new sub-sub-items:

<b>Item</b>	<b>Unit</b>
(iii) 95% of modified AASHTO for bellmouths, compacted layer to be 200 mm	m <sup>3</sup>

The unit of measurement and tendered rate for items B34.01(d)(iii) and B34.01(d)(iv) are as described under payment item 34.01.

Amend sub-item (f) to read as follows:

- (f) Gravel base (chemically stabilised gravel - new construction) compacted to

Add the following new sub-sub-items:

<b>Item</b>	<b>Unit</b>
(iii) 97% of modified AASHTO for bellmouths, compacted layer to be 150 mm	m <sup>3</sup>

The unit of measurement and tendered rate for items B34.01(f)(iii) is as described under payment item 34.01.

- (h) Gravel wearing course compacted to:

Amend sub-sub-item (ii) to read as follows:

<b>Item</b>	<b>Unit</b>
(ii) 95% of modified AASHTO density in access roads	m <sup>3</sup>

The unit of measurement and tendered rate for item B34.01(h)(ii) are as described under payment item 34.01.

### **B34.03 Pavement layers constructed from gravel obtained from existing pavement layers**

- (b) Gravel selected layer compacted to 95% Mod AASHTO density using:

Add the following new sub-sub-items:

<b>Item</b>	<b>Unit</b>
(iii) As per (i) above, but in sidewalks.	m <sup>3</sup>

The unit of measurement and tendered rate for item B34.03(b)(iii) are as described under payment item 34.03.

*Amend item 34.04 to read as follows:*

### **B34.04 'In-situ reconstruction by recycling of existing pavement layers, as new basecourse, chemically and emulsion stabilised and compacted to 98% of modified AASHTO density, using :**

Add the following sub-item:

B34.04/36.05 (g) compacted to 98% of modified AASHTO density, using :

Add the following new sub-sub-items:

<b>Item</b>	<b>Unit</b>
(i) Non-cemented upper layers, 150 mm thick and including the existing road surface and imported material.	m <sup>3</sup>
(ii) Non-cemented upper layers, 200 mm thick including the existing road surface and imported material.	m <sup>3</sup>

The unit of measurement and tendered rate for items B34.04/36.05(g)(i) and B34.04/36.05(g)(ii) are as described under payment item 34.04 to the specified depth.

*Amend item 34.06 to read as follows:*

**B34.06/36.08      Extra over item B34.04 for adding extra material as specified**

Add the following new sub-item:

(b)      Crushed basecourse

Add the following new sub-sub-item:

<b>Item</b>	<b>Unit</b>
(ii)      G2 material from a commercial source, including haulage.	m <sup>3</sup>

The unit of measurement and tendered rate for item B34.06/36.08(b)(ii) are as described under payment item 34.06.

*Amend item 34.11 to read as follows:*

<b>Item</b>	<b>Unit</b>
<b>B34.11      Watering the pavement excavation floor / recycled layer</b>	<b>kℓ</b>

Add the following new items:

<b>Item</b>	<b>Unit</b>
<b>B34.14      Removal of excess bulked material from recycling operation and stockpiling for later use as directed.</b>	<b>m<sup>3</sup></b>

The unit of measurement for B34.14 shall be a cubic metre of the removed bulked material from recycling operation. The volume shall be determined as prescribed by the Engineer and shall be the loose volume in stockpiles or its equivalent measured in hauling vehicles.

The tendered rate for B34.14 shall include full compensation for cleaning and preparing the stockpiling sites and the loading and transporting it to the stockpile area including a free-haul of 1.0 km, and off-loading of the material.

<b>Item</b>	<b>Unit</b>
<b>B34.15      Moving the in-situ recycling machine on the site for a distance exceeding 1.0 km.</b>	<b>No</b>

The unit of measurement shall be the number of in-situ recycling machines moved for a distance exceeding 1.0 km.

The submitted tendered rate shall cover all costs for moving the in-situ recycling machine on the site for a distance exceeding 1.0 km.

**Note:**

Replace "Item 35.09" with "Item B35.09"

**SECTION 3500: STABILIZATION****B3502 MATERIALS****(a) Chemical stabilizing agents**

*Add to Sub-clause 3502(a) the following:*

The new SANS 50197-1:2013 standard specifications will be applicable to this Contract (Refer to Clause B1229 in the Project Specification). According to these specifications the following cements are prescribed:

- (ii) Ordinary portland cement : CEM 11 A - L
- (iii) Portland blast-furnace cement : CEM III/A, III/B AND III/C
- (iv) Ground granulated blast-furnace cement : As specified in 3502(a)(iv)
- (v) Portland fly-ash cement : CEM II/A-V, CEM II/B-V, CEM II/A-W, CEM II/B-W

**B3503 CHEMICAL STABILIZATION****(i) Construction limitations**

*Add to Sub-clause 3503(i) the following :*

Cement stabilization shall not be carried out during falling temperatures when the ambient air temperature falls below 7°C or during rising temperatures when the ambient 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 all measures necessary in this regard and shall especially refrain from stabilizing when such night temperatures are probable.

All stabilized layers which have been damaged by frost or by the formation of ice in the layer shall be removed and replaced by the Contractor at his expense unless agreed otherwise by the Engineer. The Contractor shall make due allowance for these requirements in his construction programme, and no claims in this regard will be considered.

Amend the time for construction in Table 3503/1 for ordinary portland cement and/or approved blends from 8 hours to 6 hours.

**B3505 BITUMINOUS STABILIZING****(b) Mixing in the additive**

Delete the last sentence of this clause. Add the following ; "As the intended operation involves in-situ recycling, pre-mixing of the cement additives is not required. The spreading of cement additives is deemed to be included in the rate for such additives."

**B3509 QUALITY OF MATERIALS AND WORKMANSHIP**

Add to Clause 3509 the following :

Test results and re-measurements shall be assessed in accordance with the provisions of Section 8300 : Quality Control (Scheme 2) of the standard specifications, as amended in these project specifications.

The Contractor shall advise the Engineer at least 24 hours in advance of any stabilization work to enable him to organise and conduct his own control tests.

Where the stabilising agent is to be spread by hand, the pockets of stabilising agent shall be placed on the layer at regular intervals. However, spreading shall not be carried out before the Engineer is satisfied that the correct quantity of stabilising agent can be spread.

Stabilised layers, with specific reference to the stabilised sub-base on the shoulders (if ordered), shall be covered for curing within 24 hours, as specified. If the stabilised layer is found to have failed, the cover material shall be removed and the layer rectified if instructed by the Engineer. No additional payment shall be made for such removal and remedial work.'

**B3510 MEASUREMENT AND PAYMENT**

Delete the note at the start of the measurement and payment clause dealing with work in restricted areas. 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.

Amend item 35.02 to read as follows:

**B35.02 Chemical stabilizing agent:**

Add the following sub-item:

Item		Unit
(g)	60% stable grade bitumen emulsion, applied to achieve 2% net bitumen content.	ℓ

The unit of measurement for B35.02(g) shall be the litre of stabilising agent.

The tendered rate shall include full compensation for providing the stabilising agent at the works, irrespective of the rate of application specified or ordered by the Engineer.

**SECTION 3600: CRUSHED STONE BASE****B3608 MEASUREMENT AND PAYMENT****B36.01 Crushed-stone base**

(e) Constructed from Type G3 natural material obtained from commercial sources:

Amend sub-sub-item (i) to read as follows:

<b>Item</b>	<b>Unit</b>
(i) compacted to 98% of modified AASHTO density - Bellmouths	m <sup>3</sup>

The unit of measurement and tendered rate for item B36.01(e)(i) are as described under payment item 36.01.



**SECTION 3800: BREAKING UP EXISTING PAVEMENT LAYERS****B3807 MEASUREMENT AND PAYMENT****Unit****B38/39.03 Backfilling of excavations for patching with**

- (a) Chemically stabilized pavement material (gravel of sub-base quality and Cement) for a patch with a surface area:

<b>Item</b>	<b>Unit</b>
(i) Not exceeding 5 m <sup>2</sup>	m <sup>3</sup>
(ii) Exceeding 5 m <sup>2</sup> but not exceeding 100 m <sup>2</sup>	m <sup>3</sup>
(iii) Exceeding 100 m <sup>2</sup>	m <sup>3</sup>

- (b) Base material stabilised with 60% Anionic Stable Grade Emulsion for a patch with a surface area:

<b>Item</b>	<b>Unit</b>
(i) Not exceeding 5 m <sup>2</sup>	m <sup>3</sup>
(ii) Exceeding 5 m <sup>2</sup> but not exceeding 100 m <sup>2</sup>	m <sup>3</sup>
(iii) Exceeding 100 m <sup>2</sup>	m <sup>3</sup>

The unit of measurement and tendered rate for items B38/39.03 are as described under payment item 39.03.

**Item** **Unit**

**B38/39.04 Compacting the floor of excavations for patching** **m<sup>2</sup>**

The unit of measurement and tendered rate for items B38/39.04 are as described under payment item 39.04.

**SECTION 4100: PRIME COAT****B4101 SCOPE**

Add to Clause 4101 the following :

This section shall also cover the application of prime coat to sidewalks.

**B4102 MATERIALS****(a) Priming Material**

Add the words “, such as MSP 1 or similar, ” to the last of the listed priming materials, that is inverted bitumen emulsion.

Tar based products are not permitted for use.

**(b) Aggregate for blinding**

Add the following to Clause 4102(b) :

Blinding of the primed surface with aggregate will only be permitted to facilitate vehicular access to adjacent properties.

**B4104 WEATHER AND OTHER LIMITATIONS**

Delete adverse condition (g) of Clause 4104 and replace with the following :

“(g) when the moisture content of the top 50 mm of the base layer is more than 50% of the optimum moisture content as determined by the Engineer in accordance with TMH1, Method A7.”

**B4106 APPLICATION OF THE PRIME COAT**

Add the following to paragraph (c) of Clause 4106 :

The nominal application rate of the prime shall be 0,7  $\ell/m^2$ . Unless directed otherwise by the engineer or indicated on the drawings, the edges of the primed surface shall be 150 mm wider than the edges of the surfacing.”

Add the following new sub-clause to 4106 :

(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 50 mm is sprayed onto the previously constructed or existing surfacing.”

**B4108 TOLERANCES**

Delete the first paragraph of Clause 4108 and replace with the following:

The actual spray rates measured at spraying temperature shall not deviate by more than 8.0% from that ordered by the engineer. The engineer may, at his discretion, conditionally accept application rates falling outside this tolerance at reduced payment in accordance with Table B4108/1.

Table B4108/1  
Payment Reduction Factors for Conditionally Accepted Prime Coat

Deviation specified spray rate at spraying temperature. (%)	Payment reduction factor of tendered rate.
±8,0	1.00
±9,0	0.97
±10,0	0.95
±11,0	0.90
±12,0	0.85
±13,0	0.80

Any deviation outside these limits shall not be paid for, however, the engineer shall have the right to instruct the contractor to make up any deficiency, or blind excessive prime without additional payment. Where so instructed, the material for blinding shall consist of screened 4,75 mm nominal single size aggregate. The use of crusher dust for blinding shall not be permitted. If under-spraying occurs, and it is accepted by the engineer, only the actual quantities applied shall be paid for”

**B4109 TESTING**

Add the following

No payment will be made if this condition is not adhered to. The contractor shall provide, at his cost, representative samples of every batch of prime delivered onto site.”

**B4110 MEASUREMENTS AND PAYMENT**

**Item** **Unit**

**B41.01 Prime Coat**

Add the following new sub-items:

- (f) f) Invert bitumen emulsion prime - Colprime E or similar.  
litre (ℓ)

The units of measurement and tendered rate shall be as per item 41.01.

**SECTION 4400: SINGLE SEAL****B4404 MEASUREMENTS AND PAYMENT**

Add the following new item:

**B44/42.09 Asphalt surfacing on bridge decks**

<b>Item</b>	<b>Unit</b>
(a) 40 mm Continuously graded medium grade asphalt surfacing using B12 road grade Bitumen	t

The units of measurement and tendered rate shall be as per item 42.09.

## **SECTION 4600: BITUMINOUS SINGLE SEAL WITH SLURRY (CAPE SEAL)**

### **B4601 SCOPE**

Add to Clause 4601 the following :

“The seal shall consist of the application of a tack coat, the spreading of 13.2 mm aggregate, a further application of bituminous binder coat and the application of two coats of fine slurry, medium grade – with reference to Table 4302/11.

The work shall be carried out using labour intensive methods as far as is practical.

All clauses relating to temperatures when undertaking surfacing work will be strictly applied and no payment will be made for any standing time of plant caused by temperature limitations.

The requirements for this section of the specification shall also apply to the surfacing of paved pedestrian footpaths.”

### **B4602 GRADES OF BINDER TO BE USED**

#### **(a) Tack Coat**

Add to Sub-clause 4602(a) the following :

“The binder to be used for the tack coat shall be a B8 road grade (80/100 penetration grade) bitumen, or a 65 % cationic spray grade emulsion if approved by the engineer. The former is preferred and the latter will only be used in exceptional circumstances.”

#### **(b) Second application of binder**

Add to Sub-clause 4602(b) the following :

“The second application of binder shall be a 35% cationic spray grade emulsion.”

#### **(c) Slurry**

Add to Sub-clause 4602(c) the following :

The binder used for slurry shall be a 65% cationic stable grade emulsion.

### **B4603 CONSTRUCTION BEFORE SLURRY APPLICATION**

#### **(a) Application of tack coat and aggregate**

Add to Sub-clause 4603(a) the following :

“The aggregate for the single seal shall be 13.2 mm nominal size Grade 1 in accordance with Table 4302/8.

The tenderer’s attention is further drawn to the fact that the specifications regarding temperature and weather limitations on surfacing will be strictly applied. This must be borne in mind when the contractor prepares his preliminary programme, where due caution must be exercised between the months of May to September. No delays or payment for standing time will be entertained due to limitations on surfacing work brought about by temperature.”

**B4604 SLURRY**

**(c) Composition of slurry**

Add to Sub-clause 4604(c) the following :

“The aggregate for the slurry shall be a Medium Grade for Fine Slurry as specified in Table 4302/11.”

**(e) Application of slurry**

Add to Sub-clause 4604(e) the following :

“The slurry shall be spread by hand in accordance with the contents of this clause.

Work will, of necessity, be carried out in half widths. Traffic accommodation shall be strictly in accordance with the requirements of the specification.

The road surface shall not be put under traffic until the full seal has been completed and second slurry layer has been given time to set.”

**B4605 MEASUREMENTS AND PAYMENT**

*Amend item 46.02 to read as follows:*

**B46.02 Bituminous single seal with 19 mm Grade 1 aggregate and slurry (2 coats of slurry) on roadway with:**

Add the following new sub-items:

<b>Item</b>	<b>Unit</b>
(a) 65% Cationic spray grade emulsion in both tack coat and penetration spray m <sup>2</sup>	
(b) B4 road grade bitumen in tack coat and 35% cationic spray grade emulsion in the penetration coat m <sup>2</sup>	

- (c) 65% Cationic spray grade emulsion in both tack coat and penetration spray for cape seal on sidewalks  
m2

The schedule of quantities shall differentiate between the seal applied to the roadway and the seal applied to the pedestrian footpath.

The unit of measurement for the complete bituminous single seal with a aggregate and slurry shall be the square metre



**SECTION 5200: GABIONS**

**B5202 MATERIALS**

**(f) Filter fabric below the gabions**

Delete Sub-Clause 5202(f) and replace with the following :

“The filter fabric shall comply with the requirements of sub-sub-clause B2104(a)(iii) for Grade 5 geotextile.”

Add the following new sub-clause:

**(g) Concrete**

Concrete work shall be carried out in accordance with the provisions of Sections 6200, 6300 and 6400.

**B5204 CONSTRUCTING GABIONS**

**(c) Assembly**

Add to Sub-clause 5204(c) the following:

Gabion mattresses may be cut and rejoined, as shown on Drawing No. ECS/52/1/C2, to form any appropriate shape. An extra over rate shall apply when mattresses have to be cut and joined on instruction from the Engineer.

Add the following new sub-clause:

**(e) Blinding Layer**

Where indicated on the drawings, a blinding layer of 15 MPa concrete 75 mm thick shall be laid as a surface on which to place the gabions. The surface of the concrete shall be properly compacted and screeded to form a Class U1 surface finish as specified in Clause 6209 of the standard specification.

**B5205 MEASUREMENTS AND PAYMENT**

Add the following new items:

<b>Item</b>	<b>Unit</b>
<b>B52.05/64.01 Concrete Class 15/19 in blinding layer</b>	<b>m<sup>3</sup></b>

The unit of measurement shall be the cubic metre of concrete in the blinding layer, constructed to the line and level indicated on the drawing or as instructed by the Engineer.

The tendered rate shall include full compensation for furnishing all material and labour, including formwork as necessary, mixing, placing and compacting the concrete, and screeding to a Class U1 surface finish.

Item	Unit
<b>B52.06</b> Extra over Item 52.03(c) for cutting mattresses to suit	m <sup>3</sup>

The unit of measurement shall be the cubic metre.

The tendered rate shall include full compensation for all costs associated with cutting gabion mattresses to the required shape and the rejoined pieces to form sound cages.

## **SECTION 5400: GUARDRAILS**

### **B5402 MATERIALS**

#### **(a) Guardrails**

*Add to Sub-clause 5402(a) the following :*

“All holes in guardrail sections shall be drilled prior to galvanising. The Contractor shall submit SABS test certificates certifying the galvanising complies with the specification.

End treatment will involve the dipping of the last 3 sections of guardrails into the ground as detailed on the drawings.”

#### **(b) Guardrail posts**

*Add to sub-sub-clause 5402(b)(i) the following :*

##### **(i) Timber posts**

“New posts shall be supplied with the tops banded or gang nailed to prevent splitting, and shall be H4 treated.’

### **B5403 CONSTRUCTION**

#### **(a) Erection**

*Add after the fifth paragraph of Sub-clause 5403(a) the following :*

“The use of soilcrete or concrete to fill the holes will not be permitted.”

#### **(b) Painting**

*Add the following paragraph to Sub-clause 5403(b) :*

“Where holes have to be drilled in existing guard-rails, on site, to allow for additional posts, the damaged galvanising shall be treated with an approved zinc rich primer and two coats of an approved zinc rich paint.”

### **B5404 REQUIREMENTS**

*After the first paragraph at the start of Clause 5404, add the following :*

The vertical tolerance to which the completed guardrail shall comply shall be 3 mm. On straights and on curves the completed guard-rail shall not be out of horizontal alignment by more than 10 mm and 15 mm respectively.

### **B5406 MEASUREMENT AND PAYMENT**

**SECTION 5500: FENCING****B5502 MATERIALS****(c) Wire****(i) Barbed wire**

Delete the contents of sub-sub-clause 5502(c)(i) and replace with the following :

“Barbed wire shall comply with the requirements of SANS 675:2011 and shall be mild-steel-grade zinc-coated (heavy duty – fully galvanised) double-strand uni-directional-twist wire, each strand 2,5 mm in diameter, for use at any height above ground.

Barbs shall be manufactured from 2,0 mm zinc-coated mild steel wire and shall be spaced at not more than 150 mm.

Barbed wire shall be coloured yellow by a factory painting process integral with the galvanizing process.”

**(ii) Smooth wire**

Delete the contents of sub-sub-clause 5502(c)(ii) and replace with the following :

“Smooth wire shall comply with the requirements of SANS 675:2011 and shall be of the types specified below:

Straining wire shall be 4,0 mm diameter zinc-coated (fully galvanised) high-tensile-grade steel wire.

Fencing wire shall be high-tensile-grade steel 2,24 mm diameter zinc-coated (fully galvanised) wire.

Fencing wire shall be coloured yellow by a factory painting process integral with the galvanizing process.

Tying wire shall be 2,5 mm diameter mild-steel-zinc-coated (heavy duty – fully galvanised) wire for tying fencing wire to standards and droppers and 1,6 mm mild-steel-zinc-coated wire for tying netting and mesh wire to the fencing wire.”

**B5511 ERECTING GATES**

Add to Clause 5511 the following :

“Where instructed by the Engineer, motor grid gates as per the details shown on the standard drawings ECS/55/2/C1 to C4 shall be constructed. A rate per motor grid gate shall be tendered as per Payment Item B55.10 below.”

**B5514 MEASUREMENTS AND PAYMENT****B55.02 Supply and erect new fencing material for new fences and for supplementing material in existing fences which are being repaired or removed:**

SCMU10-23/24-0010

C3.131

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

Amend sub-items (a),(b) and (c) to read as follows:

Item	Unit
(a) Zinc-coated yellow painted, fully galvanized, mild steel grade double strand 2,5 mm diameter barbed wire as specified	km
(b) Zinc-coated yellow painted, fully galvanized, high tensile grade 2,24 mm diameter smooth wire	km
(c) Zinc coated yellow painted fully galvanized diamond mesh 64 mm hexagonal mesh, 2,5 mm diameter wire	km

The unit of measurement and tendered rate for item B55.02(a), B55.02(b) and B55.02(c) are as described under payment item 55.02.

Add to this Payment Item the following:

“The tendered rates for all fencing materials shall also include for all costs associated with the factory painting process to produce the required yellow colour.”

Add the following new items:

**B55.10 Complete motor grid gates as per Drawing No. ECS/55/2/C1 to C4**

Item	Unit
(a) Single motor grid gate Type A	No
(b) Double motor grid gate Type B	No

The unit of measurement shall be the number of motor grid gates complete, constructed to the details shown on the standard drawings, ECS/55/2/C1 to C4.

The tendered rates for motor grid gates shall include full compensation for procuring and furnishing all materials including concrete, formwork, rails, mild steel plates, reinforcing, stone packing and jointing material and for installing the gates complete as specified and detailed on the drawings.

The concrete approach slabs, including the underlying sub-base, shall be deemed to form part of the grid gate and will not be measured separately for payment. Fencing and gates adjacent to the grid gate will be measured and paid for separately and any drainage works that may be required will be measured and paid for under Section 2200.

Item	Unit
<b>B55.11 Fence terminating eye at wingwall incl additional holes and rawl bolts</b>	<b>No</b>

The unit of measurement shall be the number of each item approved by the Engineer and installed. The tendered rate shall include full compensation for furnishing and installing fence terminating eye at wingwall including additional holes and rawl bolts.

**SECTION 5600: ROAD SIGNS****B5602 MATERIALS**

Add to Clause 5602 the following sub-clause:

**(I) Concrete**

Concrete for the footings shall comply with the requirements of Section 6400 of the specification.

**B5609 MEASUREMENT AND PAYMENT**

Amend item 56.09 to read as follows:

**B56.09 Dismantling and storing existing road signs**

Amend sub-items (a) and (b) to read as follows:

<b>Item</b>	<b>Unit</b>
(a) Up to 2 m <sup>2</sup>	m <sup>2</sup>
(b) Exceeding 2 m <sup>2</sup> but less than 10 m <sup>2</sup>	m <sup>2</sup>

The unit of measurement shall be the square metre of dismantled road signs stored.

The tendered rate is as described under item 56.09

Add the following new pay item.

**B56.10 Danger Plates**

<b>Item</b>	<b>Unit</b>
(a) Danger plates at culverts	No
(b) Danger plates at other locations	No

The unit of measurement for B56.10(a) and B56.10(b) shall be the number of danger plates provided and erected in accordance with the drawings.

Sub-items (a) and (b) above shall differentiate between danger plates at culverts and at other locations.

The tendered rate shall include full compensation for all the labour and material, excavation, backfilling with soil or concrete, etc., as may be necessary for completing the work in accordance with the details shown on the drawings.

<b>Item</b>	<b>Unit</b>
-------------	-------------

SCMU10-23/24-0010

C3.133

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

**B56.11 Cast in-situ concrete Class 15/19 to footings for signs****m<sup>3</sup>**

The unit of measurement for B56.11 shall be the cubic metre of concrete in place. Quantities shall be calculated from the dimensions shown on the drawings or as authorized.

The tendered rate shall include full compensation for procuring and furnishing all the materials, storing the materials, providing all plant, mixing, transporting, placing and compacting the concrete, curing and protecting the concrete.

**SECTION 5700: ROAD MARKINGS****B5702 MATERIALS****(a) Paint**

(i) Road marking paint

In the first paragraph of this sub-clause, delete "type 2 or type4". Only type 1 paint shall be applied on this contract.

(ii) Retro-reflective road-marking paint

Add to sub-sub-clause 5702(a)(ii) the following :

During actual painting the Contractor shall supply sealed samples of the paint to be used to the Engineer 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

Amend the last sentence to read as

'The colour and luminance shall be 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/m<sup>2</sup> for white new material, and 100 minicandelas/lux/m<sup>2</sup> for yellow new material, as tested within 2 to 6 weeks of application.'

Add Sub-Clause (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 Engineer'

**(b) Roadstuds**

Add the following:

"Roadstuds shall be SABS approved road studs."



**B5704 MECHANICAL EQUIPMENT FOR PAINTING**

Add to Clause 5704 the following :

“The machine shall always operate in the direction of the traffic when applying the outside (yellow) lane markings.”

**B5706 SETTING OUT THE ROAD MARKINGS**

Add the following :

“Where road markings are to be replaced after milling/overlay seal, it is essential that all existing barrier lines and other road marking lines be accurately referenced before commencement of milling or other operations which will obliterate the existing road markings. The position of barrier lines shall be re-assessed on site by the Engineer before the Contractor commences with the road marking.”

**B5707 APPLYING THE PAINT**

Replace the last paragraph with the following:

The centre-line shall be painted immediately after 2.0 km of continuous road has received a new bitumen surface or where, in the opinion of the Engineer, conditions are unsafe.

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.

**B5708 APPLYING THE RETRO-REFLECTIVE BEADS**

Replace the sentence with the following:

‘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 0.34Kg/m<sup>2</sup> of marking.’

**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”:

“, bituminous emulsion, slurry”

Add the following to the last paragraph:

“Where black paint is used, it shall be matt.”

Add the following new clause :

#### **B5715     RMOVAL OF EXISTING ROAD STUDS**

The existing road studs shall be removed from the road surface prior to milling.”

#### **B5714     MEASUREMENTS AND PAYMENT**

##### **B57.05    Road studs:**

Add the following new sub-items:

- (a)     Uni-directional approved road studs

Add the following new sub-sub-items:

<b>Item</b>	<b>Unit</b>
(i)     Yellow	No
(ii)    White	No
(iii)   Red	No
(b)     Bi-directional approved road studs	

Add the following new sub-sub-items:

<b>Item</b>	<b>Unit</b>
(i)     Yellow/red	No
(ii)    White/white	No
(iii)   Red/red	No
(iv)    Red/white	No

SCMU10-23/24-0010

C3.137

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

The unit of measurement and tendered rate for item B57.05 are as described under payment item 57.05.

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 Notification Period.

Item	Unit
<b>B57.06 Setting out and pre-marking the lines (excluding traffic island markings, lettering and symbols)</b>	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.”

**SECTION 5800: LANDSCAPING AND PLANTING OF PLANT****B5801 SCOPE AND DEFINITION****(a) Scope**

Add to Sub-clause 5801(a) the following:

"The Contractor shall also note the requirements of the Environmental Management Procedures in Part C3 C of these Project Specifications, with particular reference to the protection of existing trees and shrubs. Due to the nature of the project site, and the erosion which occurs when trees and grasses are removed, existing vegetation shall be disturbed as little as possible."

**B5802 MATERIALS****(c) Grass seeds**

Add to sub-clause 5802(c) the following :

Unless otherwise instructed by the Engineer the seed mixture to be used for grass seeding of borrow areas and embankment slopes specified shall be (application rate indicated):

Ehrharta Villosa	10 kg/ha
Ehrharta Calycina	10 kg/ha
Chaetobromus degeanus	5 kg/ha
Lolium multiflorum	10 kg/ha

**Total**                      **45 kg/ha**

**(g) Topsoil**

Add the following to this Sub-clause:

"Prior to commencing any earthmoving operations, the Contractor shall strip and stockpile all topsoil to a nominal depth of 150 mm, or as otherwise agreed by the Engineer, within the working area and construction camp for subsequent re-use in the rehabilitation and revegetation 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.

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 sub-clause:

"Prior to topsoiling, 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 revegetated shall be ripped or scarified as directed by the Engineer.

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."

**B5807 TREES AND SHRUBS**

Add the following to Clause 5807

Only trees and shrubs indigenous to the area will be planted. Furthermore, the term trees and shrubs is extended to include indigenous ground covers. Where possible, the plants shall be sourced from local forestry initiatives or from nurseries in the area.

**(a) Positions of trees and shrubs**

Add to sub-clause 5807(a) the following :

Trees, shrubs and ground covers will also be planted at borrow pits, on cut and fill slopes, at bus stops, and at picnic / view sites as directed by the Engineer or as shown on the drawings.

**(d) Maintenance**

Add to sub-clause 5807(d) the following :

Individual trees and shrubs shall be protected to prevent destruction by livestock and other agents. The plant shall be fenced off using a 1.0 metre sided triangle or square, to be erected using 2.4 m Y-shaped fencing standards embedded to at least 1.0 metres, with barbed wire strands at the same spacing as a normal stock proof fence.

During the defects liability period, local residents shall be employed to protect and water the plants, including repairs to the fences as necessary. The number of persons employed and the expected labour costs shall be agreed in advance with the Engineer. A provisional sum is included in the bill of quantities for this purpose.

**B5808 GENERAL****(a) Time for planting**

SCMU10-23/24-0010

C3.140

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

Add to this sub-clause the following :

The Contractor shall not begin planting work until all construction activities in the area to be vegetated have been completed. Generally, the preferred season for planting is late winter into spring, that is either during August, September or October.

**(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 revegetated 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 Engineer."

**B5809 MEASUREMENTS AND PAYMENT**

**B58.03 Preparing the areas for grassing:**

**B58.09 Trees and shrubs:**

Item	Unit
(b) Planting and establishing	

Add the following new sub-item:

Item	Unit
(iii) Ground Covers	No

The unit of measurement and tendered rate for item B58.09(b)(iii) are as described under payment item 58.09.

**B58.10 Extra work for landscaping:**

SCMU10-23/24-0010

C3.141

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

Add the following new sub-item:

Item	Unit
(a) Additional landscaping work as ordered by the Engineer	Prov Sum
(b) Handling costs and profit in respect of 58.10(a) above	%

Extra work may also include the removal of indigenous plants for storage and replanting, as well as the eradication of alien / invasive plants. All such work shall be directed by the Environmental Control Officer. Expenditure of the provisional sum shall differentiate between the types of tasks performed, and shall be recorded as such on the payment certificate.

Add the following additional Clauses to 5800

#### **B5810 REMOVAL, STORAGE AND RE-ESTABLISHMENT OF EXISTING PLANTS**

Where ordered by the Engineer, in consultation with the Environmental Control Officer (ECO), certain plants may be removed from their location and stored for later re-planting. This operation would be ordered in the case of indigenous plants in the road reserve or at borrow pits which are at risk of being destroyed by the construction activity.

The ECO will direct the removal operation, including the depth and diameter of the root ball to be removed with the plants. Suitable containers will be provided through the contract and a storage location identified. A watering regime, and any other requirements to care for the plants, will be advised by the ECO. The plants will be re-established at identified locations under the direction of the ECO.

Payment for this work will be made via a provisional sum, Item 58.10, in the schedule of quantities.

#### **B5811 ERADICATION OF INVASIVE PLANTS**

Where ordered by the ECO via the Engineer, the Contractor shall remove and destroy any plants which are considered to be alien or invasive species, in accordance with the latest environmental regulations. Particular care shall be taken during such operations not to scatter seeds from these plants and to ensure that there is no prospect of re-growth.

Payment for this work will be made via a provisional sum, Item 58.10, in the schedule of quantities.

**SECTION 6400: CONCRETE FOR STRUCTURES****B6402 MATERIALS****(a) Cement**

*Delete paragraph (vi) and substitute the following :*

Where concrete mixes of 30 MPa or greater are specified, other than for pre-stressed members, blast furnace cement and milled granulated blast furnace slag may be used in proportions not exceeding 50 % of the total cement content.

- For lower strength concrete these pozzolanic cements may not be used unless authorised by the Engineer.
- In pre-stressed members milled blast furnace slag may be used but the percentage of slag shall not exceed 35% of the total cement content.
- A 15% slag content is suitable for all works unless otherwise specified.
- In all cases where blast furnace cement or slag are used the Engineer will have the authority to restrict the use of it if the batching plant is deemed to be inadequately controlled.

**(d) Water**

*Add the following :*

Water extracted from any natural stream sources for the manufacture of concrete will not be permitted unless each extraction is stored, tested and found to be suitable for concrete making.

**(f) Curing Agents**

*Add the following:*

Approved curing agents are Curex and Curing W.E.

**B6414 QUALITY OF MATERIALS AND WORKMANSHIP****(a) Criteria for compliance with the requirements**

*Add the following :*

Routine inspection and quality control tests shall be judged in accordance with the provisions of Section 8300 (Quality Control Scheme 2).



**(b) Procedure in the event of non-compliance with the requirements.**

Add the following sentence to sub-clause (i):

The minimum number of cores to be drilled shall be four. Cores containing reinforcement may only be used for testing if a length equal to the diameter containing no reinforcement can be cut from them.

**B6416 MEASUREMENT AND PAYMENT**

Add the following item:

**B64.08 "Manufacture or Supply, transport to site, storage and installation of pre-cast concrete bus shelters as specified. Tendered rate per 3,6 m long shelter complete (3 units)."**

Item	Unit
(a) Shelter using units manufactured in a pre-casting yard on site.	No
(b) Shelter using commercially produced units.	No

The unit of measurement shall be the number of pre-cast concrete bus shelters complete, supplied and installed. Each shelter shall consist of three No precast units 1,22 m wide with left and right hand end closure panels. The profile of the bus shelters is shown on the drawings.

The bus shelters shall be erected such that there is no step or gap in the horizontal and vertical planes between the adjacent units. To this end, careful preparation of the supporting fill and bedding is required. Skew, non-perpendicular, non-horizontal or unevenly installed units will not be accepted and shall be removed and re-erected at no additional cost.

The tendered rate shall include full compensation for the manufacture or supply as appropriate, transport to site and installation of the complete bus shelters, including all labour, plant, materials and tools required to position the units to the correct line and level. **Note that a complete bus shelter consists of 3 pre-cast units. The rate is per bus shelter.**

The earthworks, bedding layers, apron slab and kerbing associated with the bus shelters will be measured and paid for separately under the relevant items of the Schedule of Quantities.

**SECTION 7100 : CONCRETE PAVEMENTS****B7101 SCOPE**

*Add to Clause 7101 the following :*

On this particular contract, the work on concrete pavements may consist of :

- Construction of new pavement as various sections between km 5.6 and km 25.1.
- The installation of additional key beams as may be indicated by the employer's agent.

**B7102 MATERIALS**

*Add to Clause 7102(a) the following :*

All reference to SABS 471 shall be deleted and replaced as specified in Clause B1229 of these project specifications.

**SECTION 7300: CONCRETE BLOCK PAVING FOR ROADS****B7301 SCOPE**

*Add to Clause 7301 the following :*

*On this particular contract, block paving on roads will be confined to raised pedestrian crossings and traffic circles in Coffee Bay.*

*This section also covers the construction of block paving on sidewalks, which are required on the approaches to bridges, in the vicinity of schools, and in Coffee Bay.*

**B7302 MATERIALS****(c) Concrete Paving Blocks**

*Add to Clause 7301(c) the following :*

*On the roadway, the paving blocks shall be 80 mm thick and shall be pigmented a dark grey to black colour on the roundabouts.*

However, the pedestrian crossings shall be pigmented to an orange colour to differentiate the pedestrian crossings from the bitumen surface.

For the sidewalks, a red pigmented 60 mm paving block shall be used. The same blocks shall be used in the middle of the traffic circles and on any paved areas at the view sites.

**(e) Herbicide and ant poison**

Add to sub-clause 7320(e) the following :

It is imperative that proved herbicides and ant poisons be applied prior to laying the paving blocks. Otherwise, damage can occur very soon after construction and will be viewed as a latent defect to be repaired at the contractor's expense.

Inputs for the choice of products to be used will be obtained from the Environmental Control Officer. The manufacturer's safety precautions, and any measures prescribed by the OHS Agent, must be strictly adhered to in the application of these products.

**B7304 MEASUREMENTS AND PAYMENT**

*Amend item 73.02 to read as follows:*

**Item****Unit**

SCMU10-23/24-0010

C3.146

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

**B73.02 Concrete edge and intermediate beams**

<b>Item</b>	<b>Unit</b>
(a) Cast in-situ at back of sidewalks	m <sup>3</sup>
(b) Pre-cast edge beams, Figure 12 kerbs,	m

The unit of measurement for item B73.02(a) shall be the cubic metre of concrete cast in-situ at the back of sidewalks. The quantity shall be calculated from the dimensions shown on the drawings or authorised by the Engineer.

The tendered rate shall include full compensation for furnishing all materials, and constructing the edge and intermediate beams complete as specified, including all excavation and backfilling in all classes of material.

The unit of measurement for B73.02(b) shall be the metre of precast edge beam beams, Figure 12, placed. The quantity shall be calculated from the dimensions shown on the drawings or authorised by the Engineer.

The tendered rate shall include full compensation for furnishing all materials, constructing the edge beam as specified, including all excavation and backfilling in all classes of material.

Add the following section to Series 7000: General of the standard specification:

**SERIES 7000: SUNDRY STRUCTURES**

**SECTION 7600: BRICK AND BLOCK CULVERTS, INCLUDING THE MANUFACTURE OF THE COMPONENTS**

CONTENTS

B7601	SCOPE
B7602	MATERIALS
B7603	EQUIPMENT
B7604	MANUFACTURE
B7605	MATERIAL QUANTITIES
B7606	QUALITY CONTROL
B7607	MEASUREMENT & PAYMENT

**B7601 SCOPE**

This section covers the construction of stormwater culverts using brickwork or blockwork. These types of culverts are specified in order to maximize the use of local resources.

Payment for the construction of the culverts is scheduled under Section 7600 in the Bill of Quantities. However, the payment items are cross referenced to appropriate items elsewhere in the BoQ. For example, excavation will have the same unit of measurement and terms as for excavation in respect of pre-cast culverts, Item 22.01. A list of the appropriate payment references is given in Section B7607.

This section also covers the small-scale manufacture of precast concrete products, bricks and blocks. This is a labour-based form of producing units that can be used in construction and other uses. Production can be carried out in the open, the processes are simple and equipment does not require high capital investment.

The specifications are comprehensive and will be of value to SMME contractors. The section is applicable to small-scale operations, from completely labour intensive manufacture to the use of some machinery either fuel or electricity driven.

Concrete is made by mixing stone, sand, cement and enough water to make the mixture workable (suitable for compaction). The basic concrete mixture and the ingredients are discussed together with plant and equipment requirements.

The manufacturing of the following precast elements are covered in the section:-

- (1) Lintols and cover slabs for brick and block culverts.
- (2) Blocks for the walls of culverts.
- (3) Edge restraints for sidewalks.
- (4) Edge restraints for the Waterbound Macadam Base
- (5) Fencing Posts

## **B7602 MATERIALS**

### **(a) Cement**

Cement is the standard binder used with aggregates for the manufacture of precast concrete.

The quality of cement, particularly with regard to the rate of strength gain and sensitivity to curing, or lack of curing in many cases, should be considered in choosing a cement. In cold weather the rate of gain of strength is reduced and “ultimate” (say 7 or 28 day required strength) strength may take longer. Concrete may have to be left in the moulds for a longer period before demoulding or masonry units made on an egg-laying machine may have to be left on the concrete slab for an extra day.

Only cements or cement blends bearing the SABS mark should be used. This means that all aspects of manufacture have been controlled and meet acceptable standards.

All cement should comply with SANS 50197-1:2013, Cement types CEM II and CEM III will develop strength more slowly than CEM I. This may affect production rates. For precast concrete it is recommended the strength class be at least 32,5N preferably 42,5N or 42,5R.

### **(b) Aggregates**

Aggregates form the bulk of concrete. They significantly affect the cost and quality of the final product and the ease with which the products are manufactured and finished. Aggregates used are mostly derived from solid rock, which is crushed or has been broken down by weathering. Alternative aggregates or waste products such as furnace clinker and furnace bottom ash, fly ash, crushed burnt clay brick and slag are also used extensively in the manufacture of concrete masonry units, where available. All sources of these aggregates should be checked to see they are of adequate quality. This might be done by testing the aggregates in a laboratory or by reference to the successful service performance of the aggregates in concrete, say over a 5-year period.

Aggregates are divided into two types according to size:-sand (or fine aggregate – most material passing through a 4,75 mm square opening) and stone (or coarse aggregate consisting of particles too big to pass through a 4,75 mm sieve).

The physical properties of shape, surface texture and grading of the aggregates are significant factors in the manufacture of concrete.

However, in the manufacturing and quality control process the most important factor is the consistency of the quality of aggregate, thus avoiding frequent adjustments of mix proportions or in concrete masonry unit manufacture adjustments to the operation of the “block” machine.

There is no such thing as an ideal grading as there are conflicting requirements for an aggregate in the manufacturing process.

For instance for the filling of moulds, aggregates of rounded chunky shape and smooth texture (like glass marbles) produce concrete that flows easily. But on demoulding or on extrusion of the masonry unit from the mould green strength (early strength) is required. This is best achieved by using aggregates of elongated shape and rough surface texture.

Generally, the choice of an aggregate depends on its availability, cost, the ease with which it can be made into the required product (especially hollow masonry units with thin shells) and the properties (strength, durability, appearance) the aggregate imparts to the product.

The choice of aggregates is a compromise or optimisation of the above factors. Blending of up to three aggregates is generally the practical solution to obtaining suitable aggregates. To evaluate the suitability of an aggregate check:

Before use

- general soundness and chemical stability (especially waste products)
- physical characteristics (particle shape, surface texture, grading and water absorption)

In use

- performance in the manufacturing process noting any production problems
- influence on the properties and characteristics of the final product, noting surface textures, arises, uniformity, density and strength

In general, aggregates should consists of clean, hard, strong, dimensionally stable and durable particles free from clay coatings or foreign materials (especially organic matter) that may interfere with the normal strength development of the cement. Aggregates that do not have a reliable service performance record should be tested in a laboratory.

### **(c) Pigments**

Pigments may be used to colour concrete. The production of colour-stable concrete requires care both in choice of colours and in the composition of the concrete mix. Specialist advice should be sought on best pigments to use to obtain the required colour and their dosage.

The final choice of pigment and appropriate dosage will be made on the visual examination of dry concrete in which the pigment has been used. Usually in the preliminary stages, concrete is made with a range of dosages of cement pigment to determine the optimum dosage to give the required colour. Dosages should not exceed 7% of the mass of cement.

### **(d) Admixtures**

Chemical admixtures are materials (usually in liquid form) that are added in small amounts to the concrete at the mixing stage to modify the properties of concrete in either the fresh and/or the solid state. Properties of concrete that may be modified by the use of an admixture are one or more of the following:

Fresh concrete

- workability and cohesiveness in the wet concrete viz. concrete flow may be improved and the likelihood of segregation reduced
- reduction of water content without changing workability means a reduction in drying shrinkage and cement content
- setting time, either retarded or accelerated to suit special requirements of precasting, finishing and demoulding

Hardened concrete

- increased rate of gain of strength

SCMU10-23/24-0010

C3.150

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams for a period of 36 months

increased durability  
decreased permeability

The type of admixture to be used should, in the first instance, be based on the manufacturer's advice. The final decision should be based on cost comparisons and experiments. Observations of the effect of admixtures on the concrete would cover:

- flow and compaction of concretes in the mould
- ease of demoulding or extrusion from the moulds (CMUs)
- visual examination noting uniformity and segregation, if any
- strength and drying shrinkage of the hardened unit.

Admixtures should not be regarded as a substitute for good materials, good mix design and good workmanship.

(e) Water

Water in concrete makes the fresh concrete workable and reacts with the cement to give strength to the concrete; its quality is important. Water fit to drink is normally suitable. Evaluation of suspect water such as industrial wastewater, water from underground mining activities and raw effluent may be carried out by observing if the setting and strength gain of the concrete is affected.

Turbid (murky) water should be allowed to settle before use to remove suspended solids which could have unexpected effects. Algae in mixing water can give a greenish tinge to the concrete, while entrained air might reduce strength.

Seawater may be used in concrete where efflorescence and mottling does not matter and in unreinforced concrete. Seawater causes rusting of steel-reinforcement, lifting hooks, ties, etc. and should not be used in reinforced concrete.

## **B7603 EQUIPMENT**

### **(a) Mixers**

Free-fall mixers, e.g. tilting drum and reversing drum have blades that lift the concrete to the top of the drum and allow it to fall and so mix. These mixers are suitable for most normal concretes but cannot handle concretes of low workability, of lean mix proportions and concrete that is over-cohesive (very sticky). Mixing time is between 90 and 150 seconds.

Forced-action mixers e.g. pan mixers have blades that shear the concrete. Pan mixers consist of either a stationary pan with rotating blades or a rotating pan and blades. This type of mixer can handle concrete of any workability especially the semi-dry concrete mixes required for making bricks and blocks. Mixing time is between 60 and 120 seconds.

It should be noted that concrete can be mixed by hand if so required in the planned manufacturing process.

## **B7604 MANUFACTURE**

### **(a) Operations**



The manufacturing process involves a wet side viz. batching, mixing and casting or extruding of the CMUs, with appropriate concrete mixes, and a dry side, viz. curing, handling and assessment of the finished product.

**(b) Batching (including storage and handling)**

Equipment and structures required for the various operations are discussed. Basic principles are that:  
materials should be protected from deterioration or contamination until used  
methods of storing, handling and batching should ensure minimum segregation of the aggregates i.e. separation of the different sizes in the aggregate  
all materials, cement, aggregates, water, pigments and admixtures must be batched to acceptable degrees of accuracy

Containers used for batching should be robust. Builder's wheelbarrows (which have a capacity of 65 ℓ) and steel buckets and drums are suitable. Batching should be done by pouring material loosely into the container to overfill it, and striking off level with the brim. Partial filling of containers leads to non-uniform batching. Containers should therefore be sized accordingly.

To avoid errors, there should be sufficient containers to measure out a complete batch without having to use any container more than once. The concrete must be thoroughly mixed.

**(i) Cement**

Cement may be stored in paper bags but protected from any deterioration or in silos. Cement should preferably be batched by mass, either using a full 50 kg bag or weighing each batch of cement either from a silo or opened bags. Volume batching must allow for the bulking of the cement, normally around 20%.

**(ii) Aggregates**

Aggregates should be stored and handled so as to reduce segregation and contamination. Storage areas should be adequate for frequency of delivery and subsequent demand. There should be no intermingling of different aggregates.

If wet aggregates are delivered they should be allowed to drain; normally on a concrete surface. When some sands drain silt and/or clay are deposited at the base of the stored sand. These materials should be removed and discarded when ground storage areas are emptied. When frequent rain occurs aggregates should be stored under cover.

Batching may be carried out by volume or mass. With volume batching, an allowance for moisture in the sand should be made and for its bulking.

Some clinker or ash aggregates absorb up to 20% of their mass in water. Pre-wetting the aggregate reduces the likelihood of a rapid loss in workability of the concrete during and after mixing.

**(iii) Water**

Water is batched by volume. An experienced operator can judge the amount of water required in the particular concrete. If stored in tanks, the water should be protected from low temperatures, as this affects the setting time of the concrete and its rate of gain of strength.

In hot weather, water flowing in black pipes subject to direct sunlight can become excessively hot and cause rapid loss of workability of the concrete. Pipes should either be protected or insulated, or water should be stored when cool for subsequent use.

(iv) Pigments

Pigments are best batched by pre-weighing, and storing in plastic or other suitable containers. The pigments should be introduced gradually into the dry ingredients (cement and aggregate) during the mixing process.

(v) Admixtures

Admixtures are usually liquid and measured by volume. Admixtures should be checked for settlement. Stirring at regular intervals may be required.

Admixtures should preferably be added to the mixing water during the mixing process.

(c) Mixers and mixing

The concrete must be thoroughly mixed. Small quantities may be mixed by hand on a concrete floor or steel sheet. Machine mixing is preferable. For semi-dry mixes the best type of mixer is a pan mixer. Free-fall drum mixes are suitable for the more workable concrete.

The order of charging the mixer and the duration of the mixing are important factors affecting the quality of unit being made and its variability.

Natural aggregates of low water absorption are best charged with all aggregates, then all cementitious materials.

Dry mix combined materials and then add required water. Mix for at least 60 seconds with pan mixers and 120 seconds with drum mixers. If subsequently mixes have to be re-tempered, mix concrete for at least one minute after addition of water.

For clinker (ash) type aggregates of high water absorption charge mixer with aggregates. Add half to two-thirds of total mixing water and mix for 30 seconds. Then add cementitious materials and balance of mixing water and mix for at least 90 seconds.

Mixing duration should ensure thorough and intimate mixing of the mix ingredients. Excessively long mixing times, more than 15 minutes, affect the workability adversely of the concrete. The amount of water added to the mix depends on the workability required. This depends on how the concrete is to be compacted in the moulds.

(d) Transporting

Transport the concrete from the mixer to the mould in such a way that it does not segregate. If segregation (separation of stone and cement paste) is unavoidable, remix the concrete before placing it in the mould. Protect the concrete from contamination and from drying out.

Distribute the concrete evenly in the mould. Do not place the concrete in one position and rely on the vibration to distribute it because this causes segregation.

(e) Compaction and finishing

The concrete is to be compacted into the mould by any method that will ensure dense concrete. Precast concrete is usually compacted by means of mechanical vibrators attached to the mould or by placing the mould on a vibrating table. Continue to vibrate the concrete until a water sheen appears on the surface and air bubbles no longer break through the surface.

Hand compacting, which should be used only for limited numbers of small items, may be done by: tamping the concrete with the end of a conveniently sized piece of timber or steel; jiggling or jolting the mould; or a combination of tamping and jiggling.

Use the edge of a screedboard (a planed wooden plank used on edge) which rests on the top edges of the mould to strike off the concrete flush with the top of the mould. The concrete may be woodfloated if necessary.

Newly cast concrete must be protected from rain which could damage and soften the surface. It is also most important to protect the concrete against loss of moisture from the exposed surface. If moisture is lost the fresh concrete shrinks and this shrinkage can cause serious cracking. Possible ways of preventing moisture loss are:

Work indoors or at least in shade.

Place screens around the working area to keep out drying winds

Once the concrete has been compacted, struck off and floated, maintain a water sheen on the surface by fog spraying with water or cover with plastic sheeting.

Concrete must be protected until it sets and curing can start.

Precast items must be demoulded carefully so as to avoid damage to the concrete. Once they are demoulded, they should be stacked or supported in such a way that they do not warp or twist.

Finishes and decorative effects are basically achieved by either casting the concrete against a formed or sculptured mould surface or by the early-age working of the surface.

Working the surface while the concrete is in a green state might involve wood or steel trowelling, brooming, tooling, rubbing and carving, sprinkling special colour aggregates and compacting into the surface, or exposing the coarse aggregate by gently washing out the fines.

The concrete should be easily demoulded. Either the moulds can be pulled apart and the product left in position or the moulds turned upside down to remove the product from the mould. The ease of demoulding will depend on the mould oil used and the taper of the mould, usually 1 to 50 to 200 for steel moulds and less for plastic moulds.

Any minor blemishes on the finished products such as small chipped edges and corners and blowholes (small voids of roughly spherical shape) should be repaired as soon as possible if the quality and value of the product warrants repair. With the repair of blowholes no surface preparation is necessary. Use a mixture of 1 cement to 2 plaster sand, by volume, plus enough water to give a slurry consistency. Do not pre-wet the concrete and work the repair mix over the whole area with a sponge until holes are filled. Remove excess material with a wet sponge, spray surface lightly with a mist sprayer and cover immediately, with plastic sheeting. Keep covered for seven days and then allow to dry slowly.

With other repairs, ensure that feather edges are avoided. Where necessary, the outline of a repair should be cut with a masonry cutting disc or saw to ensure a square edge. (See Figure 1.2).



Figure 1.2: Edges to repairs

Remove loose material and clean. Prime the surface with a slurry of equal volumes of cement and dry plaster sand with sufficient water to achieve a paint consistency. Apply the mix one volume cement to 2 volumes sand, with sufficient water to be able to fully compact with a trowel. Finish surface with wood or steel trowels, sponges or brushes. Moist cure the repair for at least seven days.

#### (f) Concrete mix proportions

##### (i) General

The ingredients of concrete should be combined to give the required properties to the product at lowest cost i.e. with the hardened concrete the product should have strength, durability and suitable appearance and in the fresh state workability and cohesiveness so the concrete can be “cast” into moulds easily without segregation of the ingredients, and can easily be compacted.

Precast concrete requires a wet flowable mix, the concrete is compacted finished and left in the moulds for some time, hours or days before demoulding. Precast products are prone to damage and breakages when they are demoulded and when they are handled. Concrete should therefore have a relatively high strength, which should develop as rapidly as possible after casting.

Concrete for making masonry units, while having the same ingredients, has different mix proportions and workability because of different equipment being used and manufacturing techniques. As the units are extruded (pushed out) from the moulds after only 5 to 30 seconds in the moulds the concrete has to have sufficient “green” strength so that the bricks or blocks will not after extrusion collapse or lose shape. This is achieved by using semi-dry concrete of low workability and aggregates and mix proportions that mechanically interlock. Strength is required for the units to be removed from the slab or pallet so they are not damaged in handling.

To determine the best mix proportions trial mixes are necessary. In the first instance, nominal mix proportions are used (See Tables 1.1 and 1.3) and then by a process of trial and error the mixes are adjusted to suit the particular product being made, the manufacturing equipment and the competence of the operator using the equipment. In assessing the best concrete mix the quality of the final product is the main criterion, while ease of manufacture at lowest cost must be considered.

Strength may be determined by testing the whole product or by making concrete cubes from the mix used and testing in a laboratory.

Durability suggests long life maintenance free concrete and is based on a service record of satisfactory performance. This is not necessarily known at the time of manufacture and therefore good sound and acceptable practices must be followed, e.g. clayey sands in the concrete should be avoided as drying shrinkage and the possibility of cracks and crazing occurring are likely. Also sands that require an excess of water when used in concrete should be avoided. Products should not crack easily when lifted or handled.

(ii) Trial mixes and manufacture: Precast concrete products

Trial mix proportions of cement, sand and stone are given in Table 1.

Table 1.1 : Trial mix proportions by volume for concrete for precasting

	6.7 mm stone		9.5 mm stone		13.2 mm stone		19 mm stone	
	Large batch	Small batch	Large batch	Small batch	Large batch	Small batch	Large batch	Small batch
Cement	1 bag	1	1 bag	1	1 bag	1	1 bag	1
Sand	75 l	2	75 l	2	75 l	2	75 l	2
Stone	40 l	1	50 l	1¼	55l	1½	75 l	2

The largest size stone should be used for highest strength, or lowest cement content. The size of stone should not exceed about one quarter of the thickness of the concrete item being precast – see Table 1.2

Table 1.2: Minimum concrete thickness for various stone size

Stone size, mm	6.7	9.5	13.2	19.0
Minimum concrete thickness, mm	30	40	50	60

The following should be observed when adjusting the mix proportions:

use sufficient water in the mix to give a plastic mix that can be compacted with the means available.

for small batches use the same size container for each material. For example if the container volume is 6 l, the mix for 9,5 mm stone is Cement: 6 l Sand: 2 x 6 = 12 l Stone: 1¼ x 6 = 7,5 l

measure all materials by pouring loosely into the container and striking off flush with the brim.

measure sand in the damp state.

sand and stone content should be assessed as follows:

Make up a batch of concrete according to the proportions given in Table 1.1 Compact the concrete in the mould using the means available (i.e. mechanical vibration or hand tamping). Examine the top surface of the concrete. If stones protrude, the stone content of the mix is too high. If not, scrape the concrete with the point of a nail. If the stone content of the concrete is right, stone particles should be found about 2 mm below the surface. If the shallowest particles are deeper than this, the stone content is too low. If stone content is too high, reduce it by say 10% and increase the sand content by the same amount (same overall volume). Then reassess. If stone content is too low, increase it by 10% and reduce the sand content by the same amount. Then reassess.

Preparing the mould: Surfaces

In the manufacturing process, attention should be given to :

surfaces of the mould that will come into contact with the concrete should be cleaned and then given a very thin coating of mould-release oil. (Rubber moulds do not normally require a release agent).

mould-release oils are formulated specifically for concrete casting and are obtainable from oil companies and reputable manufacturers of concrete admixtures. The use of straight lubricating oil is not recommended.

Reinforcement and its fixing:

If precast units are reinforced, the reinforcement should be kept in the correct position in the mould while the concrete is placed and compacted. Spacers of plastic or high-strength mortar may be used to support the steel and ensure that the minimum concrete cover is provided.

Plastic spacers are commercially available from specialist suppliers.

Mortar spacer blocks may be made with a 1:1 ratio of cement and concrete sand and sufficient water to make a workable consistence. Details of a spacer block are shown in Figure 1.3. Cover the blocks to prevent drying out after casting and place them in water the next day. Keep the blocks in water for at least a week before using them.

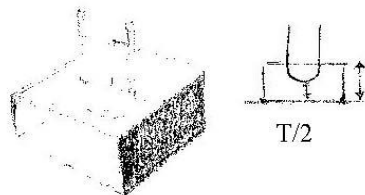


Figure 1.3: Details of mortar spacer block

(iii) Trial mixes and manufacture concrete masonry units

The trial and error process for determining best mix proportions for concrete masonry unit manufacture requires a rigorous and thorough approach otherwise false conclusions will result and mix proportions will be accepted and used that are not the best. Final decisions on aggregate blends and concrete mix proportions are based on observations, analysis of actual manufacture and the results of tests on the units made.

This involves the following steps and is influenced by the type of machine used and how its operated and the units being made, bricks or blocks, hollow or solid:

- determining the best blend of aggregates
- determining the aggregate to cement ratio
- determining the optimum water content
- a cost analysis

The starting point is using a mix of 1:8 of 50 kg cement to 4 wheelbarrows aggregate.

If 3 materials are available: stone, river sand and pit sand, (NOTE: if crusher sand available and does not have an excess of very fine material (say dust) it may replace the river and pit sand blend) try the following blends

Table 1.3: Trial mix proportions by volume for manufacturing bricks and blocks

Cement (50 kg bag)	Stone	River sand	Pit sand
	Wheelbarrows		
1		4	
1		3	1
1		2	2
1	1	2	1
1	2	1	1
1	1	1	2

If an existing mix has been used vary the aggregate blends; firstly to be coarser and then secondly to be finer than the existing mix by small changes in the various materials.

In all cases use as much water as possible in the mix so that the units don't lose shape on being extruded from the mould, or become too sticky (cohesive) because of clayey material in the sand.

Highest strengths of units occur when maximum water content is used. Often the surface texture of the unit will change from smooth and uniform with little water to a coarser texture with more water. The coarse texture units are normally stronger using the same aggregate blends. If the surface texture is too coarse, increase the fines and reduce the coarse materials.

Besides noting the surface texture of the units observe how easily the concrete flows into the mould, particularly with hollow units where the shell width is normally between 25 and 35mm.

With hollow units the maximum size stone is 6,7 mm but with solid units the stone size can be up to 19 mm. Generally mixes with large size stone are more economical in cement than mixes with small size stone for the same compressive strength. Also more stone and less sand are required in the mix with large size stone.

To determine the best cement to aggregate ratio for the masonry unit being made is to test the unit to destruction in a compressive strength test. If this is not possible, then observations have to be on all aspects in the manufacture and service performance of the unit on site to decide on cement to aggregate proportions noting any defects that occur such as chipped corners, edges and cracks.

If the best blend of available aggregates is unsatisfactory in making the required masonry unit, consider using admixtures. Further trial mixes are then necessary.

Once the aggregate blends and cement to aggregates ratios have been decided upon, then the optimum (best) moisture content should be determined. The water content depends on the materials, mix proportions, characteristics of the machine and how operated or how well concrete compacted into moulds by hand, the dimensions and configurations of the units being made. The mixer operator or machine operator should be

trained to achieve the best water content consistently. A water sheen (glistens) on the external face of the unit immediately after extrusion is an indication that the water content is near optimum.

With “wet” mixes using an egg-laying machine, difficulty is sometimes experienced in removing units the next day from the concrete slab. Usually a rough-textured concrete slab surface, say wood floated as distinct from steel trowelled will have less adhesion bond between unit and slab than a smooth textured surface.

A cost analysis should be made, based on the concrete mix proportions to be used in full-scale production and costed out in terms of material and production costs. In determining the yield of the mix, the mass of all ingredients divided by the average mass of the unit will determine the yield.

Often aggregate is delivered and priced by volume and aggregate is batched by mass. It is necessary to convert the unit cost into an appropriate unit cost, say cost per kg.

(iv) Straining Posts, stays, standards and droppers to fencing

Concrete posts shall be pre-tensioned with stressing wire that complies with B.S.S. 2691 and has a tensile strength of 1700 and 1850 MPa. Final compression shall be between 6.5 MPa and 6.9 MPa. The initial pre-stressing force shall not be higher than 70% of the ultimate tensile strength of the wire. The pre-stressing force shall not be transferred to the concrete until such time as the concrete has attained 75% of its 28 day strength.

Concrete shall be manufactured from 13.2 mm stone and shall have a 28 day strength of 35 MPa. Minimum cover shall be 20 mm.

Stays shall be fixed to the uprights using “SIKADUR 42” or similar. Intermediate posts to be provided with holes to enable “Razor wire” to be clipped to post as shown on the drawings. “

**(g) Curing**

Concrete is cured by ensuring that there is sufficient moisture available and that the temperature is suitable for the chemical reaction (called hydration) between cement and water to occur. Concrete does not gain strength by drying out. If allowed to dry out soon after manufacture it will not gain its full strength. At low temperatures the chemical reaction takes place more slowly and products have to be left in their moulds for longer periods. At higher temperatures, the chemical reaction is more rapid but the quality of the mature product may be inferior.

Concrete products may be cured by immersing in water, or spraying continuously with water, or wetting the concrete and wrapping or covering with a plastic sheet. Curing should be continued for at least 7 days in normal weather (20 °C to 25 °C) and longer at lower temperatures.

**B7605 MATERIAL QUANTITIES**

The quantities given in Tables 1.4 and 1.5 are approximate; they form a basis for a first estimate of quantities to be used in manufacture. As production progresses, checks should be made on quantities of materials used. The mix proportions in the tables are based on materials (sand and stone) being batched in a loose state i.e. poured loosely into the batching container without being compacted.

The volume of a 50 kg bag of cement when poured loosely into a container is approximately 38 to 40 litres. No allowance has been made for wastage.



Table 1.4: Material quantities for precast concrete ( $\pm$  25MPa at 28 days)

Material	6,7 mm stone		9.5 mm stone		13.2 mm stone		19.0 mm stone	
	Large batch	Small batch	Large batch	Small batch	Large batch	Small batch	Large batch	Small batch
Cement Sand Stone	Quantities for 1 bag of cement in volume of damp bulked aggregates							
	1 bag	1	1 Bag	1	1 Bg	1	1 Bag	1
	75l	2	75l	2	75l	2	75l	2
Cement, bag Sand, litre Stone, litre	Quantities for 1 cubic metre of concrete in volumes of damp bulked aggregates							
	10.0		9.5		9.2		8.4	
	750		710		695		625	
Cement, kg Sand, kg Stone, kg	Quantities for 1 cubic metre of concrete in mass (kg) of damp material							
	500		475		460		420	
	870		825		805		725	
	600		715		765		940	

Table 1.5: Material quantities for concrete masonry units

Mix proportions cement to aggregate approximate	Whole bag mixes (50kg)							
	Cement sand mixes			Concrete mixes (10 mm stone) per cubic metre of concrete				
	Per batch	Per cubic metre of mortar		Per batch		Per cubic metre of mortar		
	Sand, l/bag	Cement, bags	Sand m <sup>3</sup>	Sand l/bag	Stone, l/bag	Cement, bags	Sand, m <sup>3</sup>	Stone, m <sup>3</sup>
1.4	150	8.8	1.35	120	50	8.1	1.0	0.4
1.5.25	200	7.3	1.35	150	60	6.5	1.0	0.4
1.6.50	250	5.8	1.35	200	80	5.0	1.0	0.4
1.8	300	4.8	1.35	240	90	4.2	1.0	0.4
1.10.50	400	3.5	1.35	310	130	3.2	1.0	0.4
1.11.75	450	3.1	1.35	360	140	2.8	1.0	0.4

Table 1.6 overleaf provides materials quantities and mass of single masonry units based on:

Loose bulk densities, kg/m<sup>3</sup>: Sand 1400, Stone 1500

Relative densities: Sand 2,65, Stone 2,65

Bulking of sand, 20%

Table 1.6: Volume and masses for concrete masonry units

Work size unit 1xbxh	Solid units		Hollow units			
	Volume	Mass kg	No.	of	Minimum shell	Volume

	litre		cores	thickness mm	litre	
Modular dimensions						
190x90x90	1.6	3.4	-	-	-	-
290x90x90	2.4	5.2	2	25	1.7	3.5
290x140x90	2.4	8.1	2	25	1.9	4.2
290x140x140	3.7	12.6	2	25	2.9	6.5
390x90x90	5.7	7.0	2	25	2.1	4.6
390x190x90	3.2	14.8	2	32	3.5	7.7
390x90x190	6.7	14.8	2	25	4.5	9.9
390x140x190	10.4	22.9	2	25	5.4	11.9
390x190x190	14.1	31.0	2	32	7.6	16.7
Imperial dimensions						
222x106x73	1.7	3.8	-	-	-	-
440x110x220	10.7	23.5	2	25	7.5	16.5
440x140x190	11.8	25.8	2	25	6.0	13.2
440x220x220	21.3	46.9	2	37	10.9	24.0

NOTE: Hollow unit (block) quantities are based on maximum core size and minimum shell thickness. Cores taper 3 mm in 190 mm and 1,5 mm in 90 mm. Webs taper in both directions. Solid units have no cores. The mass is based on using natural aggregates with a concrete density of 2 200 kg/m<sup>3</sup>

#### **B7606 QUALITY CONTROL CHECKS ON MANUFACTURING PROCESS SCHEDULE OF CHECKS**

Table 1.7 provides guidance on quality control checks which should be conducted in the manufacturing process. Figure 1.4 outlines some practical checks which can be conducted in the manufacture of concrete masonry units in the absence of laboratory equipment.

Item	Property to be checked	Test	Frequency	Notes
<b>MATERIALS</b>				
Cement	General Quality	See Notes	See Notes	Check cement of right type and cement has an SABS mark on bag
	Contamination by moisture	Visual examination for lumps in cement	When contamination is suspected	Cement contamination occurs during transportation or storage. If lumps not broken by hand, sieve out lumps and use a richer mix.
	Age of cement at time of use	Compare delivery dates and date of proposed use	Test when cement is older than 3 months and cement is stored in bags	Ask cement manufacture to test and advise. Loss of strength occurs with time.

Aggregates	Quality as ordered and delivered	Appropriate tests (Maybe visual such as right size stone, clay or organic matter in sand, etc.)	When quality suspect	Initial acceptance criteria for aggregates vary and are unique for each manufacturer. More important is consistency of quality of aggregates in manufacture.
Pigments	General quality	Manufacturer / Supplier to provide test certificate	At beginning of production and when changes noted	
Admixtures	General quality (check storage and shelf life not exceeded)	Obtain test certificates or quality statement on admixture by manufacturer/supplier	At beginning of production and when changes notes	BS 5075 Parts 1 and 3 details specification requirements
Water	Purity as it affects setting and strength of cement	Refer SABS 0100-2	When quality of water suspect	Municipal water needs to be checked.
Reinforcement steel	General quality  Contamination (free from loose mill scale and other coatings that will adversely affect bond)	Obtain manufacturers test certificate  Visual check	At commencement of contract  Daily or at frequent intervals when rebars being used	Refer SABS 190, 920 and 1024
<b>PRODUCTION</b>				
Cement	Type of cement	Visual check of type, bags or delivery note. Bags not broken	When delivered	
Aggregates	Appearance	Visual check on type, cleanliness, contamination and segregation	When delivered	
	Sampling and preparation of test	SABS SM 827 SAMS SM 828	When any testing done	Testing representative samples important for

	sample			meaningful test results.
	Grading (Sieve analysis)	SAMS SM 829	When changes noted that affect quality of product	Compare grading with previously established grading limits.
	Relative density	SAMS SM 844	At beginning of contractor if geological type of aggregate changed	Information used in the design of mixes or calculations of yield of mixes based on voids in aggregates.
	Bulk density and voids content	SAMS SM 845	When changes noted or every 50 to 150m <sup>3</sup>	Information used design of mixes or calculations of yield of mixes. Voids content used as a control check on quality of blended aggregates.
	Bulking of sand	SAMS SM 856	When moisture content of sand changes significantly	Required for adjusting volumes of sand in batching.
Pigments	Type	Visual check on containers and/or delivery note	When delivered	
Batching				
General	That correct materials and correct mix proportions used	Visual check materials. Check mix proportions	Daily and when new mix proportions specified	
Cement	By mass	With 50kg bags no test required. Check load scale accuracy	Daily	A split bag of 25 kg parts can be measured by equal volumes.
	By volume	Check container volume that allowance made for bulking	When container first used or when type of cement changed	Note: Different types of cement bulk differently. Volume batching of cement is poor practice.
Aggregates	By mass	Check moisture content of sand and adjust mass	Daily	
	By volume	Check container size.	When first used.	Establish by experiment

		Check allowance for bulking	When significant moisture changes occur.	a sand bulking versus moisture content curve for each sand.
Admixture	By volume	Check dispensing apparatus set correctly	When first used. Daily	
Pigments	By mass	Check correct mass	Daily	Normally pigments pre-weighed and placed in container for subsequent introduction into the mix.
	By volume	Check container size	When first used	
Low density aggregates such as clinker	Soundness (pop-outs)	Refer to SABS 794 and SABS 1215	When pop-outs noted and then twice per month	Test required when clinker, ash and similar waste products used.
	Sulphur trioxide	Refer to SABS 794	Once per month or when problems noted	
	Loss on ignition	Refer to SABS 794	Once per month or when problems noted	
Water addition	Water content	Visual assessment by operator of concrete workability and amount of water required	Each mix made	Various aids can be used by operator in visually judging water required, i.e. hand and bar tests.
Reinforcement	Type, size and not contaminated	Measurement and visual examination	When used	Check dimensions if reinforcement bent, i.e. as in stirrups.
<b>Mixing</b>				
	Materials to be used	Visual check that all ingredients of correct type and mixer not overloaded	Daily	
	Uniformity of mix	Visual	Frequency	Particularly important with hand mixing.
	Cleanliness of mixer	Visual	Daily or when break in mixing	With hand mixing ensure surface on which ingredients mixed

				is clean.
	Adjustment of scrapers etc. in mixer (if present) for wear and correct adjustment	By measurement	Daily	Important in pan mixers to prevent segregation of ingredients.
	Order of introduction of mix ingredients	Visual	Daily	Order of batching to be determined by experience. Pre-mixing absorbent aggregates such as clinker with water to be considered.
	Mix consistence	Visual	Each mix	If consistence, viz. workability, plasticity, etc. not correct immediately investigate reason.
	Duration of mixing	Check time of mixing from time all water and cement are in contact, to discharge	Frequently	Minimum and maximum mixing times to be given to mixer operator.
	Re-tempering	Visual	When mixing time extended, loss of workability, and extra water added	Operator to be advised on maximum amount of water that can be added
	Discharge	Visual to ensure complete discharge	After each mix	Ensure no build-up of mortar or concrete in the mixer.
Precast concrete products (refer also to general comments)				
Mould	Correct type, dimensions, accuracy and undamaged	Visual and by measurement	At beginning of casting and afterwards at frequent intervals	Check moulds for wear and damage.
	Preparation for casting	Visual	Frequently	Check use of mould release oil. Rubber moulds do not require a release agent.

Reinforcement	Correct type, diameter and bending dimensions	Measurement	Frequently	Check against drawings.
	Position in mould with correct cover	Measurement and check spacer blocks	Frequently	Refer drawings and specification.
Concrete	Mix ingredients and proportions	Visual	At beginning of casting and frequently	Refer to section on materials and batching.
	Batching, mixing, placing, compaction and finishing	Measurement and visual	At beginning of casting and frequently	Ensure concrete does not segregate in transporting and placing. Check best compaction techniques by hand, vibration immersion or mould, or jolting. Check finishing-trowelling hessian drag, sand or stone topping, etc.
Concrete masonry units (refer also to general comments)				
Mould	Correct type, dimensions, accuracy and undamaged	Visual and by measurement	Regular checks on growth of unit sizes	Dimensional tolerances to SABS 1215.
	Relationship between plan dimensions of moulds and tamper head	Visual and by measurement	When excessive amount of concrete extruded between tamper head and mould	Also applies to small machines hand operated.
Machine Operation	Functioning of machine	By observation of how equipment operates	When problems noted	With single block moulds ensure proper compaction of concrete in mould.
	Distribution of concrete into mould box	Measure heights and mass of fresh units over total mould area	On introduction of new moulds, and/or concrete mix, at frequent intervals	Non-uniform distribution of concrete in moulds requires special attention.
	Primary and secondary vibration	Check duration of vibration times	Frequent intervals	The degree of compaction of units by vibration significantly

				affects strength of units and productivity. With hand compaction ensure unit well tamped to required height.
	Surface appearance on extrusion from mould that units not damaged or distorted	Visual	Frequently	Check presence of water sheen on face of unit, concrete sticking to tamper head on extrusion, uniformity of texture, colour and compaction.
	Height of unit	By measurement	Frequently	For consistent surface texture compressive strength of units should be in an agreed range.
General comments: precast concrete and concrete masonry units				
Moulds, pallets and working area	Condition of moulds, pallets and concrete surface on which operations take place	Visual	Frequently	Maintain moulds and pallets. Keep working surfaces free from debris, etc.
Handling	Damage, if any, in demoulding, or depalletising, transporting and stacking	Visual	Frequently	Products should be stored and stacked on hard, plane and unyielding surfaces which drain.
Curing	Protection of fresh products/units and curing (duration and temperature)	Visual	Ongoing	Extend and types of curing to suit local requirements and products / units being made.
Storage	Marking of stacks for subsequent identification, testing and clearance for delivery	Acceptance and control testing	Ongoing	Allow for products / units not complying with required standards to be stacked separately for subsequent management decision on their disposal.



## TESTING

Ideally all products made should be tested regularly for compliance with requirements such as strength, etc. and the production process monitored to ensure that products are not over or under strength, i.e. that the manufacturing process is not wasteful viz. too much cement being used mainly or products condemned for say inadequate strength. There should be a continuous process of assessing the quality of products made and modifying the process to give best and most economical production.

If testing is impractical or unaffordable, products should be continually assessed for dimensional accuracy, surface finishes and whether corners and edges damaged on demoulding or when transported, stacked and delivered to site. Reports back from site on satisfactory or unsatisfactory performance of products in service can assist in assessing the quality of products.

## B7607 MEASUREMENT AND PAYMENT

B76.01 Manufacture of components for culverts, and for other pre-cast items, on site.

(a) Concrete Lintols / cover slabs for culverts

Item	Unit
(i) 1.030m x 0.3 m	No
(ii) 1.230m x 0.3m	No
(iii) 1.430 m x 0.3 m	No
(iv) 1.630m x 0.3m	No

Item	Unit
(c) Concrete Edge restraints for sidewalks (1m length)	No
(g) Concrete Blocks for culvert walls & headwalls & rectangular side drains	No
(h) Cover slabs for side drains for pedestrian access & covered rectangular side drains.	No
(i) Cover slabs for vehicular access (i) 1.030m x 1.0m	No

The unit of measurement shall be the number of lintols; edge restraints; pre-tensioned straining and intermediate posts and stays; and blocks manufactured by means of a small scale operation on site in accordance with the details on the drawings and the engineer's instructions.

The tendered rate shall include full compensation for procuring and furnishing all materials, providing moulds, mixing, transportations, placing and curing the concrete, and all labour and equipment required for manufacturing the lintels, edge restraints, pre-tensioned straining and intermediate posts and stays; and blocks, complete as specified.

NOTE :

The following table lists the payment items associated with the construction of the in-situ brick / block culverts. These items are scheduled in the Bill of Quantities under Section 7600. The equivalent standard payment items are also listed, with comments as appropriate.

Payment Item	Description	Equivalent COLTO Standard Item	Comments
B76.02	Excavation	22.01	The various depth ranges and e/o items are applicable.
B76.03	Backfilling	22.02	The B0Q differentiate between the sources of backfill material.
B76.04	Cast in-situ concrete and formwork	22.07	Floors of culverts and inlets & outlets. The various sub-items are applicable.
B76.05	Steel reinforcement	22.10	Floors of culverts and inlets & outlets. A separate sub-item is included for the steel in the culvert walls.
B76.06	Brickwork	22.18	Sub-items a), b) and c) are applicable to brickwork.
B76.07	Culverts constructed in blockwork	New Item	An additional item for blockwork in the walls of culverts is given below.
B76.08	Reinstating trenches across roads	22.27	The various sub-items are applicable.
B76.09	Placing of cover slabs on brick/ block culverts	New Item	An additional item is given below.

Item Unit

**B76.07 Culverts constructed in blockwork**

- (a) Blockwork in culvert walls using blocks 450 x 225 x 225 mm thick blocks.

**Item**

**Unit**

- |                                    |                   |
|------------------------------------|-------------------|
| (i) manufactured on site           | square metre (m2) |
| (ii) purchased from a local source | square metre (m2) |

- (b) Blockwork in headwalls and wingwalls using 450 x 225 x 225 mm thick blocks.

- |                                    |                   |
|------------------------------------|-------------------|
| (i) manufactured on site           | square metre (m2) |
| (ii) purchased from a local source | square metre (m2) |

The unit of measurement for the blockwork is the square metre built, calculated from the leading dimensions on the drawings. Corners and intersections shall be measured only once. No additional payment will be made where the contractor exceeds the dimensions shown on the drawings.

The blockwork will be built in the equivalent of an English bond, such that vertical joints in the finished wall are staggered as shown on the drawings. Care shall be taken in aligning the blocks to allow for the reinforcement steel to pass vertically through the hollows in the blocks.

The tendered rate shall include all costs associated with the transport of the blocks to site, placing, bedding in mortar, levelling and jointing. The horizontal and vertical joints shall be filled solid with mortar and shall be pointed to leave a flush joint, both inside and outside, not exceeding 12 mm in thickness. The blocks shall be wetted before being placed.

The tendered rates differentiate between blocks made on site and blocks purchased from a local supplier. The manufacture or purchase of blocks shall be paid for separately. Refer to Item B76.01 for the manufacture option.

The tendered rate for B76.07 (a) and (b) shall include filling the hollows with mortar mixed and placed. The rate shall include for all materials, labour, tools and equipment required to mix the mortar and place it as described on the drawings. All transport costs shall be included.

The unit of measurement for the purchase of the blocks is the Number. The rate shall include delivery to the site. The purchase is measured separately so that the rates for sub-items B76.06 (a) and (b) are comparable.

<b>Item</b>	<b>Unit</b>
<b>B76.09 Placing of cover slabs on brick / block culverts (size as per schedule)</b>	<b>Number (No)</b>

The unit of measurement shall be the number of pre-cast cover slabs placed to form the roof of the culverts. The slabs shall be placed as shown on the drawings. This item also covers the placing of slabs on pedestrian and vehicle accesses.

The rate shall cover all costs of transporting the slabs to site, placing the slabs, the bedding mortar and jointing, placing a bitumen socked hessian strip over each joint between the slabs, and ensuring the alignment is within tolerances.

No payment will be made for slabs broken during the transport or placing operations.

<b>Item</b>	<b>Unit</b>
<b>B76.08 Reinstating trenches across roads</b>	<b>Number (No)</b>

The unit of measurement for Subitems under B76.08 will have the same unit of measurement and terms as for reinstating trenches across roads in Item 22.27

<b>Item</b>	<b>Unit</b>
-------------	-------------

**SECTION 8100: TESTING MATERIALS AND WORKMANSHIP**

**B8117 MEASUREMENTS AND PAYMENT**

**B81.03 Providing testing equipment:**

Item	Unit
Add the following new sub-item:	
(c) 3 m Aluminium straight edge and wedge	No

The unit of measurement shall be the number of 3 m aluminium straight edge and wedge supplied.



Province of the  
**EASTERN CAPE**  
TRANSPORT

**CONTRACT No: SCMU10 - 23/24-0010**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADES  
IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS FOR A PERIOD OF  
36 MONTHS**

**PART C3: SCOPE OF WORK**

**SECTION C: ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION SPECIFICATION**

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADES  
IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS FOR A PERIOD OF  
36 MONTHS**

**PART C3: SCOPE OF WORK**

**SECTION C: ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION SPECIFICATION**

<b>TABLE OF CONTENTS</b>	<b>PAGE</b>
C1001 SCOPE C3.139	
C1002 INTERPRETATIONS .....	C3.139
C1003 DEFINITIONS AND ABBREVIATIONS .....	C3.140
C1004 OBJECTIVES OF THE ENVIRONMENTAL MANAGEMENT PROCEDURES .....	C3.140
C1005 ROLES AND RESPONSIBILITIES .....	C3.141
C1006 METHOD STATEMENTS .....	C3.143
C1007 MATERIALS, PLANT AND FACILITIES .....	C3.144
C1008 CONSTRUCTION ACTIVITIES .....	C3.148
C1009 EMERGENCY PROCEDURES .....	C3.159
C1010 ENVIRONMENTAL AWARENESS TRAINING .....	C3.159
C1011 EXTERNAL AUDITING AND EVALUATION .....	C3.160
C1012 ENVIRONMENTAL MANAGEMENT DURING DECOMMISSIONING .....	C3.160
C1013 TOLERANCES C3.160	
C1014 PAYMENTS C3.161	
C1015 WORK STOPPAGE .....	C3.161
C1016 NON-COMPLIANCE AND PENALTIES .....	C3.162
C1017 MEASUREMENT AND PAYMENT .....	C3.163

## C1001 SCOPE

This Specification covers the requirements for the effective implementation of an Environmental Management Plan for controlling the impact on the environment during the road construction activities. This specification will be applicable on all work orders for all physical work that the contractor will be required to carry out.

The purpose of the Environmental Management Plan (EMP) is to help control those construction activities that can have potentially adverse environmental implications on the site and surrounding areas. In short, the EMP describes good environmental practice principles which must be applied for the duration of the construction activities.

The environmental specifications should be read in conjunction with the Environmental Assessment and Environmental Management Plan / Programme for materials sources as well as the conditions of authorisation issued by the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), the Department of Mineral Resources (DMR) and the Department of Water Affairs (DWA). It should be noted that the conditions of the DEDEAT, DMR and DWA Authorisations are legally binding.

The contractor is furthermore required to comply with other relevant legislation which may apply to the proposed activities. This may include, but not be limited to:

- (i) A water utilization permit for water abstraction, issued in terms of the National Water Act (Act No 36 of 1998).
- (ii) General Authorisation / Licence required for alterations to a river bank or permanent deviation of a stream flow, issued in terms of the National Water Act (Act No 36 of 1998).
- (iii) Licence required for alteration of wetlands, issued in terms of the National Water Act (Act No 36 of 1996)
- (iv) Permit for atmospheric emissions produced by an asphalt plant, issued in terms of the Atmospheric Pollution Prevention Act (Act No 45 of 1965).
- (v) Permit for the removal or destruction of protected plants or removal of indigenous trees within a forest, issued in terms of the National Forestry Act (Act No 84 of 1998).

For a full list of the required licenses and permits, refer to Annexure 1.

## C1002 INTERPRETATIONS

### (a) Supporting Documents

Where this specification is applicable, the following documents shall inter alia be read in conjunction with this document.

- (i) Statutory requirements of the National Environmental Management Act (Act No 107 of 1998) and regulations promulgated in terms of Section 24 of NEMA;
- (ii) Statutory requirements of the Minerals and Petroleum Resource Development Act (Act No 28 of 2002);
- (iii) Statutory requirements of the National Water Act (Act No 36 of 1998);
- (iv) Statutory requirements of the National Environmental Management: Waste Management Act (Act No 59 of 2008);
- (v) Statutory requirements of the National Forests Act (Act No 84 of 1998); and
- (vi) Statutory requirements of the National Heritage Resources Act (Act No 25 of 1999).

### (b) Applications



The provision of this specification shall apply in respect of all Contractors, Sub-contractors and to any of their site personnel, workforce or suppliers, who are engaged in the execution of the works.

## C1003 DEFINITIONS AND ABBREVIATIONS

<b>DEDEAT</b>	Department of Economic Development, Environmental Affairs and Tourism.
<b>DAFF</b>	Department of Agriculture, Forestry and Fisheries
<b>DWA</b>	Department of Water Affairs
<b>EEA</b>	External Environmental Auditor
<b>EIA</b>	Environmental Impact Assessment
<b>EMP</b>	Environmental Management Plan
<b>ENVIRONMENT</b>	The surroundings within which humans exist and that could be made up of: the land, water and atmosphere of the earth; micro-organisms, plant and animal life; any part of combination of the aforementioned and the interrelationships among and between them; and, the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.
<b>ENVIRONMENTAL IMPACT</b>	The change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.
<b>INVASIVE ALIEN VEGETATION</b>	An undesirable plant growth which shall include, but not be limited to, all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act.
<b>MSDA</b>	Material Safety Data Sheets.
<b>NO-GO AREAS</b>	Generally those areas outside the designated working areas, including but not limited to: existing services and infrastructure, occupied property; grave sites; cultivated lands, wetland areas, 'Special or Sensitive Environments' as defined in the EMP.
<b>RE</b>	Resident Engineer.
<b>TOPSOIL</b>	Natural soil covering, including all the vegetation and organic matter, with variable depth.
<b>WORKING AREAS</b>	Working areas are those areas required by the Contractor to construct the works, as approved by the Resident Engineer.

## C1004 OBJECTIVES OF THE ENVIRONMENTAL MANAGEMENT PROCEDURES

The Environmental Management Plan which is in accordance with the Environmental Policy of the Employer is intended primarily as a management tool, for the guidance of the Consulting Engineers, the Contractor and his sub-contractors.

The objective of the Environmental Management Plan (EMP) is to control the impacts firstly of materials, plant and facilities and secondly construction activities. The effective implementation of an EMP will ensure that the required works are conducted in an environmentally sound manner and that the negative impacts of the works are minimised or prevented. This management plan contains the necessary environmental requirements to the Contractor and his staff, including all sub-contractors and on-site workers are required to adhere to.

The Environmental Management Plan outlines structures and procedures to be implemented by the Contractor and his sub-contractors to minimise and manage potential environmental impacts which the Contractor's construction activities might have on the receiving environment.

An External Environmental Auditor (EEA) will be appointed by the Employer to ensure that the EMP is being effectively implemented. The EEA shall undertake monthly site inspections, the results of which will be reported to the Employer, Consulting Engineer, Contractor and to the relevant government departments.

## **C1005 ROLES AND RESPONSIBILITIES**

### **(a) Responsibilities of the Resident Engineer**

Specific to environmental management, the role of the Resident Engineer will be to ensure enforcement of the Environmental Management Plan and Procedures and supplementary recommendations made by the EEA; review and approve the Method Statements submitted by the Contractor; and liaise with the Contractor, the EEA and DEDEA on environmental matters as necessary.

Responsibilities of the Resident Engineer will include, but not be limited to:

- Communicating the advice of the EEA and/or contents of the EEA's reports;
- Issuing site instructions where applicable;
- Communicating to the EEA any new/amended construction activities;
- Informing the EEA of any infringements/accidents or incidents that have occurred on/off site;
- Implementing any Temporary Work Stoppages where serious environmental infringements and non-compliances have occurred;
- Issuing penalties as and when necessary; and,
- Maintaining a record of complaints and communicating these to the Contractor and EEA.

Should the RE be of the opinion that the environmental management measures are not being adhered to, and that the appropriate corrective action is not being implemented, the RE, advised by the EEA, will be at liberty to instruct the Contractor to cease the related operations until the contractor complies with the relevant requirements. The contractor will not be entitled to any extension of time for such stoppages.

### **(b) Responsibilities of the External Environmental Auditor (EEA)**

The role of the EEA will be to monitor, review and verify the implementation of the EMP and liaise with the Resident Engineer and/or Employer, and DEDEA to confirm the level of compliance achieved and make appropriate recommendations on improvements/actions required.

The responsibilities of the EEA will include, at a minimum:

- Advising the Resident Engineer on the interpretation and enforcement of the Environmental Specifications;
- Assisting with the review of Method Statements;
- Demarcating particularly sensitive areas;
- Monitoring any basic physical changes to the environment as a consequence of the construction works - e.g. evidence of erosion, dust generation and littering;
- Undertaking monthly site inspections and submitting reports on the level of compliance to the EMP demonstrated by the Contractor;

Undertaking quarterly audits, with reporting to the relevant authorities;  
Undertaking any damage assessments with the Resident Engineer where incidents, accidents and/or serious infringements have occurred on/off site, and advising on remedial actions required;  
Liaising with the relevant authorities as required; and  
Updating the EMP as and when appropriate and communicating these changes to the Resident Engineer and Contractor.

**(c) Responsibilities of the Contractor**

The Contractor will be contractually required to undertake his activities in an environmental responsible manner. The role of the Contractor will include the following, at a minimum:

To implement the EMP (and any subsequent revisions) for the duration of the construction activities;  
To provide reasonable resources for the effective control and management of environmental risks associated with the construction activities, as per the EMP;  
To assign tasks to personnel as necessary and ensure appropriate accountability and responsibility is assigned to enable the carrying out of these duties;  
To maintain incident, training and other relevant administrative records; and  
To ensure all personnel, sub-contractors and other workers appointed by the Contractor are aware of the environmental responsibilities on site.

These roles will, at a minimum, translate into the following environmental responsibilities:

Be familiar with the contents of the EMP and to comply with the EMP;  
Submit the necessary Method Statements and plans to the Resident Engineer for approval;  
Review the ECO Reports and take cognisance of the information/recommendations made;  
Notify the Resident Engineer immediately in the event of any accidental infringements of the Environmental Specifications and ensure appropriate remedial action is taken;  
Notify the Resident Engineer in advance of any amendments/changes to the proposed work activities to enable environmental impacts to be confirmed and mitigation measures identified; and  
Maintain records - e.g. photographic records, complaints records, training records and incident records.

**(d) Responsibilities of the Environmental Representative**

The Contractor shall on commencement of the Project appoint an Environmental Representative who, in addition to his normal duties, shall have direct responsibility for the implementation and monitoring of the Environmental Management Plan.

The Environmental Representative shall liaise with the RE, the EEA and the Contractor, in order to ensure effective implementation of the Environmental Management Plan at site level. The Environmental Representative will be responsible for the practical implementation and monitoring of the Environmental Management Plan and he shall report directly to the RE in this regard. The Environmental Representative shall periodically inspect and monitor operations on and off site and shall take the necessary action where required to ensure compliance with the requirements of the Environmental Management Plan. The Environmental Representative shall attend all regular site Works meetings for reporting, discussing and reviewing the performance of the Environmental Management Plan (which shall be a standard item on the agenda).

## **C1006 METHOD STATEMENTS**

The Contractor shall be required to submit Method Statements to the EEA outlining proposed construction activities, phasing and procedures and methods to comply with the targets stipulated in the Environmental Management Plan. Method Statements shall, where applicable, include Site Establishment Drawings with sufficient detail to assess the potential impact of the site facilities or to assess the degree of safeguarding provided against pollution.

The suggested proforma for the method statements is attached in Annexure 2.

Method Statements shall indicate how the procedures will be applied in order to meet the relevant targets and are central to the proper implementation of the Environmental Management Plan. It is anticipated that

in addition to assessing the systems and performance of the Environmental Management Plan, the external audit will scrutinise the formulation of, and adherence to Method Statements in some detail.

Method Statements must be submitted at least 10 days prior to the proposed commencement of related activities and must be approved by the EEA, in consultation with the RE. The Environmental Representative shall keep copies of these Method Statements and letters of approval (including conditions attached) in a Method Statement file.

Any deviations from the approved Method Statements must be submitted to the EEA for approval and any amendments submitted to the RE.

The following Method Statements shall be submitted by the Contractor 14 days prior to the commencement:

- Layout and preparation of the construction camp;
- Location, layout and preparation of cement/concrete batching facilities including the methods employed for the mixing of concrete including the management of runoff water from such areas;
- Contaminated water management plan, including the containment of runoff and contaminated water;
- Dust control;
- Source of water for compaction and dust suppression;
- Method for the control of erosion during bulk earthwork operations, including erosion of spoil material;
- Methods for abstracting water from rivers or other water sources including measures to prevent pollution and sedimentation;
- Emergency spillage procedures, including hydrocarbons, and compounds to be used;
- Emergency procedures for fire;
- Method of diverting stormwater during construction; and
- Solid waste control and removal of waste from Site;

Additional method statements specific for this project include the following:

- Methods for the construction of bridges, if required, and the removal of the existing structures thereof.

## **C1007 MATERIALS, PLANT AND FACILITIES**

### **(a) Materials handling, use and storage**

The Contractor shall ensure that any delivery drivers are informed of all procedures and restrictions (including "no go" areas) required to comply with the Specifications of the EMP.

The Contractor shall ensure that these delivery drivers are supervised during off loading by someone with an adequate understanding of the requirements of the EMP.

Materials shall be appropriately secured to ensure safe passage between destinations. Loads including, but not limited to sand, stone chip, fine vegetation, refuse, paper and cement, shall have appropriate cover to prevent them spilling from the vehicle during transit. The Contractor shall be responsible for any clean-up resulting from the failure by his employees or suppliers to properly secure transported materials.

All lay down areas for manufactured/imported material outside of the construction camp shall be subject to the RE's approval, which shall not unreasonably be withheld.

### **(b) Hazardous substances**

Hazardous chemical substances (as defined in the Regulations for Hazardous chemical Substances) used during construction shall be stored in secondary containers.

The relevant Material Safety Data Sheets (MSDS) shall be available on Site. Procedures detailed in the MSDS's shall be followed in the event of an emergency situation.

Potentially hazardous substances shall be stored, handled and disposed of in a suitable manner.

**(c) Fuel (petrol and diesel) and oil**

The Contractor shall ensure that all fuels and chemicals are handled and stored in a manner so to minimise the risk of spills, leaks or structural failures.

Fuel may be stored on Site and the fuel storage area shall be located at the workshop or a fuel storage depot located within the construction camp.

The Contractor shall ensure that all liquid fuels (petrol and diesel) are stored in tanks with lids, which are kept firmly shut or in bowsers.

The tanks / bowsers shall be situated on a smooth impermeable surface (plastic or concrete) base with an earth bund (plastic must have sand on top to prevent damage and perishing). The impermeable lining shall extend to the crest of the bund and the volume inside the bund shall be 110% of the total capacity of all the storage tanks / bowsers.

The bunded area shall be covered to prevent the accumulation of rainwater within the bunded area.

The Contractor shall prevent unauthorised access into the fuel storage area.

The Contractor shall have on Site all the necessary materials and equipment to deal with spills of any of the substances stored on Site.

The Contractor shall set up a procedure to deal with a spillage or pollution event; this should include immediate communication with the RE and EEA. A number of the Contractor's staff shall be appropriately trained to deal with any spills or pollution threat.

No smoking shall be allowed within the vicinity of the fuel storage area.

The Contractor shall ensure that there is adequate fire-fighting equipment at the fuel stores.

Gas and fuels shall not be stored in the same storage area.

Where reasonably practical, plant shall be refuelled at the depot or at the workshop as applicable. If it is not reasonably practical then the surface under the refuelling area shall be protected against pollution to the reasonable satisfaction of the RE prior to any refuelling activities.

The Contractor shall ensure that there is always a supply of absorbent material readily available to absorb/breakdown and where possible be designed to encapsulate minor hydrocarbon spillage. The quantity of such materials shall be able to handle a minimum of 200 litre of hydrocarbon liquid spill. This material must be approved by the RE prior to any refuelling or maintenance activities.

Drip trays shall be inspected and emptied daily, and serviced when necessary. Drip trays shall be closely monitored during rain events to ensure that they do not overflow.

The appropriate signage must be erected at the diesel bowser and workshops.

**(d) Ablution facilities**

A sufficient number of chemical toilets shall be provided by the Contractor in the construction camp area and at appropriate locations agreed by the RE. The ratio of toilets to site staff shall not exceed 1:20, and the closest toilet shall never be further than 100 m away from the area where work is currently under way.

Toilets shall not be located in river courses or flood plains.

Washing, whether of the person or of personal effects and acts of excretion and urination are strictly prohibited other than at the facilities provided.

All temporary/portable toilets shall be secured to the ground to the satisfaction of the RE to prevent them toppling due to wind or any other cause.

All toilets are to be maintained in a clean, sanitary condition. The Contractor shall be responsible for cleaning, maintenance, servicing and emptying the toilets on a regular basis. The Contractor shall supply adequate toilet paper at all toilets.

The Contractor shall ensure that no spillage occurs when the toilets are cleaned or emptied and that the contents are properly stored and removed from Site.

Discharge of waste from toilets into the environment and burial of waste is strictly prohibited.

Septic tanks may be used only once the soil conditions have been checked and found to be suitable.

The contractor may make use of a waste water treatment plant (or sewage package plant) provided such a facility has been authorised and/or registered by the relevant authorities (DEDEA and DWAF) according to the NEMA EIA Regulations (Government Notice No R. 385) and the National Water Act (Act No 36 of 1998).

#### **(e) Living Accommodation**

The location of the living accommodation must be approved by the local authorities and the traditional leadership. The living accommodation should preferably be located within the designated development node of Coffee Bay.

The living accommodation should not be located within the Coastal Conservation Area, ie within 1,0 km of the coast or high water mark of any estuary.

The living accommodation should not be located at the coastal development nodes, unless prior permission has been obtained in writing from the DEDEA.

Living accommodation for workers on Site should comply with minimum standards.

All temporary structures shall be removed and the area rehabilitated on completion of the works.

The Contractor shall designate eating areas for his employees. The Contractor shall provide bins with lids in these areas.

The source of energy / fuel for use by the workers residing in the area must be clearly specified. There must be no collection of wood outside the designated area.

#### **(f) Solid waste management**

No on-site burying or dumping of any waste materials, vegetation, litter or refuse shall occur.

The Contractor shall provide sufficient bins with lids on Site to store the solid waste produced on a daily basis. Bins shall not be allowed to become overfull and shall be emptied a minimum of once daily.

The waste may be temporarily stored on Site in a central waste area that is weatherproof and scavenger-proof, and which the RE has approved.

No burning of refuse is permitted.

All solid waste shall be disposed of offsite at least once weekly at a licensed landfill site. The nearest licensed landfill site is at Mqanduli.

The Contractor shall supply the RE with a certificate of disposal.

**(g) Contaminated water**

The Contractor shall set up a contaminated water management system, which shall include collection facilities to be used to prevent pollution, as well as suitable methods of disposal of contaminated water.

The Contractor shall notify the RE immediately of any pollution incidents on Site and liaise with the local irrigation board and farming interests.

The Contractor shall prevent discharge of any pollutants, such as cements, concrete, lime, chemicals and fuels into any watercourses, estuaries or stormwater channels.

Water that has been contaminated with suspended solids, like soils and silt may be released into natural watercourses or stormwater channels. However, all suspended solids shall be removed from water before it is discharged by settling out these solids in settling ponds.

**(h) Site camp**

The site camp shall not be located in an environmentally sensitive area. The site shall be located >100 m from a watercourse, wetland or estuary and preferable more than 1000m from the coast, unless it falls within the Coffee Bay development node.

The Contractor shall provide the RE with a plan of the site camp showing the layout / positioning of all infrastructure including wash bays, fuel storage areas, materials storage areas, sewage infrastructure and buildings. The Contractor shall maintain a map of the site layout that indicates where the wash bays, fuel storage areas, topsoil sites etc are located. The RE and EEA must approve this.

Where site camps are to be established the feasibility of removing topsoil from the site, before site establishment, shall be investigated. Removed topsoil should then be stockpiled for use in rehabilitation of the site camp

The site camp should not be located within the Coastal Conservation Area, ie within 1,0 km of the coast or high water mark of any estuary, or within 100 m of any drainage line.

The site camp should not be located at the coastal development nodes, unless prior permission has been obtained in writing from the DEDEA.

All water requiring discharge, including wastewater from kitchen and ablution facilities, should be led to soak pits, treated or discharged in a manner approved by the RE. No wastewater shall be discharged into rivers or streams.

Site camps and surrounds shall be maintained in a clean, tidy and orderly condition at all times.

The Contractor shall restore the site camp to its former condition upon completion of the works. This will include removal of all rubble and foundations, loosening of compacted soils and re-establishing groundcover. Where a homestead has been used as a site camp, the Contractor may be required to renovate the buildings once the works are complete.

**(i) Lights**



The Contractor shall ensure that any lighting installed on the Site for his activities does not interfere with road traffic or cause a reasonably avoidable disturbance to the surrounding community or other users of the area. Lighting installed shall be down lighting.

**(j) Workshop, equipment maintenance and storage**

Where practical, all maintenance of equipment and vehicles on Site shall be performed in the workshop. If it is necessary to do maintenance outside of the workshop area, the Contractor shall obtain the approval of the RE prior to commencing activities.

The Contractor shall ensure that in his workshop and other plant maintenance facilities, including those areas where, after obtaining the RE's approval, the Contractor carries out emergency plant maintenance, there is no contamination of the soil or vegetation.

The workshop shall have a smooth impermeable concrete floor. The floor shall be bunded and sloped towards an oil trap or sump to contain any spillages of substances (e.g. oil).

When servicing equipment, drip trays shall be used to collect the waste oil and other lubricants. Drip trays shall also be provided in construction areas for stationary plant (such as compressors) and for "parked" plant (such as scrapers, loaders, vehicles).

All vehicles and equipment shall be kept in good working order and serviced regularly. Leaking equipment shall be repaired immediately or removed from the Site.

The washing of equipment shall be restricted to urgent or preventative maintenance requirements only. All washing shall be undertaken in a wash bay area which must be equipped with a suitable impermeable floor and sump/oil trap. The use of detergents for washing shall be restricted to low phosphate and nitrate containing, low sudsing-type detergents.

**(k) Drinking and construction water**

Water for drinking and construction purposes should be obtained from local reticulation works, or an approved source. Unless approved by DWA, water should not be extracted from nearby dams and rivers, and construction activities should not be conducted in or directly adjacent to rivers and dams.

Water is a scarce resource throughout South Africa and certain parts of the Eastern Cape Province are prone to water shortages during periods of drought. Water, whether drinking or for operational purposes must be used responsibly.

## **C1008 CONSTRUCTION ACTIVITIES**

Table 7/1 at the end of this Section C - Environmental Specifications gives an indication of the mechanisms that cause environmental impacts for various construction activities, listed in order of the sections in the COLTO specifications. The sensitive areas for each section are identified, but the requirements for environmental protection are not limited to those areas.

**(a) Working Areas**

The road construction and associated activities may be conducted only in designated working areas. Limitation of these activities to specific working areas minimises the impact on the surrounding environment and facilitates control of the works. Sites should be divided into working areas and "no-go" areas:

- Working areas are those areas required by the Contractor to undertake the works and as approved by the RE. These areas include the area of works, borrow areas and haul roads between the working site and borrow areas. If necessary, the working areas may be demarcated during the period. The Contractor and his staff are not permitted to move around outside the designated working areas. The Contractor shall ensure that, insofar as he has the authority, no person, machinery, equipment or material enters the "no go" areas at any time.
- "No-go" areas are those areas outside of working areas. The Contractor shall erect and maintain permanent and/or temporary fences of the type and in the locations directed by the RE. Such fences shall, if so specified, be erected before undertaking designated activities. Venturing outside of the working area into a defined "no-go" area may attract a fine as indicated in Section O.

Within the overall working area, the RE shall designate specific areas for the following:

- Site Camp.
- Stockpiling and storage of construction materials.
- Stockpiling of topsoil for rehabilitation purposes.
- Spoiling of cleared vegetation (alien / invasive species).
- Sites for spoil materials.

**(b) Protection of Flora and Fauna**

Natural features, indigenous flora and fauna in the vicinity of the project works should be protected and damage or disturbance prevented or minimised; specifically:

- The removal of any indigenous vegetation must be in strict accordance to the conditions as set out by the DAFF permit.
- No plant species may be removed unless agreed by the EEA or unless they are listed as alien invasive species.
- The minimum amount of vegetation must be removed. Excessive clearing of a site must be avoided. Disturbance outside of the immediate construction area must be avoided.
- No construction staff may have access to indigenous vegetation outside of the working corridor.
- The use of indigenous plants as firewood is prohibited.
- Where protected or Red Data Species are encountered and require removal, the EEA should be consulted and the plant(s) then replanted in a nearby 'safe' area of similar habitat. Permission should be obtained from DEDEA, Eastern Cape.
- All fauna (including domestic livestock) within and surrounding the site shall be protected; they shall not be caught, poisoned, trapped, snared or killed.
- No domestic animals shall be brought onto the site.

**(c) Sites of Archaeological and or Cultural Interest**

The Contractor shall take responsible precautions to prevent any person from removing or damaging any fossils, coins, articles of value or antiquity and structures and other remains of archaeological interest discovered on the Site, immediately upon discovery thereof and before removal.

All archaeological sites identified in the environmental scoping must be demarcated with danger tape and placed out of bounds. Should disturbance of these sites be unavoidable, then an application must be made to the South African Heritage Resource Agency (SAHRA) via a qualified archaeologist.

Items identified during the investigations conducted over the site to date include:

- (i) Stone implements worked by pre-historic people.
- (ii) Potential fossil horizons in the calcrete deposits.
- (iii) Grave sites.

Should an archaeological or cultural site be located during the upgrading of the route or any associated infrastructure, it should immediately be reported to the National Monuments Council. Failure to report a site of archaeological and/or cultural significance is a contravention of the National Heritage Act (Act No 25 of 1999).

All construction site staff must be briefed to immediately report any potential sites which are encountered during the construction of the road. In the event of finding what appears to be an archaeological site or a cultural and/or historic site or object, work should be terminated until a qualified archaeologist or historian can examine the item or find.

The contractors must check the area carefully for any graves. The relocation of graves must be undertaken in consultation with the affected families and through the Project Steering Committee. The correct procedures for the exhumation and reburial of the remains must be strictly adhered to.

**(d) Protection of Natural Features**

The Contractor shall not deface, paint, damage or mark any natural features (e.g. rock formations) situated in or around the Site for survey or other purposes unless agreed beforehand with the RE.

Any features affected by the Contractor in contravention of this clause shall be restored / rehabilitated to the satisfaction of the RE.

The Contractor shall not permit his employees to make use of any natural water sources (e.g. springs, streams, and open water bodies) for the purposes of swimming, personal washing and the washing of machinery or clothes.

**(e) Aesthetics**

The Contractor shall take reasonable measures to ensure that construction activities do not have an unreasonable impact on the aesthetics of the area.

**(f) Conservation and Stockpiling Of Topsoil**

Topsoil shall be removed from the following areas no longer than 10 days before construction begins:

- (i) All areas to be excavated;
- (ii) Areas to be occupied by roads, including the temporary haulage road;
- (iii) Areas for the storage of fuels;
- (iv) Areas to be used for batching / mixing of concrete;
- (v) Areas for stockpiling of construction materials;
- (vi) Areas for stockpiling of crushed rock; and
- (vii) Areas for spoiling material.

Topsoil shall be excavated to a minimum depth of 150 mm or to a maximum depth of 300 mm. Compaction of these topsoil stockpiles is not permitted. Where topsoil has been stored for longer than 12 months the Contractor shall turn the soils to maintain viability of the seeds and the soil properties.

The topsoil stockpiles shall be clearly demarcated and vehicle access restricted. The topsoil shall not be contaminated with any fuels, oils or other construction waste or materials.

Topsoil shall not be mixed with any other material (construction rubble, subsoil etc) and erosion of the topsoil stockpiles must be prevented.

**(g) Erosion Control**

Soil erosion shall not be tolerated on the Site. Uncontrolled erosion will cause siltation and pollution of the stream and result in loss of valuable topsoil. The Contractor should take all reasonable measures to prevent

soil erosion and protect areas susceptible to erosion. Erosion prevention measures must be implemented to the satisfaction of the RE.

Areas affected by construction related activities must be monitored regularly for evidence of erosion. Areas particularly susceptible to erosion include: areas stripped of topsoil, soil stockpiles and steep slopes (gradients > 8%).

Soil erosion may result from a diversion, a restriction, or an increase in the flow of stormwater or river flow caused by the presence of temporary / permanent works, operations and activities. Where evidence of erosion appears, the construction of contour berms, cut-off drains or planting of grass sods / ground cover may be necessary.

The Contractor shall take reasonable measures to control the erosive effects of stormwater runoff. A cut-off drain(s) or low berm will be constructed where necessary to lead run-off rain water away from steep, exposed slopes, ensuring that the water does not flow over the slopes and cause erosion. Water from these drain(s) will be disposed of in such a way that the erosive force of the water in the drain(s) is dissipated and erosion does not occur at the drain discharge point(s).

Where erosion does occur the Contractor shall reinstate such areas and areas damaged by the erosion, at his own cost and to the satisfaction of the RE and EEA. Topsoil that has been washed away shall be replaced.

The access / haul roads, after ripping, must be topsoiled and hydroseeded with an appropriate hydroseed mix and the same specifications apply as in the other areas that require hydroseeding.

The order for the seeds must be placed timeously to ensure availability at the time required.

#### **(h) Prevention of Pollution**

The Contractor should ensure that pollution of the soil or water (i.e. surface and ground) does not occur as a result of any activities on Site. Pollution could result from the release, accidental or otherwise, of chemicals, oils, fuels, sewage, wastewater containing kitchen waste, detergents, solid waste and litter, etc. Specific measures to be taken to prevent the pollution of the environment include:

- Immediately report and manage any leakage or spillage with appropriate spill contingency equipment and measures.
- All fuels, oils, lubricants and other petrochemical products must not be stored within 100 m of any estuary, wetlands and rivers.
- Fuel lubricants, solvents, paints, and other chemicals must be stored within the contractors campsite in a facility secured with lock and key. Storage should be on a bunded, impervious site (secondary containment).
- Maintenance of vehicles must only take place in a designated workshop with a concrete base and drip trays for the collection of waste lubricants. Emergency maintenance vehicles must be equipped with drip trays and absorbent material, such as spillsorb, to collect and contain waste oils.
- No rock, silt, cement, grout, asphalt, petroleum product, timber, vegetation, domestic waste, or any deleterious substance should be placed or allowed to disperse into any stream, river, pond, storm or sanitary sewer, or other watercourse.
- Ensure all construction equipment is free of leaks from oil, fuel or hydraulic fluids and is cleaned in an area with a suitable controlled runoff.
- Refueling activities should not be conducted where runoff could carry contaminants into drainage pathways (including stormwater drains/trenches and sewers).
- Washing of vehicles must be kept to a minimum and must only take place in a designated area on an impervious surface which drains into an oil sump.
- Cleaning out of concrete mixers and trucks must take place on a properly designated site where there is no opportunity for the pollution of water bodies.

#### **(i) Stockpiling / Spoiling of Materials**

The RE and EEA shall approve all stockpiling and spoiling sites and confirm the end-use or rehabilitation plans for these sites.

The stockpiles should be located within demarcated construction sites. Material stockpiled should be done so in such a way as to minimise the spread of materials and the impact on the natural vegetation. The Contractor should ensure that no materials 'creep' into "no-go" areas.

No spoiling of material should take place below the 1:100 year floodline of any river, stream, and wetland or water course, nor within 1 km of the coast.

The Contractor, upon completion of the project shall reinstate areas used for stockpiling to their former states.

**(j) Asphalt, Bitumen and Paving**

Over spray of bitumen products outside of the road surface and onto roadside vegetation shall be prevented using a method approved by the RE.

The area used for the storage of bitumen drums/products shall comply with the following:

- The floor shall be smooth and impermeable (concrete or thick plastic covered in sand).
- The floor shall be bunded and sloped towards a sump to contain any spillages of substances.
- The bund shall be inspected and emptied daily, and serviced when necessary.
- The bund shall be closely monitored during rain events to ensure that they do not overflow.

When heating bitumen products, the Contractor shall take cognisance of appropriate fire risk controls. Heating of bitumen products shall only be undertaken using LPG or similar zero emission fuels and appropriate fire fighting equipment shall be readily available.

Water quality from runoff from newly/fresh bitumen surfaces will be monitored by the RE and remedial actions taken where necessary.

Stone chip/gravel excess shall not be left on road/paved area verges. This shall be swept/raked into piles and removed to an area approved by the RE.

**(k) Cement and Concrete Batching**

The permitted location of the batching plant (including the location of cement stores, sand and aggregate stockpiles) will be indicated by the RE. The concrete/cement batching plant shall be kept neat and clean at all times.

The batch plant should not be located closer than 100 m from any water course or wetland and not below the 1:100 year floodline of any water course or wetland. In addition, the batching plant shall not be located within 1 km of the coastline, unless it is within the boundaries of the Coffee Bay development node.

The batching plant shall be located on a smooth impermeable surface (plastic or concrete). The area shall be bunded and sloped towards a sump to contain any spillages of substances.

No batching activities shall occur directly on the ground. All wastewater resulting from batching of concrete shall be disposed of via the wastewater management system and shall not be discharged into the environment.

Used bags shall be stored in weatherproof containers to prevent wind blown cement dust and water contamination. Used bags shall be disposed of on a regular basis via the solid waste management system, and shall not be used for any other purpose.

Unused cement bags shall be stored so as not to be affected by rain or runoff events. In this regard, closed steel containers should be used for the storage of cement powder and any additives.

The Contractor shall ensure that sand, aggregate, cement or additives used during the mixing process are contained and covered to prevent contamination of watercourses, the surrounding vegetation and natural rock through wind or water dispersion.

All runoff from the batching plant shall be strictly controlled, and cement- contaminated water shall be collected, stored and disposed of off-site, at a location approved by the RE.

Contaminated water storage areas shall not be allowed to overflow and appropriate protection from rain and flooding shall be implemented.

All visible remains of excess concrete shall be physically removed on completion of the plaster or concrete pour section and disposed of. Washing the remains into the ground is not acceptable. All excess aggregate shall also be removed and disposed of in an approved landfill site.

#### **(l) Dust Control**

Dust is regarded as a nuisance when it reduces visibility, soils private property, reduces the palatability of grazing grasses and may retard plant growth. It is also aesthetically displeasing.

The Contractor shall be responsible for the control of dust arising from his operations and activities. Control measures could include regular spraying of working / bare areas with water, at an application rate that will not result in soil erosion or runoff.

#### **(m) Noise Control**

The Contractor shall limit noise levels (e.g. install and maintain silencers on machinery). The Contractor's attention is drawn to the applicable regulations framed under the Occupational Health and Safety Act (85 of 1983) and in particular the Noise Induced Hearing Loss Regulations (GNR307 of 2003).

All activities with high noise level should be restricted to daylight hours in the residential areas and in the proximity of villages.

The contractor must discuss the timing of noise generating activities with the staff of schools located close to the road. Appropriate times for construction should be agreed to by both parties.

The contractor shall inform the residents of any high noise events such as blasting.

Contractor's camps should be located away from tourist operations and quiet rural villages.

Crushing plants should be located as far as practical from residences, schools and social facilities.

#### **(n) Vehicles and Access Roads**

Site vehicles should be permitted access only within the demarcated construction sites or on existing roads, as would be required to complete their specific tasks. Vehicles are not permitted on re-vegetated areas.

Site vehicle traffic should be limited to specific access roads to prevent unnecessary damage to the natural environment.

On the Site the Contractor shall control the movement of all vehicles and plant including that of his suppliers so that they remain on designated routes, are distributed so as not to cause an undue concentration of traffic and that all relevant laws are complied with. In addition such vehicles and plant shall be so routed and operated as to minimise disruption to regular users of the routes not on the Site.

On gravel or earth roads on Site and within 500 m of the Site, the vehicles of the Contractor and his suppliers shall not exceed a speed of 40 km/hr.

**(o) Traffic Control and Temporary Deviations**

Increased traffic, especially heavy vehicle traffic, has the potential to draw complaints from nearby residents. The Contractor is expected to address any complaints received.

The Contractor shall comply with all the applicable local, regional and national by-laws with regard to road safety and transport. He shall instruct his drivers and plant operators that vehicles will be expected to comply with all road ordinances, such as speed limits, roadworthiness, load securing / covering.

Where sections of the road are closed for construction, barricades shall be constructed to prevent unauthorised access at all times. Suitable signage should be erected informing drivers of the road closure and warning of the possible dangers involved in trespassing within the closed areas.

Where the road is to be closed for extended period of time for the purpose of blasting, communities and motorists must be given suitable prior warning through signposting, media notices etc. The safety of motorists should remain paramount at all times.

The Contractor shall keep the local Traffic Control department (Traffic Police) aware of road closure and other activities that will affect traffic flow.

Temporary vehicular deviations should be located so as to cause minimal disruption to surrounding communities, minimal disturbance to flora, fauna and the surrounding landscape and minimal risk of erosion. The deviations shall not impede normal pedestrian or vehicular access to adjoining villages and community lands.

Each deviation route should be rehabilitated as soon as practically possible, and preferably immediately once the construction on the adjoining section of road has been completed.

**(p) Fire Prevention and Control**

The Contractor shall take all the necessary precautions to ensure that fires are not started as a consequence of his activities on Site. The Contractor, sub-contractors and all employees are expected to be conscious of fire risks. The Contractor shall hold fire prevention talks with his staff to create an awareness of the risks of fire. Regular reminders to his staff on this issue are required.

Smoking shall not be permitted in those areas where it is a fire hazard. Such areas shall include the workshop and fuel storage areas and any areas where the vegetation or other material is such as to make liable the rapid spread of an initial flame. In terms of the Atmospheric Pollution Prevention Act (No. 45 of 1965), burning is not permitted as a disposal method.

No fires may be made other than for the purpose of cooking, and must be extinguished with water once they have served their purpose. Cooking fires shall be contained in a fire drum, in an area approved by the RE.

The Contractor shall appoint a Fire Officer who shall be responsible for ensuring immediate and appropriate actions in the event of a fire and shall ensure that employees are aware of the procedure to be followed. The Contractor shall forward the name of the Fire Officer to the RE for his approval.

The Contractor shall ensure that there is adequate fire-fighting equipment (i.e. fire extinguishers and fire beaters) on Site and in all major working areas.

The Contractor shall be liable for any expenses incurred by any organisations called to assist with fighting fires and for costs involved in rehabilitation of burnt areas / property / persons, should the fire be the result of the Contractor's activities on Site.

Removed plant material shall not be dumped across the fence-line or along the fence-line onto private property. If an abutting land owner requests this the Employer must be indemnified.

**(r) Blasting (Refer to Clause B1222 and 1516)**

All and any blasting is to be done in terms of the Minerals and Petroleum Resources Development Act (Act 28 of 2002) and the Mine Health and Safety Act (Act 29 of 1996).

The Contractor shall notify nearby residents and erect appropriate signage, warning of the event, 14 days in advance any blasting. The Contractor is responsible for any accidental damages to persons or property as a result of blasting.

Prior to blasting, the Contractor shall notify the relevant occupants of surrounding land and address any concerns. The Contractor shall notify emergency services, in writing, a minimum of 24 hours prior to any blasting activities commencing on Site.

A crack survey including photographs shall be undertaken of all existing structures within a distance of the blasting site specified by the RE and the DMR. The survey shall be undertaken prior to any blasting activities in order to establish the baseline conditions, and following blasting or on receiving any complaints from the community. Structural damage to houses which has resulted from blasting must be repaired at the expense of the contractor.

The Contractor shall prevent damage to special features and the general environment, which includes the removal of fly-rock. Damage caused by blasting/drilling shall be repaired to the satisfaction of the RE.

**(s) Bridges and Culverts**

The Contractor shall minimise the extent of any damage to the flood plain to that necessary to complete the works, and shall not pollute the river systems a result of construction activities. No construction materials shall be stockpiled on the flood plain.

The Contractor shall not divert, dam or modify any watercourse or stream without the approval of the RE and DWA.

The existing structures must be removed as soon as the new bridge has been completed and opened to traffic, unless otherwise specified. Rehabilitation of the disturbed areas must be carried out in consultation with Working for Water.

Bridge construction and culvert installation should, where possible, be planned to take place during periods when stream flow is low.

Avoid operating machinery in water bodies. Excavation for a bridge or a large culvert should not be performed in flowing water. The water should be diverted around the work site during construction with a cofferdam or stream diversion. Any diversion of a stream requires a separate investigation and an approval from the Department of Water Affairs.

Avoid channel changes and protect the embankments of streams and rivers.

All rubble from the demolished structures must be removed from the riverbed and disposed of according to the waste management system. No rubble may be left in the water course.

All concrete must be allowed to fully cure prior to coming into contact with the water.

Specific mitigation measures related to bridge and culvert construction, covered in detailed in the specialist Estuary and Aquatic Studies undertaken as part of the EIA and summarized in the EIR, must be adhered to.

**(t) Water Abstraction**



Water for construction purpose may be abstracted from rivers or other small streams crossing the road only in receipt of the required permits from the Department of Water Affairs. A method statement must be prepared and approved for the abstraction of water.

During water abstraction the Contractor shall take all reasonable measures to limit sedimentation of downstream watercourses due to his activities and shall ensure that the flow in the river is never reduced below 50% of ambient. The temporary sump shall be removed from the river as soon as practically possible.

**(v) Earthworks**

All earthworks shall be undertaken in such a manner so as to minimise the extent of any impacts caused by such activities. No equipment associated with earthworks shall be allowed outside of the Site and defined access routes unless expressly permitted by the RE.

**(w) Site Rehabilitation**

The Contractor shall be responsible for complete rehabilitation of the site, including spoil sites, access roads, haul routes, site camp, stockpile, crusher area, ablution facilities and storage areas.

The Contractor shall undertake full rehabilitation under no extra cost to the Employer.

The Contractor should implement progressive rehabilitation: once works are complete in a particular area, rehabilitation / re-vegetation could begin. This would provide the opportunity to assess whether or not the methods employed are suitable and successful and would help prevent erosion in impacted areas.

Where re-vegetation of an area is not successful the Contractor will replant these areas, at no additional cost to the Employer.

The Contractor shall provide the EEA and RE with a comprehensive plan for rehabilitation of the entire site. This plan must meet the approval of the EEA and RE. The following points must be taken into account when drawing up the Rehabilitation Plan:

- The Plan should be flexible - where measures are found to be inefficient, the plan shall be modified, at no additional cost to the Employer.
- The Contractor shall be responsible for successful rehabilitation and re-vegetation of the site, for a minimum period of 12 months after construction is complete.
- The Plan shall include the eradication of young alien invasive plant species that may have become established during the construction period, in impacted areas and in rehabilitated areas.
- The growth of alien invasive plant species shall be monitored during the 12 month period following construction.
- The Plan shall include grass seed mixes applicable to summer and winter.
- The Plan shall include suitable fertilisers and application rates.
- Successful re-vegetation means  $\geq 80\%$  of the seeded area is covered with grass / groundcover.
- Where there is insufficient topsoil to cover an area to specified depth, the Contractor shall import suitable topsoil at no cost to the Employer.
- Consideration should be given to using established seedlings of indigenous grasses such as *Digitaria eriantha* and *Cenchrus ciliaris* to at least augment the use of aliens in re-vegetation of bare areas. On eroded soil chopped bush should be spread over bare surfaces, the soil should be re-seeded and the veld rested.

**(x) Exotic Vegetation**

Exotic invasive vegetation shall be removed from any working areas and the site camp(s). These vegetation species shall also be eradicated when they begin to establish themselves in disturbed areas (disturbance of the natural vegetation will encourage the establishment of invasive species). In order to discourage the spread of exotic species, soil should not be moved from one part of the site to another without the consent of the EEA.

The EEA shall assist in the identification and eradication of exotic plant species. Methods of removal / eradication may involve hoeing by hand or the controlled application of herbicides.

**(y) Community Relations**

The Contractor shall erect and maintain information boards in the position, quantity, design and dimensions specified. Such boards shall include contact details for complaints by members of the public in accordance with details provided by the RE.

The Contractor shall keep a "Complaints Register" on Site. The Register shall contain all contact details of the person who made the complaint, information regarding the complaint itself and measures taken to address the complaint.

**(z) Social Disruption**

Where construction activities require the removal of fences from around private land, the occupants shall be warned at least three days in advance. These fences / boundary markers shall be reinstated as soon as construction is complete.

Care should be taken not to damage private property. No access to homesteads / farms or other such areas is permitted without permission of the resident and on agreement with the RE.

The Contractor shall take measures to reduce disruption to users of the area abutting the Site.

**(aa) Existing Services and Infrastructure**

The Contractor shall ensure that existing services (road, rail, pipelines, power lines and telephone services) are not disrupted or damaged, unless required by the contract and with the permission of the RE.

**(bb) Protection of the Public**

The Contractor shall be responsible for the protection of the public, and public property, from any dangers associated with the road construction and associated activities, and for the safe and easy passage of pedestrians and traffic in areas affected by project activities.

Any excavation material, spoil sites and other obstructions or excavations shall be suitably barricaded and/or demarcated with hazard tape.

**(cc) Staff Safety and Education**

All staff shall be given an induction course before beginning work on the site. Part of the induction course will be to make the staff aware of the potential dangers of the road construction activities.

The Contractor must maintain a suitable First Aid Kit at the site office and will have a list of the emergency service contact numbers readily available.

Telephone numbers of emergency services, including the local fire fighting service and HAZMAT, shall be posted conspicuously in the Contractor's office near the telephone.

No authorised firearms are permitted on Site.

## C1009 EMERGENCY PROCEDURES

The following Emergency Procedures shall be submitted by the Contractor 14 days prior to the commencement:

### (a) Fire

The Contractor shall advise the relevant authority of a fire as soon as one starts and shall not wait until he can no longer control it. The Contractor shall ensure that his employees are aware of the procedure to be followed in the event of a fire.

### (b) Accidental Leaks and Spillages

The Contractor shall ensure that his employees are aware of the procedure to be followed for dealing with spills and leaks, which shall include notifying the RE and the relevant authorities.

The Contractor shall ensure that the necessary materials and equipment for dealing with spills and leaks is available on Site at all times.

Treatment and remediation of the spill areas shall be undertaken to the reasonable satisfaction of the RE.

In the event of a hydrocarbon spill, the source of the spillage shall be isolated, and the spillage contained. The area shall be cordoned off and secured. The Contractor shall ensure that there is always a supply of absorbent material readily available to absorb/breakdown and where possible be designed to encapsulate minor hydrocarbon spillage.

The quantity of such materials shall be able to handle a minimum of 200 litres of hydrocarbon liquid spill.

In the event of a fire or accidental leak/spillage, the Contractor shall notify the RE as soon as possible, but at least within 48 hours of the incident being noticed.

The telephone numbers for the closest Hazmat offices should be prominently displayed as bitumen and diesel spillage on construction and road building sites are fairly common. The cleanup procedure is critical to prevent contamination.

## C1010 ENVIRONMENTAL AWARENESS TRAINING

Before any work is commenced on the Site, the Contractor's site management staff including foremen shall attend an environmental awareness training course of approximately one-hour duration presented by the EEA. The Contractor shall liaise with the RE prior to the Commencement Date to fix a date and venue for the course. The EEA will provide the course content. The Contractor shall provide a suitable venue and ensure that the specified employees attend the course.

The environmental awareness training course shall be held during normal working hours. The information presented at the course shall be communicated to the Contractors employees on the site, to any new employees coming onto site after the initial training course and to his suppliers as required by the Project Specification.

The Contractor shall ensure that all attendees sign an attendance register, and shall provide the RE with a copy of the attendance register the day after each course.

The Contractor shall erect and maintain information posters for the information of his employees depicting actions to be taken to ensure compliance with aspects of the Specifications. These information boards shall be erected at the locations, agreed by the RE and should contain the following symbols:

- At working areas: Use drip trays, use toilets, no eating, no littering, no swimming, no picking of flowers, no dogs, no veld fires.
- At eating areas: Use toilets, no littering, no veld fires.

## C1011 EXTERNAL AUDITING AND EVALUATION

In order to ensure that the Environmental Management Plan is effectively implemented, it is important that regular external audits of the Environmental Management Plan are conducted. An External Environmental Auditor (EEA) will be appointed by the Employer to undertake these audits on a monthly basis. The RE shall arrange that these external audits do take place and that a system for addressing any problems identified during these audits, is formulated. The relevant documentation shall be kept and shall be available to the public.

## C1012 ENVIRONMENTAL MANAGEMENT DURING DECOMMISSIONING

Environmental Management associated with the decommissioning of this project will ensure that the following items are addressed at closure and during the defects liability period:

- (a) All cleared sites are rehabilitated with indigenous grass material with a cover of at least 80%.
- (b) All visible alien plants are removed from disturbed sites.
- (c) All recyclable rubble and waste, for example, scrap metal, bottles, cans and plastics are collected and disposed of through a registered recycling company.
- (d) All non-recyclable rubble and solid waste be collected and disposed of at a registered waste disposal facility.
- (e) Provision has been made for stormwater control to prevent erosion from taking place post construction.
- (f) All borrow pits and quarries shall conform to the designed closure specifications, including drainage, slope stability, top-soiling and grass planting.

## C1013 TOLERANCES

Environmental management is concerned not only with the final results of the Contractor's operations to carry out the Works but also with the control of how those operations are carried out. Tolerance with respect to environmental matters applies not only to the finished product but also to the standard of the day-to-day operations required to complete the Works.

It is thus required that the Contractor shall comply with the environmental requirements on an ongoing basis.

## C1014 PAYMENTS

The contractor will not be separately reimbursed or compensated in respect of the compliance with this Part C3-Section C of the Scope of Works. All of the contractor's costs associated with the compliance with the provision of this part of the Project Specifications shall, save and except to the extent provided for in Section 1300: Contractor's Establishment on Site and General Obligations of the Pricing Schedule, be deemed to be included in the rates tendered for the various items of work listed in the Schedule of Quantities.

Payment of the final portion (15%) for Item 13.01(a), and payment of Item 31.03, Item B31.04, Items 59.01 and 59.02, will be withheld until all the requirements of Clause C1012 above are complied with.

Release of retention at the end of the Defects Liability Period will also be delayed in the event of non-compliance with the environmental requirements becoming apparent. No payment will be made until full compliance has been demonstrated.

## C1015 WORK STOPPAGE

The RE shall have the right to order work to be stopped in the event of significant infringements of the Environmental Specifications, until the situation is rectified in compliance with the specifications. In this event, the Contractor shall not be entitled to claim for delays or incurred expenses.

Any failure on the part of the Contractor to comply with the EMP will entitle the Resident RE to certify work stoppage subject to the details set out.

The Resident Engineer shall be the judge as to what constitutes a transgression subject to the provisions of the Conditions of Contract. In the event that transgressions continue, the Contractor's attention is drawn to the provisions of the Conditions of Contract, under which the Contract Supervisor and/or Employer may cancel the Contract.

In addition to work stoppage, penalties may be issues where there is damage to the natural or human environment as a consequence of the transgression(s) and/or non-compliance(s). In such an event, the Contractor may be liable to pay a penalty at the instruction of the Resident Engineer.

A list of incidents that may lead to work stoppage are indicated below - this list is not exhaustive:

- Failure to submit Method Statements timeously.
- Failure to stockpile topsoil properly or materials in designated areas.
- Inappropriate use of adjacent watercourses and water bodies.
- Pollution of water bodies - including increased sediment loads.
- Failure to maintain basic safety measures on site.
- Animal poaching (wildlife or domestic).
- Failure to provide waste disposal facilities or services.
- Excess dust or excess noise levels emanating from the Contractor's Camp and construction areas.
- Any person, vehicle, plant or item related to the Contractor's activities causing a public nuisance.
- Failure to carry out liaison with adjacent landowners; causing damage to property without prior negotiation and/or compensation and/or causing other social infringements.
- Failure to control the pollution risks from dispensing fuel or the storage of vehicles and plant (drip trays).

The Contractor shall be responsible for the costs associated with repairing any damage to the natural or human environment that may result from the transgression and/or the result of the work stoppage.

## C1016 NON-COMPLIANCE AND PENALTIES

In the event of non-compliance with the requirement of these Environmental specifications, penalties will be imposed at the discretion of the Employer.

The value of any penalty imposed shall be determined in light of the consequential damage caused and the costs required to rehabilitate the damaged area. Values are given for basic non-compliances below and these shall be used to determine the penalty for an identified or notified occurrence.

Payment of any penalty in terms of the contract shall not absolve the Contractor from being liable for prosecution in terms of the any appropriate law.

The contractor shall act immediately when such notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. This record shall be submitted with the monthly reports and a verbal report given at the monthly site meetings.

Any avoidable non-compliance with the above-mentioned measures shall be considered sufficient ground for the imposition of a penalty

The following penalties shall apply for environmental violations:

**(a) Unnecessary removal or damage to trees:**

- (i) 2600 mm girth or less ..... R5 000 per tree
- (ii) Greater than 2600 mm, but less than 6180 mm ..... R10 000 per tree
- (iii) Greater than 6180 mm girth ..... R30 000 per tree

**(b) Serious violations:**

- (i) Hazardous chemical/oil spill and/or dumping in non-approved sites ..... R10 000 per incident
- (ii) General damage to sensitive environments ..... R5 000 per incident
- (iii) Damage to cultural and historical sites ..... R5 000 per incident
- (iv) Uncontrolled/unmanaged erosion  
(plus rehabilitation at contractor's cost) ..... R1 000 to R5 000 per incident
- (v) Unauthorised blasting activities ..... R5 000 per incident
- (vi) Pollution of water sources ..... R10 000 per incident
- (vii) of vegetation damaged, (plus rehabilitation thereof at contractor's cost) ..... R2 000 per m<sup>2</sup>

The engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final.

**(c) Less serious violations:**

- (i) Littering on site ..... R1 000 per incident
- (ii) Lighting of illegal fires on site ..... R1 000 per incident
- (iii) Persistent or un-repaired fuel and oil leaks ..... R1 000 per incident
- (iv) Any person related to the contractor's operations found  
within the designated "no-go" areas ..... R500 per incident
- (v) Any vehicles or equipment related to the contractor's  
operations found within the designated "no-go" areas ..... R3 000 per incident
- (vi) Excess dust or excess noise emanating from site ..... R1 000 per incident
- (vii) Dumping of milled material in side drains or on grassed areas ..... R1 000 per incident
- (viii) Possession or use of intoxicating substances on site ..... R500 per incident
- (ix) Any vehicles being driven in excess of designated speed limits ..... R500 per incident
- (x) Removal and/or damage to flora or cultural or heritage  
objects on site, and/or killing of wildlife ..... R2 000 per incident
- (xi) Illegal hunting ..... R2 000 per incident
- (xii) Urination and defecation anywhere except in designated areas ..... R500 per incident

The engineer's decision with regard to what is considered a violation, its seriousness and the penalty imposed shall be final. The calculation shall include allied construction activities in the same way as the calculation of reduced payments under Section 8200. The imposition of such a penalty shall not preclude the relevant provincial or national authority from applying an additional penalty in accordance with its statutory powers. Any non-compliance with the agreed procedures of the EMP is a transgression of the various statutes and laws that define the manner by which the environment is managed.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression, as it deems fit.

## **c1017 MEASUREMENT and PAYMENT**

**C3-5/01 Penalty for unnecessary removal or damage to tress for the following girth sizes:**

- (a) 2600 mm girth or less ..... number (No)
- (b) Greater than 2600 mm, but less than 6180 mm ..... number (No)
- (c) Greater than 6180 mm girth ..... number (No)

**C3-5/02 Penalty for serious violations:**

- (a) Hazardous chemical/oil spill and/or dumping in non-approved sites ..... number (No)



- (b) General damage to sensitive environments ..... number (No)
- (c) Damage to cultural and historical sites ..... number (No)
- (d) Pollution of water sources ..... number (No)
- (e) Unauthorised blasting activities ..... number (No)
- (f) Uncontrolled / unmanaged erosion (Rehabilitation will be at Contractor's expense) ..... number (No)
- (g) Damage to sensitive vegetation in no-go areas. (Rehabilitation will be at Contractor's expense)..... square metre (m<sup>2</sup>)

**C3-5/03 Penalty for less serious violations:**

- (a) Littering on site ..... number (No)
- (b) Lighting of illegal fires on site ..... number (No)
- (c) Persistent or un-repaired fuel and oil leaks ..... number (No)
- (d) Any person related to the contractor's operations found within the designated "no-go" areas ..... number (No)
- (e) As per (d) above but for vehicles or equipment ..... number (No)
- (f) Excess dust or noise emanating from the site ..... number (No)
- (g) Dumping of milled material in side drains or grassed areas ..... number (No)
- (h) Possession or use of intoxicating substances on site ..... number (No)
- (i) Vehicles driven in excess of designated speed limit ..... number (No)
- (j) Removal and/or damage to flora cultural or heritage objects on site, and/or killing of wildlife ..... number (No)
- (k) Illegal hunting ..... number (No)
- (l) Urination and defecation except in proper latrines ..... number (No)

The unit of measurement for subsubitems C3-5/01(a) to (c) shall be the number of trees by girth size removed unnecessary or damaged.

The unit of measurement for subsubitems C3-5/02(a) to (f) shall be the number of serious violation incidents. The unit of measurement for subsubitem C3-5/02(g) shall be the square metre of "no-go" areas within which damage to vegetation has occurred irrespective of the actual area of vegetation damage.

The unit of measurement for subsubitems C3-5/03(a) to (l) shall be the number of less serious violation incidents.

The penalty rate applied to each subsubitem shall be as specified in subclauses C1016(C3-5/01) to (C3-5/03).

Table 7/1: Mechanisms that Cause Environmental Impacts during Construction Activities

SECTION	CONTENTS	ENVIRONMENTAL IMPACTS				
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
1300	Camp Establishment	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Within 100 m of water bodies (including wetlands, estuaries, streams and rivers). Within 1 km of the high water mark of the sea.
1400	Housing, Offices and laboratories	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Within 100 m of water bodies (including wetlands, estuaries, streams and rivers). Within 1 km of the high water mark of the sea
1500	Accommodation of Traffic	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas Maintenance of windrows	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Coffee bay
1600	Overhaul	Spillage Storage Noise/lights Dust control Exhaust fumes Washing waste	Turning circles Parking areas	Restrict access to sensitive areas	Protection of indigenous vegetation Preserve topsoil	
1700	Clearing and grubbing	Waste treatment Hazardous waste Water supply	Selection of site Preserve indigenous vegetation	Selection of site Preserve indigenous vegetation	Protection of indigenous vegetation Preserve topsoil	Within 100 m of water bodies (including wetlands, estuaries,

SECTION	CONTENTS	ENVIRONMENTAL IMPACTS				
		POLLUTION TYPE	DEFORMATION OF LANDSCAPE	SOIL EROSION	ALIEN VEGETATION	SENSITIVE AREAS (to be completed by compiler)
		Noise /lights Dust control	Preserve topsoil	Preserve topsoil		streams and rivers). Within 1 km of the high water mark of the sea
2100 -2400	Drainage	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	
4100	Asphalt works / sealing operations	Waste treatment Hazardous waste Water supply Spillage Storage Noise / lights Dust control Smoke control Storage of materials	Selection of site Preserve indigenous vegetation Preserve topsoil Turning circles Parking areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil	Within 100 m of water bodies (including wetlands, estuaries, streams and rivers). Within 1 km of the high water mark of the sea.
5000	Ancillary roadworks	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	

**APPENDIX 1: LIST OF PERMITS AND LICENCES**

ACT	REF	RELEVANCE	PERMIT OR LICENCE REQ.
National Environmental Management Act	No 107 of 1998	General principles of Integrated Environmental Management. Duty of care, and polluter pays principle.	Authorisation required under the Regulations.
EIA Regulations in terms of Chapter 5 of NEMA and associated activity listings	Gov Notices No. R. 385, R.386 and R.387	The new EIA regulations came into effect on the 3 July 2006. Activities listed under Government Notices No. R. 386 and R. 387.	EIA process required by virtue of listing under Item 5 of Government Notice No. 387. See <b>Error! Reference source not found..</b> Authorisation required from DEDEA.
National Water Act (NWA)	No 36 of 1998	Relates to all construction activities within the river course, affecting river banks, estuaries and wetlands.	Authorisation (whether License or General Authorisation) required from DWAF (DWAE). Currently underway as a parallel process.
National Environmental Management: Biodiversity Act (NEMBA)	No 10 of 2004	Provides a list of protected plant species, for which permits must be obtained before any protected or listed plants may be removed and/or destroyed.	Permits may be required from DEDEA and/or DWAF.
National Forests Act (NFA)	No 84 of 1998	No protected species have been identified as yet.	
Eastern Cape Environmental Conservation Bill (ECEC)	2001	Any realignment which directly affects Scarp Forest will trigger the requirements of the NFA.	
Conservation of Agricultural Resources Act (CARA)	No 43 of 1983	Construction activities within the vicinity of the rivers in particular are sensitive to the spread of invasive alien species. Ground disturbance in general increases the risk of spreading invasive alien species especially along the realignment sections.	Required by law to remove alien plant species.
National Heritage Resources Act (NHRA)	No 25 of 1999	Applies to any development, which covers an area of greater than 5000m <sup>2</sup> .	A Phase 1 Heritage Resource Impact Assessment is required.
Mineral and Petroleum Resources Development Act	No 28 of 2002	Where borrow pits and quarries will be opened to supply material for the road construction and related structures.	Mining Permit required.

**APPENDIX 2: EXAMPLE OF METHOD STATEMENT**

**METHOD STATEMENT NO:**

**SHORT DESCRIPTION & LOCATION OF ACTIVITY:**

---

**RESOURCES USED :**

Equipment used: .....

Labour used: .....

Materials: .....

**CONTROL OF ENVIRONMENTAL IMPACTS:**

LIKELY IMPACT	MITIGATION/PRECAUTIONARY ACTIONS - (relevant Environmental Specifications)	FREQUENCY OF APPLICATION
e.g. pollution of surface or groundwater.		e.g. daily, weekly, monthly, once-off

**ACTIONS IN CASE OF EMERGENCY:**

LIKELY IMPACT	MITIGATION/PRECAUTIONARY ACTIONS - (relevant Environmental Specifications)	FREQUENCY OF APPLICATION
e.g. explosions.		

Responsible Parties for implementing the above:

Checked by:

Approved by (Resident Engineer):

Approved by (EEA):



Province of the  
**EASTERN CAPE**  
TRANSPORT

**CONTRACT No:SCMU10 - 23/24-0010**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS FOR A PERIOD OF 36 MONTHS**

**PART C3: SCOPE OF WORK**

**SECTION D: OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS**

# PROVINCE OF THE EASTERN CAPE

## DEPARTMENT OF TRANSPORT

### CONTRACT No:SCMU10 - 23/24-0010

#### APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS FOR A PERIOD OF 36 MONTHS

##### Part C3: SCOPE OF WORK

###### PROJECT SPECIFICATION

###### OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS

#### TABLE of CONTENTS

C1.	INTRODUCTION
C1.1	LIST OF ABBREVIATIONS
C1.2	DEFINITIONS
C1.3	KEY ROLE-PLAYERS
C1.4	KEY REFERENCES
C2.	PURPOSE OF THE OCCUPATIONAL HEALTH & SAFETY SPECIFICATION
C3.	IMPLEMENTATION OF THE PROJECT SPECIFIC OCCUPATIONAL HEALTH & SAFETY SPECIFICATION
C4.	REQUIREMENTS AT TENDER STAGE
C4.1	Specific Project Risks and Requirements
C5.	GENERAL REQUIREMENTS
C5.1	Summary of Risks identified during Design
C5.1.1	General Requirements and Provisions (Series 1000)
C5.1.2	Drainage (Series 2000)
C5.1.3	Earthworks and Pavement Layers of Gravel or Crushed Stone (Series 3000)
C5.1.4	Asphalt Pavements and Seals (Series 4000)
C5.1.5	Ancillary Road Works (Series 5000)
C5.1.6	Concrete Pavements (Series 7000)
C5.1.7	Specified Hazardous Chemical Substances
C6.	NOTIFICATION OF COMMENCEMENT OF CONSTRUCTION WORK
C7.	HEALTH AND SAFETY PLAN FRAMEWORK
C7.1	Appointment of Competent Site Personnel
C7.1.1	Construction Supervision
C7.1.2	Construction Health and Safety Officer
C7.1.3	Traffic Safety Officer
C7.2	Health and Safety Representatives and Committee
C7.3	Appointment of Competent Contractors
C8.	GENERAL RISK MANAGEMENT
C8.1	Health Risks and Medical Surveillance

- C8.1.1 Noise Risks
- C8.1.2 General Environmental Conditions
- C8.2 Emergency Procedures
  - C8.2.1 First Aiders and First Aid Equipment
  - C8.2.2 Fires and Emergency Management
  - C8.2.3 Incident Management and Compensation Claims
- C8.3 Personal Protective Equipment (PPE) and clothing
- C8.4 Occupational Health and Safety Signage
- C8.5 Induction of Employees and Visitors, General H&S Training
- C8.6 Use of Support Work, Scaffolding and other Temporary Works
- C8.7 Testing Laboratory and the use of Radioactive Equipment
- C8.8 Transportation of Workers on Site
- C8.9 Crusher, Blasting and Batch Plants
- C8.10 Management of Plant and Equipment
- C8.11 Excavations
- C8.12 Inclement Weather
- C8.13 Auditing
- C8.14 Communication on Site
- C8.15 Care of Workers on Site
- C9. HEALTH AND SAFETY FILE
  - C9.1 Supporting Documentation
- C10 NON-CONFORMANCES
  - C10.1 Failure to Comply with Provisions
- C11 MEASUREMENT AND PAYMENT
  - ANNEXURE A: RECORDS TO BE KEPT ON SITE
  - ANNEXURE B: HEALTH AND SAFETY (H&S) PRE-TENDER REPORT
  - ANNEXURE C: TENDER STAGE OCCUPATIONAL HEALTH AND SAFETY PLAN EVALUATION
  - ANNEXURE D: NOTIFICATION OF CONSTRUCTION WORK 'ANNEXURE A'
  - ANNEXURE E: MANDATORY AGREEMENT 'SECTION 37.2'
  - ANNEXURE F: EXAMPLE HEALTH AND SAFETY AUDIT DOCUMENT
  - ANNEXURE G: NON-CONFORMANCES
  - ANNEXURE H: CLOSE OUT REQUIREMENTS
  - ANNEXURE I: BILL OF QUANTITIES FOR OCCUPATIONAL HEALTH AND SAFETY

## **C1. INTRODUCTION**

### **C1.1 List of Abbreviations**

AIA	Approved Inspection Authority
BoQ	Bill of Quantities
CC	Compensation Commissioner
CRs	Construction Regulations
DRPW	Department of TRANSPORT of the Eastern Cape Provincial Government
DME	Department of Mineral and Energy
DMR	Driven Machinery Regulations
DoL	Department of Labour
FEMA	Federated Employers Mutual Association
GAR	General Administration Regulations
GSR	General Safety Regulations
HIRA	Hazard Identification Risk Assessment
H&S	Health and Safety
LI	Labour Intensive
MS	Method Statements



MH&SA	Mine Health and Safety Act No. 29 of 1996 (as amended)
OH	Occupational Health
OHS	Occupational Health and Safety Act No. 85 of 1993 (as amended)
OHSS	Occupational Health and Safety Specification
PSHSS	Project Specific Health and Safety Specification
PC	Principal Contractor
PPE	Personal Protective Equipment
ER	Engineer's Representative
RHCS	Regulations for Hazardous Chemical Substances
SANS	South African National Standards (Authority)
SMME	Small, Micro, Medium Enterprise
SWP	Safe Work Procedure

## C1.2 Definitions

The definitions used will be those set out in the Regulation Gazette No 37305 of 7 February 2014 with the following additions:

**Client:** The Head of Department, Department of TRANSPORT of the Province of the Eastern Cape.

**DRPW:** The Department of TRANSPORT for the Province of the Eastern Cape.

**Designer:** Means a competent person appointed by the Client as Agent to design, supervise and monitor construction on their behalf

**Engineer:** Means a competent person appointed by the Client to design, supervise and monitor construction on their behalf.

**Hazard:** Source of exposure to danger

**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 operation phases.

**Health and Safety Agent:**

Means any person who acts as a representative for the Client in managing the overall health and safety work as their responsible person.

**Health and Safety Plan:**

Means a documented plan which answers to the Project Specific Health and Safety Specification; including all the supporting documentation that indicate how the Principal Contractor or Contractor plans to manage H&S for the duration of the Contract.

**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 in the construction site.

**Risk:** Means the probability or likelihood that a hazard can result in injury or damage.

**Regulation/s:** Shall mean the relevant regulation/s promulgated in terms of the Occupational Health and Safety Act, No. 85 of 1993.

- 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 areas and haul roads which are reasonably required for the activities for the Principal Contractor, and approved for such use by the Engineer.
- The Act:** Means, unless the context indicates otherwise, the Occupational Health and Safety Act, No. 85 of 1993 and Regulations promulgated thereunder, as amended.

### **C1.3 Key Role-Players**

- Client Representatives:** Luzuko Shode (Construction)
- Engineer:** In House Construction Unit (Pty) Ltd acting through a principal, or an official authorised in writing
- Engineers Representative (OHS):** Royal Chikwava
- H&S Agent:** TBA

### **C1.4 Key References**

- Occupational Health and Safety Act No. 85 of 1993 and Regulations (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
- Traffic Safety Manual (SARTSM) Chapter 2, Volume 13 of 1999
- Road Traffic Safety Act No. 93 of 1996 (as amended)

## **C2. PREAMBLE**

The Department of TRANSPORT (DRPW) 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 DRPW 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 H&S of DRPW stakeholders, which include its employees, professional service providers, public and its physical assets. The responsibilities that the Department 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.

The DRPW, as the Client and its Health and Safety (H&S) Agent acting on its behalf, shall provide a project specific Health & Safety Specification (PSHSS) for the project and provide it to the Principal Contractor/s making a bid or appointed to perform construction work for the project, or parts thereof.

### **C2.1 Purpose of the Occupational Health and Safety Specification (OHSS)**

The OHSS is a performance specification to ensure that the Client (DRPW) and any bodies that enter into formal agreements with the Client, i.e. Engineers, Principal Contractors (PC) and Contractors, achieve an acceptable level of OHS performance. The Client has a zero tolerance to non-compliance and the endangering of the lives of workers, and the public, thereby being placed at risk.

No advice, approval of any document required by the OHSS (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 and must sign an OHS 5.37.2 mandatory agreement with the Client.

The H&S Specification highlights the aspects to be implemented over and above the minimum requirements of current legislation. Requirements may be changed should new risks or issues are identified that could not have been foreseen during the design phase of the project.

### **C3. IMPLEMENTATION OF THE OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION (OHSS)**

The project specific H&S specification (PSHSS) forms an integral part of the Contract, and PCs are required to make it an integral part of their Contracts with Contractors and Suppliers. A PSHSS will be available for each level of Contract and Contractor, and must be complied with. Failure to do so will be noted as a serious offense, and will result in a penalty, stoppage of part of, or the whole works, with no extension of time or allowable claims; this includes the submission of an approved health and safety plan

This specification must be read in conjunction with the OHS, 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 detailed design risk assessment is included, as is a summary of risks identified as attached.

The OHS 5.37.2 Mandatory Agreement found in the Tender Document must be fully completed by the PC. These documents shall be deemed to form part of the returnable Contract Documents.

No work may commence without written approval of the H&S plan by the H&S Agent. Failure to comply with this requirement will result in a penalty, stoppage of part of, or the whole works, with no extension of time or allowable claims.

Should there be design changes, or change in the scope of works, an amended PSHSS may be issued. Where amended PSHSSs are issued, the PC will be required to ensure a resubmission of an amended H&S plan for approval. Further to this, the PC must ensure that a similar system must be implemented between all their Contractors.

The H&S Agent will visit the project at least monthly, or more frequently if deemed necessary to ensure compliance. All activities on the site and all appropriate documentation will be monitored and reported on to the Client, Engineer and Contractor. Non-conformances will be issued and penalties or work stoppage instructions will be issued where appropriate. Communication between the H&S Agent and the PC will be through the Engineer or Engineer's Representative (ER) as determined at the commencement of the project.

### **C4. REQUIREMENTS AT TENDER STAGE**

Tenderers are required to submit a pre-tender H&S plan with their Tender submission.

The documentation submitted will be used to assess the competence of the tenderer, as required by the CRs, therefore the information submitted needs to be complete and as close as possible to the final product.

Adequate pricing for H&S is also required, and the appropriate section in the BoQ is to be completed. Failure to do so could result in the Tender being regarded as non-responsive.

The PC shall ensure the following information is submitted as part of the H&S plan with his completed Tender:

- A project specific H&S Plan in line with this project specification which will be subject to approval by the H&S Agent. This must include all supporting documentation as required to verify the H&S system;

- A declaration to the effect that he has the competence and necessary resources to carry out the work safely in compliance with the Construction Regulations 2014;
- A valid Letter of Good Standing;
- At least one copy of minutes of previous Occupational Health and Safety Committee meetings;
- Incident Investigation Reports for other projects of a similar nature undertaken by the tenderer;
- Claims ratio receipt from FEM or the Compensation Commissioner for the previous review period;
- A copy of the latest DMR audit of a mine previously worked on (if applicable), and
- Detailed technical method statements for approval by the ER and appropriate risk assessments and safe work procedures for approval by the H&S Agent:
  - Site establishment;
  - Clearing and grubbing;
  - Opening and establishing quarries and borrow pits;
  - Haul road construction, and
  - Construction of the site laboratory, offices and accommodation
  - Appointments of the following, with the relevant CVs: Construction Supervisor, Construction Health and Safety Officer, Risk Assessor, Fall Protection Planner, First Aider.
  - An organogram of the site relationships showing at least the above appointments by name.

Further method statements are to be submitted prior to, and during the project which will require the approval of the ER before work on that aspect or activity can commence.

#### **PRE-START UP ACTIVITIES:**

Once the H&S plan has been approved there may well be additional documentation that includes appointments, emergency arrangements or further method statements and risk assessments. The inclusion of such aspects for personnel or Contractors commencing work at this time is required to be approved and verified by the Engineer and H&S Agent.

### **C5. SPECIFIC PROJECT RISKS AND REQUIREMENTS**

The aspects covered in Sections 6.4 to 6.7 have been noted as risk areas in the design hazard identification and risk assessment (HIRA), and are to be noted when developing the H&S plan and associated documentation. The COLTO Standard Specification (among other) document was used to develop the HIRA, and the same reference format is used. Where particular risks are noted, further requirements may be specified. Identification of low or medium risks does not mean there is no risk involved. In depth HIRAs and management systems are required to limit as much risk as possible as required in OHS&A. Requirements for H&S systems, standards, PPE etc. are noted (but are not limited to), and the management thereof should be included in the documentation.

Technical method statements are to be developed for all key activities as they relate to the programme and approved by the ER. HIRA are to be developed using the approved method statements. Method statements are to incorporate the following information: plant, equipment, labour requirements, method of working and the duration of each activity.

H&S method statements and safe work procedures (SWPs) (or safe operating procedures (SOPs) are to be used by key site staff for daily activities and supervisors need to ensure the site, workers and the public are kept safe. The environmental issues may be included, but will need to be approved by the Environmental Consulting Officer (ECO).

### **C6. GENERAL REQUIREMENTS**

#### **C6.1 Summary of Risks identified during Design**

##### **C6.1.1 General Requirements and Provisions (Series 1000)**

Information in this series cover the start-up aspects of the project, with a number of the activities (excluding establishment) lasting the duration of the contract.

**C6.1.2 Drainage (Series 2000)**

**C6.1.3 Earthworks and Pavement Layers of Gravel or Crushed Stone (Series 3000)**

**C6.1.4 Asphalt Pavements and Seals (Series 4000)**

**C6.1.5 Ancillary Roadworks (Series 5000)**

**C6.1.6 Concrete Pavements (Series 7000)**

**C6.1.7 Specified Hazardous Chemical Substances**

The following lists of products or type of substance are those that have been identified as likely to be used on the project. Where the PC is likely to supply the product as the product has not been specified, safer alternatives should be considered. Medical surveillance will be required for those

<b>PRODUCT</b>	<b>POTENTIAL HEALTH OR OTHER RISKS</b>
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.
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
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

## C7. NOTIFICATION OF COMMENCEMENT OF CONSTRUCTION WORK

The PC shall notify the Provincial Director of the Department of Labour (DoL) in writing, in the form of the Annexure A in the CRs. This shall occur after award of the contract, but before commencement of construction work. Proof of submission and/or receipt must be provided. Work will not commence without the Notification being correctly completed and signed by the Client. The Notification shall only be signed by the Client following the approval in writing by the H&S Agent.

Work will not commence without the Notification being correctly completed and signed by the Client and proof of receipt by the Department of Labour received. The Notification shall only be signed by the Client following the approval in writing by the H&S Agent, or the Client.

Where changes to the conditions given in the submission are required (i.e. other Contractors, completion dates, increase in workers), a revised Annexure A must be submitted to the Department of Labour. It is preferable that the completion date includes the defect liability period. A copy of the notification form and any further submissions must be kept in the H&S file.

## C8. HEALTH AND SAFETY PLAN FRAMEWORK

The aspects related to the project outlined in the previous sections are to be taken into account when drawing up the H&S Plan. The PC is required to demonstrate competence by providing a H&S system that will address the requirements of the project.

The current legislative requirements, SANS codes and any other standards that may guide practice are to be taken into consideration. The following aspects must be addressed in the H&S Plan, as they have been identified in the design HIRA, as playing a role in reducing the overall risk of a particular activity, or section of the project. The H&S Agent may from time to time request additions or systems as they relate to the works at the time. The PC must include in his Health and Safety file an organogram showing all appointments and responsibilities on site. This must include names of personnel where possible.

The PC is to prepare one or more site layout drawings to indicate at least the following:

- positions of emergency personnel and equipment at the site camp, or each fixed working area;
- traffic routes for plant and pedestrians, parking;
- storage areas (flammable stores, materials etc.)

Such drawings could be the same as those required by the ECO. Such layouts are to be updated regularly throughout the project.

### C8.1 APPOINTMENT OF COMPETENT SITE PERSONNEL

The CEO (OHS 516.1) of the PC will take overall responsibility for the appointment of competent site staff for the duration of the project. Should the CEO not be personally involved in the project, the H&S responsibilities are to be delegated to the Site Agent (OHS 16.2). All other legal appointments are to be made with relevance to the type of work required and kept current with the project programme. The construction team is to ensure the H&S Officer is kept up to date with all planned activities, to ensure all H&S requirements are met.

All construction/technical method statements are to be generated by senior site personnel, and the appropriate risk assessments developed therefrom in conjunction with the H&S Officer.

The Occupational Health and Safety Plan shall include the following, but not be limited to the following key appointments:

#### C8.1.1 Construction Supervision

Competent supervisors who are appointed to manage part or all of the works must have had training and/or experience in the area of responsibility. All site supervisors must show evidence of basic training in H&S, and an understanding or training in areas of responsibility (i.e. risk assessments, method statements etc.).

Multiple competent supervisors may be appointed where justified by the scope and complexity of the works. Curriculum Vitae (CVs) are to be submitted for approval by the Engineer, Agent, and/or Client. Each supervisor will be held responsible for the safety of working teams and subordinates, housekeeping and stacking and storage of materials.

### **C8.1.2 Construction Health and Safety Officer**

The PC will employ at least one competent, full-time H&S Officer for the duration of the contract. If the Client approves, a part-time CHSO may be used on small projects.

The H&S Officer's CV is to be submitted for approval by the Engineer as well as the H&S Agent, preferably at the pre-construction phase. The PC is to ensure adequate resources are provided in order to undertake all responsibilities (i.e. mobile phone, computer and internet access, vehicle etc.) Qualifications shall include at least grade 12, SAMTRAC or similar (e.g. NEBOSH:), with a minimum of two years exposure to Civil Engineering Construction in an OHS capacity.

He should also have undergone training in the Act and Regulations.

In the case of a contract where contractors are employed, the H&S Officer must have the competence to evaluate the Contractors Health and Safety plans. The CHSO must hold a valid driver's license.

This person may not hold any other position on the site staff.

The Construction Supervisor assisted by the H&S Officer will be held responsible for all H&S on the project. Senior site staff and supervision, Contractors are to follow systems, instructions etc. given by the H&S Officer at all times. No new workers or Contractors may commence work without approval or following the H&S plan as submitted. Failure to do so will be considered a serious offence.

The H&S Officer shall not be the same person as the Traffic Safety Officer, but will be responsible for ensuring that daily traffic management is adequately managed for all teams.

A close out meeting will be held at the end of each formal audit by the H&S Agent and findings will be issued in the form of site instructions. Senior site staff will be obliged to attend the close out meeting.

A monthly report of all H&S activities and incidents is required by the end of the first week of each month, or at a date agreed to by the H&S Agent and the H&S Officer. The H&S Officer will be responsible for collating the H&S documentation (electronically) at the close out of the project. A list of the typical aspects that should be provided is available as an Annexure to this document.

### **C8.1.3 Traffic Safety Officer (TSO)**

The PC is to appoint a competent TSO. The TSO shall be responsible to the H&S Officer. The CV of the TSO is to be submitted to the Engineer and H&S Agent for approval. Attention is drawn to the provisions of Section 1500 of the COLTO specifications as given in the Contract Data and Scope of Work. Furthermore, no workers will be allowed to be transported in open vehicles, or with plant and materials.

Traffic accommodation drawings will be provided by the Engineer, and any changes suggested or required are to be discussed and approved by the Engineer. 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 Engineer and/or H&S agent. Additional care must be taken where workers and construction traffic interface. This should be in the form of flagmen to direct trucks and adequate signage as directed by the Engineer.

A system of recording daily traffic accommodation is to be provided. Photographs are to be taken following the placement of the accommodation to prove compliance. All daily records must be signed by the ER.

It must be noted that further penalties are specified for non-compliances in this PSHSS.

### **C8.1.3 Other Appointments**

Other critical appointments, such as the Risk Assessor, Emergency Co-Ordinator, First Aider, Incident Investigator, etc. must be of competent persons. The Client, Engineer and H&S Agent reserve the right to accept or reject any such appointment if the appointee is not considered to be adequate for the post.

### **C8.2 Health and Safety Representatives and Committee**

H&S Representatives are to be appointed following the start-up of the project, to be made up from both permanent and Contractors or 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 H&S Officer deems such labour competent to do 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 H&S Officer shall ensure 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 H&S Agent 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.

Failure to do so will be deemed to be a moderate offence.

### **C8.3 Appointment of Competent Contractors**

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. An index 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:

- The H&S Officer is to ensure a Contractors appointment and approval of H&S documentation at least seven (7) working days prior to commencing work.
- 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.
- No work may commence without Mandatary (37.2) agreements between parties in place.

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 H&S Officer is to ensure the level of H&S documentation is appropriate:

- Mandatary agreements in place
- Letter of Good Standing
- Method Statements and Risk Assessments
- Available information relative to:
  - Load testing and registers for cranes or lifting devices
  - Medical Certificates of Fitness
  - Safety Data Sheets (SDSs)



Failure to provide written approval of H&S documentation will be considered a serious offense, and could result in aspects of, or all of, the activities being stopped and/or penalties implemented.

## **C9. GENERAL RISK MANAGEMENT**

### **C9.1 Health Risks and Medical Surveillance**

The specified products have been listed above. As some products have not been identified, the PC is to ensure the H&S Officer and all supervision is responsible for ensuring the safe use of such products, and their inclusion into method statements and risk assessments. The appropriate SDSs are to be obtained for all products and used to develop the H&S documentation as they relate to the works.

Ergonomic risks are to be noted, especially where there are LI components, and all workers (including those of Contractors) are to be included in the medical surveillance programme.

Workers will be exposed to noise, dust, volatiles and vibration (whole body and upper body) due to the type of plant, materials specified and the general nature of the works. Silica and general environmental monitoring for the general construction, as well as works at borrow pit and the quarry have been allowed for in the BoQ, as well as the allowance for medical surveillance.

Environmental monitoring results and risk assessments are to be made available to the occupational health professionals doing the medical surveillance. The use of occupational risk exposure profiling (OREPS) and job descriptions are to be used to determine specific exposures for management.

Medical surveillance will commence at pre-employment. All workers (including 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. Arrangements for keeping medical records for the required time are to be noted. It is preferable that the PC has a medical surveillance plan. Full medical records are not to be placed in the H&S file. A procedure for managing the medical records which require safekeeping for prescribed periods are to be addressed.

Given the potential health risks the following aspects are to be included in each medical surveillance intervention:

- Full medical, surgical and occupational history;
- Full physical examination of all systems, and
- 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:

- Audiometry (hearing tests);
- Spirometry (lung function testing);
- Chest X-rays;
- Liver function testing (volatiles), and
- Any other tests identified as relevant

Failure to do so will be considered a serious offence.

#### **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). 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 PPE in them is enforced. All plant brought in by plant hire companies is to be compliant with the Noise Induced Hearing Loss Regulations.

Audiometric testing of all workers is to be included in the medical surveillance programme. Double audiometric testing at pre-employment and single tests thereafter is required. These should be repeated annually and as part of the exit medical. Audiometry records are to be available in the H&S file.

Suitable SANS approved hearing protective equipment shall be issued and worn. Where several items of construction plant are in operation at or near to each other, the noise zone for the combined plant should be established and suitable hearing protective equipment used within this zone.

Failure to do so will be considered a serious offence.

### **C9.1.2 General Environmental Conditions**

Compliance with the Environmental Regulations (as amended), among others is required. Environmental monitoring of ventilation, lighting and dust may be deemed to be required by the Approved Inspection Authority used to measure the environment. Copies of the relevant reports and actions taken in respect of these are to be placed in the H&S file.

Any spillages of substances which could be toxic to persons must be dealt with adequately. The Contractor must include his spillage removal system in the OHS Plan.

### **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 H&S Agents 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 may be adapted 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:

- Appointment of a competent emergency response co-ordinator and wardens;
- Lists of first aiders, and
- Requirement in terms of identified risks:
  - Fire;
  - Explosions;
  - Falls from heights, and
  - Motor vehicle accidents.

The emergency plan is to ensure the inclusion of local service providers where possible. Such arrangements should be made with these persons prior to the commencement of the project. 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. Furthermore first aiders from the community or SMMEs, if not already accredited, are to be sent for 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. It is suggested that all supervisors carry an appropriately stocked first aid kit in their vehicles at all times.

#### **C9.2.2 Fires and Emergency Management**

The PC must ensure that any fire risks will be managed appropriately. Trained fire fighters could be appointed at offices or areas where fire risks are deemed high. The emergency plan is to include the risk of fire at site camps, on site and related to any specific activities.

Fire extinguishers will 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 an appropriate 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 Engineer and H&S Agent 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 monthly report.

*Failure to comply with emergency provisions will be considered a serious offence, and the operation or project may be stopped if deemed inadequate for the work at the time of assessment or site inspection.*

### **C9.3 Personal Protective Equipment (PPE) and Clothing**

The wearing of the identified SANS approved PPE at all times is non-negotiable. The PC shall ensure that all workers (Including Contractors and other PCs) are issued with and shall wear:

- Hard hats;
- Protective footwear;
- Reflective bibs or vests and overalls;
- Eye and ear protection, and
- Any other necessary PPE identified from SDSs or risk assessments.

Adequate quantities of PPE shall be kept on site at all times. This shall include necessary PPE for visitors. The procedures for managing PPE are to be in a formal procedure submitted with the H&S plan for approval; this must include the company policy on the issue and replacement of PPE.

Any person found on site without the necessary PPE will be removed from site until the PPE is supplied and worn, and penalties may be issued per non-compliance.

### **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:

- 'no unauthorised entry';
- 'report to site office';
- 'site office';
- 'beware of overhead work';
- 'hard hat area' or other PPE requirements noted;
- First aid box positions (including vehicles), and
- 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.

The Contractor shall establish a system for controlling and recording entrance to the Site office and camp area.

### **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 is supplied and, and penalties may be issued for non-compliance.

### **C9.6 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 Engineer (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 Engineer. 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.

Failure to do so will be considered a serious offence.

### **C9.7 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 H&S Agent 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. Method statements, risk assessments and the appropriate training will be required.

Failure to do so will be considered a serious offence.

### **C9.8 Transportation of Workers 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. The cover shall be securely fixed to the vehicle. No equipment or materials shall be transported in the same vehicle at the same time as workers. Failure to transport workers in a safe manner will be regarded as a serious offence. Tenderers must indicate in their OHS plans what type of transport is envisaged and how this will be managed.

Failure to do so will be considered a serious offence.

### **C9.9 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 1996 and its Regulations. Work in these areas must comply with these requirements and separate appointments and CoPs 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. Dust suppression systems (water or closed systems) and regular monitoring are required. The added requirement of Chest X rays for workers is to be added to pre-employment medicals and repeated 2 yearly thereafter.

The Department of Mineral Resources (DMR), as well as the H&S Agent 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.

Whichever form of batch plant is used, for mixing concrete or slurries for surfacing, guards and protection of nip points, emergency stops etc. are to be appropriately managed by competent supervision. Edge protection, movement of plant and dust management are required.

All blasting must comply with the Explosives Act No. 15 of 2003 and the OHS&A and MH&SA or other legislation as applicable. Method statements and risk assessments will be required before blasting will be permitted. The Engineer and H&S Agent will be required to approve the arrangements. Should a blasting Contractor be used, the requirements relating to the management of Contractors shall apply. The requirements listed in the Amendments to the Standard Specification should be referred to.

Failure to do so will be considered a serious offence.

#### **C9.10 Management of Plant and Equipment**

A substantial amount of large plant and equipment is likely to 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 at the H&S Agent's audit. All daily inspection records are to be kept 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.

Only competent, fit plant operators are to be used. Medical certificates of fitness are required for all operators. Noise levels are to be displayed on plant.

Any plant or slings used to lift plant or material require annual load testing by an AIA. Operators are to be adequately trained and certified to operate cranes. Certificates and registers are to be placed in the H&S file.

Movement of plant in closures and in confined working areas is to be closely monitored and managed by the TSO and supervisors. The blind spots of plant are to be taken into account and workers and Contractors protected accordingly.

Failure to do so will be considered a serious offence.

#### **C9.11 Excavations**

Steep slopes require careful management. The 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 Engineer. 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.

As far as possible water should be kept out of excavations and no work should take place when water is standing in an excavation unless the excavation supervisor has approved such work.

The H&S Officer is to ensure that all Contractors follow the same requirements as they relate to excavations. The Engineer may stop work at any time should the working area be deemed unstable. Method statements are to be approved by the Engineer and risk assessments are required. Workers are to be

trained in the risks and protection measures, and the appropriate PPE is to be issued as highlighted in the risk assessments.

A competent person is to be appointed to manage excavations. All equipment and conditions are to be checked daily prior to work commencing. Communal registers for excavations on site are not permitted. Excavations should preferably not be open beyond what can be worked daily. Where excavations need to remain open, all excavations are to be properly protected, candy striped tape is not acceptable. Plastic mesh supported on adequate droppers 1 000 mm high should be used (approved by the Engineer). Berms are required to be a safe distance from the edge of the excavation. Stepped excavations are encouraged.

Adequate numbers of ladders are to be available to ensure safe access and egress from excavations. Ladders are required for excavations of greater than 1000 mm, and the ladder is to extend at least 1 000 mm above the edge of the excavation. No wooden ladders are allowed on site. Registers are to be kept current and placed in the H&S file.

Failure to do so will be considered a serious offence.

### **C9.12 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 H&S Officer and the Engineer.

Failure to manage specific conditions or address issues timeously will be considered a serious offence.

### **C9.13 Auditing**

External auditing by the H&S Agent will be done at least monthly or more frequently if deemed required by the H&S Agent, Client or Engineer. The site will be inspected and the documentation audited relative to the activities and H&S plan. The H&S Officer of the PC must accompany the Client, or the H&S Agent, on all audits and inspections.

The PC will ensure that all their Contractors are audited at least monthly prior to the H&S Agents monthly audits. 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, Engineer or H&S Agent 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.

Failure to address findings or non-conformances will be considered a serious offence.

### **C9.14 Communication on Site**

All communication on site will be done through the Engineer to the PC and be in writing, including the issue and responses to non-conformances and H&S audit results.

Failure to address issues timeously will be considered a serious offence.

#### **C9.15 Care of Workers on Site (Welfare)**

Adequate toilets, clean, safe drinking water and decent shelter will be afforded workers at all times.

Toilets 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 1:10. 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.

Failure to address issues timeously will be considered a serious offence.

#### **C9.16 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.

These requirements are applicable to any employee of any organization providing services on site. Penalties may also be applied by the Client, OHS Agent or Engineer.

#### **C9.17 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.

Method statements and safe work procedures will be required for all work involving electrical apparatus.

#### **C9.18 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.

#### **C9.19 Working Over Water**

Where circumstances, such as work on bridges, require that persons are working over water, a suitable fall protection plan must be put in place. A risk analysis of the danger of drowning must be carried out to determine the necessity for the wearing of life jackets and the presence of rescue equipment in case of a fall into the water.

If the river is subject to flash flooding, a suitable warning system must be developed to avoid any person being caught in the flood when working in or near the river.

## **C10. HEALTH AND SAFETY FILE**

The documentation submitted and approved following the awarding of the contract will be used to form the H&S file. The H&S file is required to be laid out in a logical manner, and documentation filed within the file is to be easily accessible. The following completed information shall be included (but not be limited to):

- The PSHSS;
- The H&S Plan;
- Appointment by Client;
- Mandatary agreement with Client;
- Notification of construction work;
- A record of all working drawings, calculations and design where applicable;
- Detailed list of Contractors with contact details, appointments, Mandatories etc.;
- Record of Competencies;
- Training Records.
- Permits;
- Method statements;
- Risk assessments;
- Safe work procedures;
- Emergency and injury management;
- SDSs;
- Medical surveillance records;
- Registers, and
- Records of audits, minutes etc.

### **C10.1 Supporting Documentation**

The following list is not absolute, and the PC is expected to assess if any further information should be submitted as supporting documentation, as it relates to the H&S plan. The inclusion of other, relevant documents is encouraged.

All documents as required by the Act and Regulations, including (but not limited to):

- Proof of registration with the Compensation Commissioner or FEMA;
- Proposed Organogram;
- Appointments under the Regulations;
- Examples of internal audits;
- Inspection registers of plant and equipment;
- Non-conformance system;
- Information relating to hazardous materials used and stored on site with SDSs;
- All Method Statements, Hazard Identification and Risk Assessments for the project;
- All Health and Safety Plans for the project;
- Examples of minutes of all relevant meetings related to H&S;
- Registers for all plant and equipment
- Incident records, including investigations and results, and
- Medical certificates of fitness and medical surveillance programme.

The H&S File shall closed out following the hand-over of the project. A list will be made available and the contents will be agreed to between the H&S Agent and the PC towards the end of the project.

## **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.

The following constitute examples of the types of non-conformances that will attract penalties:

<b>Minor Penalty: R 50.00 / count</b>	<b>Medium Penalty: R 500.00 / count and a non-conformance</b>	<b>Severe Penalty: R 5 000.00 / count, a non-conformance and / or activity stoppage</b>
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 Method Statements	Invalid Letters of Good Standing
Tools and equipment identified in poor condition during inspections	Legal non-conformances identified during the previous audit and not addressed within the agreed time frame	Non-compliance with traffic accommodation requirements: layout or physical conditions
	No 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 Method Statements	

### **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 engineer or the Client's H&S Agent, shall be sufficient cause for the Engineer to apply penalties as follows:

- (iii) 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.
- (iv) 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 ER or Engineer. 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.

### **C12. MEASUREMENT AND PAYMENT**

The payment items for Occupational Health & Safety are contained in Schedule C of the Bill of Quantities. The same rules are applicable in respect of the pricing of these items as for every other payment item. Attention is drawn to the Pricing Instructions in Part C2.1 of this document.

#### **Item and Unit**

**C3-6/01                                      Preparation of site Specific Health and Safety Plan.                                      (Lump Sum )**

The rate for this item must cover all expenses incurred in preparing the site specific Health and Safety Plan as required by the Client's Project Specific Health and Safety Specification in this document.

**C3-6/02 Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations (Lump Sum)**

The full amount will be paid in one instalment only when the Client's Agent has verified and approved the following

- (a) The Principal Contractor has notified the Provincial Director of the Department of Labour in writing of the project, Annexure A to the Regulations.
- (b) The Principal Contractor has made the required initial Appointments of Employees and Contractors.
- (c) The Client has approved the Principal Contractor's project Health and Safety Plan.
- (d) The Principal Contractor has set up his Health and Safety File.

**C3-6/03 Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations (Month)**

The amount shall represent full compensation for that part of the Principal Contractor's general obligations in terms of the Occupational Health and Safety Act and Regulations which are mainly a function of time. Payment will be made when the Client's Agent has verified the Principle Contractor's compliance as part of the audit. This will include the updating and administration of the Health and Safety file.

**C3-6/04(a) Provision of full time Construction Health and Safety Officer (Month)**

The Tender sum shall include for the cost of a Construction Health and Safety Officer on a full time basis, his overheads, transport and all others items necessary for the proper carrying out of his duties, which include the induction and training of all persons on site. If a part time safety officer is appointed, by agreement with the Employer, then the amount Tendered will be prorated according to the amount of time spent on the project.

**C3-6/04(b) Provision of 1 No OHS assistant to above Man-Month**

Expenditure under this item will be in accordance with the conditions of contract. The amount due to the Contractor will be equal to the total of the actual amount paid to the OHS assistants 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 OHS assistants. The Contractor shall advise the Engineer of the full monthly cost for each OHS assistant engaged. No payment other than that provided above will be made in respect of the OHS assistants.

**C3-6/05 Provision of Personal Protective Equipment (PPE) as listed in the Bill of Quantities (No)**

The rates for these items shall include for the procurement, delivery, storage, distribution and all other actions required for the supply of PPE to the employees of the Principal Contractor, full or part time, requiring them. Sub-contractors are responsible for their own costs in this regard. Any items of PPE not included on the list will be paid for only after the Engineer has agreed to their acquisition.

Items listed will include, among others which may be noted, are: hard hats, reflective vests, reflective bibs, high visibility overalls, protective foot wear, fall arrestor harness and tethers, gloves, ear muffs, earplugs and dust masks of appropriate type. Normal items such as standard



The rates for these items 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.

**C3-6 / 09 Establishment of Noise Levels (No)**

This item shall cover all costs involved in the establishment of noise zones, including any workshops, in terms of Regulation 9, of the Noise-Induced Hearing Loss Regulations. Where a zone has previously been established for a particular item of plant within the last two years, the test need not be repeated but must be kept valid for the duration of the Contract.

**C3-6 / 10 Payment for H&S Representatives at meetings (Hr)**

The rate for this item shall cover the cost to the Contractor of the attendance of Health and Safety representatives at monthly meetings and shall compensate the Contractor for loss of productive time at these meetings

**C3-6 / 11 Provision of First Aid Boxes (No)**

The rate for this item shall cover all costs incurred in the provision and maintaining of first aid boxes as outlined in Paragraph 7 above.

**C3-6 / 12 Transportation for Workers on Site (Month)**

The unit of measurement is the month. The amount tendered under this Item shall cover all costs involved in the safe transportation of workers as outlined above. Payment will be made monthly and pro rata for parts of a month for the duration of the contract.

**C3-6 / 13 Submission of Health and Safety File (Lump Sum)**

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

This amount will be paid only once the Principal Contractor has met all his obligations in respect of the Occupational Health and Safety Act and the Construction Regulations and has submitted his Health and Safety File complete as envisaged on this specification to the Client's satisfaction. This must be done prior to the issue of a Certificate of Completion

Notwithstanding any statements in section 1300 of the COLTO Specifications, should the Certificate of Practical Completion be issued after the Contractual Completion date no payment will be made under items C.02 and C.03 for the period between the Contractual Completion date and the date of issue of the Certificate of Practical Completion. This, however does not relieve the Principal Contractor of any of his legal responsibilities for Occupational Health and Safety in terms of the Act and Regulations

**C3-6 / 14 HIV/AIDS awareness education**

**C3-6 / 14a) Preparation and submission of HIV/AIDS service provider workshop plan (Lump Sum)**

The lump sum rate shall include full compensation for preparation and submission of HIV/AIDS service provider workshop plan.

**C3-6 / 14b) Conduct HIV/AIDS awareness workshops on site for all (Lump Sum)  
local and other workers employed on the contract, inclusive of all direct and  
indirect costs.**

The lump sum rate shall include full compensation for conducting HIV/AIDS awareness workshops on site for all local and other workers employed on the contract, inclusive of all direct and indirect costs.

**C3-6 / 14c) Provide and maintain condom dispensers (for both male (Lump Sum)  
and female condom) on site.**

The lump sum rate shall include full compensation for providing condoms, for both males and females, and condom dispensers. The contractor shall maintain the condom dispensers for the duration of the contract.

**C3-6 / 14d) Provide and maintain HIV/AIDS awareness posters on site (Lump Sum)**

The lump sum rate shall include full compensation for providing and maintaining HIV/AIDS awareness posters on site for the duration of the contract.

**C3-6 / 14e) Provide information regarding the voluntary testing of all (Lump Sum)  
workers on site, counselling support and care.**

The lump sum rate shall include full compensation for providing information regarding the voluntary testing of all workers on site, counselling support and care for the duration of the contract.

**C3-6 / 14f) Appointment of a HIV/AIDS awareness champion (Lump Sum)**

The lump sum rate shall include full compensation for appointing an HIV/AIDS awareness champion.

**C3-6 / 14g) Provide sanitary towels (for females) on site (Lump Sum)**

The lump sum rate shall include full compensation for providing sanitary towels for females on site for the duration of the contract.

**ANNEXURE A**

**RECORDS TO BE KEPT ON SITE**

<b>ITEM</b>	<b>CR</b>	<b>RECORD TO BE KEPT</b>	<b>RESPONSIBLE PERSON</b>
1.	3(3)	Notification to Provincial Director - Annexure A Available on site	Principal Contractor
2.	5(1)(m)	Copy of Principal Contractor's Health & Safety Plan Available on request	Client (Consultant)
3	5(1)(j)	A Valid Letter on Good Standing in respect of Workman's Compensation	Principal Contractor
4	7(1)(d)	Copy of Principal Contractor's Health & Safety Plan As well as each Contractor's Health & Safety Plan Available on request	Principal Contractor
5	7(1)(b)	Health & Safety File opened and kept on site (including all documentation-required in respect of the OHSA & Regulations. Available on request	Principal Contractor
6.	7(1)(e)	Consolidated Health & Safety File handed to Client on completion of Construction work. To include all documentation required by the OHSA & Regulations.	Principal Contractor
7.	7(1)(f)	Comprehensive and Updated List of all Contractors on site, the agreements between the parties and the work being done.	Principal Contractor
8.	6(7)	Keep record on the Health & Safety File of the input by Construction Health and Safety Officer [CR 8 (5)]	Principal Contractor
9.	9(6)	Risk Assessments, kept up to date and available on site for inspection	Principal Contractor
10.	7(7)	Proof of Health & Safety Induction Training	Principal Contractor
11.	10(3)	Construction Manager [CR 8 (1)] has latest updated version of Fall Protection Plan [CR 10 (1)]	Principal Contractor
12.	9(2)(b)	Inform Principal Contractor in writing of dangers and hazards relating to construction work	Designer of Structure
13.	11(1)(c)	All drawings pertaining to the design of structure On site available for inspection	Principal Contractor
14.	11(2)(b)	Record of inspection of the structure [First 2 years - once every 6 months, thereafter yearly]	Owner of Structure
15.	11(2)(d)	Maintenance records - safety of structure Available on request	Owner of Structure
16.	12(3)(c)	Drawings pertaining to the design of formwork/support work structure. Kept on site, available on request	Principal Contractor
17.	13(2)(h)	Record of excavation inspection On site available on request	Principal Contractor
18.	17(11)	Suspended Platform inspection and performance test records. Kept on site available on request	Principal Contractor
19.	19(8)(c)	Material Hoist daily inspection entered and signed in record book kept on the premises	Principal Contractor
20.	19(8)(d)	Maintenance records for Material Hoist Available on site	Principal Contractor
21.	20(8)	Records of Batch Plant maintenance and repairs On site available for inspection	Principal Contractor
22.	21(2)(g)(ii)	Issuing and collection of cartridges and nails or studs (Explosive Powered Tools) recorded in register - recipient signed for receipt as well as return	Principal Contractor
23.	231(1)(k)	Findings of daily inspections (prior to use) of Construction Vehicles and Mobile Plant	Principal Contractor
24	24(d)	Record of temporary electrical installation inspections [once a week] and electrical machinery [daily before use] in a register and kept on site	Principal Contractor

25		Copies of all appointments made in regard to safety supervisors and inspectors	Principal Contractor
26		Record of safety inspections on equipment using radioactive materials.	Principal Contractor
27		Any other records as required by the Client or his OHS Agent	

#### ANNEXURE B

#### PROVINCE OF THE EASTERN CAPE DEPARTMENT OF TRANSPORT

#### HEALTH AND SAFETY (H&S) PRE-TENDER REPORT

Tenderers are required to submit a pre-tender H&S plan with their Tender submission.

The following requirements were set in the tender documentation and have been utilized to assess the completeness of the documentation presented with the submission of tenders. These requirements fulfil the requirements of the Client in terms of the Construction Regulations, Regulation 5(1)(h) They are to be read in addition to the Act and Regulations but are not a substitute for them.

The documentation submitted will be used to assess the competence of the tenderer, as required in the CRs, therefore the information submitted needs to be complete and as close as possible to the final product.

The following scores have been used to determine compliance with the pre-tender requirements:

Scoring as follows:

Not supplied or not adequate	0
Supplied and complete	1

If the tenderer has not completed any projects then Items 4 and 5 need not be supplied. A letter to this effect must be attached.

Tenderers are required to achieve a minimum of 10 out of a total of 17 for their tenders to be considered.

Legal or Specification Reference (Construction Regulations - CRs)	Pre-Tender Requirement H&S	Tenderers Response	Max Score	Actual Score
CRs 7(1)(a)	1 A project specific H&S Plan in line with this project specification which will support the CRs, therefore the information submitted needs to be complete and as close as possible to the final product. See check sheet		1	
CRs 5(1)(g)	2 Adequate pricing for H&S is also required, and the appropriate section in the BoQ is to be completed. Failure to do so could result in the Tender being regarded as non-responsive.		1	
CRs 5(1)(h)	3 A declaration to the effect that he has the competence and necessary resources to carry out		1	

	the work safely in compliance with the Construction Regulations 1003;			
	4 At least one copy of minutes of previous Occupational Health and Safety Committee meetings;		1	
	5 Incident Investigation Reports for other projects of a similar nature undertaken by the tenderer		1	
CRs 7.1	6 Detailed technical method statements for approval by the ER and for approval by the H&S Agent: a. Site establishment; b. Clearing and grubbing; c. Construction of offices and accommodation, and d. Proposed site layouts		1 1 1 1	
CRs 9.1	7 Appropriate risk assessments: a. Site establishment; b. Clearing and grubbing; c. Construction of offices and accommodation, and d. Proposed site layout		1 1 1 1	
CR 7.1	8 Appropriate safe work procedures: a. Site establishment; b. Clearing and grubbing; c. Construction of offices and accommodation, and d. Proposed site layouts		1 1 1 1	
	<b>FINAL SCORE</b>		<b>17</b>	



## ANNEXURE C

### TENDER STAGE OCCUPATIONAL HEALTH AND SAFETY PLAN EVALUATION

Tenderers will be scored on their response to various facets of the Health and Safety Specification in the Tender Document.

Failure to achieve a score of 60 % will render the tender non-responsive.

Proof of the evaluation must be given under the remarks column.

1	General	Is the Specification Project Specific? If not then the score is	0
	Scoring	Response present and satisfactory	1
		Not present	0

OHS Act Regulation	Specification Section	Description	Max Score	Score
6.2	7.1	Construction supervisor	1	
6.6	7.1.2	Construction H&S Officer	1	
	7.1.3 (spec sect 1500)	Traffic Safety Officer	1	
	5.1	Health Risks and Medical Surveillance		
NIHLR	5.1.1	Noise Risks	1	
	5.2	Emergency Procedures		
GSR 3	5.2.1	First Aiders and First Aid Equipment	1	
CR 27	5.2.2	Fires and Emergency Management	1	
GAR	5.2.3	Incident Management and Compensation Claims	1	
GSR 2	5.3	Personal Protective Equipment (PPE) and clothing	1	
GSR 2B	5.4	Occupational Health and Safety Signage	1	
CR 7 (8;9)	5.5	Induction of Employees and Visitors, General H&S Training	1	
CR 21	10.6	Management of plant and equipment	1	
CR11	5.7	Excavations	1	
CR 8	5.8	Working at Heights	1	
CR 8	5.8.1	Fall protection plan	1	
DMR 11/CR 20	5.9	Cranes and lifting equipment	1	
DMR 11	5.9.1	Tower cranes	1	
CR 10	5.10	Temporary works	1	
CR 18	5.13	Batch Plants	1	
CR4(1)(d)	5.15	Auditing	1	

	5.16	Communication on Site	1	
CR 28 Facilities Regs.	5.17	Care of Workers on Site (Welfare)	1	

	Additional Requirements			
		Organogram	1	
	1.3	Declaration of competency	1	
CR 7 (1)		Method Statements (SWPs)		
		a) Site Establishment	1	
		b) Clearing and Grubbing	1	
		c) Excavations	1	
CR4.1 (h)		Has pricing for OHS been allowed for?	1	
		TOTAL SCORE	28	0
		TOTAL PERCENTAGE		0.00

**ANNEXURE D**

**NOTIFICATION OF CONSTRUCTION WORK (ANNEXURE A)**

**Regulation 4 of the Construction Regulations, 2014**

1. (a) Name and postal address of principal Contractor:  
.....
- (b) Name and telephone number of principal Contractor's contact person:  
.....
2. Principal Contractor's compensation registration number:  
.....
3. (a) Name and postal address of Client:  
.....
- (b) Name and telephone number of Client's contact person or agent:  
.....
4. (a) Name and postal address of designer(s) for the project:  
.....
- (b) Name and telephone number of designer's contact person:  
.....
5. Name and telephone number of principal Contractor's construction supervisor on site appointed in terms of regulations 6 (1):  
.....
6. Name/s of principal Contractor's sub-ordinate supervisors on site appointed in terms of regulation 6 (2):  
.....
7. Exact physical address of the construction site or site office:  
.....

8. Nature of the construction work:

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

9. Expected commencement date: .....

10. Expected completion date: .....

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

.....

12. Planned number of Contractors on the construction site accountable to principal Contractor:

.....

13. Name(s) of Contractors already chosen:

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

.....  
Principal Contractor

.....  
Date

.....  
Client

.....  
Date

- THIS DOCUMENT IS TO BE FORWARDED TO THE LOCAL OFFICE OF THE DEPARTMENT OF LABOUR WHERE THE PROJECT WILL TAKE PLACE, PRIOR TO COMMENCEMENT OF WORK ON SITE.
- ALL PRINCIPAL CONTRACTORS THAT QUALIFY TO NOTIFY MUST DO SO EVEN IF ANOTHER PRINCIPAL CONTRACTOR ON THE SAME SITE HAD DONE SO PRIOR TO THE COMMENCEMENT OF WORK.
- A LETTER OF CONFIRMATION IS TO BE KEPT IN THE OHS FILE

**ANNEXURE E**

**AGREEMENT IN TERMS SECTION 37.2 OF THE OCCUPATIONAL HEALTH AND SAFETY ACT 1993  
(ACT NO. 85 OF 1993, AS UPDATED IN GOVERNMENT GAZETTE 7721 OF 18 JULY 2003)**

THIS AGREEMENT is made at;.....,

on this the, ..... day of ....., in the year .....

between

---

(hereinafter called "the Client") of the one part, herein represented by;

..... in his capacity as.....

and delegate of the Client in terms of the Client's standard powers of delegation pursuant to the provisions of Act No 7 of 1998.

and

---

(hereinafter called "the Mandatory") of the other part, herein represented by

.....in his capacity as .....

and being duly authorised by virtue of a resolution appended hereto as Annexure A.

WHEREAS the Client is desirous that certain works be constructed, viz

CONTRACT NO: ....., and has accepted a tender by the Mandatory for the construction, completion & maintenance of such works and whereas the Client and the Mandatory have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatory with the provisions of the Occupational Health and Safety Act 1993 (Act 85 of 1993 as updated);

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

- 1 The Mandatory shall execute the work in accordance with the contract documents pertaining to this contract;
  
- 2 This Agreement shall hold good from its commencement date, which shall be the date determined in terms of the Form of Offer and Acceptance, or other date decided upon, in the Contract Data, to either:
  - a) The date of the final certificate issued or as contained in this Volume ..... of the contract documents pertaining to this Contract, or
  - b) The date of termination of the Contract;
  
- 3 The Mandatory declares to be conversant with the following:
  - b) All the requirements, regulations and standards of the Occupational Health and Safety Act (Act 85 of 1993 as updated), hereinafter referred to as "The Act", together with its amendments and with special reference to the following Sections of The Act.
    - i. Section 8: General duties of clients to their employees;
    - ii. Section 9: General duties of clients and self-employed persons to persons other than employees;
    - iii. Section 10: General duties of manufacturers and others regarding articles and substances for use at work;
    - iv. Section 37: Acts or omissions by employees or Mandatories, and
    - v. Sub-section 37(2) relating to the purpose and meaning of this Agreement.
  
  - b) The Contractor shall ensure that he familiarises himself with the requirements of the Company's health and safety specification developed for the project, and that he, his employees and any other Contractor s employed during the project comply with them. The Contractor shall ensure that all health and safety documentation required by with the Company's health and safety plan is maintained for the duration of the project.
  
- 4 In addition to the requirements of conditions of contract (as amended by the Contract Data of the contract documents pertaining to this Contract), the Mandatory agrees to execute all the works forming part of this Contract and to operate and utilize all machinery, plant and equipment in accordance with The Act.
  
- 6 The Mandatory is responsible for the compliance with the Act by all his Contractors, whether or not selected and/or approved by the Client.
  
- 8. The Mandatory warrants that all his own and his Contractors' workmen are covered in terms of the Compensation for Occupational Injuries and Diseases Act 1993 as amended, which cover shall remain in force whilst any such workmen are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Client upon signature of the agreement.

9. The Mandatory undertakes to ensure that he and/or subcontractors and/or their respective clients will at all times comply with the following conditions:

- d) The Mandatory shall assume the responsibility in terms of Section 16.1 of the Occupational Health and Safety Act. The mandatory shall not delegate any duty in terms of Section 16.2 of this Act without the prior written approval of the Client. If the mandatory obtains such approval and delegates any duty in terms of section 16.2 a copy of such written delegation shall immediately be forwarded to the Client.
- e) All incidents referred to in the Occupational Health and Safety Act shall be reported by the Mandatory to the Department of Labour as well as to the Client. The Client must further be provided with copies of all written documentation relating to any incident.
- f) The Client hereby obtains an interest in the issue of any formal enquiry conducted in terms of section 32 of the Occupational Health and Safety Act into any incident involving the Mandatory and/or his employees and/or his Contractors.
- g) The Mandatory shall conduct such risk assessments, method statements and safe work practices as may be necessary during the course of the contract and shall ensure that all staff are informed of these. Proof of this shall be placed in the project Health and Safety file.
- h) Adherence to the Contractor's Health and Safety plan must be enforced including the application of penalties for non-conformance as set out in the Client's Health and Safety Specification.

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

SIGNED FOR AND ON BEHALF OF THE CLIENT: .....

WITNESS:

1 ..... 2.....

NAME (IN CAPITALS)

1 ..... 2.....

Date .....

SIGNED FOR AND ON BEHALF OF THE MANDATORY: .....

WITNESS:

1 ..... 2.....

NAME (IN CAPITALS)

1 ..... 2.....

Date .....



ANNEXURE F

LEGAL REQUIREMENT AND REGISTER AUDIT										
ITEM	LEGAL REF	REF TO SPEC.	RECORDS TO BE KEPT	SCORE	FINDINGS FROM LEGAL AND PHYSICAL INSPECTIONS	ACTION BY	START DATE	CLOSE DATE	OUT	REQUIRED ACTIONS/ COMMENTS
1			Updated project H&S Organogram							
2	OHSA SPEC.	8.1	16.1							
			16.2							
3	16 (1) and (2)		CV of 16.1							
			CV of 16.2							
4	CR 8 (1) and (2)		<b>Designation of Construction Manager(s) and Subordinate Person(s)</b>							
			CR 8.1							
			CR 8.2							
			CV's on file							
5	OHSA S. 17; GAR 7	8.2	H&S Representatives appointed							
			Monthly inspections completed							
			Representation from Contractors							
6	OHSA S. 18; GAR 5	8.2	H&S Committee appointed							
			Minutes on file							
			H&S representatives reports discussed							
			Incidents discussed							

			Signed by Chair/CEO						
			Evidence of minutes noted						
7	GAR 4		<b>Copy of OH&amp;S Act (Act 85 of 1993)</b>						
			Available on site.						
			Posters displayed						
			Copy of Contract document available on site.						
8	CR5(1)(j), 7(1)(f)	5	<b>Written proof of registration / Letters of good standing available on Site List of PC and Contractors on site</b>						
9	OHS A S.37.2	4	Copy of the Mandatory (S37.2) agreement between the PC and Client						
10	OHS A S.37.2		<b>Mandatory agreements between PC and Co-Contractors</b>						
11	CR 3(6)	7	Notification to Provincial Director - Annexure A. Copy available on site						
			Reply from DoL						

12	CR 5(1)(m)	6	Copy of Principal Contractor's Health & Safety Plan Available on request.						
			Letter of approval from Agent.						
13	CR 7(1)(b)		Health & Safety File opened and kept on site (including all documentation- required in respect of the OHSA & Regulations						
			Available at all times						
14	CR 7(1)(d)	8.3	Copy of Principal Contractor's Health & Safety Plan provided to Contractors						
15	CR 7(1)(f)	8.3	Letters of approval for each contractor on file						
			List of Contractors on site						
16		5.1	<b>Copies of Technical Method Statements approved by RE (GCC 12.3.1)</b>						
			Register available, signed by RE						

17	CR 8(5) CR 6.8	8.1.2	H&S officer appointed and approved.						
			Traffic Safety Officer appointed and approved						
			CV's available						
18		9.2.1	First aider/s appointed and approved.						
			Certificates available						
19	CR 9(6) OHSA 14 CR 9(3)	5.1	<b>Risk Assessments:</b>						
			Up to date and available on site for inspection						
			Review and monitoring programme adhered to						
			<b>(All RAs to be listed)</b>						
			Carrying Passengers on vehicles						
			Excavations (manual and machinery)						
			Fuel supply						
			Material handling and storage						
			Moving of Construction Vehicle						
			Operating of Front End Loader						
Safe use of hand tools									

			Signs to control traffic						
			Site Establishment						
			Traffic accommodation						
		9.5	Workers trained in risk assessments						
20	CR 9.1 (c)	5.1	<b>Safe Work Procedures</b>						
			List of available SWPs						
		9.5	Workers trained in SWPs						
			Proof of training verified						
21	OHS SECT. 13 CR 7(7)	9.5	Induction programme available						
			Proof of induction training available						
22	CR 10		<b>Fall Protection:</b>						
			Appointment of Competent person						
			CV on file						
			Included in Risk Assessment						
			Addressed in emergency plan						
			Other site inspection findings						
			Registers available						

23	CR (3)	9(2)(b)	<b>Structural Information from Designer:</b>						
			Geo-science technical report						
			Design loading of the structure						
			Methods & sequence of construction						
			Design risk assessment						
			Addenda H&S Specification						
24	CR 12(3)(c)	9.6	<b>Support Work and Formwork:</b>						
			Competent persons appointed						
			CVs available						
			Design						
			Erection, maintenance, use and dismantling						
			Design drawings available on site						
			Risk Assessment included						
			Registers in line with support work and formwork noted in site inspection						

25	CR 13(2)(h)	9.11	<b>Excavations:</b>					
			Competent persons appointed					
			CVs available					
			Depth of excavations on site					
			Shoring in use					
			Registers in line with open excavations noted at site inspection					
26	CR 11 (f) GSR 13A	9.11	<b>Ladders:</b>					
			Competent person appointed					
			Registers kept					
27	ER CR 14	10 9.9	<b>Blasting:</b>					
			Competent person/s Appointed in writing for Demolition work					
			CV on file					
			Site Risk Assessment carried out					
			Method Statement available					
			Compliance with Explosive Regulations					
			Pre-shift Inspection register kept					
			Quarry permit in place					

28	CR 17(11)		<b>Suspended Platforms:</b>						
			Competent person appointed						
			CV on file						
			Suspended Platform inspection and performance test records						
			Registers for platforms noted on site						
29	CR 19(8)(c)(d)		<b>Material Hoist</b>						
			Competent person appointed						
			CV on file						
			Maintenance records available						
			Daily inspection register						
30	CR 20(8)		<b>Batch Plant:</b>						
			Appointment of Competent person						
			Registers for maintenance, cleaning and repairs						
			Risk Assessment carried out						
			Batch Plant to be inspected weekly by a competent person.						
			Inspections register available						



31	CR 23		<b>Construction Vehicles:</b>						
			Appointment of competent operators						
			Identity Document						
			Competency Certificate						
			Drivers Licence						
			PrDP						
			Medical Certificate						
			Plant and machine lists available						
			Inadequacies noted on site						
		Registers on file noting daily inspections							
	9.8	Transportation of workers							
32	CR 24		<b>Temporary Electrical Installations:</b>						
			Appointment of competent person						
			CV on file						
			Services identified and protected						
			Certificates of Compliance for installations						
Daily electrical machinery register									

			Quarterly inspections						
33	DMR CR 22	18	<b>Cranes and Lifting Equipment</b>						
			Competent person appointed						
			CV on file						
			Identity Document						
			Competency certificate						
			Drivers licence						
			PrDP						
			Medical certificate						
			Cranes & Lifting tackle identified/numbered on Register						
			Log Book kept for each individual Crane						
			Inspection:						
			- All cranes - <b>daily by operator</b>						
			- <b>6 monthly</b>						
			- Other cranes - <b>annually by comp. person</b>						
			- Lifting tackle(slings/ropes/chain slings etc.) - <b>3 monthly</b>						
			Risk Assessment carried out						
			Driven Machinery compliance re excavators and TLBs being used						

34	CR 27		<b>Stacking &amp; Storage Supervisor:</b>						
			Appointed per work area						
			CVs Available						
			Include site conditions						
			Spoil areas						
			Register available per area						
35	Dept Health Code of Practice	9.7	<b>Use of Radioactive Equipment</b>						
			Competent operator with certificate						
			Regular leak and other testing						
			Proper storage and signage						
			Register available						
36	GSR 2		<b>PPE:</b>						
			Included in Risk Assessment						
			PPE used and enforced						
			Training to use (Induction)						
			Records of Issue kept						
			Registers for condition checks						

37	GSR PER	9	<b>Welding/Flame Cutting Equipment</b>						
			Competent Person(s) appointed						
			CVs available						
			Equipment identified/numbered and entered into a register						
			Gas cylinders and store inspected and safe						
			Types of welding on site (List)						
			Equipment inspected monthly and register available						
38	RHCSs CR 7, 23		<b>Hazardous Chemical Use and Storage</b>						
			Competent Person/s appointed						
			CVs available						
			Risk Assessments include use of HCSs						
			Register of HCS kept/used on Site						
			Flammable Store						
			Bulk fuel storage						
			Safety Data Sheets on file and utilised						
Permit to store fuel in place									
39	PER		<b>Pressure Equipment (PEs):</b>						

			Competent person appointed						
			Fire Extinguishers inspected and up to date						
			Inspection Registers						
40	GSR 3	9.2.1	<b>Emergency Management:</b>						
			First aiders available through project						
			Level 3						
			Check First aid box(es)						
			First aid boxes through site						
Registers available (noted on site)									
41	GAR	9.2	<b>Incident Management:</b>						
			Emergency co-ordinator appointed						
			CV available						
			Emergency plan appropriate						
			Emergency level included in Risk Assessments						
			Workers trained						
			Incident reports available and complete						
Incident Investigator									
42	MHSA	9.9	<b>Crushing Plant/Quarry</b>						

			Competent person appointed (3.1)						
			Written Proof of Competence of above appointee available on Site including CV						
			Risk Assessment carried out						
			Method statements						
			Lock out system						
			Electrical certificate.						
			Machinery checked and register kept						
			All permits up to date						
43	MHSA (R3)	9.9	<b>Borrow Pits</b>						
			Competent person appointed (3.1)						
			CVs on file						
			COPs on file						
			Risk Assessment carried out						
			Method statements						
44	MHSA		<b>Codes of Practice</b>						
			Approval by DME						

45	DMR 2		<b>Revolving Machinery</b>						
			Exposed revolving parts to be countersunk, enclosed or guarded						
			Projecting shaft or spindle end be guarded by a cap or shroud						
			Stop/start controls						
			Controls appropriate						
			Emergency stops/system						
46	CRs RHCS's MHSA	8.1	<b>Medical Surveillance Programme</b>						
			Pre-placement						
			Periodic						
			Exit						
			Workers at height						
			Plant operators						
			DME Annual Medical report						
47	CR 21	Sect. 1500 Main Spec 8.1.3 SARTSM Chap. 13 Vol. 2	<b>Traffic Accommodation</b>						
			Competent person appointed						
			CVs available						
			Traffic plan according to SARTSM Ch.13Vol.2						
			Risk Assessments include traffic risks						
			Changes and registers signed by RE						
			Visual check on						

			Traffic Control						
			Inspection Registers kept						
48	CR 28		<b>Welfare Facilities:</b>						
			Toilets available where crews are working/clean						
			Clean potable water available						
49		See Main Spec	<b>HIV and AIDS programme</b>						
50	NIHLR	9.1.1	<b>Noise Risks</b>						
			Noise Zones established						
			Hearing PPE supplied						
			Audiometric testing done						
			Records Kept						

RESPONSIBILITY		DATE
OHS AGENT SIGNATURE		DATE
PC SIGNATURE		DATE
ENGINEER SIGNATURE		DATE
CLIENT SIGNATURE		DATE



**ANNEXURE G**

**HEALTH AND SAFETY SITE INSPECTION  
NON CONFORMANCE NO**

AGENT:	PROJECT:
Consultant:	Date and Time:
Client:	Area:
Contractor:	

ASPECTS NOTED	COMMENTS	COMPLETION REQUIRED BY (DATE)
	•	
	•	
	•	
	•	
	•	

PHOTOGRAPHIC EVIDENCE (if available):

1	2
3	4

OTHER:

The following penalties are to be applied:

Signature of RE	
Signature of H&S Officer/Site Agent	
Signature: of H&S Agent	

**CLOSE OUT OF NON- CONFORMANCE**

VERIFIED BY AGENT	COMMENTS ON WHAT WAS DONE (ATTACH PROOF IF AVAILABLE)	DATE COMPLETED	

PHOTOGRAPHIC EVIDENCE, OR LIST OF ANNEXURE TO PROVE CLOSURE

SIGNATURE OF H&S OFFICER OR SITE AGENT	
SIGNATURE OF ER	

## ANNEXURE H

### CLOSE OUT REQUIREMENTS

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.

Health and Safety close out file requirements include:

- 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
  - List of Contractors
  - Letters of Approval of Contractors
  - Mandatary Agreements
  - Letters of Good Standing
  - Appointments
- h) Incident Records
- i) Non- Conformance records
- j) Agent's Audits
- k) Method Statements
- l) Risk assessments
- m) Safe work procedures
- n) Medical surveillance certificates of fitness. Medical records are to be kept according to the OH&S Act as amended.
- o) All drawings for temporary structures (suspended beams/scaffolds etc.)
- p) Copies of test results, policies and procedures for environmental monitoring (silica, noise, dusts etc.)

**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.

SIGN HAZARD IDENTIFICATION AND RISK ASSESSMENT				Low	Med	High
				Risk Rating Multiplier: Low = 1; Medium = 2; High = 3		
				2	6	18
				3	8	27
<p>Baseline Residual Risk - Key Risks                      Raw Risk - Does not mean that the activity is safe, or that potential injuries and / or fatalities are eliminated                      Design - The extra factors noted that must be in place to reduce the risk                      Risk - Typical behaviour given the design / factors present.                      - The extra factors noted that must be in place to reduce the risk                      Key Risks will be assessed and reported on in the Site Specific H&amp;S Specification                      New tasks require re-assessment as the project progresses</p>						
GAR GSR SANS SABS NIHL OHS Act	General Administration General Safety South African National Bureau of Standards South African Bureau of Standards Noise Induced Hearing Loss Occupational Health and Safety Act and Regulations 85 of 1993	Regulations Regulations Standards Standards Loss	GMR SWP MS HCS PrDP	General Safe Method Hazardous Professional Machinery Work Chemical Driving Permit	Regulations Procedures Statements Substances	

				Baseline Design Risk				Raw				Residual Risk			
COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category	Extra control measures necessary to reduce risk / Redesign	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category			
<b>COLTO SERIES GENERAL REQUIREMENTS AND PROVISIONS</b>															
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. May be illegal connectionsAsbestos pipes	2	2	2	8	Competent supervision and adequate pre-task training will be requiredRemoval of asbestos pipe to be according to the Asbestos RegulationsAll 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 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	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			

				Baseline Design Risk				Residual Risk				
COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Raw Risk Rating and Risk Category	Extra control measures necessary to reduce risk / Redesign	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and 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 method statements, 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 engineers 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

				Baseline Design Risk				Residual Risk				
COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Raw Risk Rating and Risk Category	Extra control measures necessary to reduce risk / Redesign	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and 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 method statements, 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
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. Method statements and risk assessments to reflect management of same. Dedicated Traffic Safety Officer is to be employed to control these requirements	3	3	2	18

				Baseline Design Risk				Residual Risk				
COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Raw Risk Rating and Risk Category	Extra control measures necessary to reduce risk / Redesign	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category
1502(b)(f)	Temporary deviations	Yes	All deviations and temporary bypasses are to be approved by the RE	3	3	3	27	Construction drawings to be provided, all accommodation in line with SARTSM Ch 13 Vol 2. Method statements and risk assessments to reflect management of same.	3	2	1	6
1502(e)(h)	Are there specific concerns regarding public access?	Yes	Taxi /Bus stops and access to private property will be affected	3	3	3	27	Construction drawings to be provided, all accommodation in line with SARTSM Ch 13 Vol 2. Method statements and risk assessments to reflect management of same. Allowance will be made for access to private property	3	3	2	18
1502(i)	Traffic Safety Officer (TSO) will be appointed?	Yes	A team with at least 1 TSO to manage the traffic safety on site	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

				Baseline Design Risk				Raw	Residual Risk			
COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category	Extra control measures necessary to reduce risk / Redesign	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and 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 engineer for the disposal of materials Method Statements and Environmental approval	3	3	2	18
<b>COLTO SERIES 2000</b>												
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 Method Statements, Risk Assessments, PPE	2	2	1	4
2200	Prefabricated culverts	Yes	Where in-situ 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



				Baseline Design Risk				Raw	Residual Risk			
COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category	Extra control measures necessary to reduce risk / Redesign	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category
2300	Concrete kerbing, concrete channelling, chutes and down pipes and concrete linings for open drains	Yes	Pre-cast kerbs, in-situ 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 Method Statements and SWP	2	2	1	4
<b>COLTO SERIES 3000</b>												
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. Method Statements All operators to be competent in their specific operations Rehabilitation of borrow pits	3	3	1	9
3200	Stock piling	Yes	Stock piling will take place at the different sites along the route	3	3	2	18	Permission from the engineer for the disposal of materials All stock pile areas are to be fenced and are to comply with the relevant safety regulations	3	3	1	9
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 Method statements and SWP required	3	3	1	9

COLTO / LEGISLATIO N REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Design Risk				Raw	Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category			Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category
3400	Pavements	Yes	Excavation, compaction and placement of pavement	3	2	2	12	Alternative safe pedestrian passage is required where pavements are under construction Method statements 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	Method statements and SWP required	3	2	1	6	
<b>COLTO SERIES 4000</b>													
<b>COLTO SERIES 5000</b>													
5100	Stonework	Yes	Transportation of material to site. Manual labour. Vehicle traffic	3	3	3	27	Method statements and SWP required PPE, DD Green gloves	3	3	2	18	
5200	Gabions	Yes	Transportation of material to site. Manual labour. Vehicle traffic	3	3	3	27	Method statements 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	Method statements and SWP required Workers are to be issued with DD Green gloves, PPE,	3	3	2	18	

				Baseline Design Risk				Residual Risk				
COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category	Extra control measures necessary to reduce risk / Redesign	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category
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	Method statements and SWP required MSDS's, PPE and training	3	3	2	18
<b>COLTO SERIES 6000</b>												
6100	Foundations	Yes	Transportation of material to site Excavations, Structures and culverts	3	3	3	27	Method Statements, SWP Operators to be competent	3	3	2	18
6200	Formwork	Yes	Manual construction of formwork Shutter Manual labour	2	3	2	12	All formwork to be inspected and certified Method Statements, SWP, Training and MSDS's	2	3	2	12
6300	Steel reinforcement	Yes	Steel fixing	3	3	3	27	Training, Method statements, medical surveillance and working at height	3	3	2	18

				Baseline Design Risk				Residual Risk				
COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Raw Risk Rating and Risk Category	Extra control measures necessary to reduce risk / Redesign	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category
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 Method statements are to be submitted before demolition is started Competent personnel, PPE, Correct disposal of rubble	3	3	1	9
6600	Bearings and Joints	Yes	Bridges will have bearings and joints	3	3	3	27	Method Statements, SWP, PPE, Specialised personnel	3	3	2	18
<b>COLTO SERIES 7000</b>												
7100	Concrete Pavements	Yes	Excavations, compacting and pouring of concrete	3	3	3	27	Method Statements, SWP, PPE, Specialised personnel	3	3	1	9
7200	Reinforced earth	Yes	Retainer walls and Gabions	3	3	3	27	To be to engineers 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 engineers design. Checked on a regular basis	3	3	2	18
F1200	Concrete extensions	Yes	Some bridges and culverts will be widened	3	3	3	27	To be to engineers design. Checked on a regular basis	3	3	2	18
<b>OHS SPECIFICATIONS</b>												

				Baseline Design Risk				Residual Risk				
COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Raw Risk Rating and Risk Category	Extra control measures necessary to reduce risk / Redesign	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category
OHS Specification	Drilling	Yes	Holes for blasting will take place as follows; Borrow Pits and Road, Method Statements	3	3	3	27	Use of competent blasting and drilling company, Method Statements, PPE, Risk Assessments, SANS Codes	3	3	2	18
OHS Specification	Preparation of blast areas	Yes	Preparation as per Method Statements	3	3	3	27	Use of competent blasting and drilling company, Method Statements, 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, Method Statements, PPE, Risk Assessments, Sans Codes, OHS Act and SWP. Approval of blasting plan from the RE and OHSO 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, Method Statements, certified operators	3	2	1	6

				Baseline Design Risk				Residual Risk				
COLTO / LEGISLATION REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category	Extra control measures necessary to reduce risk / Redesign	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category
	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
OHS Specification	Hazardous Chemicals	Yes	HCS's will be used during the project	3	3	3	27	Medicals are required for persons using HCS Medical certificate issued by an Occupational Health Practitioner Method statements and SWP are to be in place	3	3	2	18
	Transportation	Yes	All vehicles to be identified as Construction Vehicles	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	3	1	9

COLTO / LEGISLATIO N REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Baseline Design Risk				Raw	Extra control measures necessary to reduce risk / Redesign	Residual Risk			
				Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category			Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category
	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	3	1	9	
	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	Flammable materials	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12	
		Yes	Petrol	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12	
		Yes	Diesel	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12	
		Yes	Lubricants	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12	
OHS Specification	Hazardous Chemicals	Yes	Gas cylinders	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12	
		Yes	Asphalt	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12	

				Baseline Design Risk				Residual Risk				
COLTO / LEGISLATIO N REF	Design aspect present	Yes / No	Describe the conditions and activities associated with the task	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Raw Risk Rating and Risk Category	Extra control measures necessary to reduce risk / Redesign	Likely Consequences of an Accident	Frequency of Exposure	Probability of Harm	Risk Rating and Risk Category
		Yes	Cement & cement bags	3	3	2	18	PPE, Method Statement, Training, Medicals and Induction and rotation of workers	3	3	1	9
		Yes	Road lime & lime bags	3	3	2	18	PPE, Method Statement, Training, Medicals and Induction and rotation of workers	3	3	1	9
		Yes	Silica hard rock quarry	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12
		Yes	Road marking paints	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12
		Yes	Primers	3	3	3	27	Medicals, PPE, first aid equipment and limit workers in work area	3	3	2	18
		Yes	Portable toilets	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	2	2	12
		Yes	Shutter oils	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	3	2	18
		Yes	Additives for concrete	3	3	3	27	PPE, Method Statement, Training, Medicals and Induction	3	3	2	18





Province of the  
**EASTERN CAPE**  
TRANSPORT

**CONTRACT No: SCMU10 - 23/24-0010**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE  
PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS FOR A  
PERIOD OF 36 MONTHS**

**Part C3: SCOPE OF WORK**

**SECTION E: HIV/AIDS AWARENESS EDUCATION SPECIFICATION**

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS FOR A PERIOD OF 36 MONTHS**

**Part C3: SCOPE OF WORK**

**SECTION E : HIV/AIDS AWARENESS EDUCATION SPECIFICATION**

<b>TABLE OF CONTENTS</b>		<b>PAGE</b>
E1	SCOPE C3.237	
E2	DEFINITIONS AND ABBREVIATIONS .....	C3.237
E3	BASIC METHOD REQUIREMENT.....	C3.237
E4	HIV/ AIDS AWARENESS EDUCATION AND TRAINING .....	C3.238
E5	PROVIDING WORKERS WITH ACCESS TO CONDOMS.....	C3.241
E6	ENSURING ACCESS TO HIV/AIDS TESTING AND COUNSELLING FACILITIES AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS (STI) .....	C3.241
E7	APPOINTMENT OF AN HIV/AIDS AWARENESS CHAMPION.....	C3.241
E8	MONITORING C3.241	
E9	REPORTING C3.242	
E10	MEASUREMENT AND PAYMENT.....	C3.242



## E1 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.

## E2 DEFINITIONS AND ABBREVIATIONS

### E2.1 Definitions

**Service Provider:** The natural or juristic person recognised and approved by the National Department of Public Works 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 Engineer as defined in the Contract Data.

### E2.2 Abbreviations

HIV : Human Immunodeficiency Virus  
AIDS : Acquired Immune Deficiency Syndrome  
STI : Sexually Transmitted Infection

## E3 BASIC METHOD REQUIREMENT

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

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

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

- (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:

- (a) The nature of the disease;
- (b) How it is transmitted;
- (c) Safe sexual behaviour;
- (d) Post exposure services such as voluntary counselling and testing (VCT) and nutritional plans for people living with HIV/AIDS;
- (e) Attitudes towards other people with HIV/AIDS;
- (f) Rights of the Worker in the workplace;
- (g) 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;
- (h) How the Service Provider will support the Awareness Champion;
- (i) Location and contact numbers of the closest clinics, VCT facilities, counselling services and referral systems;
- (j) How the workshops will be presented, including frequency and duration;
- (k) How the workshops will fit in with the construction programme;
- (l) How the Service Provider will assess the knowledge and attitude levels of attendees to structure workshops accordingly;
- (m) How the video will be used;
- (n) How the Service Provider will elicit maximum participation from the Workers;
- (o) A questions and answers slot (interactive session)

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

#### **E4 HIV/AIDS AWARENESS EDUCATION AND TRAINING**

##### **E4.1 Workshops**

The Contractor shall inform the local Community Health Centre of the project once site has been established. The Contractor shall also arrange for HIV/Aids Awareness Education and Training after the recruitment of local labour.

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 Public Works, is to be screened to Workers at workshops.

In order to enhance the learning experience, groups of not exceeding 25 people shall attend the interactive sessions of the workshops.

## **E4.2 Recommended practice**

### **E4.2.1 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.

### **E4.2.2 Service Providers**

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

### **E4.2.3 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.

#### **(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.
- (iii) 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.

**(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.

**E4.3 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 Public Works

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

#### E5 PROVIDING WORKERS WITH ACCESS TO CONDOMS

The Contractor shall provide and maintain condom dispensers and make both male and female condoms, complying with the requirements of SANS 4074:2017, 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

#### E6 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.

#### E7 APPOINTMENT OF AN HIV/AIDS AWARENESS CHAMPION

Within 14 days of site handover the Contractor shall appoint an Awareness Champion from amongst the Workers, who speaks, reads and writes English, who speaks and understands all the local languages spoken by the Workers and who shall be on site during all stages of the construction period. The Contractor shall ensure that the Awareness Champion has been trained by the Service Provider on basic HIV/AIDS information, the support services available and the necessary skills to handle questions regarding the HIV/AIDS programme in a sensitive and confidential manner.

The Awareness Champion shall be responsible for:

- (a) Liaising with the Service Provider on organising awareness workshops;
- (b) Filling condom dispensers and monitoring condom distribution;
- (c) Handing out information booklets;
- (d) Placing and maintaining posters

#### E8 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.

## E9 REPORTING

E9.1 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).

E9.2 The employer shall certify the report and schedule described in E9.1 whenever a claim for payment is issued to the employer.

NOTE: In the event that the contractor fails to comply with the requirements of E9, the employer may apply any of the sanctions provided for in the contract. Sanctions may include the application of a financial penalty.

## E10 MEASUREMENT AND PAYMENT

Payment items to cover the contractor's cost related to the HIV/AIDS Awareness Education are included in the bill of quantities. These items are described under in Schedule C of the bill of quantities.



**CONTRACT No: SCMU10 - 23/24-0010**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS FOR A PERIOD OF 36 MONTHS**

**PART C3: SCOPE OF WORK**

**SECTION F: LABOUR SPECIFICATION**

**PROVINCE OF THE EASTERN CAPE**

**DEPARTMENT OF TRANSPORT**

**CONTRACT No: SCMU10 - 23/24-0010**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS FOR A PERIOD OF 36 MONTHS**

**PART C3: SCOPE OF WORK**

**SECTION F : LABOUR SPECIFICATIONS**

<b>TABLE OF CONTENTS</b>	<b>PAGE</b>
F1 EMPLOYMENT OF LOCAL LABOUR AND TRAINING REQUIREMENTS.....	C3.259
F1.1 SCOPE .....	C3.259
F1.2 DEFINITIONS C3.259	
F1.3 ENGAGEMENT OF LOCAL LABOUR .....	C3.261
F1.4 CONTRACTUAL REQUIREMENTS.....	C3.262
F1.5 SANCTIONS C3.263	
F1.6 PROJECT STEERING COMMITTEE .....	C3.263
F1.7 COMMUNITY LIAISON OFFICER .....	C3.264
F1.8 TRAINING REQUIREMENTS.....	C3.265
F1.9 FORMAL TRAINING.....	C3.267
F2 SPECIFICATION FOR LABOUR-INTENSIVE CONSTRUCTION (EPWP) .....	C3.269

# F1 EMPLOYMENT OF LOCAL LABOUR AND TRAINING REQUIREMENTS

## F1.1 SCOPE

This 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. This specification is applicable to all Work Orders which require physical work activities to be carried out.

## F1.2 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 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.

## F1.3 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.

### F1.3.1 Employment of Local Labourers

Upon the award of the Contract the Contractor shall without delay consult with the Project Steering Committee (PSC), the Engineer 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.

### F1.3.2 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;
- (b) Preference shall be given to the long-term and single heads of households;
- (c) 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;

- (d) 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 Engineer thereof in writing, and the Engineer, 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 Engineer 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 Engineer 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.

## F1.4 CONTRACTUAL REQUIREMENTS

### F1.4.1 Legislation

The onus shall be on the Contractor to ensure that all statutory requirements applicable to the employment of Labour are observed.

### F1.4.2 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.

### F1.4.3 Targeted labour

The targeted labour shall be as specified above. The definitions, provisions and specifications of the South African National Standard Specification SANS 1914-5:2002, Targeted Construction Procurement : Part 5 : Participation of Targeted Labour will apply to this contract. Should there however be conflict between SANS 1914-5:2002 and the Works Specification, the latter shall take precedence and prevail.

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.



#### F1.4.4 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 Engineer 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 Engineer 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 Engineer.

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 C 4 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 Engineer with independently audited documentary evidence of the total actually paid to the workforce and the number of workers days generated during the contract.

### F1.5 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<sub>A</sub> = Award value (Contract Price exclusive of VAT, and allowances for contingencies and escalation)

L<sub>M</sub> = Local Labour Goal % stated in the Project Document

L<sub>A</sub> = The local labour component % which the Employer's Representative certifies as being achieved upon completion of the contract.

### F1.6 PROJECT STEERING COMMITTEE

When required a Project Steering Committee (PSC) shall be established to manage community issues related to 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.

## F1.7 COMMUNITY LIAISON OFFICER

### F1.7.1 Appointment

The Contractor shall appoint a Community Liaison Officer (CLO) after consultation with the Project Steering Committee (PSC), the Engineer 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 Engineer when called upon to do so.

### F1.7.2 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 Engineer 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 Engineer 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;
- (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 Engineer;
- (l) perform such other duties as required and agreed upon between all parties concerned.

### F1.7.3 Remuneration

The remuneration of the Community Liaison Officer shall be determined jointly by the Contractor, Engineer 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 Engineer and the Contractor.

#### F1.7.4 Transport of the Community Liaison Officer

The Contractor shall provide transport for the Community Liaison Officer as agreed upon between the Employer, the Engineer and the Contractor.

A Provisional Sum is provided in the Bill of Quantities to cover the provision of transport for the Community Liaison Officer.

## F1.8 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.

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 Engineer, and the Contractor shall, if so instructed by the Engineer, 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.

#### F1.8.1 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 Engineer 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 Engineer, 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 Engineer will choose the courses to be attended by the nominated and approval Local Labourers.

#### F1.8.2 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 Engineer, the Contractor shall make recommendations in this regard. The final list of candidates will be decided on between the Contractor and the Engineer.

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.

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.

#### F1.8.3 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.

#### F1.8.4 Non-compliance

If at any stage the Engineer 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 Engineer.

## F1.9 FORMAL TRAINING

### F1.9.1 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 Engineering projects and shall serve as a guide only for planning purposes. The actual training needs, training agency and programme shall be agreed with the Engineer 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:

- (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 Engineer.

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.

### F1.9.2 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.

### F1.9.3 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.

### F1.9.4 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 Engineer. At the successful completion of each course each participant shall be issued with certificate indicating the course contents as proof of attendance and completion.

### F1.9.5 Labour / Training Agent

If specified in the Contract, the Contractor shall appoint a Labour / Training Agent, subject to the written approval of the Engineer. 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 Engineer 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 Engineer may require. The Labour / Training Agent shall also be responsible for those aspects of training which are assigned to him the Contract.

### F1.9.6 Training centre

If so specified in the Contract a suitable on site Training centre shall be provided by the Contractor to the satisfaction of the Engineer. 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.

## F2 SPECIFICATION FOR LABOUR-INTENSIVE CONSTRUCTION (EPWP)

### F2.1 SCOPE

In order to reduce unemployment the Government has initiated the promotion of labour-intensive Expanded Public Works Programme (EPWP) projects.

The Expanded Public Works Programme (EPWP) is a short term, non-permanent, labour-intensive programme initiated by Government and funded wither fully or partially, from public resources to provide a public asset.

This specification sets out the provisions and requirements relating to labour-intensive construction for Expanded Public Works Programme (EPWP) projects.

### F2.2 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.**

### F2.3 LABOUR-INTENSIVE COMPETENCIES OF CONTRACTOR'S STAFF

#### F2.3.1 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.

### F2.3.2 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  any one of these 3 unit standards
		Use Labour Intensive Construction Methods to Construct and Maintain Roads and Stormwater Drainage	
		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  any one of these 3 unit standards
		Use Labour Intensive Construction Methods to Construct and Maintain Roads and Stormwater Drainage	
		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)			

### F2.4 STANDARD CONDITIONS OF EMPLOYMENT FOR EXPANDED PUBLIC WORKS PROGRAMME (EPWP) PROJECTS



The Ministerial Determination, Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice N° R63 of 25 January 2002, as reproduced below, shall apply to works described in the scope of work as being labour-intensive and which are undertaken by unskilled or semi-skilled workers.

#### F2.4.1 Introduction

- (a) This document contains the standard terms and conditions for workers employed in elementary occupations on an Expanded Public Works Programme (EPWP). These terms and conditions do NOT apply to persons employed in the supervision and management of an EPWP.
- (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 EPWP;
  - (iii) **"worker"** means any person working in an elementary occupation on a EPWP;
  - (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 an EPWP;
  - (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.

#### F2.4.2 Terms of Work

- (a) Workers on an EPWP are employed on a temporary basis.
- (b) A worker may NOT be employed for longer than 24 months in any five-year cycle on an EPWP.
- (c) Employment on an EPWP does not qualify as employment as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

#### F2.4.3 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.

#### F2.4.4 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.

#### F2.4.5 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.

#### F2.4.6 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.

#### F2.4.7 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").

#### F2.4.8 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.
- (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.

#### F2.4.9 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.

#### F2.4.10 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
  - (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 EPWP on which she was employed has ended.

#### F2.4.11 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.

#### F2.4.12 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 EPWP;
  - (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 EPWP.
- (b) An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.

- (c) An employer must supply each worker with a copy of these conditions of employment.

#### F2.4.13 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;
  - (iii) In the case of a time-rated worker, the time worked by the worker;
  - (iv) Payments made to each worker.
- (b) The employer must keep this record for a period of at least three years after the completion of the EPWP.
- (c) The Contractor shall ensure that local labourers who are recruited for the Contract produce their 13 digit Identity Document. A certified copy of the Identity Document for each beneficiary must be forwarded to the DRPW Regional EPWP representative for record keeping and included in the monthly Contractors Performance Report.
- (d) Each beneficiary shall sign an EPWP employment contract and each page of the Contract must be initialled by the beneficiary. The aforementioned Contracts must be forwarded to the relevant Regional EPWP Unit, kept on file for the Project and included in the monthly Contractors Performance Report.
- (e) A daily attendance register shall be kept and signed by each beneficiary and kept on record and reported on in the monthly Contractors Performance Report. A copy of the attendance registers shall also be forwarded to the Regional EPWP Representative.
- (f) The Site Agent or the CLO or the Contractor shall sign the Daily Labour Reports as documentary proof that the beneficiaries indicated have in fact worked that day. The number of days worked per beneficiary must be recorded in the monthly Contractors Performance Report.

#### F2.4.14 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) Each beneficiary shall sign a payment sheet which shall be regarded as proof that payment has been received.
- (j) 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.

#### F2.4.15 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.
- (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.

#### F2.4.16 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.
- (c) The Contractor shall procure overalls that must comply with the following:
  - (i) Overall colour to be orange;
  - (ii) the letters "EPWP" must appear on the back of the jacket in 30 centimetre letters;
  - (iii) the EPWP logo must appear on the heart pocket on the front of the jacket.

#### F2.4.17 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 EPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.
- (b) A worker must report any work-related injury or occupational disease to their employer or manager.
- (c) The employer must report the accident or disease to the Compensation Commissioner.
- (d) An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be

refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.



#### F2.4.18 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.
- (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.

#### F2.4.19 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 EPWP on which the worker worked;
  - (iv) The work performed by the worker;
  - (v) Any training received by the worker as part of the EPWP;
  - (vi) The period for which the worker worked on the EPWP; and
  - (vii) Any other information agreed on by the employer and worker.

### **F2.5 VARIATIONS TO STANDARD CONDITIONS OF EMPLOYMENT FOR EXPANDED PUBLIC WORKS PROGRAMME (EPWP) PROJECTS**

Notwithstanding the provisions of the above-mentioned Ministerial Determination, Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No R63 of 25 January 2002, 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 Engineering 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 Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No. R63 of 25 January

2002 shall apply. The Sub-clause numbers refer to the relevant Sub-clause number under Sub-clause E2.4 above.

*Delete sub-sub-sub-clause F2.4.2(c)*

*Delete Sub Sub-clause F2.4.3 and replace with the following:*

“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 Engineering Sector, South Africa shall apply. Clause 8 makes provision for 45 hours/week.”

*Delete Sub Sub-clauses F2.4.6 and F2.4.7 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 Engineering 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 Sub-sub-clause F2.4.14 and replace with the following:*

“Sub-clause 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 Engineering Sector, South Africa shall apply. Sub-clause 5(1) (a) makes provision for employees to be paid weekly, fortnightly or monthly.”

*Delete the words “(other than a Contractor)” in sub-sub-sub-clause F2.4.17(a)*

## **F2.6 EMPLOYMENT OF UNSKILLED AND SEMI-SKILLED WORKERS IN LABOUR INTENSIVE WORKS**

### **F2.6.1 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 set for the EPWP shall be a minimum of R100.00 per day as set by the Ministerial Determination : Civil Engineering Sector : South Africa. This must be reported on in the monthly Contractors Performance Report.
- (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-sub-clause F2.6.1 (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;
  - (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 and that a record thereof is kept and included in the monthly Contractors Performance Report:
- (i) 55% women;
  - (ii) 55% youth who are between the ages of 18 and 35; and
  - (iii) at least one person with disabilities.

#### F2.6.2 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.

#### F2.6.3 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.
- (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. The Employer and the Department of Public Works (Fax: 012 3258625/ EPWP Unit, Private Bag X65, Pretoria 0001) must be furnished with a copy of this request.
- (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 F2.6.3(c) above.
- (e) Proof of compliance with the requirements of sub clause F2.6.3 (b) to (d).must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

## **F2.7 GENERIC LABOUR-INTENSIVE SPECIFICATION**

### **F2.7.1 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.stansa.co.za](http://www.stansa.co.za)) or viewed by appointment at the offices of the Employer's Representative during normal working hours.

### **F2.7.2 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 1,0m deep."

#### **Clause 4.4: Excavations other than in trenches**

*Replace sub-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**

*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 Engineer 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 Engineer, and shall submit to the Engineer 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."

## **F2.8 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.

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 letter LI as shown in the example below.

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.

### **Example**

<b>Item</b>	<b>Unit</b>
-------------	-------------

#### **B21.01 Excavation for open drains**

- |  |  |
|--|--|
| (a) Excavating soft material situated within the following depth ranges below the surface level by means of Labour-intensive construction: |  |
|--|--|

- (i) Up to 1,0 m .....m<sup>3</sup>
- (ii) Exceeding 3,0 m and up to 4,5 m.....m<sup>3</sup>
- (b) Extra over sub-items B21.01(a) and B21.01(a) for excavation in hard material irrespective of depth .....m<sup>3</sup>

Sub-items B21.01(a) and (b) shall be measured and paid for as specified in the Standard Specifications.

The unit of measurement for sub-item B21.01(a)(i) shall be the cubic meter of soft material excavated by Labour-intensive construction in accordance with the authorized dimensions, measured in place before excavation.

Excavation for open drains only as defined in sub-clause 2102(b) shall be measured. Irrespective of the total depth of the excavation the quantity of material in such depth range shall be measured and paid for separately.

The tendered rate for sub-item B21.01(a)(i) shall include full compensation for the excavation of the soft material by Labour-intensive construction to the required lines, levels and grades and the disposal of the material as directed, including a free haul of 1,0 km.





Province of the  
**EASTERN CAPE**  
TRANSPORT

**CONTRACT No: SCMU10 - 23/24-0010**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS FOR A PERIOD OF 36 MONTHS**

**PART C3: SCOPE OF WORK**

**SECTION H : QUALITY ASSURANCE FRAMEWORK FOR ROAD WORKS**

It should be noted that elements 1 to 19 are mandatory to a quality system, while Elements 20 to 22 are not, but are likely to enhance the contractor's efficiency and profitability.

## **ELEMENT 1 - MANAGEMENT**

### **RESPONSIBILITY**

#### **QUALITY POLICY**

The Contractor shall define and document his policy and objectives for any commitment to quality. The contractor shall ensure that the policy is understood, implemented and maintained at all levels of his organization during the execution of any physical work which may be authorized through a works order..

*Note:* In drawing up this document, top management must give close consideration of their Quality Policy and their commitment thereto and put this into writing in a manner that can be clearly understood by all members of their organization.

#### **ORGANISATION**

The contractor shall produce organization charts and job descriptions showing the responsibility, authority and interrelation of key staff, at company and contract level, involved in the management, performance and verification of work affecting quality, who need the organizational freedom and authority to:-

- a. Initiate action to prevent the occurrence of non-conformities.
- b. Identify and record problems relating the product, process and quality system.
- c. Recommend solutions through designated channels.
- d. Verify the implementation of solutions.
- e. Control further processing and delivery of non-conforming products until the problem has been corrected.

The contractor shall provide adequate staff, including trained personnel for management, performance of the work and verification activities including internal quality audit.

The contractor shall appoint a member of his management team as the Quality Manager who, irrespective of his other responsibilities, shall have defined authority for:-

- a. Ensuring that a quality system is implemented and maintained in accordance with this framework.
- b. Reporting on the performance of the quality system to top management for review.
- c. Liaising with external parties on matters relating to quality system.

*Note:* Successful management relies on good communication within the management team and on a clear definition of the responsibilities and authority of each member of the team. This is best documented by means of an organogram and a list of job descriptions. Job descriptions should preferably be defined by "position" rather than by name and should briefly but clearly state the responsibilities of the position and the reporting lines.

#### **MANAGEMENT REVIEW**

The contractor's senior management shall review the quality system at regular intervals to ensure its suitability and effectiveness in satisfying the requirements of this framework and the contractor's quality policy and objectives.

The review intervals shall not be more than 12 months and shall be 6 months or less during period of development or when significant numbers of non-conformities are occurring.

The Quality Manager shall present a report to the review meeting. This report shall include details of internal audit and non-conformance report and resultant actions taken to eliminate the recurrence of non-conformities. Employer feedback relating to quality shall be included in the report.

Deficiencies in the Quality System shall be identified and a plan for improvements agreed. The proceeding of the review, together with action requirements, shall be recorded.

*Note:* A quality system requires regular maintenance if it is to remain effective. Top management must maintain its interest, involvement and commitment to the system. Management Reviews are an important, visible expression of this interest and commitment.

## **ELEMENT 2 - THE QUALITY SYSTEM**

The contractor shall establish, document and maintain a quality system, which shall contain as a minimum the following components:-

- a. Quality policy.
- b. Works Instruction, Standard Methods and Manuals describing how individual activities shall be planned, carried out, controlled and inspected for compliance with specification.
- c. Inspection Check lists. Inspection checklists shall contain details of the work, which require checking or testing to ensure compliance with the specification. They will, where applicable, contain details of specification tolerances and test results. Inspection checklists shall be signed off by the responsible person and stored as part of the Quality Records.
- d. Check lists. Checklists shall contain details of tasks necessary for the smooth running of the checklist shall be signed off by the person responsible for the task and passed to higher authority for reviewing and storage.
- e. Contract Quality Plans. A contract Quality plan will be required for each individual contract. They will describe those aspects of the Quality System, which will be adopted for that contract. The Contract Plan is dealt with in greater detail in Element 19.

## **ELEMENT 3 - CONTRACT REVIEW**

The contractor shall established procedures to provide for the following:

- a. A thorough reading of the full document so as to determine the extent that other items of the work will affect the work to be carried out by the contractor.
- b. A review of the document for consistency, clarity and sufficiency of information.
- c. Bringing to the notice of the Employer, either in writing or at the Site Inspection, of any unclear or inconsistent requirement or lack of sufficient information in the tender document.
- d. That the contractor has or can obtain sufficient skills and resources to carry out the proposed work.

Unless a compulsory Site Inspection forms part of the tendering procedure, the contractor and the employer shall formally meet prior to the award of the contract to review the contract and the contractor's tender proposal to:-

- a. Ensure that both parties have the same understand of their respective contract obligations.
- b. To resolve any inconsistencies, lack of clarity or shortage of information in the contract document.
- c. To review the contractor's resources and capacity to undertake the work.
- d. To review the contractor's Contract Quality Plan.

The minutes of such meeting/s shall form a part of the contract documents.

The contractor shall identify how an amendment to the contract is made and lay down procedures for the efficient transfer of such amendments to his staff.

*Note:* This element is vital to the smooth running of a contract and is intended to minimize misunderstanding and delays during the course of the contract.

#### **ELEMENT 4 - DESIGN CONTROL**

The contractor shall establish and maintain documented procedures to control and verify and design of the product in order to ensure that the specified requirements are met.

The design inputs shall be identified, documented and selection reviewing by the contractor for adequacy. Incomplete, ambiguous or confliction requirements shall be resolved with the Employer.

The design output shall be documented.

The design output shall

- a. Meet the design input requirements.
- b. Contain acceptance criteria.

Design output documents shall be reviewed before release.

The contractor shall liaise with the employer's control laboratory while carrying out the design.

The contractor's laboratory mix designs shall be verified and where necessary modified by producing, laying and testing the material using the mixing and paving plant that will be used during the contract. During these trials the settings for the plant to produce the specified end results shall be recorded and incorporated in the design output documentation. Test result showing the physical properties of the material shall be incorporated in the design output documentation.

*Note:* A well thought out, documented and applied design procedure will prevent delays at the start of a contract and provide essential output for the control of the work. The design output should include details of materials to be used, the job grading of aggregates and the accepted tolerance on each sieve fraction (which will normally be tighter than the tolerances in the contract document),

setting of mixing and paving plant to produce the required specification, mixing and laying temperatures, holding times for modified binders and modified mixes, etc. These outputs will form essential inputs for the compilation of Work Instruction and Inspection Check Lists. On PPGS contracts where contractor is required to design and overlay having a specific life it may be necessary to call on outside help to carry out a full pavement design.

## **ELEMENT 5 - DOCUMENT AND RECORD CONTROL**

The contractor shall control all documents and records as follows:-

- a. Drawings. A register showing the current revision of all drawings shall be maintained, updated and displayed at the work site. The register shall indicate the holders of copies of each drawing. Changes not involving the reissue of drawings shall be clearly noted on ALL copies of the relevant drawing and cross referenced to the instruction document. Superseded drawing required for record purposes shall be stored separately from the current revisions.
- b. Correspondence which relates to the contract such as letters, memos, instructions, orders and the minutes of meeting shall be filed in a manner which will allow easy access. The distribution of correspondence shall be clearly marked on the file copy.
- c. Quality Control Records. The contractor shall determine the distribution of each quality control document. The distribution shall be clearly marked on each record and shall be signed off prior to passing along the chain. Fully signed off quality Control Records shall be filed in a manner which will allow easy access.
- d. The distribution of Quality System documentation shall be controlled by the Quality Manager. Distribution lists shall be maintained to ensure that holder of original documents receive any revisions. Superseded issues shall be marked as such withdrawn from use.

All drawing and records shall be stored in a manner that will prevent loss and minimize deterioration.

Copies of contractual Quality Records, specified as such, shall be supplied to the Employer. Other Quality Records shall be available to the Employer for inspection and audit.

On completion of the contract all records and documents shall be archived in a manner which will prevent loss, minimize deterioration and allow retrieval for the period specified on the contract document or as required by legislation, whichever is the longer.

*Note:* For the smooth running of a contract it is essential that staff responsible for the ordering of supplies and the execution of the work have available all the information relevant to their responsibilities and that the information is up to date. This can be achieved by having a systematic procedure for the receiving, copying distribution and filing of documents together with a procedure for the withdrawal of out of date copies.

C3-291

## **ELEMENT 6 - PURCHASING AND SUBCONTRACTING**

### **GENERAL**

The contractor shall have documented procedures which he shall follow to ensure that materials purchased from suppliers and services provided by subcontractors meet the specified requirements.

*Note:* The performance of suppliers and subcontractors is critical for achieving the quality requirements of the contract. They must therefore form an integral part of the Quality System. This justifies having a documented policy to formally and consistently control their activities.

### **ASSESSMENT**

The contractor shall evaluate and select suppliers and subcontractors on the basis of their ability to meet the requirements of the Quality System, specification and the program. Subcontractors and suppliers should be encouraged to develop their own quality assurance systems.

Before making a purchase from a supplier or employing a subcontractor whom the contractor has not dealt with during the previous two years in relating to products or services similar to those being sought a prior, documented assessment shall be made to verify their ability to meet the quality and program requirements.

*Note:* Where prospective suppliers and subcontractors do not have an established track record the contractor should satisfy himself that they have the necessary skills and resources to carry out the proposed work. This should be done formally by a senior member of management and the outcome recorded.

### **PURCHASING DATA**

Each Contract Quality Plan shall specify the person responsible for the purchase of materials and services which relate to achieving the specified requirements.

All purchase orders and subcontract agreements which are significant for the achievement of quality requirement shall be in writing and shall contain:

- a. Precise identification of the type and specification.
- b. The title or other positive identification and applicable issue for specifications, process requirements, inspection instructions and other technical data.
- c. The quantities, rate of delivery, delivery details and completion dates.

The contractor shall review and approve purchasing documents for adequacy of the specified requirement prior to issue.

*Note:* Unless purchasing instructions are precise there is a significant risk of the wrong materials or service being delivered.

### **INCOMING MATERIALS**

C3-292

All materials purchased or produced by the contractor or supplied by the Employer for incorporation in the works shall be checked for compliance with the specification prior to incorporation in the works and verification recorded on the relevant Inspection Check List. Delivery dockets and verification test result sheet shall either be attached to the Inspection Check List or referred to, in an identifiable manner, on the Inspection Check List.

All materials shall be handled, stockpiled and stored in a manner that will prevent deterioration; segregation, contamination or damage and verification shall be recorded on the relevant Inspection Check List.

*Note:* The contents of stockpiles and storage tanks should be checked for compliance prior to their being released for use. The habit of recovering material from a stockpile while it is being constructed should be avoided. Care must be taken to ensure the incoming binder are placed in storage tanks allocated for that type of material. Material not meeting the specified requirements should be dealt with as non-confirming work.

#### **MATERIALS AND PRODUCT IDENTIFICATION AND TRACEABILITY**

The contractor shall establish and maintain procedures for the identification and traceability of materials incorporated in the works from their origin (quarry, borrow pit, refinery etc.) to their final position in the completed work.

Records of such identification and traceability shall be incorporated in the Quality Records.

*Note:* The traceability of materials through the process can be achieved by cross-referencing stockpiles/storage tanks with delivery notes and daily process records. Agreements should be made with suppliers of modified binder for full records of the modification process to be supplied with every delivery of modified binder.

#### **ELEMENT 7 - PROCESS CONTROL**

The contract shall identify and document the production and placing processes which affect quality and shall ensure that these processes are carried out under controlled conditions. Controlled conditions shall include the following:

- a. Documented procedures for the operation of equipment for the production and placing of the product and for building of material stockpiles and the recovery of material from stockpiles.
- b. Documented procedures for the maintenance and servicing of equipment.
- c. Documented procedures for the calibration and adjustment of equipment.
- d. Documented procedures for modification of binders.
- e. Monitoring, control and recording of suitable process parameters (i.e. temperatures, rates of delivery of raw materials, storage times, etc.).
- f. Compliance with documented procedures.
- g. Approval of processes and equipment.
- h. Criteria for workmanship, which shall be stipulated in the clearest possible manner (e.g. paving manuals, works instruction, illustrations or representative samples).

The processes shall be carried out by qualified operators and records shall be kept of all process parameters which cannot be verified by subsequent inspection (i.e. storage temperatures and times

for binders and modified binders, mixing times, mixing and placing temperature, etc.) These records shall form part of the Quality Records.

*Note:* The quality of the end product in asphalt paving and bitumen seal work is highly dependent on good process control. Trial mixes and pavements will, if properly carried out, provide the control parameters for process control.

## **ELEMENT 8 - CONTROL AND INSPECTION OF THE WORK**

### **GENERAL**

The contractor shall undertake the work in a planned and controlled manner to ensure that the specified requirements are achieved. To this end the contractor shall develop procedures and documentation that:

- a. Identify the Employer's quality requirements.
- b. Plan how these will be met.
- c. Control the work in accordance with the plan.
- d. Inspect the work to verify that it complies with the specified requirements.
- e. Record the result of the verification.

*Note:* This element required that all work on the site is properly managed. Identifying and planning

The contractor shall examine the contract document and produce a Specification Review Schedule (SRS) tabulating the specified quality requirements for the work. This information shall be used as a basis for developing the Contract Quality Plan. Method Statements and/or Work Instructions shall be issued to that those person actually carrying out the work fully understand what is required. These shall describe how the task is to be performed, the person responsible for ensuring its completion, the sequence of operations and the resources to be used.

*Note:* Each and every quality requirement in the contract specification and the contractor's design must be identified, the task necessary to achieve and check the required quality laid down and a person appointed to ensure that task are carried out and quality records are completed and filled. The SRS will form the input for the drawing up of work Instructions.

### **INSPECTION AND RECORDING**

The contractor shall inspect and/or test all the specified quality requirements (see "Identifying and Planning" above) to verify their compliance. The results shall be documented and retained as part of the Quality Records. Prior to covering up work carried out by other parties the contractor shall satisfy himself that such work conforms to the required specification.

C3-294



*Note:* The documentation required for inspection and recording can normally be covered by inspection Check Lists, which when completed will be filled as part of the Quality Records.

## **ELEMENT 9 - CONTROL OF INSPECTION, MEASUREMENT AND TEST EQUIPMENT**

The contractor shall maintain a register of all inspection, measurement and test equipment used to check the quality of the work. Every item of equipment shall be clearly marked with its identification number or code appearing in the register.

All inspection, measurement and test equipment shall be calibrated and/or checked at appropriate intervals.

The register shall record the required frequency of calibration of checking, together with name of the person or body responsible for the calibration or check.

Work Instructions and Inspection Check Sheet shall be issued, setting out the methods to be used for checking of equipment by the contractor's employees.

The contractor shall safeguard inspection, measurement and test equipment, including computer software, from adjustment which would invalidate the calibration settings.

Calibration certificates and check sheet shall be retained and form part of the Quality Records.

*Note 1:* Calibration certificates are required for load measuring devices such as weigh bridges, load cells, proving rings and scales. Calibration of these devices should be in accordance with the manufacturers' recommendations, legal requirements or the requirements of the specification.

*Note 2:* The mass and drop of compaction hammers, the mass and straightness of penetration needles, the accuracy of the thermometers, etc. should be checked at least once a month and the results of the checks recorded and filed.

*Note 3:* The condition of such items as moulds, rifflers, sieves, centrifuge cups, measuring tapes, ovens, centrifuges, etc., should be checked at least once every six months, or more frequently if the work load is heavy. These checks must be made by a responsible person appointed by the Quality Manager and the results of the checks recorded and filed.

## **ELEMENT 10 - CONTROL OF NON-CONFORMING WORK**

The contractor shall draw up and maintain procedures to ensure that non-conforming materials work are either:

- a. Reworked to meet the specified requirements;
- b. Accepted with or without concession by the Employer; or
- c. Rejected and replaced.

Non Conformance Report (NCR) shall be issued. An NCR shall contain the following:

C3-295

- a. Details of the precise location;
- b. Details of the symptoms;
- c. The probable cause;
- d. Proposals for the correction; and
- e. Proposals for the future avoidance of the non-conformity.

NCRs shall be approved by the person granted such authority in the Contract Quality Plan and by the Employer in case where a concession is being sought prior to implementing rectification work or the covering up of the non-conforming work.

Where non-conforming work will affect or delay other parties, the presence of the non-conformity shall be brought that party's notice as a matter of urgency.

The cause of non-conformities shall be investigated by the Quality Manager who shall take action, including if necessary the modification of the Quality System and/or the Contract Quality Plan, so as to eliminate or reduce the recurrence of such non-conformities. All NCRs and quality improvement action taken by the Quality Manager shall be reported at the Management Review meetings.

*Note:* Even with excellent practice and control some defects in material or workmanship will occur. This element formalises how these non-conformities should be handled to ensure that:

- a. other parties are aware of the problem;
- b. the defective work is correct; and
- c. corrective measures are taken to eliminate or reduce the future occurrence of the defect.

#### **ELEMENT 11 - HANDLING, STORAGE AND DELIVERY**

The contract shall draw up and maintain procedures, issue Work Instructions and make agreements with suppliers for the correct handling, stockpiling, storage and delivery of raw and processed materials to prevent deterioration and damage. These procedures shall include methods for the building of stockpiles and the recovery of materials from stockpiles, temperature control and duration for the storage and/or curbing of modified binders and the protection of processed materials while being transported from the mixing plant to the laying site.

*Note:* Poor stockpiling, storage, handling and delivery may have a deleterious effect on the quality of materials and in some cases may render them unfit for use. On the other hand, good practices in the building of stockpiles and the recovery of material could enhance the quality of marginal materials. The formalising and strict control of work under this element can therefore have a market effect on the quality of the end product.

#### **ELEMENT 12 - CONTROL OF QUALITY RECORDS.**

The contractor shall produce and maintain documented procedures for the identification, collection, indexing, filing, storage and safe keeping of Quality Records to demonstrate conformance with the specified requirements and the effective operation of the Quality System. Pertinent quality records from suppliers and subcontractors shall form part of these records.

C3-296

*Note:* Quality records are evidence that the contract has implemented his Quality System. To be of use they must be kept in an orderly fashion and be easily retrievable for examination by the Employer and, if necessary, to be used in the settlement of disputes.

### **ELEMENT 13 - POLLUTION CONTROL**

The contractor shall issue Work Instructions, Method Statements or manuals covering the control of pollution. These should include (but are not restricted) to the following:

- a. Emission control at mixers.
- b. Avoidance of spills.
- c. Action to control spills.
- d. Disposal or reject material.
- e. Disposal of surplus material at laying sites.
- f. Disposal of oils, fitters and discarded parts during servicing of plant.
- g. Testing of sprays bars.
- h. Clearing of stockpile sites.
- i. Cleaning up of mixing sites.

*Note:* The production and laying of bituminous materials is potentially a dirty process and strict control is required if the contractor is not to fall foul of the law. Lack of good pollution control can result in disputes and possibly in stoppage of work.

### **ELEMENT 14 - SAFETY AND WELFARE**

The contractor shall document and operate a formal health and safety programme which complies with the Occupational Health and Safety Act No 85 of 1993 and any subsequent amendments and associated Regulations. Work Instructions shall be issued pertaining to health and safety measures specific to the work to be carried out. The minutes of Health and Safety Committee Meetings shall be included in the Quality Records.

The contractor shall formalise his policy regarding the welfare of his staff and labour and issue Works Instructions setting out the methods of implementing this policy.

*Note:* A safe site with contented staff will greatly enhance both the quality and quantity of the work produced. The formalisation of safety and welfare measures will ensure that all members of the organisation are aware of both their rights and responsibilities in these matters. Close attention to these matters will help to prevent accidents and minimize labour disputes.

### **ELEMENT 15 - TRAINING**

The contractor shall establish and maintain documented procedures for identifying training needs and provide appropriate training for all personnel. Personnel specific assigned task shall be qualified on the basis of appropriate education, training or experience to carry out such tasks. Training and qualification records shall be maintained for all personnel and review on a regular basis. These reviews, together with the information contained in non-conformance reports, shall form the basis for future training programmes.

C3-297

The contractor shall establish and maintain documented procedures for checking that prospective employees have sufficient skills to perform the intended tasks to the quality standards required and shall institute necessary training where such skills are lacking.

*Note:* Inadequate training is one of the most common cause of foul-up and inefficiencies. Carefully planned training programs, on the site, at head office and through attendance at outside courses and seminars will go a long way to ensuring that all members of the organization are fully trained to carry out their expected tasks. Internal Audits, Management Reviews and NCRs are sources from which to identify training needs and the content of training courses. The Reconstruction and Development Programme (RDP) places great emphasis on the training of disadvantaged people, and future contracts are likely to contain requirements for the training of emerging contractors. To be effective this training must cover the whole gambit of contracting and not only concentrate on on-site skills.

#### **ELEMENT 16 - CONTROL AND RECTIFICATION DURING THE GUARANTEE PERIOD**

The contractor shall draw up, document and agree with the Employer procedures for the inspection of the work during the guarantee period and for the rectification of non-conforming work.

*Note:* All contracts contain some form of guarantee period. For existing standard contracts this is the maintenance period, normally twelve months. For PPGS contracts this guarantee period is likely to be between three and five years and for Build-Operate-Transfer (BOT) contracts the guarantee period may possibly extend to as much as thirty years. It is therefore essential that, at an early stage of the work, preferably before the submission of tenders, both the contractor and the Employer are aware of their responsibilities and authority during the guarantee period and of how such responsibilities and authority during the guarantee period and of how such responsibilities and authority are to be carried out.

#### **ELEMENT 17 - STATISTICAL CONTROL**

The contractor shall identify the need for statistical control methods to give warning of any tendency for the quality of raw or processed materials to depart from the specified requirements.

The contractor shall establish and maintain documented procedures to implemented statistical warning systems and to pass the results of such system to the relevant supplier or process personnel.

*Note:* Statistical control charts can give early warning of the tendency of attributes, such as gradings, sand equivalents, void contents, binder contents, etc. to depart from the specification. This early warning can allow preventative action to be taken before non-conformities start to occur.

#### **ELEMENT 18 - INTERNAL QUALITY AUDITS**

The contract shall produce and maintain documented procedures for planning and carrying out Internal Quality Audits to verify whether quality activities and result comply with the Quality System and to determine the effectiveness of the Quality System and Contract Quality Plans.

C3-298

SCMU10-23/24-0010

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months

Internal audits shall be recorded and brought to the attention of the personnel having responsibility for the activity being audited.

Corrective action shall be taken on deficiencies found in the audit.

Internal audits shall be carried out on all quality activities at least once a year but more frequently during development stages of the Quality System, during the early stages of the implementation of Contract Quality Plans and when the occurrence of non-conformities is excessive.

Result of audits and follow up action shall be reported by the Quality Manager at the Management Review Meeting.

*Note:* Internal Quality Audits, carried out by staff who are independent of those responsible for up front quality control will provide a check that the Quality System is operating as planned and is being effective in producing the objectives set out in the contractor's Quality Policy and provide information for the improvement of the Quality System and Contract Quality Plans.

## **ELEMENT 19 - CONTRACT QUALITY PLANS**

The contractor shall draw up Contract Quality plan for each contract. The plan will detail how the Quality System will be adapted to ensure the control of quality on that contract.

The contract Quality Plan shall include (but not be restricted) to the following:

- a. The title, brief description, and key dates of the contract.
- b. A list of the drawings and specification applicable to the contract.
- c. The names, titles and responsibilities of the contract management team.
- d. A list of subcontractors and suppliers
- e. The construction programme.
- f. Specification review schedules.
- g. A list of Work Instructions, Inspection Check lists, check lists, Standard Methods and Manuals applicable to the contract.
- h. Documents setting out purchasing and subcontracting procedures.
- i. Procedures for Document and Record Control.
- j. Procedures for the control and rectification of Non-conforming work.
- k. Procedures for carrying out Internal Audits and the frequency of carrying out such audits.
- l. Procedures for ensuring compliance with the Occupational Health and Safety Act No 85 of 1993.
- m. A list of and procedures for the Control and safe keeping of Quality Records.
- n. A list of training courses to be attended by the contract staff and Works Instructions pertaining to the on-site training of staff, labour and SMMEs.
- o. Details of any Statistical Control methods to be used on the contract.
- p. The signatures of the persons who prepared and authorised the plan.

*Note:* A Contract Quality Plan is the on-site working document setting out how the contractor's Quality System will be applied to that contract to ensure that the Quality Policy and the quality requirements of the contract are met. The Work Instructions, Inspection Check Lists, Standards Methods Check Lists and Manuals required in plan can be assembled:

C3-299

- ✓ By adopting and/or adapting standard company documents
- ✓ By adopting or adapting documents developed for similar work previous job, or
- ✓ By preparing new documents for new activities

These will provide details of how all the identified quality requirements will be planned, controlled, inspected for compliance, corrected where compliance is not met, and the results record.

## **ELEMENT 20 - PROCUREMENT OF WORK**

The contractor shall develop, document and maintain procedures and allocate personnel for the regular scanning of the media for tender advertisements pertaining to bituminous work and for projects where bituminous alternatives could be offered.

The procedures should lay down the publications to be scanned and the action to be taken if the publications do not come to hand when expected.

The result of the scanning must be channelled to top management for further action.

Contractors interested in innovation work should lay down procedures for obtaining early access to planning proposal, Road Authority preliminary programs and local and overseas research data.

*Note:* these procedures should ensure that potential work is not overlooked and keep the contractor up to date with the latest thinking.

## **ELEMENT 21 - PAYMENT**

The contractor shall establish, document and maintain procedures for:

- a. Obtaining progress information from site.
- b. Agreeing this information with other parties concerned.
- c. The preparation and issuing of payment certificates or invoices.
- d. Ensuring prompt payment.

The contractor shall also establish, document and maintain procedures for obtaining agreement with subcontractor and supplier for:

- a. The issue of invoices.
- b. Agreeing invoiced quantities.
- c. The settlement of dispute regarding non-conforming work and suppliers.
- d. Agreeing the terms and conditions of payment for services and suppliers received.
- e. Ensuring prompt payment.

*Note:* These procedures will go a long way to ensuring good relation with subcontractors and supplied and a smooth cash flow for the contractor.

## **ELEMENT 22 - QUALITY MANUAL**

The contract shall compile and maintain a Quality Manual which shall contain:

C3-300

SCMU10-23/24-0010

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months

- a. The contractor's Quality Policy.
- b. An organogram showing key management position and reporting lines.
- c. A description of how the Quality System is structured.
- d. A statement of the contractor's objectives and implementation policy in relation to each element of the system.
- e. A list of the contractor's Standard Methods, Manuals, Work Instruction and Check Lists.

*Note:* This document provides an overview of the whole system and can be useful as a reference document for external auditors, as a marketing document, as a tender submission document and as an introduction for new employees. Because of the wide distribution of this document, its content should be restricted to non-confidential information.

---

# Part C4: Site Information

---



**CONTRACT No: SCMU10-23/24-0010**

**APPOINTMENT OF A PANEL OF MANAGING CONTRACTORS FOR ALL UPGRADE PROJECTS IMPLEMENTED USING IN HOUSE CONSTRUCTION TEAMS IN THE EASTERN CAPE PROVINCE FOR A PERIOD OF 36 MONTHS**

**PART C4: SITE INFORMATION**

<b>TABLE OF CONTENTS</b>	<b>PAGE</b>
C4.1 MISCELLANEOUS .....	C4.304
C4.2 EMPLOYER'S OBJECTIVES .....	C4.304
C4.3 OVERVIEW C4.306	
C4.4 EXTENT OF THE WORKS .....	C4.310
C4.5 ACCOMMODATION OF TRAFFIC .....	C4.310
C4.6 MAINTENANCE OF THE EXISTING ROADS .....	C4.312
C4.7 SERVICES C4.312	
C4.8 DRAWINGS C4.312	
C4.9 POWER SUPPLY AND OTHER SERVICES .....	C4.313
C4.10 CONSTRUCTION IN RESTRICTED AREAS .....	C4.313
C4.11 CONTRACTOR'S CAMP SITE .....	C4.313
C4.12 SECURITY .....	C4.314
C4.13 PROCESS AND ACCEPTANCE CONTROL .....	C4.314
C4.14 ENVIRONMENTAL MANAGEMENT .....	C4.315
C4.15 PROJECT STEERING COMMITTEE (PSC) .....	C4.315
C4.16 COMMUNITY LIAISON OFFICER (CLO) .....	C4.315
C4.18 LABOUR INTENSIVE CONSTRUCTION METHODS .....	C4.316

C4.19 RESTRICTIONS ON THE USE OF PERSONNEL IN THE PERMANENT EMPLOYMENT OF THE CONTRACTOR C4.318

C4.20 TRAINING.....C4.318

C4.21 SAFETY.....C4.318

C4.22 AREAS AVAILABLE FOR TEMPORARY STOCKPILES.....C4.319

C4.23 WASTE DISPOSAL SITES.....C4.319

C4.25 FAUNA AND FLORA .....C4.320

C4.26 CLIMATE.....C4.320

## C4.1 MISCELLANEOUS

The works specifications forms 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 Works 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 cover items not applicable to this particular contract.

## C4.2 EMPLOYER'S OBJECTIVES

The Employer's objective is to appoint a panel of managing contractors for the upgrading of the roads within the borders of the Eastern Cape Province for a maximum period of three years and with an option to increase it by an additional year if the work is not completed. The roads will be constructed by the Department of Transport's In-House Construction Team. To accelerate the delivery of the project, the Managing Contractor shall be responsible for assisting the In-House Construction Unit (IHCU) in appointing sub-contractors (SMME's) within the LMAs and Districts where projects are implemented, procuring construction materials, availing plant, equipment and construction personnel for use during construction.

The IHCU shall issue the successful contractor with written Work Orders for all services and goods required before any delivery or rendering of any service. The contractor may, from time to time, also be required to cover costs related to labour, accommodation, repair of the department's plant and equipment as well as any other cost associated with the project. Where an order has been issued for the specific delivery of materials, plant, equipment and or services, these shall be delivered on site and at a location indicated by the employer or his agent within 48 hours. It is also the intention of this contract for the contractor to carry out physical work (i.e. ancillary works, surfacing, layer-works, major & minor works, etc.) related to the project. However, should this be necessary, a works order will be issued for the specific work to be carried out. Any works order issued will, among other things, outline the scope of work to be carried out as well as the duration. The rates tendered by the contractor shall be used to compensate the contractor for any physical work carried out. The Employer may also opt to go out to tender for any portion of physical work within the project limit.

Over the three year contract period, the Employer does not guarantee the number of work orders that will be issued nor the minimum total amount of work orders. **This contract shall be for services to be rendered as and when required.** Except where a specific order has been issued for physical work to be carried out on site and for the duration of that work order, no P&Gs shall be charged separately on a monthly basis and no staff will be required from the contractor to be stationed on site.

Where the contractor is issued with a specific work order to carry out any physical work, the contractor will be required to deliver the infrastructure using labour-intensive construction methods and using local SMME contractors wherever practical.

Requirements are introduced that certain construction activities must be carried out by hand in terms of the Expanded Public Works Programme (EPWP) and by SMME sub-contractors where practical.

#### Labour-Intensive Construction

The aim is to provide temporary employment opportunities for the communities in close proximity of the road by introducing labour-intensive construction methods 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 approximately detailed quantities for each type of work to be carried out in accordance with the Contract Documents are included in the Bill of Quantities.

**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 the 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.**

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 on the basis of such adjustments or limitations in terms of clause 6.11 of the General Conditions of Contract.

C4-4

## C4.3 OVERVIEW

### C4.3.1 PROJECT LOCATION

The location of the projects are in the Province of the Eastern Cape. The regions are: Amathole, Sarah Baartman, Chris Hani, Joe Gqabi, OR Tambo and Alfred Nzo, in predominantly rural areas.

### C4.3.2 ROUTE CHARACTERISTICS

#### C4.3.2.1 Existing Geometric Standards

The routes are generally rolling to mountainous, with steep gradients of up to 24%.

The existing horizontal alignments are predominantly winding gravel road in poor conditions. There are a number of very sharp curves with a horizontal radius of less than 60 m. Intervisibility is restricted by curvilinear alignments, by adjacent hillsides and by encroaching bushes. The IHCU is currently working on the roads to upgrade them from gravel to surfaced roads.

#### C4.3.2.2 Land Use and Roadside Development

The land adjacent to the roads is typical of the rural areas of the Eastern Cape. Roadside development consists of rural homesteads, varying in density, with facilities such as schools, clinics, hospitals and police stations. Land use is predominantly subsistence farming, with some cultivated areas and livestock grazing lands.

There are a large number of pedestrians, including school children, using the roads. As the shoulders are not surfaced and overgrown, people tend to walk on the bitumen surface. This presents a major safety concern due to the narrow surface and poor intervisibility.

#### C4.3.2.3 Intersections and Accesses

There are a number of intersections and accesses on these roads.

#### C4.3.2.4 Traffic

Average traffic volumes are relatively light and there is a lack of reliable information.

Indicative counts are as follows :

- Averages of 470 vehicles per day .

Heavy vehicles consists of delivery trucks to local supply stores and occasional buses.

#### C4.3.2.5 Climate

C4-5

Details of the climatic conditions were obtained from the South African Weather Service. The areas traversed by the roads are in the summer rainfall area, although on average significant rainfall occurs from September to April. There is less rain on average from May to August. Unfortunately, there is no data available at this stage as some weather stations have been repeatedly vandalized (information provided by the weather service).

The areas traversed by the roads on these regions/ districts may therefore be classified, according to TRH 4: 1996, as having a "wet" macro climate, with mild relatively dry winters and hot to moderate summers. The Weinert N-value for these regions is between 0 and 2, which indicates that the weathering of materials is usually by decomposition. The weathering of crystalline rocks such as dolerite can be fairly deep.

Summer temperatures can be very hot and humid, while cold fronts affect the area in winter. The central relevant weather station for which temperature data is available is at East London. Information is also available for Mthatha, but with an altitude of 742 metres, the temperature range is likely to be more diverse than at the coast.

The average summer daily temperature is about 27 °C, but daytime highs above 35 °C frequently occur. The average daily temperature during winter is around 4.5 °C, while light frosts have been recorded on rare occasions. The variation between the average maximum and minimum temperatures in a month is between 18 and 27 °C and is more or less constant throughout the year.

The high temperatures during summer would have a softening effect on bituminous surfacing and layers. The highest temperature recorded for a given day at East London is 44.0 °C.

Generally, frost does not occur in winter at the coast. However, it can be very cold in the deep valleys.

**Table 1** *Mean Monthly and Annual Rainfall (Port St Johns)*

<b>Statistical Rainfall Data</b>					
Station No. 0129/06BA4 (Port St. Johns - AER 1888 - 1984)					
Month	Rainfall (mm)		Ave. Rain Days (No.)		
	Ave.	24 hr Max.	Total	1 to 10 mm	> 10mm
Jan	117	71	14.3	11.2	3.4
Feb	130	154	12.3	9.8	3.4
Mar	147	166	11.9	9.7	4.1
Apr	86	138	8.6	6.7	2.3
May	66	92	5.7	4.2	1.7
Jun	38	95	3.4	2.7	1.0
Jul	40	112	4.6	3.8	1.4
Aug	49	102	6	4.5	1.5
Sep	87	136	9.1	7.1	2.2
Oct	119	144	13.5	10	2.8
Nov	120	181	14	11.1	3.7
Dec	121	82	14.2	11.8	3.3

**Table 2** *Maximum and Minimum Temperatures (East London)*

Month	EAST LONDON			
	Maximum ° C		Minimum ° C	
	Aver.	Extreme	Aver.	Extreme
January	29.2	45.1	16.6	6.9
February	29.3	45.5	16.6	6.5
March	28.1	43.3	15.4	4.5
April	26.2	41.1	12.1	2.6
May	24.0	37.6	8.7	0.1
June	21.9	33.0	6.0	-2.0
July	21.9	35.8	5.2	-2.2
August	22.6	35.0	6.4	-1.5
September	23.6	39.9	8.8	-1.5
October	24.6	42.0	11.0	0.5
November	26.3	44.6	12.9	3.9
December	28.1	44.1	14.7	6.2

Of particular concern is the combination of high temperatures and high humidity in summer. The contractor should be prepared for the possibility of closing the site in the event of the Discomfort / Humiture index rising above 105 in the interest of health and safety. At all time during the summer months, workers shall have access to a plentiful water supply to prevent dehydration.

#### C4.3.2.6 Existing Services

Existing utility services run parallel to and across the roads and will have to be protected during construction. Electricity lines are overhead and are thus easily identified. Telephone lines are generally overhead, but underground cables may exist. The relevant authorities have been advised of where the lines need to be moved. This will involve both overhead and underground services. Nevertheless, the contractor shall liaise with Eskom and Telkom and plan his work accordingly. It is important to note that relocation of Telkom services have already commenced.

Water and sewerage mains are also known to exist at various locations along the alignment. The local municipality generally does not have a good record of where services are located. Nevertheless, close liaison with the municipality will be required. Manholes and water taps have been identified and the contractor may start at these points to identify the location of the connecting pipes. The presence of septic tanks close to the road cannot be discounted. Private individuals and business sometimes have their own water lines and sewer lines. It will be necessary to establish ownership of all services prior to relocation, or to working around them.

## C4.4 EXTENT OF THE WORKS

The works to be carried out under this contract generally involve supplying the Employer with materials, plant and or equipment, which will enable the IHCU to complete the construction of the road. The contractor may also be required to provide or pay labour that is working on the projects as well as paying for accommodation and any other costs associated with the project. Furthermore, the work orders may be issued for the contractor to carry out specific physical activities as may be determined by the employer. Such activities shall be compensated for at the rates tendered by the contractor for the projects.

### C4.4.1 Roadworks

The upgraded roads will have improved geometrics, drainage, sight-distance, safety and surfacing, with work being carried out as in Clause 3 above

Extra over rates for work in half-widths or restricted areas will generally NOT be paid on this Contract unless specifically allowed for.

The treatments are summarised below :

### C4.4.2 Road Signs and Markings

Specifications and designs will be discussed and issued from time to time.

### C4.4.3 Rehabilitation and Finishing

Where physical work has been carried out by the contractor, the roadway shall be left in a neat and tidy condition on completion of construction, and all hazards and debris removed as specified.

The contractors' camp and any facilities for the Engineer shall be fully dismantled and removed, unless negotiated for by the Client to leave the structures for his future use, to complete the works.

## C4.5 ACCOMMODATION OF TRAFFIC

The accommodation of traffic will be a critical aspect of this particular project and is therefore given its own section.

It needs to be appreciated that the accommodation of traffic may have a significant bearing on the programming of the works where work may be required to be carried out by the contractor. The steep terrain, environmental constraints, and the location of roadside development means that there is limited scope for the construction of temporary bypasses. The road will therefore have to be upgraded under traffic.



The Contractor shall appoint a responsible person (Traffic Safety Officer) who shall ensure that all traffic control is in accordance with the specification and to whom all traffic related queries will be referred. It must be anticipated that the TSO will be a full time position. The person appointed shall be available at all times to deal with members of the public, private stake-holders, the municipality, and with the emergency services.

The Contractor will be responsible for the safe passage of traffic along the site of the works for the duration of construction. He shall demonstrate to the Engineer his proposed traffic control measures via the preparation of traffic accommodation plans and diagrams prior to construction. The plans and diagrams shall cover all foreseeable traffic control conditions and situations. They shall also cover emergency situations such as accidents or breakdowns, especially where one-way traffic is in place.

In addition to the above, the Contractor shall note the following specific requirements :

- (a) Traffic will be accommodated as described under this clause and as specified in the project and standard specifications - Section 1500. The Manual K56 "Safety at Roadworks in Rural Areas" must be read and implemented in conjunction with Road Note No. 13. K56 "Safety at Roadworks in Rural Areas" is published by The National Institute for Transport and Road Research of the CSIR.

The Contractor's tendered rates for the relevant items in the Schedule of Quantities shall include full compensation for all possible additional costs which may arise from the above, including the costs of appointing a responsible traffic person. No claims for extra payment due to inconvenience as a result of the *modus operandi* or the behavior of local traffic will be considered.

- (b) The need to accommodate the traffic safely and with the least amount of inconvenience to the travelling public is necessary throughout the construction period.
- (c) The travelling public shall have the right of way on public roads, and 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 the road.
- (d) Failure to maintain road signs, warning signs or flicker lights, or any other traffic control devices, in a good condition shall constitute ample reason for the Engineer to bring the works to a stop, in terms of Clause 5.11 of the General Conditions of Contract, until the traffic control has been implemented to his satisfaction.

Payment of the monthly rate for traffic control will be reduced pro-rata for the days on which inadequate control is provided. In addition, the penalty provisions for inadequate traffic accommodation will be strictly enforced.

- (e) The contractor may not commence construction activities before adequate provision has been made to accommodate traffic in accordance with the requirements of this document and the South African Road Traffic Signs Manual.
- (f) The procurement document includes drawings indicating the minimum requirements in respect of traffic accommodation at work sites. Nevertheless, the contractor shall submit a Traffic Management Plan, containing proposals in connection with temporary signage and traffic control measures, to the engineer for approval.

C4-10

- (g) It is a specific requirement that the site be left in a safe state at the end of each day and that the transportation of agricultural produce is not disrupted. Specific measures and contact details will be required for long weekends, public holidays and for the traditional construction industry holiday period in December and January.

## C4.6 MAINTENANCE OF THE EXISTING ROADS

The Contractor shall be responsible for all routine maintenance operations along the road reserve on the sections which fall within the limit of the working area, 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 Engineer.

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

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.

## C4.8 DRAWINGS

The reduced drawings that form part of the tender document shall be used for tender purposes only.

The Contractor will be supplied with three (3) paper copies of each of the drawings for construction. 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 Engineer's Representative requires for completing his as-built drawings, shall be supplied to the Engineer's Representative before a certificate of completion will be issued.

Only figured dimensions shall be used and drawings shall not be scaled unless so instructed by the engineer. The engineer 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 Engineer 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.

C4-11

## 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 office of both Telkom and Eskom 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. 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

When required to carry out specific physical work on site, the Contractor shall make his own arrangements regarding the establishment of a camp site and housing for his construction personnel. Liaison with the local community, councillors, traditional leaders and municipality will be required to find a suitable site and due regard must be given to the impact of the camp on the daily lives of local residents. Approval for the use of the site shall be obtained from local authorities, or from residents associations, as well as the written approval of the Engineer.

The Contractor may utilize base camps for construction plant from where they can operate to ensure that a minimum of time is expended in travelling to the various work sites. The use of base camps will be at the Contractor's option. The same approvals are required for the base camps as for the main camp.

The site camp will require the submission and approval of an Environmental Scoping Report and Management Plan by the Department of Economic Development and Environmental Affairs (DEDEA). The Contractor shall take note of the requirements of Part C3C of the Project Specifications, which deals with the necessary environmental management programme, with particular reference to batching plants, bitumen and fuel storage, and plant maintenance areas.

The Contractor shall also note the requirements in respect of the Occupational Health and Safety Act and its construction regulations.

The Contractor shall provide and maintain a continuous means of on-site communication between his site supervision staff (i.e. the people responsible for the day to day running of the Contract) and the staff of the Engineer's Representative. The Contractor must provide the Engineer with one mobile two-way radio on the Contractor's frequency (item B15.03) and also allow for the rental and use of cellular phones by the Engineer's staff under Item B14.03. The provision and use of cellular phones for the Contractor's personnel will be for his own cost. Cellphone reception is not guaranteed and may be a factor in choosing a camp site.

## 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 Engineer's offices and the laboratories. The cost of security is deemed to be included in the rates for accommodation and offices. All plant and equipment provided on site by the contractor shall be insured by the contractor and the cost of insurance shall be deemed to be included in the rates.

## C4.13 PROCESS AND ACCEPTANCE CONTROL

It is preferred that an independent laboratory be established on site which will perform the acceptance control testing by the Engineer on this Contract. The procedure for requests for testing, frequency of tests, testing and reporting of results will be finalised by the Engineer on site in collaboration with the Contractor.

The Contractor shall erect the necessary buildings required for the laboratory – refer to Section 1400 in the schedule of quantities.

Notwithstanding, the Contractor is responsible for process control and for ensuring that the work conforms to the requirements of the specifications and drawings, and shall implement an adequate testing regime to prove compliance. This is as per Clause 1205 of the Standard Specification.

Where a joint or combined laboratory is established, the cost shall be shared as described in the project specification. Testing in the combined laboratory will be effected 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 so as to assist in avoiding or restricting delays. The Employer will not pay claims for delays to the works resulting from waiting for test results.

The procedure for requests for testing etc. applies equally to a combined laboratory.

C4-13

## C4.14 ENVIRONMENTAL MANAGEMENT

The Contractor will be responsible for managing a non-specific Environmental Management Plan (EMP) in terms of Volume 5 of the Tender Documents. The Environmental Management Programme Report (EMPR) is legally binding and shall be adhered to at all times.

The Contractor's authorized agent shall report to the Engineer regarding compliance with the conditions as stipulated in the Environmental Management Plan. The Engineer will indicate an Environmental Control Officer who, in addition to their normal duties, will have direct responsibility for the liaison with the Contractor and the Engineer to ensure the implementation and monitoring of the Environmental Management Plan. Monthly audits and detailed quarterly reports will be conducted by the environmental control officer.

The Contractor shall take the utmost care to minimise the impact of his establishment and other construction activities on the environment and shall adhere to the requirements as set out in Volume of the Tender Documents. 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 Engineer, the Contractor has not adhered to these requirements; the Contractor shall rectify the damage at his cost and to the satisfaction of the Engineer.

## C4.15 PROJECT STEERING COMMITTEE (PSC)

A Project Steering Committee (PSC) will be established to manage community issues relating to this project in accordance with the provisions of Part C3 Section F : Labour Specifications. The Contractor will have one senior member of his staff as representative on the PSC without any voting powers.

## C4.16 COMMUNITY LIAISON OFFICER (CLO)

It will be required from the Contractor to employ a Community Liaison Officer (CLO) during the execution of any Works as specified in Part C3 Section F: Labour Specification of this Works Specification.

## 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 in terms of the Expanded Public Works Programme (EPWP).

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 C3 Section F Labour Specification of the Works Specification.

### C4.1.8.2 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.

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 C3 Section F : Labour Specifications

### C.4.1.8.3 Local Labour Goal

The minimum local labour goal for this contract, as defined in Section F shall be **12.5%** of the tender value excluding allowances for contingencies, Provisional sums, Contract Price Adjustment (CPA) and VAT.

Failure to comply to this minimum local labour goal will result in the payment of a penalty in accordance with subsubclause F1.5 in Section F of the Scope of Work.

If required, after consultation with the community, rotation of labour may be necessary. This will take place on a four to six month basis and will be confined to general labourers. This must be allowed for in the tender rates and no additional payments will be made.

The contractor and his Sub-contractors 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 each employee engaged shall be given to the Engineer prior to their commencing work on this Contract.

Skilled workers and competent Sub-contractors may only be recruited elsewhere if not available locally. SMME's should also be prepared to carry out work by labour-intensive construction.

The portions of the Works listed below and those marked by LI in the Bill of Quantities shall, unless otherwise instructed by the Engineer, be constructed under this Contract using labour-intensive construction methods only.

In respect of those portions of the Works which are not listed below 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.

C4-15

#### **C4.1.8.4 Activities to be executed by means of Labour-intensive Construction methods**

The contractor shall identify and activities which can be carried out using labour based methods prior to commencement of any physical work activities which has been requested through a specific works order.

## 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 F of the Scope of Work) and shall, subject to the further provisions of Section E of the Scope of Work execute and complete the works using a temporary workforce working directly for the Contractor and/or for Subcontractors.
- (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 Engineer 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 Sub-contractors 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 Engineer may deem as constituting a warrant.

## C4.20 TRAINING

Training of labourers employed locally shall be done strictly in accordance with the provisions of Section E of the Scope of Work.

## C4.21 SAFETY

Refer to Section B sub-clause B1230 in the Scope of Work in respect of Safety requirements for this Contract.

C4-17



## C4.22 AREAS AVAILABLE FOR TEMPORARY STOCKPILES

The areas within the road reserve but outside the road prism, interchanges link roads, and intersection surfaces 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 Engineer.

## C4.23 WASTE DISPOSAL SITES

The Contractor shall arrange his own waste disposal 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 Engineer. All disposal 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 waste disposal sites.

## 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 Engineer, this happens, the Engineer is entitled to initiate prosecution by the relevant authorities.

## C4.26 CLIMATE

Details of the climatic conditions were obtained from the South African Weather Service. The area traversed by the road is in the summer rainfall area, although on average significant rainfall occurs from September to April. There is less rain on average from May to August. Unfortunately, there is no data available for Coffee Bay as the weather station has been repeatedly vandalised (information provided by the weather service).

The mean annual rainfall at Port St Johns, the northern end of the Meander, is 943 mm. The maximum rainfall events for a single day were recorded in January and February. It is noted, however, that even in the relatively dry months of June and July, high intensity storms have occurred which produced 24 hour rainfall figures in excess of 100 mm.

Rainfall data was also obtained from stations at Cwebe, on the coast close to the Mbashe River mouth, and at Wilo Plantation, some 40 km inland. The relevant average annual rainfall figures are 1113 mm at Cwebe and 970 mm at Wilo plantation.

As can be deduced, rainfall at the 3 stations closest to Coffee Bay is reasonably consistent, in the region of 1000 mm per annum. The area traversed by the road from Coffee Bay to Zithulele may therefore be classified, according to TRH 4: 1996, as having a "wet" macro climate, with mild relatively dry winters and

hot to moderate summers. The Weinert N-value for this region is between 0 and 2, which indicates that the weathering of materials is usually by decomposition. The weathering of crystalline rocks such as dolerite can be fairly deep.

Summer temperatures can be very hot and humid, while cold fronts affect the area in winter. The closest relevant weather station for which temperature data is available is at East London. Information is also available for Mthatha, but with an altitude of 742 metres, the temperature range is likely to be more diverse than at the coast.

The average summer daily temperature is about 27 °C, but daytime highs above 35 °C frequently occur. The average daily temperature during winter is around 4.5 °C, while light frosts have been recorded on rare occasions. The variation between the average maximum and minimum temperatures in a month is between 18 and 27 °C and is more or less constant throughout the year.

The Contractor shall take note of the average rainfall per month in preparing his programme. Work on the 2 new structures should be programmed in the drier months to minimize the risk of flooding while working on the foundations and sub-structure. The bridges being widened will not require any work in the river beds.

**Table 1 Mean Monthly and Annual Rainfall (Port St Johns)**

<b>Statistical Rainfall Data</b>					
Station No. 0129/06BA4 (Port St. Johns - AER 1888 - 1984)					
Month	Rainfall (mm)		Ave. Rain Days (No.)		
	Ave.	24 hr Max.	Total	1 to 10 mm	> 10mm
Jan	117	71	14.3	11.2	3.4
Feb	130	154	12.3	9.8	3.4
Mar	147	166	11.9	9.7	4.1
Apr	86	138	8.6	6.7	2.3
May	66	92	5.7	4.2	1.7
Jun	38	95	3.4	2.7	1.0
Jul	40	112	4.6	3.8	1.4
Aug	49	102	6	4.5	1.5
Sep	87	136	9.1	7.1	2.2
Oct	119	144	13.5	10	2.8
Nov	120	181	14	11.1	3.7
Dec	121	82	14.2	11.8	3.3

**Table 2 Maximum and Minimum Temperatures (East London)**

Month	EAST LONDON			
	Maximum ° C		Minimum ° C	
	Aver.	Extreme	Aver.	Extreme
January	29.2	45.1	16.6	6.9
February	29.3	45.5	16.6	6.5
March	28.1	43.3	15.4	4.5
April	26.2	41.1	12.1	2.6
May	24.0	37.6	8.7	0.1
June	21.9	33.0	6.0	-2.0
July	21.9	35.8	5.2	-2.2
August	22.6	35.0	6.4	-1.5
September	23.6	39.9	8.8	-1.5
October	24.6	42.0	11.0	0.5
November	26.3	44.6	12.9	3.9
December	28.1	44.1	14.7	6.2

Of particular concern is the combination of high temperatures and high humidity in summer. The contractor should be prepared for the possibility of closing the site in the event of the Discomfort / Humiture index rising above 105 in the interest of health and safety. At all time during the summer months, workers shall have access to a plentiful water supply to prevent dehydration.

#### **C4.27 MONTHLY CERTIFICATES**

The statement to be submitted by the contractor in terms of Clause 6.10 of the *General Conditions of Contract* shall consist of the original certificate plus two paper copies. The certificate shall be prepared in a form acceptable to the Employer and shall be on A4-size paper. The certificate shall be accompanied by an updated schedule of quantities showing the previous, current month and total quantities to date being claimed.

Payment will be made in terms of the relevant items in the Contract Data, Part C1, with specific reference to the items which qualify Clause 6.10 of the *GCC*.

#### **C4.28 MONTHLY SITE MEETINGS**

The contractor shall attend site meetings with representatives of the Employer and the Engineer at dates and times to be determined by the Employer. Such meetings will be held to evaluate the progress of the contract and to discuss matters pertaining to the contract which any of the parties represented may wish to raise, but not matters concerning the day-to-day running of the contract.

The Engineer shall prepare an agenda for the meetings and formal minutes which follow the agenda will be kept. The format will be subject to the approval of both the Employer and the Contractor. The Contractor shall prepare a monthly report prior to each meeting and present the report to the meeting. Information to be included in the report is given in Clause C4.29 below, with specific reporting sheets in Part C1-5 of this procurement document.

#### **C4.29 REPORTING REQUIREMENTS**

The Contractor shall submit to the Engineer a Monthly Progress Report. The Report shall be prepared prior to and be tabled at the monthly site meetings, and together with the monthly payment certificate. The information required shall include the following :

- Progress in comparison to approved programme of work as required in terms of Clause 5.6 of the *General Conditions of Contract*.
- Value of work done and estimated cash flow over the remainder of the contract period.
- Labour returns for the month as per Clause 4.10.2 of the *General Conditions of Contract* and the specific forms which are included in Part C1-11 of the project document.
- Plant schedule indicating the constructional plant on site as per Clause 7.1 of the *General Conditions of Contract*.
- Accident Reports in terms of Clause 8.5 of the *General Conditions of Contract*.

- Statement of all claims that are pending, all in terms of Sub-clause 10.1 of the *General Conditions of Contract*.
- Approved dayworks for the month.
- Approved rain days and any other delays during the month.
- A report from the *Community Liaison Officer* on any issues which have arisen and what is being done to resolve them.

SCMU10-23/24-0010

Appointment of a panel of managing contractors for all upgrade projects implemented using In House Construction teams in the Eastern Cape Province for a period of 36 months