Province of the
EASTERN CAPE
TRANSPORT

TENDER NO:

SCMU10-21/22-0019
FRAMEWORK AGREEMENTS FOR AD HOC ROUTINE MAINTENANCE WORKS TO VARIOUS PROVINCIAL ROADS IN THE SARAH BAARTMAN DISTRICT OVER A PERIOD OF 3 YEARS (TWO PER LMA – 12 APPOINTMENTS)

VOLUME 3B

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

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CONTRACT

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C3.1 : DESCRIPTION OF THE WORKS

C3.1.1 EMPLOYER'S OBJECTIVES

The employer's objectives are to ensure that experienced contractors on **CIDB grading 5CEPE / 6CE or higher** be appointed via Framework Agreements for service providers for Routine Roads Maintenance works on an as and when required basis (*ad hoc*) in each Local Municipal Area (LMA). The quantum of work on unsurfaced and surfaced roads in various LMA's is not yet quantified and will be determined after the appointments have been made. Works assignments will be determined by the District Roads Engineers for their respective LMA's.

The Framework Appointments will be valid for a period of 36 months. The time for completing each Works assignment is to be determined individually on an ad-hoc basis with a **maximum duration of 12 months per Works assignment**. The maximum value of Work Assignments which can be awarded to any one contractor in terms of this agreement shall not exceed the maximum amount allowed per annum based on the Contactors CIDB Grading inclusive of VAT.

Two Contractors are to be appointed per LMA. The Department will first allocate works to the first preferred service provider (the service provider that scores the highest points in the tender evaluation). The second preferred service provider for a specific LMA will only receive works packages if the available budget allocated for the financial year is sufficient to accommodate two service providers affectively, or if the first appointed contractor can no longer fulfil his obligations.

Further, it is the Employers objective that a minimum of 30% of the value of each works assignment be subcontracted to Micro Enterprises (ME's) in the relevant 1 to 4 CIBD grading. The ME's must be based within the LMA as far as possible. It is the Employers objective to maximise the usage of ME's and a minimum number of four ME Contractors, where possible, are to be appointed on for each works assignment. This amount is to be agreed with the District Roads Engineer in writing prior to the commencement of each works assignment. The Department will strive to ensure that each works assignment will lend itself to the usage of ME contractors.

A further objective is to ensure that the S'hamba Sonke, and Provincial Roads Maintenance Grant (PRMG) requirements and principles, which are applicable to this contract, are to be adhered to in the implementation of the project.

The following sets out the proposed procedure that is to be followed when a Works assignment is required:

Works Assignment

Two Contractors are to be appointed per LMA. The Department will first allocate works to the first preferred service provider (the service provider that scores the highest points in the tender evaluation). The second preferred service provider for a specific LMA will only receive works packages if the available budget allocated for the financial year is sufficient to accommodate two service providers affectively, or if the first appointed contractor can no longer fulfil his obligations.

For each Works assignment to be executed under this appointment the Department will identify the quantities of Works required and develop a schedule of quantities and price, based on the selected Contractors tendered / approved rates. The preferred Contractor will then be allocated the agreed Work assignment for that specific scope of works and value. Contract price Adjustment will be applicable to payment certificates (6.8.2)

Each specific works assignment shall be limited to a **maximum duration of 12 months**. On completion of the works assignment, the Contractor's Performance will be evaluated by the DMT consisting of the District Roads Engineer, District Manager and Head of Supply Chain in the specific district. Should the work have not been conducted to a satisfactory standard (within time, budget and to the required specifications) the Department shall have the right to decide not to award any further works assignments to the said contractor and remove said contractor from this Framework Appointment.

Establishment / De-Establishment

All establishment and de-establishment of plant will be paid under dayworks. The km claimed under section item B19.04 for the establishment and de-establishment, **will be limited to a maximum of 150km for each trip**.

Works

The Works will be undertaken in accordance with the relevant standard and project specifications, or as instructed by the Employers Agent. The Contractor is to commence work within 14 days of being instructed by the District Roads Engineer or such a time as agreed to in writing.

Should the Contractor not perform within the specified response and completion times or not conduct the said works with "due diligence", penalties will be applied as set out in Section C3.3.2 and the Department shall have the right to decide not to award any further works assignments to the said contractor.

C3.1.2 OVERVIEW OF THE WORKS (SCOPE)

The routine road maintenance /construction activities will ensure that provincial gravel and surfaced roads, as well as road reserves are maintained to a level of serviceability as set out in the document.

The Framework contract will be **valid for 36 months** and the Works will consist of routine and periodic road maintenance tasks on the Provincial Road Network within the respective municipal area. Each works assignment, will however **not exceed 12 months**.

Any Works assignment issued prior to the expiry of the 36 month Framework contract will be enforceable until the completion of that Works assignment, even if such completion date is after the expiry of the 36 month Framework contract.

C3.1.3 EXTENT OF THE WORKS

The routine maintenance work to be performed as part of this Contract mainly consists of the activities listed below to be carried out on all Major and District surfaced and unsurfaced roads in the LMA. Additional works to minor roads will only be carried out upon specific request from the Client. This list is not necessarily complete nor will it limit the extent of work to be carried out under this Contract.

C3.1.3.1 GENERAL

- Establishment of camps on site
- Accommodation of traffic

C3.1.3.2 ROUTINE MAINTENANCE OF GRAVEL ROADS

- Wet grading
- Dry grading

- Special grading
- Accessibility grading
- Reshaping
- Heavy maintenance
- Gravel patching
- Re-gravelling/gravelling short lengths

C3.1.3.3 ROUTINE MAINTENANCE OF SURFACED ROADS

- Patching
- Repair of edge breaks
- Cleaning of concrete drainage channels
- Repair of guard rails
- Road signs
- Gabion work
- Bush clearing
- Grass cutting
- Lane marking
- Emergency fencing
- Repair and replacement of roadside furniture

C3.1.3.4 DRAINAGE MAINTENANCE

- Culvert cleaning
- Culvert repair
- Side drain grading
- Open drain cleaning
- Open drain repair
- Culvert installation

C3.1.3.5 MAINTENANCE OF STRUCTURES

- Bridge repair / maintenance – cleaning of decks and drainage
- Bridge repair / maintenance – cleaning of water ways
- Minor structure repair / maintenance – cleaning of decks and drainage
- Minor structure repair / maintenance – cleaning of water ways

C3.1.3.6 MAINTENANCE OF TRAFFIC SIGNS AND ROADSIDE FURNITURE

- Road sign installation, repair and cleaning
- Road sign erection
- Guardrail installation and repair
- Kilometre marker installation / repair

C3.1.3.7 MAINTENANCE OF ROADSIDE RESERVE

- Grass cutting by hand
- Vegetation control
- Fencing repair
- Erosion control – gabions
- Erosion control – stone pitching

C3.1.4 LOCATION OF THE WORKS

The site comprises of all the provincial roads (surfaced and unsurfaced) within the Local Municipal Area of which the appointment is let.

The term “Site” as defined in the General Conditions of Contract 2015, will comprise the full road reserve width as identified by the District Roads Engineer. The “Site” will also include land not provided by the Employer where equipment and/or materials for use in the permanent works of the contract can be stored and/or stockpiled with the provision that the land selected for this purpose be approved by the Employers Agent. The Contractor must make his own arrangements for the use of such land and must obtain written approval from the owner(s) concerned.

Should it be deemed necessary by the Department, works may be allocated in other Local Municipal Areas or Districts as the one in which this appointment is let.

C3.1.5 TEMPORARY WORKS

C3.1.5.1 SPECIAL WATER HAZARDS CONTROL

It should be noted that certain areas of the Works are fairly low lying and due to blocked and inadequate stormwater control structures, these areas are prone to flooding and ponding during and subsequent to rainy periods.

Therefore, roadworks and trenching / open excavations may also be delayed due to ponding of water and the Contractor will have to allow for various methods of removing ponding stormwater and other de-watering methods to enable a minimum of delay to occur.

C3.1.5.2 OTHER SERVICES (TELKOM, ELECTRICITY, ETC)

Items have been allowed in the Bill of Quantities for dealing with and protecting existing services where they are known.

The Contractor will, however, ensure that prior to construction all the necessary Record Drawings and Way-leaves for all services have been obtained and verified on site by the relevant Service Providers in his presence. The Contractor must request in writing the relevant Official to indicate the said services at least 48 hours prior to commencement of work, after which the responsibility rests with the Service Department if the services are not indicated to the Contractor as requested.

The Contractor shall take whatever extra precautions are required to protect all existing services from damage during the period of the Contract. Any damage to existing services indicated by the relevant service providers or other damage as a result thereof, shall be for the Contractor's account.

C3.1.5.3 SURVEY BEACONS AND BENCHMARKS

The Contractor shall be responsible for the preservation of all land survey, erf or other pegs, benchmarks and beacons. If damage or disturbance of any such pegs or beacons is caused by the operations of the Contractor or his subcontractors the pegs are to be replaced by a Registered Land Surveyor at the cost of the Contractor. Benchmarks will be replaced by the Employers Agent at the Contractor's expense.

Information regarding the position of all such pegs will be made available to the Contractor by the Employers Agent on request.

The Contractor is to ensure that no spoil is placed over an erf peg or benchmarks and that these are adequately protected for the full duration of the Contract.

Where disturbances of boundary pegs is unavoidable due to excavation or other operations adjacent to the pegs, the Contractor shall advise the Employers Agent or his Representative immediately, and agreement is to be reached that the disturbance of the peg is unavoidable and a strict record of such disturbed pegs is to be kept. Such pegs are to be replaced by a Registered Land Surveyor as described above and the Contractor is to submit proof of the cost of replacement of pegs. The Contractor will be reimbursed on a basis pro-rata to the total cost of peg replacement determined on completion of the Works.

C3.1.5.4 TIDYING UP OF THE WORKS

The Contractor shall take note that progressive and systematic finishing and tidying will form an essential part of this contract. On no account shall spoil, rubble, materials, equipment or unfinished operations be allowed to accumulate in such a manner as to unnecessarily be a hindrance to or impede the activities of other contractors or service providers or public. In the event of this occurring, the Employer shall have the right to withhold payment for as long as may be necessary in respect of the relevant works in the area(s) concerned. In this regard, the Contractor's attention is drawn to NEMWA.

Upon completion of the Works or any portion thereof, the ground, fences, gates and any structures that have been interfered with are to be carefully restored to their original condition and all rubbish, tools, tackle, plant and material must be removed so as to leave the Site in a clean and orderly condition. No additional payment shall be made for work set out above.

C3.1.5.5 UTILISATION OF MEs

A minimum of 30% of the value of each works assignment be subcontracted to Micro Enterprises (ME's) in the relevant 1 to 4 CIBD grading. The ME's must be based within the LMA as far as possible. It is the Employers objective to maximise the usage of ME's and a minimum number of four ME Contractors, where possible, are to be appointed on for each works assignment. This amount is to be agreed with the District Roads Engineer in writing prior to the commencement of each works assignment. The Department will strive to ensure that each works assignment will lend itself to the usage of ME contractors.

Section 15000 includes all the milestones and targets to be met by the Contractor, as well as his responsibilities with regard to the maintenance activities in co-operation with MEs.

C3.1.5.5 EMPLOYMENT OF LOCAL LABOUR

The Contractor shall be required to create a minimum of 6 job opportunities for the duration of each Works assignment.

The employment of the above local labour can be included in the local labour which will be employed by the Micro Enterprises.

A "local labourer" is defined as a person who resides in the Local Municipal Area in which the project is based.

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C3.2 : ENGINEERING

C3.2.1 DESIGN SERVICES AND ACTIVITY MATRIX

Works designed by, per design stage *:*

Concept, feasibility and overall process	Employer
Basic engineering and detail layout to tender stage	Employers Agent
Final design to approved for construction stage	Employers Agent
Temporary works of Contractor	Contractor
Preparation of as-built drawings	Contractor

C3.2.2 DRAWINGS AND DOCUMENTS

The drawings listed below are attached in order to give an overview of the appointment.

Additional construction drawings will, in terms of Clause 5.9.1 of the General Conditions of Contract (2015), be issued to the Contractor by the Employers Agent /Employer on the commencement date and from time to time as required.

The reduced drawings that form part of the tender documents shall be used for tender purposes only. The Contractor will be supplied with 3 sets of unreduced paper prints of each drawing required for the works assignment free of charge. Any additional prints will be for the account of the Contractor.

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

Drawing No	Title	
Volume 1	General Conditions of Contract (2015)	To be obtained by Contractor
Volume 2	The Standard Specifications for Road and Bridge Works for State Road Authorities (COLTO 1998 Edition)	To be obtained by Contractor
Volume 3A	This Volume – Tender Advertisement, Tendering Procedures, Returnable Documents, Form of Offer, Contract Data, Pricing Instructions and Schedules of Quantities	To be downloaded
Volume 3B	Scope of Works	To be downloaded
Volume 4	Set of drawings issued with Volume 3 for tender purposes (may be bound in at the back of Volume 3 or issued as a separate volume)	To be downloaded
1109-T-01	Locality Plans	Included in Volume 3
Volume 5	The Routine Road Maintenance Procedures Manual as issued by the Department Roads and Public Works of the Eastern Cape (Version 1, February 2002)	Available on request from the Employers Agent
Volume 6	Regravelling and Road Betterment Procedures Manual (Version : 3–Feb 2005)	Available on request from the Employers Agent
Volume 7	Book of Standard Drawings as issued by the Department of Roads and Public Works of the Eastern Cape (dated 08/08/2001)	Available on request from the Employers Agent

C3.2.3 DESIGN PROCEDURES

The Contractor is responsible for the design of all temporary works required for the construction of the permanent works. This includes, inter alia, temporary access roads, trench shoring, dewatering and temporary support systems.

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C3.3 : PROCUREMENT

C3.3.1 PREFERENTIAL PROCUREMENT PROCEDURES

C3.3.1.1 Resources standards

Refer to the Tender Data in Part T1

C3.3.1.2 Requirements

Refer to the Returnable Documents in Part T2

C3.3.2 PENALTY CALCULATION

C3.3.2.1 Establishment

Should the Contractor fail to establish within the time agreed to with the Employers Agent, the penalty will be **0.05% of the value of the Work assignment per day**.

C3.3.2.2 Late Completion of the Works

Should the Contractor fail to complete the works within the time agreed to with the Employers Agent, the penalty will be **0.05% of the value of the Work assignment per day**.

C3.3.2.3 Use of ME Contractors

If the Contractor fails to subcontract a minimum of 30% of the value of the works assignment to Exempted Micro Enterprises (EMEs), the Contractor shall be liable to the Employer for the amount calculated as a penalty in order to deter and dissuade the Contractor from committing breach of contract.

The formula to calculate the penalty amount shall be:

Penalty Amount = (The minimum amount to be subcontracted to EMEs / The specified minimum percentage points to be subcontracted to EMEs) x 0.25 x the actual percentage point(s) of the Contract Price the Contractor failed to subcontract in terms of this Clause."

Example:

Contract Price - R 7,500,000.00 (excl. VAT)

Minimum EME Subcontract Amount - 30% of R 7,500,000.00 = R 2,250,000.00

Actual Percentage of Contract Sum Subcontracted to EMEs - 20%

Percentage of Contract Sum the Contractor Failed to Subcontract - 10%

Penalty Amount = (R 2,250,000.00 / 30) x 0.25 x 10 = R 187,500.00.

C3.3.2.4 Use of Local Labour

The contractor is to source all unskilled labour from the local municipal area where the Works assignment is based. However, if the contractor fails to meet the requirement of creating a minimum of six (6) employment opportunities for locally based persons for the duration of each works assignment or as agreed to by the Department, a penalty of 1,5 * the value of the amount of employment that was not created, calculated at R140.00 per day per person, will be calculated and imposed. This amount will be deducted from the Contractor's payment certificate.

The Contractor is to indicate to the Client via a report certified by their Contracts Manager /Director indicating the payments made to Local Labour and ME's.

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C3.4 : CONSTRUCTION

C3.4.1 WORKS SPECIFICATION

C3.4.1.1 Applicable Standards

The Standard Specifications for Road and Bridge Works for State Road Authorities (1998 Edition) as prepared by the Committee of Land Transport Officials (COLTO) are applicable to this Contract. It shall however be noted that reference is made in certain of the specifications to other standardised specifications which may or may not be included in this document. Where such specifications are not included, they shall however be deemed to be included in the Contract documents.

The Contractor shall have available for reference on site at all times a full set of the above specifications, together with any other to which they refer. These specifications shall remain the property of the Contractor but shall be made available to the Employers Agent whenever required throughout the duration of the Contract.

In addition the following Particular Specifications that are bound into this document will also apply:

- Section 1800 :Collection & Removal of Debris & Litter
- Section 1900 :Dayworks (provisional)
- Section 9100 :Controlling Vegetation Growth –Cutting
- Section 12000 :Environmental Management Programme implementation
- Section 13000 :Occupation Health & Safety specifications
- Section 15000 : Utilisation of ME's and Local Labour

C3.4.1.2.1 The term "Project Specifications" appearing in any of the COLTO standardised specifications must be replaced with the terms "scope of work".

C3.4.1.2.2 The variations and additions to the specifications listed in C3.4.1.2.2 are as follows:

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 below, together with additional amendments as set out herein.

The Routine Road Maintenance and Regravelling, as well as the Road Betterment Procedures Manuals, as issued by the Department of Roads & Public Works of the Eastern Cape will be referred to as a guideline, for the repair / construction and maintenance activities to be conducted under this Contract.

C3.4.2 SITE FACILITIES

C3.4.2.1 Facilities for the Employers Agent

No facilities for the Employers Agent are required. Site meetings will be held in the Contractor's site office or venue agreed upon depending on the Works assignment.

C3.4.2.2 Sanitary Facilities

The Contractor shall supply chemical toilets for use by his employees and temporary workers and shall be entirely responsible for maintaining such toilets in a clean and sanitary condition to the satisfaction of the Employers Agent and the health authorities. The number of toilets shall be based on one toilet per fifteen personnel on site and the Contractor shall make his own arrangements and pay all charges for the removal of sewage.

C3.4.2.3 Contractor's Camp Site

The establishment of all labour, plant and materials on site and all arrangements in this respect is the responsibility of the Contractor.

The Contractor shall provide his own on-site facilities, as agreed to by the Employers Agent at the commencement of each Works assignment. This is to be paid under dayworks rates for each occurrence / establishment.

Before the erection of his camp, office, stores, plant and accommodation units or any facilities, the Contractor shall satisfy the Employers Agent that he is familiar with and has taken due cognizance of any pertinent local by-laws, availability of services and statutory regulations. The Contractor's attention is specifically drawn to the regulations pertaining to the accommodation of labour.

C3.4.2.4 Telephone and Communication Facilities

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 works assignment) and the staff of the Employers Agent.

The Employers Agent and his Representative will use their own cellular and office telephones for this contract. The provision and use of cellular phones for the Contractor's personnel will be for his own cost.

C3.4.2.5 Accommodation for Employees

The Contractor shall make his own arrangements for the accommodation of his employees.

C3.4.2.6 Security

The Contractor shall be responsible for the security of his own personnel and constructional plant, as well as that of the Departmental employees on and around the site of the works and for the security of his camp and laboratory, and no claims in this regard will be considered by the Employer.

C3.4.2.7 Water, Power Supply and other Services

The Contractor shall make his own arrangements concerning the supply of water, electrical power and all other services for use at the site camps, as well as for all construction and maintenance purposes. No direct payment will be made for the provision of water, electrical power and other services. The cost thereof shall be deemed to be included in the rates and amounts tendered for the various items of work.

C3.4.3 FEATURES REQUIRING SPECIAL ATTENTION

C3.4.3.1 Public Safety

The Contractor shall at all times ensure that his operations do not endanger any member of the public, his own personnel as well as the departmentally seconded personnel. All works are to be carried out in accordance with the approved Occupational Health and Safety Plan.

C3.4.3.2 Adjoining Properties

The sites of the Works are surrounded by private properties. The Contractor shall exercise strict control over his employees to ensure that they do not trespass outside the road reserve or interfere in any way with the adjacent owners, tenants and their properties. In addition, the Contractor shall liaise with the owners regarding all matters that may affect them such as the provision of water and the like.

C3.4.3.3 Construction and Maintenance Activities in Confined Areas

It may be necessary for the Contractor to work within confined areas. Except where provided for in the project specifications, no additional payment will be made for work done in restricted areas.

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 / maintenance 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.

STANDARD AMENDMENTS TO THE STANDARD SPECIFICATIONS ISSUED BY COLTO

No amendments have been issued.

PROJECT SPECIFICATIONS REFERRING TO THE STANDARD SPECIFICATIONS AND ADDITIONAL SPECIFICATIONS

In certain clauses the Standard Specifications allow a choice to be specified in the Scope of Works 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 Scope of Works. It also contains some additional specifications required for this particular Contract.

The number of each clause and each payment item in this part of the Scope of Works 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.

SECTION 1100 DEFINITIONS AND TERMS

Add the following additional clauses:

"B1156 ACCEPTANCE CONTROL

Acceptance control means whatever testing the Employers 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. Such testing will be carried out at the cost of the Employer in a laboratory approved by him.

B1157 COMMERCIAL SOURCE

An off-site source of materials chosen by the Contractor will also be viewed as a commercial source. The Contractor shall take full responsibility for the quality of all materials and services supplied from commercial sources.

B1158 PROCESS CONTROL

Process control means all testing required to be carried out by the Contractor 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 Employers Agent."

SECTION 1200: GENERAL REQUIREMENTS AND PROVISIONS

B1204 PROGRAMME OF WORK

Insert the following before the first paragraph:

"A programme in accordance with the precedence method shall be provided showing the various activities in such detail as may be required by the Employers Agent. The programme shall be updated monthly in accordance with the progress made by the Contractor.

Failure to comply with these requirements will entitle the Employers Agent to apply a programme based on his own assumptions for the purpose of evaluating claims for additional compensation."

B1206 SETTING OUT OF THE WORKS AND PROTECTION OF BEACONS

In second line of first paragraph, replace Clause 14 with 4.1.2, 4.5, 4.15 and 4.15.3 of SANS 1921-1.

B1207 NOTICES, SIGNS AND ADVERTISEMENTS

Replace the second paragraph with the following:

Contract nameboards shall be erected and maintained for the duration of the works assignment at points to be indicated by the Employers Agent. Details of the contract nameboard are provided in the standard drawings, whilst a layout of the identity boards are included with the tender drawings."

Delete the final paragraph and replace with the following:

"All signboards erected in accordance with the drawings or as approved by the Employers Agent, shall be removed at the same time as the Contractor's de-establishment.

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B1209 PAYMENT

(b) Rates to be inclusive

In the 3rd line, after the word "quantities", *insert* "together with the payment of VAT as a separate item,"

(f) Materials on Site

In the first line of the first paragraph, delete "Clause 52" and replace with "Clause 6.10.1".

Add the following sub clause:

"**(g) Trade names**

Where materials are specified under trade names, tenders must be based on those specified materials."

B1210 CERTIFICATE OF PRACTICAL COMPLETION OF THE WORKS

Insert the following:

In the fourth line of the first paragraph, delete "Clause 54" and replace with "Clause 5.14".

Add the following paragraph:

"Only a Certificate of Completion will be issued on successful completion of all works assignments at the completion of the 36 month appointment period."

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

Add the following to the first paragraph of subclause (d)(ii)

"This is also required with respect to fences, gates, camp sites, bypasses and material spoiled on private property."

Add the following after subclause (e)

"These written statements, as required in Clause 1214(b)-(e) shall be handed to the Employers Agent before the final certificate will be issued."

B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL

Delete the clause and replace with the following:

"There will be no extension of time on this contract due to abnormal rainfall due to the contract being a fixed term maintenance contract."

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

In second line of first paragraph, replace "Clause 35" with "Clause 8.2".

B1229 SABS CEMENT SPECIFICATIONS

Add the following to this subclause:

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

SANS 50197-1 "Cement composition, specifications and conformity criteria Part 1: Common cements."

Furthermore, where reference is made in this specification or the standard specification to a different cement type, the following names will apply and the Employers Agent will confirm the relevant new name from the table overleaf:

AFRISAM		Limpopo	Mpumalanga	Gauteng	Free State	KZN	Eastern Cape	NW Province	Northern Cape	Western Cape	Lesotho	Botswana	Namibia	Swaziland
CEM I	52,5R	RHC	RHC	RHC	RHC		RHC	RHC	RHC		RHC	RHC	RHC	RHC
CEM II A-M	42,5R	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HSC		HSC	HSC	HSC	HSC
CEM II B-L	32,5R				APC		APC		APC		APC		APC	
CEM II B-L	32,5N				RS		RS		RS		RS		RS	
CEM III A	42,5N			EBC										
CEM IV B-V	32,5R													APC
CEM V A	32,5R	APC	APC	APC	APC			APC				APC	APC	
CEM V A	32,5N	RS	RS	RS	RS			RS				RS	RS	

APC = All Purpose Cement HSC = High Strength Cement RHC = Rapid Hard Cement EBC = Eco Building Cement RS = Roadstab Cement

LAFARGE		Limpopo	Mpumalanga	Gauteng	Free State	KZN	Eastern Cape	NW Province	Northern Cape	Western Cape	Lesotho	Botswana	Namibia	Swaziland
CEM II A-V	52,5N	Rapidcem/ Fastcast	Rapidcem/ Fastcast	Rapidcem/ Fastcast	Rapidcem/ Fastcast	Rapidcem/ Fastcast		Rapidcem/ Fastcast	Rapidcem/ Fastcast					
CEM II A-V	42,5R					Powercrete Plus								
CEM II A-M (V-L)	42,5R	Powercrete Plus	Powercrete Plus	Powercrete Plus	Powercrete Plus	Powercrete Plus	Powercrete Plus	Powercrete Plus	Powercrete Plus		Powercrete Plus	Powercrete Plus	Powercrete Plus	Powercrete Plus
CEM II B-M (V-S)	32,5N	RoadCem	RoadCem	RoadCem	RoadCem	RoadCem		RoadCem	RoadCem					
CEM IV A-V	32,5R					Buildcrete/ Civilcrete								
CEM IV B-V	32,5R	Buildcrete/ Civilcrete/	Buildcrete/ Civilcrete/	Buildcrete/ Civilcrete//	Buildcrete/ Civilcrete//	Buildcrete/ Civilcrete/	Buildcrete/ Civilcrete/	Buildcrete/ Civilcrete/	Buildcrete/ Civilcrete/		Buildcrete/ Civilcrete/	Buildcrete/ Civilcrete/	Buildcrete/ Civilcrete/	Buildcrete/ Civilcrete/

NPC-Cimpor		Limpopo	Mpumalanga	Gauteng	Free State	KZN	Eastern Cape	NW Province	Northern Cape	Western Cape	Lesotho	Botswana	Namibia	Swaziland
CEM II B-S	42,5N					Plus	Plus							
CEM II B-M (S-V)	42,5N					Plus	Plus							
CEM II A-L	32,5R					Plus	Plus							
CEM II B-L	32,5N					Pro/Build	Pro/Build							
CEM II B-L	32,5R					Pro-R	Pro-R							
CEM III A	32,5N					Pro/Build	Pro/Build							
CEM V A (S-V)	32,5N					Pro/Build	Pro/Build							
MC	22,5X					Masonry	Masonry							

PPC		Limpopo	Mpumalanga	Gauteng	Free State	KZN	Eastern Cape	NW Province	Northern Cape	Western Cape	Lesotho	Botswana	Namibia	Swaziland
CEM I	52,5N	OPC	OPC	OPC	OPC	OPC	OPC	OPC	OPC	OPC	OPC	OPC		OPC
CEM II A-L	42,5N						Surebuild							
CEM II B-L	42,5N	Surebuild	Surebuild	Surebuild	Surebuild	Surebuild		Surebuild	Surebuild		Surebuild	Surebuild		
CEM II B-V	42,5N		Surebuild	Surebuild		Surebuild								Surebuild
CEM II B-M	42,5N	Surebuild	Surebuild	Surebuild	Surebuild	Surebuild	Surebuild		Surebuild	Surebuild				
CEM II B-V/M	32,5R											Botcem		

Add the following new clauses:

B1230 DAILY RECORDS

The Contractor shall furnish the Employers Agent daily with records of work executed by him for each activity. The records shall include information such as description, location, measurement, plant and labour hours, where applicable, and all other information the Employers Agent may require for the record and measurement purposes, in accordance with the reporting forms included in Appendix C attached to this Volume.

No separate payment items will be scheduled for the administrative costs incurred by the Contractor to provide the Employers Agent with the activity sheets and other information that will be required. These costs will be deemed to be inclusive of the rates tendered for the works.

B1232 COMMUNITY LIASON OFFICER (CLO)

The Community Liaison Officer (CLO) is to be selected by the Project Steering Committee (PSC) / Local Council and the Employer (through his agent) and appointed by the Contractor. The Contractor shall, however, accept the appointment as part of his management personnel.

The duties of the CLO will be:

- To be available on site daily during normal working hours and at other times as the need arises. His normal working day and his period of employment will be mutually agreed upon by the Employer and the Employers Agent accordingly.
    - To determine, in consultation with the Contractor, the needs of the local labour/SMMEs for relevant training if so required.
- To communicate daily with the Contractor and the Employers Agent to determine the labour/SMME requirements with regard to numbers and skill, to identify possible labour disputes and to assist in their resolution.
    - To attend all meetings in which the community and/or labour is present or is required to be represented. In particular, he will attend the first part of the monthly/site meeting to report on the local community involvement.
    - To inform local labour of their conditions of temporary employment and to inform local labourers as early as possible when their period of employment will be terminated.
    - To attend disciplinary proceedings to ensure that hearings are fair and reasonable.
    - To keep a daily written record of his interviews and project liaison conducted.
    - All such other duties as agreed upon between all parties concerned.

A payment item has been allowed for in the Bill of Quantities for the payment of the CLO.

B1233 COMMUNITY PARTICIPATION

In order to give effect to the need for the participation and transparency in the process of delivering services, the community should participate in the decision making process throughout the duration of the project. This shall be achieved through structured engagement between those responsible for the delivery of the project and the community.

A Project Steering Committee (PSC) which will be voluntary organizations shall be formed from representatives of the Roads Forum, the Employer, the Employers Agent, the Contractor and interested and affected parties. The PSC shall meet at least once every month.

The PSC shall make decisions and recommendations by consensus for the consideration and final approval of the Employer.

The tasks of the PSC will be to:

- Identify problems and opportunities that result from the location, construction and operation of the roads.

- Participate in the prioritization process of the works in the development of the Maintenance Plan which will form the basis of the Construction Programme.
- Keep the community informed of all decisions taken and revisions relating to the Construction Programme.
- Keep the community informed with regards to progress being made on a monthly basis.
- To assist with community liaison and resolution of non contractual disputes.
- To devise fair and transparent procedures that will assist the Contractor in the engagement of labour.

B1234 UNSCHEDULED RELOCATION OF MAINTENANCE TEAMS DUE TO UNFORESEEN REASONS

The Employers Agent may instruct the Contractor to transfer a specific maintenance team or a group of teams, to a new location within the project area which does not comply with the approved programme due to unforeseen reasons. Where the team or teams need to be re-established and moved to a site over a distance exceeding fifty (50) kilometres, the Contractor shall be compensated, at dayworks rates, for his plant and labour costs to relocate the specified teams accordingly.

These costs are to be agreed to by the Employers Agent and Employer prior to relocation commencing.

B1235 PROVIDING CONTRACT MANAGEMENT TO THE HOUSEHOLD CONTRACTORS LOCATED WITHIN THE LMA

The Eastern Cape Department of Transport is responsible for the Household Contractor Maintenance Programme.

The Household Contractor Maintenance Programme is aimed at poverty alleviation through community households located along certain roads as indicated in the Table below, who conduct basic road maintenance functions such as pothole repair and culvert cleaning.

It is the Employer's intention that the provision of Contract Administration, Quality Control, Preparation of Reports and General Management of the programme be conducted by one full time foreman provided by the Main Contractor. The foreman is also required to provide the community contractors with basic training on how to conduct the said maintenance works to Departmental standards.

B1236 PROVISION OF HIRE OF PLANT BY THE CONTRACTOR FOR THE DEPARTMENT FOR EMERGENCY WITHIN THE DISTRICT

This item will allow the Department to occasionally hire specific items of plant through the contractor for emergency use (inclusive of insurances). No payment will be made unless documented proof of hiring of plant for use by the Department is provided to the Client.

B1237 PROVISION OF HIRE OF OPERATORS BY THE CONTRACTOR FOR THE DEPARTMENT

This item will allow the Department to occasionally hire plant operators through the contractor for use by the Department outside of the works assignment. No payment will be made unless documented proof of hiring of plant operators for use by the Department is provided to the Client. The Department is responsible for accidental damage / wear and tear to its own plant /equipment.

B1239 MEASUREMENT AND PAYMENT FOR CERTAIN GENERAL ITEMS

Payment will be made under this Section for certain temporary work items as follows:

Item		Unit
B12.01 Community Liaison Officer		
(a)	Community Liaison Officer cost	provisional sum
(b)	Monthly transport allowance for CLO	provisional sum
(c)	Remuneration of PSC representatives from the community to attend official meetings	provisional sum
(d)	Handling costs and charges for Contractor for items (a) (b) and (c)	percentage (%)

A provisional sum is provided for the cost of community liaison, which will include the salary of the Community Liaison Officer for the duration of the works assignment. The Community Liaison Officer may possibly not be required on a full time basis.

Provisional sums are also allowed for the monthly transport allowance for the CLO, as well as for the payment of PSC members for attending official meetings as scheduled by the Employers Agent. All the above provisional sums will only be expended as instructed by the Employers Agent and approved by the Employer.

The percentage tendered for handling costs and charges shall cover all additional costs for the Contractor over and above the sums paid under sub items (a), (b) and (c)."

Item **Unit**

B12.07 Provision of hire of Plant by the Contractor for the Department **Provisional sum**

A provisional sum is provided to cover the cost of occasional hire of appropriate plant by the Contractor for use by the Department in the region, outside the scope of the works assignment. The tendered rate shall include full compensation for all labour, equipment, tools and associated administrative costs required to provide the required plant.

Item **Unit**

B12.08 Handling charges on Item B12.07 .....**(%)**

The percentage tendered for handling costs and charges shall cover all additional costs for the Contractor over and above the sums paid.

Item **Unit**

B12.09 Provision of hire of Operators by the Contractor for the Department.... **Provisional sum**

A provisional sum is provided for the cost of occasional hire of suitably qualified plant operators (that comply with all OHS requirements) by the Contractor for use by the Department to operate plant, be it hired plant or departmentally owned plant. The tendered rate shall include full compensation for all labour, equipment, tools and associated administrative costs required to provide the required plant operators.

Item **Unit**

B12.10 Handling charges on Item B12.09 .....**(%)**

The percentage tendered for handling costs and charges shall cover all additional costs for the Contractor over and above the sums paid.

Item **Unit**

B12.11 Providing Contract Management to Household Contractors within the LMA .....**month**

The unit of measurement shall be per month or pro rata of 21 days for which the Foreman provides the function of Contract Administration, Quality Control, Preparation of Reports and General Management of the programme as well as training.

The tendered rate shall include for full compensation for all overheads, one full time foreman, one LDV and any other incidentals that may be required to provide the above service complete.

Item **Unit**

B12.12 Supply and installation of Contract Name Boards .....**No.**

The unit of measurement shall be per number of contract name boards erected.

The tendered rate shall include for full compensation for all overheads including the supply, handling and erection of the contract name boards complete with poles as per the detail attached in Annexure A.

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

B1303 PAYMENT

B13.01 The Contractor's general obligations

Add the following:

"References to Clause 49 must be amended to read Clause 6.8.1"
"References to Clause 53 must be amended to read Clause 6.11"

Add the following:

The Scope shall also include the requirements of the Occupational Health and Safety specifications and relevant payment items contained in the tender documentation.

Add the following to subclause (i):

"Sub item 13.01(a) (establishment of plant and site camp) as set out in COLTO will be paid for under the dayworks section (Section 1900). The scope of works / establishment will be agreed in writing with the District Roads Engineer at the commencement works assignment."

"Sub item 13.01(b) The unit of measurement is percentage (%). The value related component will be paid for as a percentage of the portion of works agreed to by the Employers Agent and Contractor at the commencement of the works assignment. This will be paid on a monthly basis only while the works is being undertaken."

"Sub item 13.01(c) The unit of measurement is month. The time related component will be paid for based on different values of works. The cost thereof is to include full compensation for any insurances, supervision, running costs and the likes. Payment will only be made for each month or portion thereof when the Contractor is physically on site. No payment will be made for durations when no works assignment is allocated.

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

B1402 OFFICES AND LABORATORIES

(b) Offices

No offices will be required by the Employers Agent.

(c) Laboratories

"No on-site laboratories are required. The Contractor may make use of SANAS accredited laboratories for all his process control testing."

SECTION 1500 : ACCOMMODATION OF TRAFFIC

B1501 SCOPE

Add the following:

Certain parts of the work to be carried out under this section may be reserved for selected sub-contractors.

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

It is a condition of this contract that traffic is accommodated 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"

B1502 GENERAL REQUIREMENTS

(a) Safety

Add the following at the end of the second paragraph of this subclause:

"The entire site will be handed over to the Contractor and he is responsible for the accommodation of traffic thereon. The Contractor may only occupy such areas on the site in accordance with the approved construction programme or as approved by the Employers Agent.

The Contractor shall submit a programme for the accommodation of traffic to the Employers Agent for approval."

f) Approval of temporary deviations

Add the following:

"If, after any temporary deviation has been constructed, any changes which are considered necessary or desirable, the proposal shall be submitted to the Employers Agent for his approval."

(i) Traffic Safety Officer

Add the following after the second paragraph:

"The Contractor shall submit a CV of the candidate to the Employers Agent for approval before the Traffic Safety Officer is appointed. The Traffic Safety Officer shall be made available to discuss road safety and traffic accommodation matters whenever required by the Employers Agent. This Traffic Safety Officer shall not be the same person as the Construction Health and Safety Officer contemplated in Part C of this specification. If a Traffic Safety Officer is found to be incompetent by the Employers Agent, the Employers Agent will instruct the Contractor to remove and replace him with a competent person. The Traffic Safety Officer will report to the Construction Health and Safety Officer"

At the end of the subclause add the following:

"The duties of the responsible persons shall include liaison with the relevant traffic authorities and in the event of an accident on the section of road under construction, the Traffic Safety Officer or his assistants shall be responsible for contacting the traffic authority and South African Police Service."

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

"(ii) Record on neat and dimensioned sketches and submit to the Employers Agent the position and sign reference number where applicable of each sign, barricade, delineator, cone, amber flicker light, guardrail and permanent or temporary painted road marking feature. The

position of each of the above-mentioned signs and road marking features shall be adequately referenced to identifiable permanent features located along the site of the works.

These records shall also show the date and time at which the recorded traffic accommodation features are certified correct by the traffic safety officer, and shall be signed by the traffic safety officer before being submitted to the Employers Agent.

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

(iii) Personally inspect the position and condition of each traffic accommodation feature on the whole site of works at least twice each day at 9h30 and at 16h30, to record all irregularities discovered and the remedial action taken, and to sign off as correct and submit to the Employers Agent such record sheets by the middle of the next working day at the latest. The traffic safety officer shall keep a duplicate book for this specific purpose. The provision of daily photographs is advisable.

The traffic safety officer shall also submit the daily labour returns of flagmen, stop/go and traffic signal control men employed, with this report.

Add the following sub-clauses:

"(i) 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 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 Employers Agent and that the roads are safe for night traffic.

(xi) Be responsible for implementing actions requested in writing by the traffic authorities with regard to the work to be carried out and be responsible for the erection and maintenance of all traffic signs necessary for the accommodation of traffic.

(xii) In the event of an accident, the traffic safety officer shall record details of the accident in a written report accompanied by photographs and a neat sketch plan which show identifiable permanent features, relevant dimensions and the position of all temporary road signs, barricades, delineators and other devices used for traffic accommodation. The traffic safety officer is also to record the GPS coordinates of the accident scene. "

(xiii) Also ensure full compliance with all the requirements of the Occupational Health and Safety Act and Construction Regulations (2014) which may pertain to the accommodation of traffic.

(xiv) Keep the responsible Traffic Police fully informed with regard to any changes in the accommodation of traffic planned by the Contractor due to construction activities."

Add the following sub-clauses:

(j) Failure to comply with provisions for the accommodation of traffic

Failure or refusal on the part of the Contractor to take the necessary steps to ensure the safety and convenience of the travelling public, accommodation of traffic, and the provision of plant and personnel in accordance with these specifications or as required by statutory authorities or ordered by the Employers Agent, shall be sufficient cause for the Employers Agent to apply penalties as follows:

Work related Penalties

A fixed penalty of **R500** 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 Scope of Works.

In addition a time-related penalty of **R300** 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 Employers Agent. The Employers Agent's instruction shall state the allowable time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

Health and Safety related Penalties

Penalties in respect of Occupational Health and Safety related issues are as per the table in Section 13000 of this document.

(k) Site personnel

The Contractor shall ensure that all his personnel, excluding those who are permanently office bound, are equipped with reflective safety jackets and that these are worn at all times when working on or near to the travelled way.

Any person found not wearing a reflective jacket under these circumstances shall be removed from the site until such time as he is in possession of and wearing a reflective jacket. Furthermore the above penalties will also be applied. Reflective safety jackets shall be kept in good condition and any jackets that are, in the opinion of the Employers Agent, ineffective shall be immediately replaced by the Contractor.

(l) Use of the road by the public

The Contractor shall plan and conduct his activities so as to bring about the least possible disruption to the traffic on the roads on which he works. The Contractor shall deal with deliberate courtesy and understanding in any discussions or disputes at all points of contact with the travelling public.

(m) Extension of time for completion

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.

(n) Provision of safety equipment for the Employers Agent

The Employers Agent shall be provided with the following traffic safety equipment:

(i) Amber rotating flashing lights for mobile use which shall be approved by the Employers Agent.

The Contractor shall provide the Employers Agent and the Representative with amber rotating warning lights. All lights shall be operational whenever the vehicles operate within the road reserve. All lights shall have a minimum height of 200 mm and 50 watt output, be of the revolving reflector type and shall have a magnetic base, flexible cable and a connection suitable for insertion into a 12V automobile cigarette lighter socket.

(ii) Maintenance sticker

The Contractor shall supply the Employers Agent and the Representative with magnetic "maintenance" stickers. The stickers must read "CONSTRUCTION VEHICLE" in 170 mm letters on a yellow retro-reflective background.

(iii) Safety jackets

The Contractor shall provide the Employers Agent, the Representative and visitors with safety jackets for moving around on site. The jackets shall be of an approved type, orange in colour and shall be to the approval of the Employers Agent. The Contractor is to allow for fifteen jackets.

(iv) Hard hats

The Contractor shall provide the Employers Agent and visitors with hard hats for moving around on site where they may be required. The Contractor is to allow for fifteen hard hats.

No additional payment will be made for the above items and the costs will be deemed to be inclusive in the establishment costs."

(o) Flagmen

Where required by the Employers Agent, flagmen shall be provided for the control of traffic at lane closures and road accidents if and when they occur.

Flagmen shall be adequately trained in the standard flagging techniques as described in the South African Road Signs Manual (Volume 2, Chapter 13) on Figure 13.23 (Detail 13.23.1) and be provided with conspicuous clothing such as safety jackets utilising retro-reflective and/or fluorescent panels in red, yellow and / or white.

Flagmen shall have in their possession, at all times, certification that they have attended and passed an accredited course in flagging techniques before being allowed onto the construction site.

Flags shall be made from bright red or red-orange material and shall be square with a minimum side length of 600 mm. The flag shall be attached to a staff at least 1,0 m in length.

Flagmen shall be placed at positions as shown on the drawings or as directed by the Employers Agent. Such positions shall be a sufficient distance from the work areas to allow vehicles to slow down before entering the work area but not so far away that the drivers tend to increase speed before entering the work areas. The minimum requirement shall be one flagman at the start of each closure.

During the daytime, at least two flagmen shall be provided at each traffic control point in addition to the STOP/GO sign operator, one flagman at the 80 km/h sign and a second roving flagman to indicate to the traffic at the end of the queue to stop.

At night time at least one roving flagman equipped with a Stromberg Lightman xenon strobe, or similar approved, and a torch is required at each traffic control point as well as the traffic light operator. Where the shoulder of the road is closed to traffic, a flagman shall be provided at the leading end of the closure during daytime. This flagman shall be provided at the 80-km/h sign to warn the traffic about the closure. No flagman shall be on duty for a period of more than 10 hours per day. The traffic control site shall be well lighted at night with at least one floodlight positioned so as to illuminate the area and not shine into the oncoming traffic.

In terms of lateral clearance and safety, flagmen shall stand on the shoulder of the lane of traffic that is being controlled and under no circumstances shall flagmen be permitted to stand within the traffic lane. In order to obtain maximum visual impact for the travelling public, flagmen shall stand-alone.

(p) Access to the works

The Contractor's plant and equipment shall not stop on the trafficked carriageway except to unload or load traffic control facilities.".

B1503 TEMPORARY TRAFFIC-CONTROL FACILITIES

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

"The Contractor shall provide, erect and maintain the necessary traffic-control devices, road signs, channellisation 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 at all times and are functioning properly , and he shall replace any that have been damaged, lost, stolen or obliterated at his own cost."

Delete the last sentence of the second paragraph and substitute the following:

"Traffic-control devices no longer required at the site of a deviation or a lane closure shall be moved for re-use. Traffic-control devices lost or damaged by the Contractor shall be replaced at his own cost.".

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 Employers Agent. The arrangements expected to be most commonly used on this contract are shown in the Routine Road Maintenance Procedures Manual of the Department of Roads and Public Works of the Eastern Province.

The details shown for spacing and placement of traffic-control facilities may however, be revised at the discretion of the Employers Agent where deemed necessary to accommodate local site geometry and traffic conditions."

(a) Traffic-control devices

Add the following to this Subclause:

"Flagmen shall be provided at all access exit points to the working areas."

Add the following new paragraph:

"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 after the second paragraph of this Subclause:

"The Contractor shall be responsible for the protection and maintenance of all signs, and shall at his own cost replace any that have been damaged, or lost, or stolen.

All temporary road signs required to remain in position for some time shall be pole mounted as shown on the drawings. All temporary road signs required to be moved more often shall be mounted on portable supports for the easy moving of signs to temporary positions. The only permitted method of ballasting the sign supports shall consist of durable sandbags filled with sand of adequate mass to prevent signs from being blown over by wind. The cost of the sandbags shall be included in the monthly rate for accommodation of traffic.

Temporary road signs and channelization devices shall be manufactured in accordance with the South African Road Traffic Signs Manual (Volume 2, Chapter 13) of June 1999 and arranged along the road as shown on the drawings and in the Manual.

Add the following paragraphs:

"All road signs shall be new or approved by the Employers Agent as new in accordance with the specifications. The Contractor shall have available on site sufficient extra road signs, barricades and delineators to replace items that have become defective or missing.

The Contractor shall be responsible for the protection and maintenance of all signs, and shall take all reasonable measures to ensure minimum damages to signs and other traffic control devices.

The covering of permanent road signs, if applicable, shall be by first utilising a hessian bag, which shall be pulled over the sign in the form of a hood and fastened to the signposts. Plastic bags or other materials fastened by means of adhesive tape shall not be permitted. The cost of covering of permanent road signs shall be included the monthly rate for accommodation of traffic.

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.

No work may proceed on any section where accommodation of traffic is required until such time as the relevant requirements with regard to sign posting and other detail shown on the Contractor's drawings are met and approved by the Traffic Safety Officer in writing.".

(c) Channelisation devices and barricades

Add the following:

"The start of barricades shall be positioned such that a minimum sight distance of 150m, measured at a height of 1,05m from the road surface, is obtained.

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 m² 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 and

(vi) where work is not taking place in a section closed half width to traffic, the delineators shall be moved laterally back to the edge of the work area to provide a wider space for traffic.".

No traffic cones are to be utilised."

(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 Employers Agent.

Rotating lights shall have an amber lens of minimum height of 200 mm and shall be mounted in such a way as to be highly visible from all directions. The lights on construction vehicles shall not be switched on while vehicles are being operated on unrestricted sections of a public road, but shall be switched on while construction vehicles are operating within the accommodation of traffic area, as the vehicles decelerate to enter a construction area, or as the vehicles accelerate to the

general speed when entering the road from a construction area. Lights on plant shall operate continuously while the plant is working alongside sections of road open to public traffic

All LDV's and cars operating on site shall also be equipped with rotating amber flashing lights which shall be placed so as to be highly visible and operated continuously while the vehicles are manoeuvring in or out of traffic or is travelling or parked alongside roads open to public traffic.

Rotating lights and the "Maintenance Vehicle" signs on the Contractor's and Employers Agent's vehicles and plant shall not be paid for separately.

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

Add the following sub-clauses:

(g) Other traffic control measures ordered by the Employers Agent

The Employers Agent may instruct the Contractor to provide any other road sign, reflective tape, etc. Such road signs shall conform to the requirements of the South African Road Traffic Signs Manual, or specification provided by the Employers Agent.

Similarly, in order to ensure that the travelling public is kept fully informed and warned on matters relating to the accommodation of traffic, construction sign posting and the effect of the construction on the flow of traffic through the site, the Employers Agent may arrange for advertising in the press and/or for other forms of publicity.

B1504 WIDTH AND LENGTH OF TEMPORARY DEVIATIONS

Replace "10m" and "5m" in the first paragraph with "3m" and "2m" respectively.

Replace the second paragraph with the following:

"Where the existing road is constructed in half widths or in full width with single direction traffic, the roadway width for accommodating one-way traffic shall be at least 3,2 m wide. The length of the half-width construction or full width construction with single direction traffic controlled by STOP and GO/RY signs shall not exceed 2, 0 km.

The traffic shall be single direction controlled by STOP and GO/RY signs during daytime and temporary traffic signals at night as agreed by the Employers Agent."

B1506 EARTHWORKS FOR TEMPORARY DEVIATIONS

Add the following to this Clause:

"Wherever possible and as agreed by the Employers Agent topsoil shall be stripped off the area required for deviations. The topsoil shall be stockpiled in accordance with the specifications for later re-use to re-instate the deviations."

B1517 MEASUREMENT AND PAYMENT

Delete the contents of this clause and replace with the following:

"Accommodation of traffic will not be paid for separately and any costs associated with it, unless expressly stated and allowed for, must be included in the rates of the various items where accommodation of traffic is required."

SECTION 1600 : OVERHAUL

B1602 DEFINITIONS

(d) Free-haul distance

Delete “and cut to spoil” *in the last sentence.*

SECTION 1700 : CLEARING AND GRUBBING

B1702 DESCRIPTION OF THE WORK

(b) Grubbing

Delete the contents of this Clause and replace with the following.

" In the road reserve all stumps and roots are to be cut to the following heights above ground level and are to be treated with Garlan 4 with Red Dye :

- 0m to 3m from the edge of roadway : - Flush with the natural ground level
- 3m to 9m from the edge of roadway : - Maximum height of 100mm above the natural ground level

All trees of girth larger than 0,5m to 1m <u>will not be measured separately</u> and will be deemed inclusive of the rate. Trees with a girth larger than 1m will be measured and paid for under item B17.02."

B1703 EXECUTION OF WORK

(e) Cleaning out of hydraulic structures

Replace the contents of this clause with the following:

"Hydraulic structures and culverts shall be cleaned when instructed by the Employers Agent.

Hydraulic structures and culverts shall be cleaned of all silt and debris such that all surfaces are clearly visible and accessible for inspection.

Material removed shall be disposed of in close proximity of the culverts within the road reserve or loaded and transported to spoil as directed by the Employers Agent. Material spoiled near the hydraulic structures and culverts shall be spread neatly well clear of the top of drainage trenches where it will not wash back."

Add the following new clauses:

(f) Removal of undesirable vegetation

The Employers Agent may require the selective physical eradication of noxious weeds, invader plants and other undesired vegetation within the road reserve by uprooting and by cutting brush with suitable equipment.

For the purpose of this clause, undesirable plant growth shall include, inter alia, the following as set out in Section 29 of CARA by the Minister of Agriculture and published in the Regulation Gazette No. 7032 Vol 429, promulgated on 30 March 2001.

<u>Category 1 Plants</u>

Weeds characterised as Category 1 plants must not occur on any land or inland water surface throughout the Republic, except in areas designated as biological control reserves. The plants as listed below need to be removed by the land user, unless they are in specifically designated areas that have been set aside for biological control.

Lantana, Pompon Weed, Bugweed, Queen of the Night, Pampas Grass, Cat's Claw Creeper, Red Sesbani, Fountain Grass, Water Hyacinth and Azolla.

Category 2 Plants

These plants are only allowed to be grown in areas specifically demarcated for this purpose. Appropriate steps must be taken to curtail the spread of the plants beyond these areas.

Eucalyptus, Black Wattle, Patula Pine, Cluster Pine, Grey Poplar, Guava, Watercress, Weeping Willow, Port Jackson, Rooikrans and Sisal.

Category 3 Plants

These need to be contained from spreading by removing all new seedlings.

Jacaranda, Syringa, Butterfly Orchid tree, Cotoneaster, Australian Silk Oak, St Joseph's Lilly and New Zealand Christmas Tree.

The eradication of undesirable trees will be paid for under normal payment items scheduled for removal of trees. Additional payment items will be scheduled for the physical eradication of undesired vegetation if they are selectively removed, otherwise it will be catered for under the Clear and Grub payment.

(h) Clearing and grubbing narrow widths

The Employers Agent may require clearing and grubbing of narrow widths between 0.5 and 5m wide to be conducted adjacent to existing roadways in order for them to be widened, or for the construction of new drains and mitre drains. The description and execution of the works will be conducted in the same manner as set out in sections 1702 (a), (b) and 1703 (a).

B1704 MEASUREMENT AND PAYMENT

Item		Unit
B17.01	**Clearing and grubbing**	hectare (ha)

Add the following paragraphs:

"This item will be used for the general bush clearing along provincial roads. In the road reserve all stumps and roots are to be cut to the following heights above ground level and are to be treated with Garlan 4 with Red Dye :

- 0m to 3m from the edge of roadway : - Flush with the natural ground level
- 3m to 9m from the edge of roadway : - Maximum height of 100mm above the natural ground level.

Only trees of girth larger than 1m will be measured separately and will be measured and paid for under item B17.02."

"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 abovementioned work".

"The rate shall also allow for the gathering, cutting up, shredding if required, loading, transporting and disposing of at local villages located along the said roadways or any area instructed by the Employers Agent regardless of distance."

B17.05 Cleaning out of hydraulic structures

Delete the last sentence of the last paragraph.

Add the following items:

Item		Unit
B17.07	**Mechanical cleaning of hydraulic structures, pipes and portal culverts**	hour (hr)

The unit of measurement shall be the number of hours of operation of a high pressure jetting machine (minimum pressure 120 bar and flow rate of 260 l/min) as instructed by the Employers Agent. Non-working hours for transport, breakdown, lack of operator or any other reason shall not be measured.

The tendered rate shall be an all-inclusive charge for the use of the plant and operator, transport costs to and from the site and all other handling costs, profit and other charges. The tendered rate shall also allow for loading the materials onto trucks, for transporting the material within a free-haul distance of 1,0km and for spoiling the material to a site agreed to with the Employers Agent.

Item		Unit
B17.08	**Removal of undesired vegetation**.....	square metre (m^2)

The unit of measurement shall be square metres of ground cleared using mechanical or manual labour methods, to selectively remove undesirable vegetation as instructed by the Employers Agent, including trees with a girth of up to and including 1,0m.

The removal of undesirable vegetation within areas designated for Clear and Grub (Item17.01 and 17.04) will not be paid for separately under this item.

The removal of undesirable trees with a girth in excess of 1,0m will be paid under item B17.02.

The tendered rate shall include for cutting the off-cuts into manageable sizes, loading, off loading and spreading and hauling with a free haul distance of 1,0km.

Item		Unit
B17.09	**Shredding of vegetation cuttings in situ**.....	cubic metre (m^3)

The unit of measurement shall be the volume of shredded vegetation generated from the cuttings, the volume determined from the rated capacity of the truck or container used to remove the shredded material.

The tendered rate shall include full compensation for all plant, labour and materials for stockpiling the cut material, loading and shredding and final loading of shredded vegetation onto trucks off loading and spreading and hauling with a free haul distance of 1,0km or stockpile as directed.

Item		Unit
B17.10	**Clearing and grubbing narrow widths**.....	square metre (m^2)

The unit of measurement shall be square metres of ground cleared and grubbed as directed by the Employers Agent.

The tendered rate shall include for all work necessary for the clearing and grubbing the surface in narrow widths, the removal and grubbing of trees and tree stumps (except large trees and stumps as defined and measured separately), cutting branches, backfilling of cavities, and the removal, transportation and disposal of material, all as specified."

SECTION 1800 : COLLECTION AND REMOVAL OF DEBRIS AND LITTER

CONTENTS

B1801 SCOPE

B1802 EXECUTION OF WORK

B1803 QUALITY STANDARD

B1804 MEASUREMENT AND PAYMENT

B1801 SCOPE

This section covers the work involved in collecting and removing of all foreign articles, debris, litter, posters and illegal signs in the road reserve, roadside stopping places lay byes, as well as the replacing of damaged facilities and emptying of rubbish bins at all these areas.

The Routine Road Maintenance Procedures Manual (RRMPM) of the Department of Roads & Public Works of the Eastern Cape provides a guide on how to conduct the works as indicated below.

B1802 EXECUTION OF WORK

The Contractor shall be responsible for keeping the road reserve clear of all foreign articles, which *inter alia*, shall include litter, branches, stones larger than 75 mm, tyres and stripped tyre treads, posters, illegal signs, animal carcasses and the like.

(a) Dumping sites

All material cleared from the road reserve shall be disposed of at approved dumping sites. The payment of fees and charges associated with the dumping sites shall be the responsibility of the Contractor and be deemed to be inclusive of the applicable rates.

The location of dumping sites shall be the responsibility of the Contractor. Written approval from the landowners or local authorities on whose property the dumping occurs will be required. No dumping sites will be permitted within the road reserve area.

(b) Removal of litter and debris

The Contractor will, as ordered by the Employers Agent, inspect and remove all foreign articles, debris, rubbish and litter from the full road and road reserve areas, including the road pavement, lay byes, side drains, all drainage grids and structures and bridge drainage ports and scuppers. This shall also include the emptying of rubbish bins and cleaning of all containers, benches and tables.

The Contractor shall provide sufficient plastic bags and the necessary equipment such as sharp pointed steel rods for picking up plastic bags and paper items. The Contractor must ensure that all bottles, tins, etc hidden by the grass and shrubs, are removed. Work shall be undertaken progressively along the road reserve.

Litter shall be collected on one side of the road in one day before crossing to the opposite side to reduce the number of crossings over the road.

The rubbish bag collection vehicle shall travel off the surfaced width of the road as far as possible and bag collection operation shall be organised in such a way that filled bags left on the side of the road do not have to be carried across the road to the vehicle. Full bags shall not be left on the side

of the road overnight. No dumping sites will be permitted within the reserve area and the Contractor shall be responsible for removing the filled bags to the nearest approved dumping site.

(c) Road Inspections

The Contractor, while traveling the road network to conduct maintenance / construction activities, shall remove all foreign articles from the carriageway, which shall include, *inter alia,* any debris, spilt loads, concentrated piles of refuse, animal carcasses (to be buried at an approved site using approved methods), branches, trees, dangerous objects, stripped tyre treads and accident debris.

All foreign articles shall be loaded and carted away by the Contractor, and spoiled at an approved tip site. Any large objects that cannot be loaded on a 1 ton LDV and excessive accident debris or large spilt loads shall be removed under day works or the applicable payment items.

No separate payment will be made for the above ad-hoc debris collection by the Contractor while traveling the roads to perform his scheduled duties. The costs thereof shall be deemed to be included in the rates tendered for the cleaning of the road reserve.

(d) Replacing of damaged facilities

At resting areas or lay-byes, concrete litter bins, tables and benches shall be replaced if damaged in accordance with the specifications and drawings and when instructed by the Employers Agent.

(e) Treatment of existing concrete rest area furniture

At resting areas or lay-byes, concrete litter bins, tables and benches shall be treated by removing all loose paint and debris using a scraper and wire brush, applying two coats of white road marking paint to clean and dust free concrete surface, applying one coat of green (to match existing) road marking paint (or similar approved paint) to top of tables and benches in accordance with the specifications and drawings and when instructed by the Employers Agent.

(f) Treatment of existing concrete bridge balustrades

Concrete bridge balustrades shall be treated by removing all loose paint using a scraper and wire brush, applying two coats of white road marking paint to clean and dust free concrete surfaces in accordance with the specifications and drawings and when instructed by the Employers Agent.

B1803 QUALITY / STANDARD

The road reserve shall be completely cleared of all debris and litter. The collected litter and debris shall not be dumped over banks, into streams, manholes, but only at an approved location, arranged beforehand with the Employers Agent.

The resting areas shall be cleared and tidy with all containers being emptied and benches and tables cleaned.

B1804 MEASUREMENT AND PAYMENT

Item	Unit
B18.01 Clearing of the road reserve	
(a) Trunk roads (30 m wide road reserve)	kilometer (km)
(b) Main roads (25 m wide road reserve)	kilometer (km)
(c) District roads (20 m wide road reserve)	kilometer (km)

The unit of measurement for clearing of the road reserve is the kilometer of cleared road reserve per cleaning operation measured along the road center line (to the nearest kilometer) in accordance with these specifications.

The tendered rate shall include full compensation for all labour, tools and transport necessary for the collection and disposal of foreign articles as specified in this Section, and the clearing of rest areas, lay-byes and rubbish bins.

Item **Unit**

B18.02 Replacing of damaged facilities

(a) Litter containers ..... number (No)

(b) Tables ..... number (No)

(c) Benches ..... number (No)

The unit of measurement shall be the number of each type of facility replaced. The tendered rates shall include full compensation for providing each type of facility, erecting and painting, including 2 coats of white roadmarking paint to all exposed concrete surfaces and 1 coat of green roadmarking paint (or similar approved) to top of facilities, including tidying up surrounding area after installation and for removing and transporting damaged facilities to a designated spoil site.

Item **Unit**

B18.03 Treatment of existing concrete rest area furniture

(a) Litter containers ..... number (No)

(b) Tables ..... number (No)

(c) Benches ..... number (No)

The unit of measurement shall be the number of each type of facility treated. The tendered rates shall include full compensation for treating each type of facility complete, including surface preparation and painting, including 2 coats of white roadmarking paint to all exposed concrete surfaces and 1 coat of green roadmarking paint (or similar approved) to top of facilities and tidying up surrounding area.

Item **Unit**

B18.04 Treatment of existing concrete bridge balustrades

(a) Balustrades .....square meter (m^2)

The unit of measurement shall be the square meter of balustrade treated by removing all loose paint using a scraper and wire brush, applying two coats of white road marking paint to clean and dust free concrete surfaces in accordance with the specifications and drawings and when instructed by the Employers Agent. The rate shall include full compensation for all labour, tools and cleaning of the area after painting.

Item **Unit**

B18.05 Cleaning of Rest Areas and Litter Removal

(a) Within 50km from the main camp site .....Number (No)

(b) Between 50km and 150km from the main camp site .....Number (No)

(c) Further than 150km from the main camp site .....Number (No)

The unit of measurement shall be the number of rest areas cleaned within the specified distance from the main site camp. The amount of rest areas will be agreed between the Employers Agent's Representative and the Contractor once the main site camp has been established.

The tendered rate shall include full compensation for all work necessary to clean the rest area and to collect and remove the litter and debris at a suitable dumping area or closest municipal dump (inclusive of tip fees). Transport of workers, tools and labour costs will be deemed to be included in the tendered rate.

SECTION 1900 : DAYWORKS

CONTENTS

B1901 SCOPE
B1902 ORDERING OF DAYWORK
B1903 MEASUREMENT AND PAYMENT

B1901 SCOPE

This Section covers the listing of day work items in accordance with the General Conditions of Contract (Clause 6.5) for determining payment for work which cannot be quantified in specific units in the Bill of Quantities, or work ordered by the Employers Agent during the construction period which was not foreseen at tender stage and for which no applicable rate exists in the Bill of Quantities as well as for the establishment and de-establishment of site.

B1902 ORDERING OF DAYWORK

No dayworks shall be undertaken unless written authorisation has been obtained from the Employers Agent.

B1903 MEASUREMENT AND PAYMENT

Item		Unit
B19.01	**Personnel**	
(a)	Unskilled labour	hour (hr)
(b)	Semi-skilled labour	hour (hr)
(c)	Skilled labour	hour (hr)
(d)	Ganger	hour (hr)
(e)	Flagmen	hour (hr)

Item		Unit
B19.02	**Plant**	
(a)	Flat bed truck	hour (h)
(b)	Tipper Trucks - 3 to 5 ton capacity	hour (h)
(c)	Tipper Trucks - More than 5 ton	hour (h)
(d)	TLB (digger loader)	hour (h)
(e)	Excavator. (20-30 ton)	hour (h)
(f)	Grader (AT 140 G or similar)	hour (h)
(g)	Compactor (Bomag 90)	hour (h)
(h)	Water truck (5000 litre)	hour (h)
(i)	Dozer (D7 or similar)	hour (h)
(j)	Tractor-trailor combination (43 kW, 3 ton min)	hour (h)
(k)	Compressor (air) including hoses and tools (specify)	hour (h)
(l)	Dewatering pump including generators and accessories (specify size)	hour (h)
(m)	Mobile electric welding sets and accessories (specify size)	hour (h)
(n)	Cutting torch with mobile electric & oxy acetylene installation	hour (h)
(o)	Mobile concrete mixers (specify size)	hour (h)
(p)	Light delivery vehicle (LDV)	hour (h)
(q)	Centre-mount crane (specify size)	hour (h)
(r)	Low bed truck (specify size)	kilometre (km)
(s)	Other (specify)	hour (h)

Item **Unit**

B19.03 Materials

(a) Procurement of materials .....provisional sum
(b) Contractor's handling costs, profit and all other charges in respect of

Item B19.03 (a) .....percentage (%)

The unit of measurement for items B19.01 and B19.02 shall be the hour for the item of plant or personnel. Non working hours for transport breakdown, lack of operator or any other reason shall not be measured. The time shall be taken from the time that the personnel and/or plant depart until return.

Measurement shall only be for work instructed and directed by the Employers Agent, where the Employers Agent considers no other appropriate rate is available in the Bill of Quantities. Prior to the commencement of any work by the labourers described under item B19.01, the Contractor must obtain written consent from the Employers Agent regarding the classification of all labourers in terms of "unskilled", "semi-skilled" and "skilled" labourers.

The tendered rates for labour for item B19.01 shall include full compensation to cover overhead charges and profit, leave pay, bonuses, subsistence, allowances, employer's contributions, additional payment for overtime, where applicable, insurances, housing, site supervision, use of small hand tools and appliances, non-mechanical plant and equipment and consumable stores, for all administrative, supervisory, operative and contingent costs, relating to the supply of personnel.

The tendered rates for plant for item B19.02 shall be an all-inclusive hire charge for the use of the vehicle and driver or plant/equipment and operator and shall apply only to vehicles plant and equipment nominated in writing by the Employers Agent, for all administrative, supervisory operative and contingent cost, and profit, relating to the running of the plant.

The unit of measurement for item B19.03 (a) shall be the amount actually paid for the procurement of materials to be purchased and shall be made in accordance with the provision of the general conditions of Contract. Only the actual quantities of materials used, as verified by the Employers Agent, shall be paid for.

The percentage tendered for item B19.03 (b) shall be percentage of the amounts actually paid for the procurement of materials as ordered under item B19.03 (a) and shall be in full and final compensation in respect of the Contractor's handling costs, profit and all other charges in connection with the procurement and supply of the materials to the point of usage.

The abovementioned tendered rates shall be full compensation for the various items as specified and no further profit shall be paid."

SECTION 2100 : DRAINS

B2101 SCOPE

Replace the first paragraph with the following:

"This Section covers all the activities for rehabilitative, new and maintenance work in connection with the excavation and construction of open drains, subsoil drainage and banks and dykes at the location and to the sizes, shapes, grades and dimensions shown on the drawings or as directed by the Employers Agent, and the test flushing of the subsoil drains."

B2102 OPEN DRAINS

Add the following subclause:

"**(h) Concrete channels, kerb-and channel combinations, concrete side drains and median drains**

Concrete channels shall be cleaned when instructed by the Employers Agent. Material from the channels, kerb-and-channel combinations, side drains in cut and median drains shall either be loaded and transported to designated spoil sites or disposed of adjacent to channels where it cannot be washed back into the channel within the road reserve as directed by the Employers Agent.

Vegetation growing in channel joints and cracks shall be removed with roots to prevent re-growth.

Vegetation growing over channels from the edges shall be trimmed at the concrete edges and disposed of. Undesirable vegetation shall be removed with roots and spoiled where directed by the Employers Agent.

Concrete drainage channels shall be clear of any obstruction such that the concrete surfaces are clearly visible. All concrete drains and channels, chutes and the like are to be swept after all obstructions and debris has been removed.

Silt, debris and vegetation removed shall not be thrown up against cut or down fill slopes."

B2104 SUBSOIL DRAINAGE

Add the following new clauses:

"**(d) Exposing existing subsoil pipes**

Where instructed by the Employers Agent, existing subsoil pipes shall be exposed for inspection. The material on top of the pipe shall be carefully removed by hand. Care shall be taken not to damage the filter fabric and pipe during excavation.

Repair work, if required, shall be carried out as directed by the Employers Agent. It may involve the replacement of the existing pipe and the backfill with material similar to that encountered in the existing system.

(e) Draining of distressed areas

Where the presence of subsurface water has caused failures of the pavement layers the Employers Agent may require the installation of subsoil drains through the road to drain the excavation before re-instatement of the pavement layers.

The subsoil drainage system to be installed shall be as instructed by the Employers Agent.

Where asphalt premix is to be removed for the installation of a subsoil drain the asphalt shall be cut neatly and perpendicular with approved sawing equipment to the width instructed by the Employers Agent before excavation.

Payment for the excavation of the asphalt premix layers and the reconstruction of the pavement layers shall be made under the relevant sections.

(f) Maintenance of subsoil drains

When instructed by the Employers Agent, blocked subsoil drains shall be unblocked by rodding through rodding eyes provided for the purpose and thorough flushing of the pipes.

Should the Contractor notice the existence of blocked or damaged subsoil drains, the Employers Agent shall be duly notified to issue an instruction for the execution of the relevant maintenance work."

B2107 MEASUREMENT AND PAYMENT

Item **Unit**

B21.01 Excavation for open drains..... cubic metre (m^3)

Add the following to the penultimate paragraph:

"The tendered rate shall also include full compensation for trimming the open drains. Only those drains designated by the Employers Agent for excavation will be measured. The above rate will be deemed inclusive where blading is specified in Section 3400, and will not be measured separately.

Where blading or road bed preparation is specified (Section 3400), payment for the formation of side and mitre drains up to the road reserve will be included in the blading or road bed preparation rate. However, where new drains are to be constructed to extend beyond the road reserve limits, payment will be made under this item for the length of drain outside the road reserve."

Item **Unit**

B21.02 Clearing and shaping existing open drains ..... cubic metre (m^3)

Add the following to the penultimate paragraph:

"The tendered rate shall also include full compensation for trimming the open drains. Only those drains designated by the Employers Agent for clearing and shaping will be measured. The above rate will be deemed inclusive where blading is specified in Section 3400, and will not be measured separately.

Where blading is specified (Section 3400), payment for the formation and clearing of side and mitre drains within the road reserve will be included in the blading rate. However, where drains extend beyond the road reserve limits, payment will be made under this item for the length of drain outside the road reserve."

Delete item 21.18 and replace with the following:

Item **Unit**

B21.18 Clearing of concrete drainage channels

(a) Side drains, median drains and the like .....square metre (m^2)

(b) Channels in kerbing-channeling combinations .....metre (m)

(c) Other drains and channels within the following invert ranges

(i) Less than 1.0m.....square metre (m^2)

(ii) 1.0m to 2.0m.....square metre (m^2)

(iii) 2.0m to 3.0m.....square metre (m^2)

(iv) Exceeding 3.0m .....square metre (m^2)

The unit of measurement shall be the square metre of channel cleared, measured in plan (no payment shall be made for vertical surfaces).

The tendered rates shall include full compensation for all labour plant and equipment required for removing the material from the channels irrespective of the depth of silt and debris and for loading, protecting the existing drains and channels, dealing with any surface or sub-surface water, off-loading and spreading when material removed is intended for spoiling at a designated spoil site.

The tendered rates shall include for transporting the excavated material to spoil sites within a free haul distance of 1,0km.

Where material is disposed of adjacent to channels, the tendered rate shall include full compensation for removing the material from the channels, irrespective of the depth of silt and debris, protecting the existing drains and channels, dealing with any surface or sub-surface water, spoiling and spreading the material adjacent to the channel where it cannot be washed back into the channel."

Add the following new items:

Item **Unit**

B21.20 Clearing and shaping side and mitre drains by road grader.....meter (m)

The unit of measurement shall be the linear meter of mitre and side drain formed, cleared, opened up and shaped. The length of mitre drain will be measured from the outside of the side road drain to the approved extremity of the mitre drain. Only those mitre and side drains designated by the Employers Agent for clearing and shaping will be measured. Where blading is specified (Section 3400), payment for the formation and clearing of side and mitre drains up to the road reserve will be included in the blading rate. However, where roads extend beyond the road reserve limits, payment will be made under this item for the length of drain outside the road reserve."

Item **Unit**

B21.21 Exposing of existing subsoil drains..... (m^3)

The unit of measurement shall be the cubic meter of material removed by hand to expose the drain.

The rate tendered shall include for full compensation for all labour and tools required for removing the material. The re-instatement of the drain shall be paid for under the relevant items for constructing a new drain.

Item **Unit**

B21.22 Clearing of subsoil drains..... (m)

The unit of measurement shall be meter of drain cleared on the instruction of the Employers Agent.

The tendered rate shall include full compensation for all labour equipment, tools and transport required for clearing subsoil drains and for disposal of the cleared material at approved sites."

SECTION 2200 : PREFABRICATED CULVERTS

B2201 SCOPE

Amend the first paragraph to read:

"This Section covers all the activities in connection with the construction and maintenance of prefabricated units of culverts and other closed conduits such as storm water ducts, tremies and service ducts, together with inlet and outlet structures, manholes and other appurtenant structures."

B2203 MATERIALS

(b) Portal and rectangular prefabricated concrete culvert units

Add the following:

"Should a pipe unit be specified as half of the standard length, the actual length of the unit will be measured for payment as it is accepted that only certain lengths are available from the manufacturers. The tendered rate for concrete pipe culverts shall also include any additional costs with respect to units that are half the standard length. The standard length of a concrete pipe will be taken as 2,44m or 2,5m depending on supplier. All pipe joints are to be wrapped with U24 Bidum or similar approved material. The cost of the wrapping of the joints will be deemed to be inclusive in the installation rate of the pipe."

(d) Fine granular material

Add the following:

"Selected material, approved by the Employers Agent, may be used for the bedding."

Add the following clause:

B2212 INLET AND OUTLET STRUCTURES, CATCHPITS AND MANHOLES

(a) Excavation and backfilling

Amend the first paragraph to read as follows :

"The width of excavation shall be the net external dimensions of structure plus 0,5 meter working space along or around the structure. The specifications given elsewhere in this Section for backfilling the culverts shall apply mutatis mutandis to inlet and outlet structures, catchpits and manholes. If wet soilcrete is used with vibrators the extra working space can be reduced to 150 mm."

Add the following clause:

"B2219 CONSTRUCTION TOLERANCES

The installation of prefabricated pipes, portal and rectangular culverts and ducts shall comply with the requirements stated below:

(a) Level

The permissible deviation from the specified level shall be ≤ 20mm.

(b) Alignment and grade

The permissible deviation of the alignment and grade of each culvert and pipeline shall be 20mm from the specified line and level, or from the line between culvert or pipe inverts at successive

manholes or catch pits, as applicable, when measured over any 7m length, and all such deviations shall be gradual. Reverse falls are unacceptable."

B2218 MEASUREMENT AND PAYMENT

Add the following new items:

Item		Unit
B22.29	**Sealing of cracks and joints in existing culverts or pipes**	metre (m)

The unit of measurement shall be the actual length of crack or joint sealed in the inside of the pipe or culvert.

The tendered rate shall be for the full compensation for procuring, furnishing and caulking the cracks or joints with the specified material, it should also include for cleaning the area to be caulked.

Item		Unit
B22.30	**Demolition of brick structures**	
(a)	115 mm thick brickwork	square metre (m^2)
(b)	230 mm thick brickwork	square metre (m^2)
(c)	345 mm thick brickwork	square metre (m^2)

The unit of measurement shall be the square metre of brickwork demolished.

The tendered rate shall include full compensation for all labour, plant and equipment required to demolish the existing brick structure (including plasterwork and the like) and disposal of the demolition to an approved spoil site within a free-haul distance of 1km. For partial demolition, It shall also include for squaring out the brickwork and preparing the existing surface for repair or to tie into new brickwork."

SECTION 3400 PAVEMENT LAYERS OF GRAVEL MATERIAL

B3401 SCOPE

Add the following paragraph :

"The work involved under this Section also includes all activities that are required to conduct routine and preventative maintenance to existing gravel and surfaced roads, including the use of self-propelled road graders to improve the overall rideability, safety aspects and correcting any drainage faults that may be present. The Routine Road Maintenance Procedures Manual (RRMPM) and the Regravelling and Road Betterment Procedures Manual of the Department of Roads and Transport of the Eastern Cape describes the causes and type of defects, as well as providing a guide on how to conduct the works as indicated below.

The additional items of work covered under this Section include:
(a) Wet grading
(b) Dry grading
(c) Access blading
(d) Special grading
(e) Reshaping
(f) Heavy maintenance
(g) Gravel patching
(h) Light roadbed preparation
(i) Heavy roadbed preparation
(j) Gravel shoulder repair
(k) Removal of edge build-ups
(l) Regravelling/gravelling in short lengths

(j) Gravel shoulder repair (as per P07 of the Procedures Manual – RRMPM)

Shoulder reinstatement shall be carried out where the gravel shoulder is 75 mm or more lower than the surfaced edge of the road and at bus bays and stopping places where a drop off of more than 50 mm exists or where the slope of a gravel shoulder must be reinstated to 3,5% or where directed by the Employers Agent.

Reconstruction of gravel shoulders consists of the following methods of placing and compaction:

1. Ripping, watering, placing and compacting of in-situ shoulder material with or without the adding of extra material from borrow. In the event of extra material having to be added, an extra over payment item is allowed in the Bill of Quantities as well as for stabilizing in-situ or imported material (the quantity of cement to be added shall be as instructed by the Employers Agent).

2. Construction of full depth gravel shoulder with material imported from borrow or shavings originating from milling out existing asphalt layers.

The shoulders and other areas shall be reinstated level with the existing surfaced edge and with a minimum slope of 2% to shed water from the road. On the high and low side of the road shoulder, reinstatement shall be constructed to the same cross fall as the road. At bus bays and stopping places the shoulders shall be built up with a maximum width of 2.0 m from the surfaced edge. No additional payment shall be made for the reconstruction of gravel shoulders to restricted widths and lengths.

The reinstated gravel shoulder shall be compacted to 93% modified AASHTO density.

The Contractor shall determine the optimum moisture content of the gravel to be used and shall compact the material with a suitable vibratory roller, or any other compaction equipment he considers suitable for the work to achieve a dense layer which will not ravel under traffic.

Material shall not be compacted in layers exceeding a thickness of 150 mm.

(k) Removal of edge build-ups

Silted-up material that forms on edges of shoulders, restricting the flow of water or presenting a potential hazard to traffic shall be removed on the instruction of the Employers Agent. Material removed shall either be loaded and transported to designated spoil sites or disposed of adjacent to the road on the lower side of the road within the road reserve as directed by the Employers Agent.

Where the material is spoiled adjacent to the road the contractor shall ensure that the material is spread neatly and well clear of the road where it will not wash back. The Employers Agent may order trenches to be excavated through the edge to lead the water off the road.

B3402 MATERIALS

(a) General

Add the following to the second paragraph:

"Materials to be used for the gravel wearing course shall be Type 1 as per Table 3402/4, with the following amendments:

- Maximum target size = 53 mm
- Oversize index = 10% maximum
- Maximum permitted oversize = 63 mm."

B3403 CONSTRUCTION

(b) Placing and compacting

Add the following new sub-subclause:

"(iii) Regravelling

"Before the construction of the gravel wearing course is commenced, the Contractor shall ensure that the underlying subgrade is to the satisfaction of the Employers Agent. This shall include the submission of all relevant process control test results to the Employers Agent.

The wearing course material shall be dumped on the road and then spread by means of motor graders over the full width of the layer shown on the drawings and to such depth that after compaction the thickness of the layer complies with the requirements of the Scope of Works and the surface of the layer is true to elevation, grade, and cross-section.

At no stage along a road shall the continuous length of unprocessed dumped material exceed 0.5km. Passing opportunities will be provided within the dumped material at a minimum spacing of 200 meters.

The material shall be spread away from the area on which it has been dumped in such a manner as to minimise segregation of the various sizes of aggregate in the material.

Material that is oversize in terms of the requirements for size and that remains after processing or spreading or both shall be hand knapped or bladed off the road and removed and disposed of.

Where necessary, in order to increase the moisture content of the material to the optimum value of the compaction equipment employed and the density required, not more than the requisite quantity of water shall be added uniformly over the area to the compacted. The water shall be thoroughly mixed into the material until a homogeneous mixture is obtained.

Material that is too wet shall be allowed to dry out to the correct moisture content before compaction proceeds.

Compaction shall be carried out in continuous operations over the full width and length of the area being compacted until the density specified has been achieved. The required shape and cross-section shall be maintained during compaction, and all holes, ruts, and depressions shall be

corrected by frequent blading with a motor grader. The top of the compacted layer shall present a hard uniform compacted appearance.

Any weak spots that become apparent during compaction shall be cut out and repaired with sound material at the Contractor's expense.

The wearing course shall be compacted to a density of at least 95% of modified AASHTO density. Only partial payment will be done, at the discretion of the Employers Agent, on sections of wearing course until the Contractor has submitted satisfactory process control test results for the section to the Employers Agent."

Add the following new subclauses:

"(f) Mixing/Blending of materials

Where required by the Employers Agent, materials from different sources shall be mixed in order to produce a final layer that meets the requirements of the specification.

Materials from the different sources shall be dumped on the road in the proportions ordered by the Employers Agent. The two materials shall be thoroughly mixed by grader or other suitable plant so as to obtain an even mix of the different types of material dumped. The layer shall then be compacted in accordance with clause 3403 (b).

(g) Testing of wearing course gravel

The following minimum testing shall be undertaken by the Contractor as process control for the wearing course gravel, including material processed in-situ:

(i) 1 CBR per kilometre of gravel wearing course.
(ii) 3 Gradings and indicators per kilometre. (The sample is to be taken from a $1m^2$ representative area on the road at the test position as per TMH 5)
(iii) 3 Layer thickness measurements per kilometre.
(iv) 3 Compaction density tests per kilometre.
(v) 5 width of road (wearing surface) measurements to be taken every kilometre.
(vi) Visual inspection
(vii) Tolerance checking of surface repairs by using straight edge

In addition, there shall be at least 3 CBR tests undertaken on samples from each proposed borrow pit.

All such tests will be undertaken by the on-site or approved laboratory, utilising personnel properly trained and equipped for the purpose.

Only 70% of the applicable rate will be certified for the placing and construction of the pavement layer/gravel wearing course. Upon presentation of the above approved test results, the balance will only be payable if they conform to the set minimum requirements, failing which, the Contractor is to reprocess the section of work until it conforms to the specification. Only then will the balance of the payment be made."

Add the following clause :

"**B3408 EXECUTION OF BLADING WORK**

The Employers Agent will inspect the existing road ahead of the blading programme and will instruct, in writing, the Contractor exactly which sections will receive what type of blading. The existing insitu material generated during the cutting operation to form the required cross section and side / mitre drains, may be cut out and placed on the side slopes from the fence line to the centre of the side drain, or disposed of as directed.

(a) Wet grading (As per GO1 of the Procedures Manual - RRMPM)

The aim of the wet grading operation is to improve the riding surface and to remove the potholes, corrugations and rutting that have developed with time, as well as clearing the side and mitre drains within the road reserve and providing the correct cross sectional profile to the road prism.

Wet grading shall only be carried out when gravel is at the correct moisture content. Water is to be sprayed on the full width of road section to be worked before blading commences, to ensure that the material is at optimum moisture content. The material from both side drains of the road is to be cut into the road and spread with successive cuts towards the centre of the road. The depth of the cuts shall be sufficient to result in an even surface.

Hand labour is to fill all potholes and remove oversize and any vegetation from the roadway. Water is then again to be sprayed on the full width of road section being worked. The material windrow which has been formed in the centre of the road is now cut with successive cuts towards one side of the road. If a material windrow is formed at the shoulder of the road, this material needs to be cut out through the side drain.

If this is not possible due to physical constraints, openings and mitres will be made to ensure that the side drain can function freely. Any drains blocked off by undercutting shall be opened and gravel spillage into outlets shall be removed.

Water is then again to be sprayed on the full width of road section that was worked.

The wet grading operation will also include for providing the required cross sections and cambers on the road, as well as cutting all the mitre and side drains complete, to ensure proper drainage.

Should the side slopes from the road reserve fence line, to the outer edge of the side drain need to be cut and shaped, this area will first be cleared and grubbed. The required Clearing and Grubbing activity within the road reserve will be measured under Section 1700, with the shaping and trimming being measured under Section 5900.

(b) Dry grading (As per GO2 of the Procedures Manual - RRMPM)

The aim of the dry grading operation is to improve the riding surface and to remove the potholes, corrugations and rutting that have developed with time, as well as clearing the side and mitre drains within the road reserve and providing the correct cross sectional profile to the road prism.

The Contractor shall also attempt to maximise the number of dry grades after rains or when soil conditions are close to optimum moisture content.

The material from both side drains of the road is to be cut into the road and spread with successive cuts towards the centre of the road. The depth of the cuts shall be sufficient to result in an even surface.

Hand labour is to fill all potholes and remove oversize and any vegetation from the roadway. The material windrow which has been formed in the centre of the road is now cut with successive cuts towards one side of the road. If a material windrow is formed at the shoulder of the road, this material needs to be cut out through the side drain.

If this is not possible due to physical constraints, openings and mitres will be made to ensure that the side drain can function freely. Any drains blocked off by undercutting shall be opened and gravel spillage into our outlets shall be removed.

Should the side slopes from the road reserve fence line, to the outer edge of the side drain need to be cut and shaped, this area will first be cleared and grubbed. The required Clearing and Grubbing activity within the road reserve will be measured under Section 1700, with the shaping and trimming being measured under Section 5900.

(c) Special grading (As per GO3 of the Procedures Manual – RRMPM)

The aim of special grading operation is to improve the riding surface and to remove the potholes, corrugations and rutting that have developed with time, as well as clearing the road reserve and providing the correct cross sectional profile to the road prism.

Special grading shall only be carried out when gravel is at the correct moisture content. Water carts shall be used to water the road ahead of the grader and during the operation, as well as on completion of the shaping before compaction. The Contractor shall determine the optimum moisture content at which the material is to be graded.

The first cut shall commence in the side drain collecting material in a windrow on the shoulder and blade towards the centre line. With successive cuts, the grader is to move the windrow across the full width of the road. The depth of the first cut shall be sufficient to result in an even surface. No undercutting or small windrows which will prevent water flowing freely off the road surface or into culvert inlets shall be allowed. During the blading operations all large stones and vegetation shall be removed from the windrowed material. Any drains blocked off by under cutting shall be opened and gravel spillage into culvert inlets and outlets removed. The wet grading operation will also include for providing the required cross sections and cambers on the road, as well as cutting all the mitre and side drains complete, to ensure proper drainage.

Compaction after the blading operation must ensure that at least 95% of MOD AASHTO is achieved for the gravel wearing course layer.

The special grading operation will also include for providing the required cross sections and cambers on the road, as well as cutting all the mitre and side drains complete, to ensure proper drainage.

Should the side slopes from the road reserve fence line, to the outer edge of the side drain need to be cut and shaped, this area will first be cleared and grubbed as specified. The required Clearing and Grubbing activity within the road reserve will be measured under Section 1700, with the shaping and trimming being measured under Section 5900.

(d) Accessibility grading

Accessibility grading will be instructed in cases where roads have deteriorated so far that no gravel remains on the road and where grading is required to ensure drivability.

The aim of the blading operation is to improve the riding surface by attempting to remove the potholes, corrugations and rutting that has developed with time, as well as clearing the side and mitre drains within the road reserve. The blading operation should also attempt to provide the correct cross sectional profile to the road prism.

The first cut shall commence in the side drain collecting material in a windrow on the shoulder and blade towards the centre line. Hand labour is to fill all potholes and remove oversize material and any vegetation from the roadway. With successive cuts, the grader is to move the windrow across the full width of the road. The depth of the first cut shall be sufficient to result in an even surface if possible. No undercutting or small windrows that will prevent water from flowing freely off the road surface or into culvert inlets shall be allowed. During the blading operations all large stones and vegetation shall be removed from the windrowed material. Any drains blocked off by under cutting shall be opened and gravel spillage into culvert inlets and outlets removed. The grading operation will also strive toward providing the required cross sections and cambers on the road, as well as cutting all the mitre and side drains complete, to ensure proper drainage.

Should the side slopes from the road reserve fence line, to the outer edge of the side drain need to be cut and shaped, this area will first be cleared and grubbed. The required Clearing and Grubbing activity within the road reserve will be measured under Section 1700, with the shaping and trimming being measured under Section 5900

(e) Reshaping (As per GO4 of the Procedures Manual - RRMPM)

Reshaping will be instructed by the Employers Agent where the road cross section of the road profile has changed and needs to be reworked to achieve the required shape, which will facilitate a better riding quality and proper drainage.

Reshaping will consist of ripping (150 mm), adding water, mixing, shape and trimming to the required cross sections and cambers inclusive of cutting all mitre and side drains complete, to ensure proper drainage, and removing any oversize material.

Compaction during the operation must ensure that at least 95% of MOD AASHTO is achieved.

The operation will also include for providing the required cross sections and cambers on the road, as well as cutting all the mitre and side drains complete, to ensure proper drainage.

Should the side slopes from the road reserve fence line, to the outer edge of the side drain need to be cut and shaped, this area will first be cleared and grubbed as specified. The required Clearing and Grubbing activity within the road reserve will be measured under Section 1700, with the shaping and trimming being measured under Section 5900.

(f) Heavy maintenance (As per GO5 of the Procedures Manual - RRMPM)

Heavy maintenance will be instructed by the Employers Agent where the existing material left on the road surface is extremely rough, due mainly to oversize material in it and needs to be reprocessed, to ensure that the material conforms to specification, as well as ensuring that the proper road profile is achieved, which will facilitate a better riding quality and proper drainage. Heavy maintenance will only be instructed if the existing road bed material conforms to the specified requirements.

If the insitu road bed material does not conform to the required specification, the Employers Agent will instruct the Contractor to blade the existing gravel material to windrow, perform the necessary road bed preparation and replace the gravel wearing surface. This operation will be measured separately and relevant items allowed for.

Heavy maintenance will consist of ripping (150 mm), re-processing, adding water, mixing, shaping, compacting and trimming to the required cross sections and cambers inclusive of cutting all mitre and side drains complete, to ensure proper drainage, and removing oversize material.

Compaction during the operation must ensure that at least 95% of MOD AASHTO is achieved for the gravel wearing course layer.

The operation will also include for providing the required cross sections and cambers on the road, as well as cutting all the mitre and side drains complete, to ensure proper drainage.

Should the side slopes from the road reserve fence line, to the outer edge of the side drain need to be cut and shaped, this area will first be cleared and grubbed as specified. The required Clearing and Grubbing activity within the road reserve will be measured under Section 1700, with the shaping and trimming being measured under Section 5900.

(g) Gravel patching (As per GO6 of the Procedures Manual - RRMPM)

Gravel patching will be conducted on areas of road demarcated by the Employers Agent that has **an area of less than 150 m^2** and an average depth of approximately 150 mm. This operation requires the contractor to provide the required road traffic signage, square up the pothole / wash away, clear out all loose material, wet the bottom, mix and place the imported gravel wearing material and compact to 95% modified AASHTO density using hand operated compaction equipment complete.

Gravel patching may be instructed before dry or wet grading is ordered over the entire length of roadway being maintained.

(h) Light roadbed preparation

Light roadbed preparation will be utilised to prepare the existing roadway to conform to the required design cross section before the regravelling operation commences, if so required. This item will be used when the above can be achieved by using a motorised grader unit without ripping the insitu material.

The Employers Agent will order light roadbed preparation before regravelling a section of road only if the insitu roadbed material conforms to the required specification.

Blading shall commence by first cutting and shaping the side and mite drains to the required specification to ensure proper drainage, as well as the shaping of the roadway. If in the opinion of the Employers Agent, the material so removed is suitable to be mixed in with the imported material, it should be bladed towards the centre line from both sides with successive cuts. If in the opinion of the Employers Agent the material from the formation of the cross section and drains is not suitable, it will be spread over the side slopes or disposed of as directed. During the blading operation all large stones and vegetation shall be removed from the windrowed material. Any drains blocked off by under cutting shall be opened and gravel spillage into culvert inlets and outlets removed. The Contractor is to ensure that the required cross section is neatly trimmed and approved by the Employers Agent, before any material is imported.

The operation will also include for providing the required cross sections and cambers on the road, as well as cutting all the mitre and side drains complete, to ensure proper drainage.

Any drains blocked off by under cutting shall be opened and the spillage into culvert inlets and outlets removed. The Contractor is to ensure that the required cross section is neatly trimmed and approved by the Employers Agent, before any material is imported.

(i) Heavy roadbed preparation

Heavy roadbed preparation will be utilised to prepare the existing roadway to conform to the required design cross section before the regravelling operation commences if required. This item will be used when the above can only be achieved by using a motorised grader to rip the insitu material, scarify, add water, mix, shape and compact the material to achieve the required cross section before the regravelling operation.

The Employers Agent will order heavy roadbed preparation before regravelling the section of road only if the insitu road bed material is of such a nature, that upon being processed, conforms to the minimum requirement to receive the imported gravel wearing course.

Heavy roadbed preparation will consist of ripping (150 mm), adding water, mixing, shape and trimming to the required cross sections and cambers inclusive of cutting all mitre and side drains complete, to ensure proper drainage.

The Contractor is to ensure that the required cross section is neatly trimmed and approved by the Employers Agent, before any material is imported.

Compaction during the operation must ensure that at least 95% of MOD AASHTO is achieved for the gravel wearing course layer.

Any drains blocked off by under cutting shall be opened and the spillage into culvert inlets and outlets removed. The Contractor is to ensure that the required cross section is neatly trimmed and approved by the Employers Agent, before any material is imported.

(m) Quality / Standard

The road surface on completion of the works shall give a smooth ride free from corrugation and be properly drained.

The specified camber for straight sections of roads shall be maintained and superelevation on curves shall extend across the full width of the roadway."

B3407 MEASUREMENT AND PAYMENT

Item		Unit
B34/33.03	**Extra over for Item 34.01 for excavation of material in:**	
(a)	**Intermediate excavation**	Cubic metre (m^3)
(b)	**Hard excavation**	Cubic metre (m^3)

The unit of measurement shall be the cubic metre of compacted pavement layer and the quantity shall be calculated from the authorized dimensions of the compacted layer.

Add the following items :

Item **Unit**

B34.14 Wet grading ..... **kilometre (km)**

The unit of measurement shall be the kilometre of full width of gravel road bladed, inclusive of the formation and shaping of all the side and mitre drains, measured along the centre line of the road.

The tendered rate shall include full compensation for all the blading by motor grader, water cart and all labour required to remove large stones and keeping drainage clear from gravel spillage.

Separate items will be scheduled for various road way widths to be bladed.

Item **Unit**

B34.15 Dry grading ..... **kilometre (km)**

The unit of measurement shall be the kilometre of full width of gravel road processed, inclusive of the formation and shaping of all the side and mitre drains, measured along the centre line of the road.

The tendered rate shall include full compensation for all the blading by motor grader and all labour required to remove large stones and keeping drainage clear from gravel spillage.

Separate items will be scheduled for various road way widths to be processed.

Item **Unit**

B34.16 Accessibility grading ..... **kilometre (km)**

The unit of measurement shall be the kilometre of full width of road processed, inclusive of the formation and shaping of all the side and mitre drains, measured along the centre line of the road.

The tendered rate shall include full compensation for all the blading by motor grader and all labour required to remove large stones and keeping drainage clear from gravel spillage.

Separate items will be scheduled for various road way widths to be processed.

Item **Unit**

B34.17 Special grading ..... **kilometre (km)**

The unit of measurement shall be the kilometre of full width of gravel road processed, inclusive of the formation and shaping of all the side and mitre drains, measured along the centre line of the road.

The tendered rate shall include full compensation for adding water, shaping and trimming by motor grader, and providing for the necessary compaction effort to achieve the required specification, as well as all labour required to remove large stones and keeping drainage clear of gravel spillage.

Separate items will be scheduled for various road way widths to be processed.

Item **Unit**

B34.18 Reshaping ..... **kilometre (km)**

The unit of measurement shall be the kilometre of full width of gravel road processed, inclusive of the formation and shaping of all the side and mitre drains, measured along the centre line of the road.

The tendered rate shall include full compensation for ripping, adding water, shaping and trimming by motor grader, and providing for the necessary compaction effort to achieve the required specification, as well as all labour required to remove large stones and keeping drainage clear of gravel spillage.

Separate items will be scheduled for various roadway widths to be processed.

Item **Unit**

B34.19 Heavy maintenance ..... **kilometre (km)**

The unit of measurement shall be the kilometre of full width of gravel road processed, inclusive of the formation and shaping of all the side and mitre drains, measured along the centre line of the road.

The tendered rate shall include full compensation for ripping, grid rolling, adding water, shaping and trimming by motor grader, and providing for the necessary compaction effort to achieve the required specification, as well as all labour required to remove large stones and keeping drainage clear of gravel spillage.

Separate items will be scheduled for various road way widths to be processed.

Item **Unit**

B34.20 Gravel patching ..... **cubic metre (m^3)**

The unit of measurement shall be the cubic metres of potholes repaired.

The tendered rate shall include full compensation for the procuring of all the materials and gravel, transport, water cart, labour and compaction equipment to effect the repair of a specific pothole / wash away complete at any point along the site.

Item **Unit**

B34.21 Light roadbed preparation ..... **kilometre (km)**

The unit of measurement shall be the kilometre of full width of gravel road processed, inclusive of the formation and shaping of all the side and mitre drains, measured along the centre line of the road.

The tendered rate shall include full compensation for shaping and trimming by motor grader and providing for the necessary labour required to remove large stones and keeping drainage clear of gravel spillage.

Separate items will be scheduled for various road way widths to be processed.

Item **Unit**

B34.22 Heavy roadbed preparation ..... kilometre (km)

The unit of measurement shall be the kilometre of full width of gravel road processed, inclusive of the formation and shaping of all the side and mitre drains, measured along the centre line of the road.

The tendered rate shall include full compensation for ripping, adding water, shaping and trimming by motor grader, and providing for the necessary compaction effort to achieve the required specification, as well as all labour required to remove large stones and keeping drainage clear of gravel spillage.

Separate items will be scheduled for various road way widths to be processed.

Item **Unit**

B34.23 Gravel shoulder repair

(a) Ripping, watering, mixing, placing and compacting existing shoulders to 93% Mod AASHTO density ..... cubic metre (m^3)

(b) Extra over subitem (a) for adding extra material ..... cubic metre (m^3)

(c) Extra over for subitem (a) for stabilizing material ..... cubic metre (m^3)

(d) Haulage and placement of gravel shoulder material from DRE stockpile ..... cubic metre (m^3)

The unit of measurement for subitem B34.23 (a) shall be the cubic metre of material to be reworked for the reinstatement of gravel shoulders adjacent to surfaced roads.

The tendered rate shall include full compensation for ripping the existing shoulder material, breaking down, watering, mixing of the material including any extra material added, compacting the material, including removal of 5 % by volume of oversize material and transporting it over a distance of 1,0 km.

The unit of measurement for subitem (b) shall be the cubic metre of material added to the existing gravel shoulder to make up any shortfall of material for reconstruction of shoulders. The quantity of extra material added shall be taken as 70% of the volume of hauling trucks. The tendered rate shall include full compensation for procuring the material from borrow pits, placing and spreading the material over the existing shoulders including transporting the material within a free-haul distance of 1,0km and removal of 5 % of volume of oversize material and transporting it over a free-haul distance of 1,0km.

The unit of measurement for subitem (c) shall be cubic metre of material stabilized if required by the Employers Agent at the required rate. The tendered rates shall include full compensation for procuring materials as specified, labour, transport and for adding and mixing cement to in-situ or imported material as required by the Employers Agent.

The tendered rates for subitem (d) shall include full compensation for haulage and placing of the material from the nearest DRE stockpile.

Item **Unit**

B34.24 Removal of edge build-up

(a) Remove material and load for spoil (1m wide) .....kilometre (km)

(b) Remove material and dispose of adjacent to road (1m wide) .....kilometre (km)

The unit of measurement shall be the kilometre of silted-up material removed from the edges of the road shoulder along surfaced roads on instruction from the Employers Agent.

The tendered rates shall include full compensation of all overheads, labour, tools and equipment for the execution of the work.

The tendered rates must also include for loading, transporting, offloading and spreading the material at approved spoil sites, including a free-haul distance of 1,0 km.

B34.26 Regravelling in short lengths of up to 300m.....**cubic metre (m^3)**

Regravelling in short lengths will be defined as regravelling as per Item B34.01, but in continuous lengths of not more than 300m.

The unit of measurement shall be the cubic metre gravel road processed, inclusive of the formation and shaping of all the side and mitre drains, measured along the centre line of the road.

The tendered rate shall include full compensation for mixing, processing, rolling, adding water, shaping and trimming by motor grader, and providing for the necessary compaction effort to achieve the required specification, as well as all labour required to remove large stones and keeping drainage clear of gravel spillage.

SECTION 3900: PATCHING AND REPAIRING EDGE BREAK

B3901 SCOPE

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

"This section covers the patching of existing pavement layers, as well as the pre-treatment of the newly placed or rehabilitated base in confined areas and the asphalt surfacing required to complete the works."

All work to be conducted with regards to edge break will be dealt with in Section 4800.

The Routine Road Maintenance Procedures Manual (RRMPM) of the Department of Roads and Public Works of the Eastern Cape describes the causes and type of defects, as well as providing a guide on how to conduct the works as indicated below."

B3902 MATERIALS

Add the following sentence:

"The backfill material for the patching shall be a base course G2 type, and shall be placed and compacted as indicated on the drawings.

The completed repair work will then be primed using 60% Stable Grade emulsion at the application rate of 0.7l/m^2. The asphalt surfacing shall be a medium continuously graded mixture or an approved commercial cold premix applied to the thickness indicated."

B3904 PATCHING (As per PO3 of the Procedures Manual – RRMPM)

Replace the words "Patching" with "Base and surface repair" where applicable in the entire section.

Delete sub clauses (c) and (d) and replace with the following:

"**(c) Excavating pavement material**

The existing material shall be removed in a neat rectangle to a sound base, with a minimum dimension of 200 mm by 200 mm. All the sides shall be trimmed to maintain a 30 degree slope. The material removed from the hole is to be stockpiled and, if suitable, it may be re-used in the lower layers. After completion of the excavation, the Employers Agent shall be afforded the opportunity to inspect it before the bottom and sides are compacted.

"(d) Backfilling excavation

The excavation will be backfilled using G2 type material in layers not exceeding 75mm. Each layer is to be compacted until a uniform hard appearance is achieved. The top layer of base course must be placed and compacted so that it is 35 mm below the existing road surface and left to cure for 2-3 days before priming and sealing. If an alternate form of surfacing is to be used, the Employers Agent may instruct that the base course must be placed and compacted so that it is 13 mm below the existing road surface and left to cure for 2-3 days before priming and sealing. No patching will be left unsurfaced over non-working days, weekends or holidays."

Add the following sub clauses:

"**(f) Tack coat**

The exposed layer shall be cleaned of all undulations to ensure a firm flat base and sides and shall be tacked with 60% stable grade emulsion at an application rate of 0.7l/m^2 All the provisions pertaining to tack coats as contained in Section 4800 shall apply.

(g) Asphalt surfacing

The asphalt surfacing shall be a medium continuously graded mixture or an approved commercial cold premix applied to the thickness indicated. All the provisions pertaining to asphalts as contained in Section 4200 shall apply.

(h) 13,2 mm Cape Seal

After the tack coat has been applied as indicated above, the area is to be painted with a 65% spray grade emulsion, with an application rate of 1,5 l/m^2. Before the emulsion breaks use a spade loaded with 13,2 mm chips and spread the stone on the applied tack coat to lie shoulder to shoulder evenly over the demarcated area. Stones that lie on top of each other are to be broomed off. The stone chips are to be lightly rolled using a vibratory drum roller to ensure they are embedded in the tack coat.

After rolling of the chips is complete and the emulsion has broken adequately, apply slurry over the sealed area with squeegees, taking care not to dislodge the chips but to spread the slurry evenly over the stone. All the provisions pertaining to seals as contained in Section 4600 shall apply.

The slurry should overlap the chipped area by 150 mm. All the provisions pertaining to Section 4600 shall apply.

(j) Production Limitations

As far as it is practically possible the size of the area to be repaired shall be limited to that which can be excavated, backfilled and opened to traffic within a single working day. Where this is impractical, the Contractor shall ensure that the correct signage for controlling the traffic during the night is in place as per the appropriate traffic manuals. No area that is to be prepared shall be left exposed if rain is imminent.

B3905 REPAIRING EDGE BREAKS IN SURFACING

Delete this section – repair of edge breaks will be dealt with in section 4800

B3907 MEASUREMENT AND PAYMENT

Item **Unit**

B39.03 Backfilling of excavations for patching with:

Add the following new sub-item:

(c) G2 base course material from DRE stockpiles ..... cubic metre (m^3)

The tendered rates shall include full compensation for haulage, placing and compaction complete from the nearest DRE stockpile.

Add the following new items:

Item **Unit**

B39.06 Tack Coat (60% Stable grade emulsion)..... litre (l)

The unit rate of measurement shall be the litre of tack material measured at spraying temperature and applied at the application rate of 0,7 l/m^2.

The tendered rates shall include full compensation for supplying the tack material, cleaning and watering the layer to be primed, applying the tack material and maintaining the primed surfaces as specified. No extra over rate will be paid for applying the tack coat in restricted areas. The above will be deemed to be inclusive in the applicable rates.

Item **Unit**

B39.07 Cold premix (applied 35 mm thick).....square metre (m^2)

The unit of measurement shall be the square metre of cold premix surfacing constructed to the thickness specified.

The tendered rates shall include full compensation for procuring, furnishing, mixing, placing and compaction of all materials as specified, as well as process control testing, protecting and maintaining the work as specified.

Item **Unit**

B39.08 Hot premix (applied 35 mm thick).....square metre (m^2)

The unit of measurement shall be the square metre of hot premix surfacing constructed to the thickness specified.

The tendered rates shall include full compensation for procuring, furnishing, mixing, placing and compaction of all materials as specified, as well as process control testing, protecting and maintaining the work as specified.

Item **Unit**

B39.09 (a) Temporary pothole repair using cold premix or similar approved product ..... cubic metre (m^3)

The unit of measurement shall be per cubic metre of the product, applied as per the manufacturer's instructions to potholes not exceeding 1000mm x 1000mm.

The tendered rates shall include full compensation for procuring, furnishing, preparing, placing and compaction as per the manufacturer's instructions.

B39.09 (b) Temporary pothole repair by plugging using C4 (stabilised) material ..... cubic metre (m^3)

The unit of measurement shall be per cubic metre of material, applied to potholes not exceeding 1000mm x 1000mm.

The tendered rates shall include full compensation for procuring, furnishing, preparing, placing and compaction.

SECTION 4600 : BITUMINOUS SINGLE SEAL WITH SLURRY (CAPE SEAL)

B4605 MEASUREMENT AND PAYMENT

Item	Unit
B46.02 Bituminous single seal with 13,2 mm aggregate and slurry.....	square metre (m^2)

Add the following:

"The tendered rates shall include full compensation for all plant, labour and materials complete to conduct the said works, as well as for working in restricted areas and for placing by non mechanical equipment. No extra over items for work in areas inaccessible to mechanical equipment will be allowed for. "

SECTION 4800 : TREATMENT OF AN EXISTING SURFACE EXHIBITING CERTAIN DEFECTS

B4801 SCOPE

Add the following new sub clauses :

"(f) Potholes

This will be for the repair of potholes on tarred roads, exposing the base layer with no evidence of based failure.

(g) Bleeding repair

This will be for the repair of smooth areas of the road surface that have excessive emulsion or bitumen binder by rolling stone chips into the binder.

The Routine Road Maintenance Procedures Manual (RRMPM) of the Department of Roads and Public Works of the Eastern Cape describes the causes and type of defects, as well as providing a guide on how to conduct the works as indicated below."

(h) Paving geotextile

"Work shall consist of supplying and placing a paving geotextile as a waterproofing and stress relieving membrane for the purpose of crack sealing extensively cracked areas as indicated by the Employers Agent."

B4802 MATERIALS

Add the following new sub clauses :

"(e) Paving geotextile:

The paving geotextile used with this specification shall be manufactured from continuous filament non-woven polyester (PET) synthetic fibers; resistant to chemical attack (from fluxoils, paraffin's or any other solvents used in bituminous binders), mildew and rot and shall meet the following physical requirements.

Property	Units	Requirements	Test Method
Tensile Strength (min)	kN/m	8	SANS 1010221
Elongation at break	%	40-60	SANS 1010221
Penetration Load (CBR)	kN	1.5	SANS 1010221
Puncture Resistance (DART)	mm	28	EN ISO 13433
Melting Point	°C	260	ASTM D276
Bitumen Retention	ℓ/m²	1.4	ASTM D6140"

(3) Other sealants

Add the following:

"(i) <u>Paving geotextile</u>

Cracks designated by the Employers Agent shall be sealed using a paving geotextile-based crack sealing method. The paving geotextile shall be Sealmac (150) or equal approved.

B4804 CONSTRUCTION

Delete sub clause (d) and replace with the following new sub clause :

"**(d) Slack and depression repair (As per PO2 of the Procedures Manual - RRMPM)**

This treatment is to be used where the road surface is uneven and where depressions, humps or small grooves occur, which, in the opinion of the Employers Agent, are the result of the deformation of the pavement layers, but not of structural failure of the pavement.

Mark out the area to be repaired. Chip out a 500 mm wide by 35 mm deep strip along the inner edge of the marked area, ensuring that the outer edge is vertical. Roughen up the existing road surface which is to be patched. Sweep the area clean of all loose material.

Apply a 60% stable grade emulsion diluted 50/50 with water to the area to be repaired. Set up levelling runners at opposite ends of the patch. Starting at the deepest point spread a 25 mm thick layer of loose premix between the levelling runners and compact using the vibratory roller. Roll the outer edges first, and gradually move across the compacted area keeping 2/3 of the drum on the compacted area and 1/3 on the un-compacted premix. Fill the entire area between the levelling runners and compact, repeating the process till the repaired surface is level with the existing road surface.

On completion the area is to be swept clean and the repaired area to be painted with a 60% stable grade emulsion diluted 50/50 with water, overlapping the patch by 100mm all round."

Delete sub clause (e) and replace with the following new sub clause :

"(e) Repairing edge breaks in surfacing (as per PO5 of the Procedures Manual)

This treatment shall be used for restoring the road edges to the true edge lines of the original road or to such other edge lines as may be required. This item will only be applicable to areas of the road surface that has broken away along the edge(s) by more than 100 mm but less than 300 mm when measured from the original edge of the surfacing.

The existing surfacing shall be trimmed back and the pavement material shall be excavated down to a solid base. The minimum depth of excavation shall be 50 mm below existing road surface and compacted to form a neat smooth surface. A 50mm by 50mm groove shall be excavated at the outer edge of the new correct edge line to form thickened edge beam. The tack coat to be used before the asphalt or cold premix is applied shall be 60% Stable Grade emulsion with a 50/50 mix with water. Apply the mixed emulsion on the prepared area, the vertical edges of the existing surface and the 50 mm thickened edge at a rate of 0,7l/m^2.

Compact the asphalt or cold premix in layers not exceeding 30 mm using a double drum vibratory pedestrian roller."

(f) Sealing cracks (as per PO4 of the Procedures Manual - RRMPM)

Delete sub clause (iii) and replace with the following new sub clause :

"(iii) Cracks smaller than 3mm

Cracks smaller than 3mm shall be treated with an emulsion of either Waterblock or Colseal with latex mixed 50/50 with water, as directed by the Employers Agent. "

Delete sub clause (iv) and replace with the following new sub clause :

"(iv) Cracks of 3mm and wider

Cracks of 3mm and wider shall be treated with two separate applications as follows :

- First application :

  Make up an emulsion of either Waterbloc or Colseal with latex mixed 50/50 with water as directed. Then add sufficient fine plaster sand to the emulsion to produce a runny paste. If necessary, further small amounts of fine plaster sand may be added to facilitate satisfactory filling of the cracks. The emulsion is now to be placed in the crack and allowed to dry for 2 hours before the second application is applied.

- Second application :

  There are two methods that can be applied for the second application as follows. The Employers Agent will instruct the Contractor accordingly.

  - Method 1 (using sealant and crusher dust)

    Measure out 5.3l of 0.5mm crusher dust and add to 0.25l of Cement and mix thoroughly. To the mixture add 1l of water and 2 l of sealant and mix until a uniform creamy workable consistency is obtained. If the mixture appears too dry, a small amount of additional water should be added.

    The mixture is to be applied to a maximum thickness of 5 mm per layer till the crack is filled.

  - Method 2 (using a 200 mm wide geotextile strip)

    Cracks and cracked areas and surrounding surfaces shall be cleaned by using compressed air and sweeping the area with hand brooms. A tack coat of undiluted 65 cationic spray grade emulsion with 5% SBR latex which shall be applied at a spray rate of approximately 1.2 liters/m^2 along the line of the cracks and 150mm on either side of the crack. The geotextile membrane 200mm wide shall be pressed onto the wet emulsion before the emulsion has broken to ensure satisfactory bonding between the geotextile and the road surface and impregnation of the geotextile. All wrinkles shall be smoothed out. The geotextile shall then be saturated by applying a penetration coat of modified emulsion, undiluted, at a spry rate of approximately 1 liters/m^2. Care shall be taken to ensure that the geotextile is fully saturated. Where the direction of the crack changes cut the fabric to allow a 200mm overlap.

    A layer of washed crusher dust with a nominal stone size of 4.75 mm shall then be applied at a spread rate of 25m^3/m^2 as an armouring layer before opening the treated section to traffic."

"(v) Paving geotextile:

The cracks and surrounding surface shall be cleaned by sweeping the area with hand brooms. A tack coat of cationic 65% spray grade bitumen emulsion with 5% net SBR latex shall be applied at a spray rate of 1.2 ℓ/m^2 by means of a hand applicator. The paving geotextile, of suitable width, shall then be applied to the wet tack coat by hand and rolled with a suitable roller (pneumatic roller or truck) to ensure satisfactory bonding between the geotextile and the road surface. All wrinkles shall be smoothed out. The geotextile is then saturated by applying a final coat (saturation coat) of cationic 65% bitumen emulsion with 5% net SBR latex by hand at 0.52 ℓ/m^2 which is spread out with a squeegee. The second application of the emulsion may be diluted with water to aid the saturation of the geotextile. A layer of crusher dust is used to blind the patch; after rolling any loose crusher dust must be broomed off. (Where Sealmac crack sealing is to be exposed to traffic for an extended time

we advise that armour patches with -6.7mm with 0.075mm washed out, 6.7 mm clean aggregate, slurry or 6.7mm aggregate choked with crusher dust)."

Add the following new sub clauses :

"**(h) Repairing of potholes (As per PO1 of the Procedures Manual – RRMPM)**

This treatment involves the repair of potholes within existing surfaced roads only with no evidence of base failure. The average depth of repair will not exceed 35 mm in depth from the original wearing surface.

The sides and bottom of the pothole shall be cut back to give vertical sides, an even bottom and a rectangular hole. All unsuitable and loose material shall be removed and disposed of. A tack coat of 60% spray grade emulsion shall be applied as indicated on the drawings to cover the entire exposed surface and shall be left to dry. The hole shall then be filled with a premixed asphalt as indicated on the drawings, and compacted to leave the surface of the filled pothole flush with the road surface.

(i) Bleeding repair (As per PO8 of the Procedures Manual – RRMPM)

Areas of the road surface that have become smooth due to excessive emulsion or bitumen binder shall be cleaned by using hand brooms to ensure that all loose material is removed from the surface.

The area to be treated is to be lightly sprayed using power paraffin. The area is then to be broomed again until the existing bitumen becomes soft. Crushed stone chips (6,7 mm) is then to be applied evenly to the area and rolled into the bitumen, using a pedestrian roller (do not vibrate). On completion the area is to be broomed to remove all the loose stone chips."

B4807 MEASUREMENT AND PAYMENT :

Item **Unit**

B48.03 Slurry Seal

Delete the contents of (b) and replace with the following :

(b) Slurry applied by hand.....square m (m^2)

Item **Unit**

B48.04 Screed of asphalt or coarse slurry

Delete the contents of (a) and replace with the following :

(a) Tack coat using 60% stable grade emulsion diluted 50/50 with water.....litre (l)

Add the following new paragraph :

(d) Chip out strip 500 mm by 35 mm..... square metre (m^2)

The unit of measurement for chipping out the area using picks shall be the square metre.

The tendered rate shall include full compensation for the labour and equipment to chip the area to the specified width and depth, roughen the area, remove all loose material, sweep area and disposing within the 1km free haul distance, and all other incidentals necessary for the preparing of the surface as specified."

Item **Unit**

B48.05 Repairing edge breaks in surfacing

Add the following sub-item :

(c) Reconstructing edges using cold premix.....ton (t)

Add the following new items :

Item **Unit**

B48.14 Geotextile seal bandage (tack coat, geotextile and armouring layer indicated)

(a) Cracks and joints (200 mm wide bandage) ..... (m)
(b) Cracked areas using Paving geotextile (slurry measured in 48.03) ..... (m^2)

The unit of measurement for subitem (a) for covering cracks or the joint between the patch and the surrounding road surface shall be the metre of seal bandage applied over the crack or joint.

The unit of measurement for subitem (b) for covering cracked areas shall be the square metre of paving geotextile applied over the designated seal area.

The tendered rates shall include full compensation for providing, mixing, heating (where required) and applying all the materials as specified, and for all equipment, labour, supervision and incidentals for completing the work. No additional payment will be made for multiple applications of material."

Item **Unit**

B48.15 Crack sealing using Method 1 (sealant and crusher dust).....(l)

The unit of measurement shall be the litre of sealant mixture applied in the crack or joint.

The tendered rate shall include full compensation for furnishing and procuring the materials and equipment, for labour, supply, mixing, curing, finishing, and all other incidentals necessary for applying the seal mixture as specified inclusive of the tack coat and armouring layer complete."

SECTION 5100 PITCHING, STONEWORK AND PROTECTION AGAINST EROSION

B5101 SCOPE

Amend the first the first paragraph to read:

"This Section covers the furnishing of materials and the construction as well as maintenance activities of a protective covering in stone pitching, cast in situ concrete pitching, bricks or prefabricated concrete blocks on exposed surfaces such as earth slopes, drains and stream beds, as well as heavier protective layers in the form of riprap and the construction of stone masonry for walls, as well as shown on the drawings or as ordered by the Employers Agent.

The Routine Road Maintenance Procedures Manual (RRMPM) of the Department of Roads and Public Works of the Eastern Cape describes the causes and type of defects, as well as providing a guide on how to conduct the works as indicated below."

B5108 MEASUREMENT AND PAYMENT:

Add the following new item:

Item		Unit
B51.08	**Demolition of stone pitching and masonry walls**	
(a)	Stone pitching	cubic metre (m^3)
(b)	Stone masonry walls	cubic metre (m^3)

The unit of measurement shall be the cubic metre of stone pitching or masonry wall demolished.

The tendered rate shall include full compensation for all labour, plant and equipment required to demolish the existing structure and disposal of the demolition to an approved spoil site within a free-haul distance of 1km. For partial demolition, it shall also include for squaring out the exposed surface and preparing the existing surface for repair or to tie into new construction work."

SECTION 5200 GABIONS

B5201 SCOPE

Add the following sentence to the first paragraph :

"This section will also cover all activities required to maintain and repair existing gabion structures.

The Routine Road Maintenance Procedures Manual (RRMPM) of the Department of Roads and Public Works of the Eastern Cape describes the causes and type of defects, as well as providing a guide on how to conduct the works as indicated below."

B5205 MEASUREMENT AND PAYMENT:

Add the following new item:

Item		Unit
B52.05	**Dismantle and remove gabion structures**	(m^3)

The unit of measurement shall be the cubic metre of gabion structure dismantled / demolished and removed to spoil.

The tendered rate shall include full compensation for all labour, plant and equipment, as well as all incidentals required to demolish the existing structure and disposal of the demolition to an approved spoil site within a free-haul distance of 1km."

SECTION 5400 : GUARDRAILS

B5402 MATERIALS

(c) Reflective Plates

Add the following:

"Missing reflective plates along guardrails are to match the existing or as per the standard details, as specified by the Employers Agent."

B5403 CONSTRUCTION

(c) Painting

Add the following:

"No guardrails are to be painted."

B5409 MEASUREMENT AND PAYMENT

Add the following items:

Item		Unit
B54.14	**Adjusting spacer blocks and tightening bolts**	number (No)"

The unit of measurement shall be the number of spacer block sets that are adjusted and re-aligned, along with the bolts through the spacer block set being tightened. The number shall be agreed with the Employers Agent prior to this activity commencing.

The spacer blocks shall be aligned to the vertical, as per the specification, with the bolt being tightened accordingly.

The rate shall include for all labour, material, tools, accommodation of traffic, etc. to undertake this activity."

Item		Unit
B54.08	**Renovating Guardrails**	
(c)	**Cleaning and painting**	(m)"

Treatment of existing rusted guardrails by removing all loose paint and rust using a wire brush, preparing surface for prime coat, applying prime coat to clean and dust free metal surface, applying two coats of Plascon Wall and All "Mines Grey" paint (or similar approved), to front and back of guardrail sections (prime coat and finishing coats to be applied to the manufacturer's specifications)

SECTION 5500 FENCING

B5501 SCOPE

Add the following sentence to the first paragraph:

"This Section will also include for all activities required to repair and maintain existing fences and gates."

B55.14 MEASUREMENT AND PAYMENT

Item **Unit**

B55.02 Supply and erect new fencing material

Add the following clause :

(j) Dipping of wire in yellow paint ..... meter (m)

"The tendered rate shall be meter of smooth fencing wire or barbed wire dipped into a yellow oil based paint. The rate is to be inclusive of all materials, plant and labour complete to dip and dry the wire strands.

Item **Unit**

B55.03 New gates

(a) Gates (size and type indicated) .....Number (No)

(b) Motor Grid Gates (size and type indicated).....Number (No)

Add the following:

"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.

Payment shall distinguish between the various types of motor grid gates shown on the drawing."

Add the following subitem:

Item **Unit**

B55.05 Dismantling existing fences

"(c) Motor grid gates ..... number (No.)"

Add the following to the measurement and payment clause:

"The unit of measurement for motor grid gates shall be the number of grid gates dismantled on the instruction of the Employers Agent.

The tendered rate for grid gates shall include full compensation for dismantling a motor grid gate complete including the breaking down and removal to spoil of all concrete or brickwork, approach slabs, rails, poles and wiring, the backfilling and compaction of all holes and the reinstatement of the road to its line, level and width. The provision of wearing course material, if required will be paid for separately."

SECTION 5600 : ROAD SIGNS

B5603 MANUFACTURING OF ROAD SIGN BOARDS AND SUPPORTS

(a) Road sign boards

Add the following:

"The Contractor shall ensure that the signs and supports supplied by the manufacturers are correct in all respects."

(f) Road sign supports

Add the following:

"All the ground-mounted signs shall be supported on creosote timber pole supports."

Add the following new sub clauses:

(h) Chromadek sections

"Chromadek sections shall be assembled in accordance with the details of the standard plans.

Where joints are approved by the Employers Agent, they shall be constructed in accordance with the details shown on the standard plans and shall be covered on the rear face after assembly with a 20mm wide PVC corrosion protection tape. The PVC tape shall be covered by a 60mm wide self adhesive aluminium backed strip such as "Bostik Dit-Sit" or approved equivalent, all as indicated on the standard plans.

Retro-reflective material shall be applied to the section as specified for Aluminium Sections in Clause 5603(d) of the Standard Specifications, with the following additional requirement:

Where the letters or legends cross the horizontal joints of the sign panels the lettering or legend shall be cut along the joint and trimmed just short of the 3mm radius bend on the section.

(i) Fastening details

All fastening details to join the sign sections, to edge the assembled sign panel and to fasten the completed panel on to the timber supports shall be constructed in accordance with the details shown on the standard plans."

(j) Date of erection and sign identity number

The manufacturer's name, month and year of erection of the sign shall be placed in the bottom left-hand corner when facing the back of the sign. An eleven (11) digit identity number supplied by the Employers Agent shall also be placed on the back of the sign above the date of erection. All lettering shall be 50mm high and shall be manufactured from 7 year cast enamel scotchcal or equivalent. All lettering will be located such that it is visible from the shoulder of the road. No reflective paint or reflective material will be permitted on the back of sign faces.

Single signs such as R and W series signs shall only have the manufacturer's name, date and month placed on the back.

B5604 ROAD SIGN FACES AND PAINTING

Add the following new sub clauses

(e) Application of retro-reflective material

All sign faces shall be faced with retro-reflective material. Painted front sign faces shall not be used. Colours, symbols, legends and borders shall comply with the regulations of the applicable Road Traffic Act, the South African Road Traffic Signs Manual, SABS 1519-1990, and the details shown on the Plans.

Where applied to Chromadek Sections retro-reflective material shall be applied as specified for aluminium sections in Clause 5603(d) of the Standard Specification, and of Clause B5603(h) of this Project Specification.

(f) Silkscreening

Silkscreening or inking over retro-reflective materials shall not be acceptable.

B5605 STORAGE AND HANDLING

Add the following:

"The following shall not be allowed on the sign face:

(a) Drilling of holes

(b) Application of any form of adhesive

(c) Cleaning with any chemicals that are not specifically approved by the manufacturer of the retro-reflective material, and

(d) Covering the sign face with an impermeable material that does not allow free circulation of air.

B5606 ERECTING ROAD SIGNS

(a) Position

Add the following:

"All signs are to be placed, where practically possible, at the "preferred" location as indicated in the table on drawing ECS/56/1/C1. Variations will only be allowed if the topography does not allow the sign to be placed in the preferred position."

(d) Field Welding

Replace the contents of this clause with the following:

"No welding shall be allowed during the erection of any road signs."

(e) Time of Erection

Replace the contents of this clause with the following:

"Road signs shall be erected during and without disrupting the normal free flow of traffic."

Add the following new sub clause:

(h) Fixing of signs to poles

All sign faces will be affixed to the pole by means of clamps as indicated on drawing ECS/56/1/C7. An additional mild steel clamp ("ready-bar") will also be installed, together with one galvanised steel bolt fixed through the pole, as indicated on drawing CS/G/6/5.

W401 and W402 signs will only be affixed by means of two galvanised steel bolts through the face of the sign and pole.

B5609 MEASUREMENT AND PAYMENT

Item		Unit
B56.01	**Road sign boards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class 1 retro-reflective material, where the sign board is constructed from:**	

(c) Pre-painted galvanised steel plate (1.2mm chromadek or approved equivalent)

Replace subitems (i) to (iii) with the following:

"(i) Sign type and size to be specified separately ..... number (No)"

Replace the first paragraph after item (e)ii with the following:

"The unit of payment will be the number of completed sign boards."

SECTION 5700 : ROAD MARKINGS

B5702 MATERIALS

(b) Road studs

Add the following:

"Permanent road studs used on this Contract shall be as specified in the drawings or similar approved. The road studs used shall as far as possible match existing road stud materials"

B5706 SETTING OUT THE ROAD MARKINGS

Add the following before the first paragraph :

"In accordance with the project specifications and prior to any obliteration of the existing road markings by sealing, patching or rehabilitation measures, the Contractor shall prepare and submit reference drawings to the Employers Agent, showing the position of existing road markings relative to control markers or reference beacons placed along both sides of the road carriageway. No additional payment shall be made for this referencing work."

Add the following before the third paragraph:

"After completion of the seal, the position of the road markings shall be set out and re-established as directed by the Employers Agent from the established reference beacons or control markers placed along both sides of the road."

B5707 APPLYING THE PAINT

Add the following:

"During the period between the obliteration of the existing and the application of new road markings, the Employers Agent may order that temporary road marking be carried out for the accommodation of traffic. Pre-marking in accordance with Clause 5706 of the Specifications except that paint spots of approximately 25mm in diameter should be used.

Unless otherwise prescribed by the Employers Agent, temporary road marking shall be completed before a particular section of road is opened to traffic.

Note, all paint used shall contain reflective glass beads."

B5708 APPLYING THE RETRO-REFLECTIVE CEMENTITIOUS ROAD MARKING COMPOUND

Add the following:

Retro-reflective cementitious road marking compound shall meet the following minimum requirements:

Standards:	SANS 7321
Thickness:	2mm
Skid resistance:	greater than 40 BPA
Retro reflectivtty:	greater than 150 mcd/rn2 ' lux
Drying time:	less than 45 minutes
Compressive strength:	58-60 m.p.a@24 hrs
Density:	2.2 kgs/m^2
Product mix:	glass beads, cementitious powder, activator

<u>General</u>

The laying of Retro-reflective Cementitious Road Marking Compound (hereafter referred to as *permanent road marking)* must be in accordance with the South African Road Traffic Signs Manual and is regarded as Specialist Work.

Applied *permanent road marking* shall be durable and be expected to last for a minimum period of 5 years (60 months) reckoned from the completion date of the Contract and irrespective of traffic volume. Consequently, a five (5) year maintenance period is applicable.

Permanent road marking material shall comply with SANS 7321 and be delivered at the site in sealed containers bearing the name of the manufacturer and the type of material and the contractor shall at his own expense provide samples for testing as required by the Employers Agent.

Permanent road marking shall not be applied to a damp surface or at temperatures lower than 10° when the relative humidity exceeds 90% or when. in the opinion of the Employers Agent, the wind strength is such that it may adversely affect the road marking operations.

Surface Preparation

Before the permanent road marking material is applied, the surface shall be clean and dry and completely free from any soil, grease, oil, acid or any other material which will be detrimental to the bond between the permanent road marking and the surface. The surface where the permanent road marking is to be applied shall be properly cleaned by means of degreasing by combination of high pressure water and an approved degreasing agent or other approved method.

Where the road markings are to be applied to a new bituminous surface, the Contractor shall ensure that the surface to be painted has hardened sufficiently to enable the satisfactory application of the permanent road marking.

Where road markings are to be applied to a concrete pavement, loose particles shall be removed prior to application of the permanent road marking material.

B5709 ROAD STUDS

Replace the third and fourth paragraph with the following:

"Permanent road studs shall be fixed after the painting of the road lines. Fixing shall be strictly in accordance with the manufacturer's recommendations.

Prior to the application of the surface treatment, all existing road studs shall be adequately protected by covering with polyethylene sheeting at least 0,25 mm thick, specially reinforced paper or other approved material. Any existing road stud stained by bitumen shall be removed and replaced, unless all such bitumen is completely removed so as not to show any stains. Painting over stained road studs is strictly prohibited.

During laying of aggregate chips, rolling and brooming care shall be taken to protect all existing road studs against damage or breakage. The protective covering of existing road studs shall be firmly held in place during the reseal operation and shall only be removed after all rolling and brooming has been completed and prior to opening to traffic.

The Contractor shall replace at his own cost any road studs that have been stained and cannot be cleaned entirely or damaged by constructional activities.

Where ordered by the Employers Agent, the Contractor shall remove the existing road studs prior to the application of the surfacing seal. A sharp blow from a hammer and chisel at the epoxy base should be sufficient to dislodge the reflectors. Armourlite studs may be broken off flush with the road surface and the resulting broken glass removed from the road. All studs shall be removed from the road to the satisfaction of the Employers Agent. Any damage to the existing road shall be satisfactorily repaired by the Contractor at no extra payment.

Where ordered by the Employers Agent, temporary road studs shall be installed on completion of each section of seal prior to opening to traffic, Installation and fixing to the road surface shall be strictly in accordance with the manufacturer's instructions and positioned such that the reflective face is square to a line parallel to the road centre line. Spacing of temporary road studs shall be at 48 metre centre to centre distance unless otherwise ordered by the Employers Agent. The Contractor shall maintain the temporary road studs in position, until the permanent road marking has been completed."

B5711 GENERAL

Add the following:

"If ordered by the Employers Agent, the Contractor shall apply a further application of paint to all road marking on the site of works within the maintenance period."

SECTION 5900 : FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS

B5904 MEASUREMENT AND PAYMENT

Delete item 59.01 and replace with the following new item:

Item		Unit
"**B59.01**	**Finishing the road and road reserve**	hectare (ha)

The unit of measurement shall be the hectare of road and/or road reserve completed as per the instruction of the Employers Agent.

The tendered rate shall include full compensation for clearing, trimming with a motor grader to the required slope, disposing of material, tidying and all other work to be done for finishing off the road and road reserve. Separate items have been scheduled for the following categories.

The finishing of the road reserve shall be measured in the following five categories :

1) Where the existing cross fall of the road reserve to be trimmed has a negative slope or is between 0 degrees and 15 degrees to the horizontal
2) Where the existing cross fall of the road reserve to be trimmed is between 15 degrees and 30 degrees to the horizontal
3) Where the existing cross fall of the road reserve to be trimmed is between 30 degrees and 45 degrees to the horizontal
4) Where the existing cross fall of the road reserve to be trimmed is between 45 degrees and 60 degrees to the horizontal
5) Where the existing cross fall of the road reserve to be trimmed is between 60 degrees and 75 degrees to the horizontal

Where the existing road side slopes are of such a nature that they cannot be trimmed and finished by using a motor grader, this operation will be conducted under Section 3300".

Add the following new sections (9100 to 15000):

SECTION 9100 : CONTROLLING VEGETATION GROWTH - CUTTING

CONTENTS

B9101 SCOPE

B9102 EXECUTION OF WORK

B9103 QUALITY STANDARD

B9104 PAYMENT AND EQUIPMENT

B9105 MEASUREMENT AND PAYMENT

B9101 SCOPE

This Section covers the control of planted or natural grasses and vegetation by means of mechanical mowers on single and dual carriageway roads. It also includes vegetation cutting by hand.

B9102 EXECUTION OF WORK

Grass and all noxious and undesirable vegetation (of which the stem diameter does not exceed 50mm) shall be taken to be one and the same thing. Mowing of grass shall be classified into shoulder mowing and general mowing.

(a) Shoulder mowing

Shoulder mowing shall include the following:

(i) Contiguous strips to the road surface

The widths of the strips are:

- Gravel shoulders: Gravel shoulders and side slopes over a width of 5,0 m.
- Surfaced shoulders: Gravel round off and side slopes over a width of 3,0 m.

The width of the strip shall be measured from the outer edge of the tarred surface, except where there is a concrete side drain continuous to the tarred surface. In the latter case it shall be measured from the outer edge of the concrete side drain.

(ii) Grassed side drains

Any grassed or gravel side drain and any area between either concrete / tarred and concrete/tarred surfaces falling within the continuous strips.

(iii) Culvert inlets and outlets including the removal of all cuttings to avoid creating blockages.

(iv) Areas around trees and shrubs from the stem to a width of 0,5 m to 1,0 m outside the drip zone.

(v) The median (if it exists)

The area between the two carriageways measured from surface to surface. This shall include for cutting under the branches and between the shrubs. Small intrusion shrubs shall be cut together with the grass and removed.

(b) General mowing

General mowing including intersections, covers all areas inside the road reserve including the road reserve of cross roads up to a distance extending to each side from the road, or as indicated in the Scope of Works, or the drawings or by the Employers Agent. Included are all the areas of shoulder mowing as described in sub clause 9102(a).

(c) Cutting around road signs, guardrails, marker boards, dangerous areas and sight triangles.

The Contractor shall cut all grass and weeds in designated areas in the road reserve, such as the sight triangles at intersections, the areas in front of and around road signs and kilometre reference markers, and all other areas as specified and ordered by the Employers Agent. The dimensions and location of the areas in which the grass and weeds are to be cut shall be as specified, shown on the drawings or ordered by the Employers Agent.

No grass or other plant cuttings may be burnt in the road reserve or in the immediate vicinity of any road.

If any endangered species of plant are identified, the area shall be demarcated and no cutting shall be permitted within such demarcated area.

(d) Requirements

The following shall apply for any mowing and cutting operation:

(i) The grass shall be mowed to a height of not less than 50 mm and not more than 125 mm measured above the surrounding ground level and removed.

(ii) No distinction will be made between grass on flat areas or on slopes.

(iii) When instructed by the Employers Agent, the Contractor shall be responsible for baling or the collection and disposal of all grass cuttings to the approval of the Employers Agent. Grass cuttings may be left in sparsely covered areas but shall be evenly distributed as directed by the Employers Agent.

(iv) Concrete side drains shall be kept clear of grass spreading over the edges or growing in the joints. After removal of the grass, the concrete surfaces shall be swept clean of grass or other dirt which shall be removed to an approved dump site.

(v) Where on the instruction of the Employers Agent cut grass is baled, the removal of the bales shall be undertaken at the same rate of progress as the baling operation. Bales shall not be left in drainage channels or be left in the road reserve for a period exceeding two days, or be left in the road reserve over weekends, or be left in the road reserve closer than 4 m from the edge of the tarred surface. At no time will the mowing operation be allowed to be more than 5,0 km ahead of the baling operation.

Baling will be paid for as an extra-over item.

(vi) Certain areas around road signs, trees, large obstructions, under guard-rails, at wing walls and abutments, on steep slopes and in drainage trenches and dongas will not lend themselves to normal machine cutting and these areas shall be cut using alternative methods. The finished work shall provide a neat and evenly cut appearance with no isolated tufts of grass left remaining.

(vii) In inaccessible areas, cutting by hand and cleaning shall keep up with the mechanical mowing. At no time shall the mechanical mowers be allowed to be more than 5 km ahead of the labour finishing behind.

(viii) Grass flattened by implements during the mowing and cutting process shall be cut by hand.

(ix) No grass or other plant cuttings may be burnt in the road reserve or in the immediate vicinity of any road.

B9103 QUALITY / STANDARD

Vegetation shall be cut to the required height and mowing done evenly without abrupt changes or breaks.

Hedges shall be trimmed with sides slightly wider at the bottom and tops cut flat to not less than the required height.

Areas shall be left neat and tidy with all vegetation cuttings removed where instructed.

B9104 PLANT AND EQUIPMENT

The mechanical mowers shall be in good order and fitted with a boom mounted flail cutting attachment to cut vegetation on slopes. The mower shall be fitted with two high intensity amber flashing lights which shall be visible from both the front and the rear of the vehicle.

Safety precautions must be taken to ensure that the mower does not project or propel any stone or object which may cause injury to persons or damage to public vehicles.

Hedges shall be trimmed by approved equipment consisting of a rotating disc and blades mechanism.

Provision shall be made for one flagman to accompany each motorised mower, as well as for all signage required as indicated in the Routine Road Maintenance manual. Flagman on duty must be provided with reflective safety jackets and a red flag made of durable cloth and fastened to a staff 1,0m long. The flagmen shall thoroughly be trained to carry out the flagging procedure required for the mowing activity to ensure that the travelling public respects warnings given by them.

The mower shall as far as possible always operate in the direction of traffic flow and the flagman shall maintain a distance of approximately 150 metres behind the mower.

B9105 MEASUREMENT AND PAYMENT

Item **Unit**

B91.01 Mowing the grass

(a) Shoulder mowing

(i) Reserve with dual carriageway ..... kilometre (km)

(ii) Reserve with single carriageway..... kilometre (km)

(iii) Extra over (i) for baling ..... kilometre (km)

(iv) Extra over (ii) for baling ..... kilometre (km)

(b) General mowing

(i) Reserve with dual carriageway ..... kilometre (km)

(ii) Reserve with single carriageway..... kilometre (km)

(iii) Extra over (i) for baling ..... kilometre (km)

(iv) Extra over (ii) for baling ..... kilometre (km)

The unit of measurement for mowing is the kilometre length of road, both sides and median (if applicable) inclusive. The length of road will be measured once along the centre line of the road, irrespective of the number of individual areas (i.e. contiguous strips or median) that needs to be mowed. Proportional payments may be made for work complying with the requirements of the specification.

The unit of measurement for baling is the kilometre length of road, both sides and median (if applicable) inclusive. The length of road will be measured once along the centre line of the road, irrespective of the number of individual areas (i.e. median) along which baling is done.

The tendered rate shall include full compensation for furnishing all plant, equipment and labour for each mow and baling operation, regardless of whether the grass is cut by machine or manual labour, and shall include all costs for raking into piles, picking up and disposal of grass cuttings, all as specified in clause B9102.

No separate payment will be made for cutting grass on steep or rocky slopes, around signboards, under guardrails etc. The tendered rate shall also include for removal of cut grass from all open drains of growth as specified in this section and the cutting of grass around road signs where applicable.

General mowing (and baling, if specified) shall always be from fence to fence within the road reserve, irrespective whether it is a single carriageway, dual carriageway or single carriageway in a future dual carriageway road reserve.

Item **Unit**

B91.02 Cutting of designated areas

(a) Road signs, reference marker boards, guardrails etc.....metre square (m^2)

(b) Dangerous areas at intersections .....metre square (m^2)

(c) Sight triangle at intersections.....metre square (m^2)

(d) Extra over (b) for baling ..... number (No)

(e) Extra over (c) for baling..... number (No)

The unit of measurement for subitem (a), (b) and (c) is metre square as ordered by the Employers Agent.

The unit of measurement for subitems (d) and (e) is the number of areas at which baling of the grass took place.

No separate payment will be made for cutting grass on steep or rocky slopes.

The tendered rate shall include full compensation for furnishing all plant, equipment and labour for each mow and baling operation, regardless of whether the grass is cut by machine or manual labour, and shall include all costs for the raking into piles, picking up and disposal of grass cuttings, all as specified in clause B9102.

Where grass cutting is paid for under Item B91.01, no additional payment will be made under Item B91.02 for areas within the parameters of B91.01.

SECTION 10300 EMERGENCY MAINTENANCE

CONTENTS

B10301 SCOPE

B10302 EXECUTION OF WORK

B10303 MEASUREMENT AND PAYMENT

B10301 SCOPE

This Section covers any emergency maintenance work that the Employers Agent may instruct the Contractor to undertake at short notice, with work commencing within 24 hours of notification.

B10302 EXECUTION OF WORK

The work will be undertaken in accordance with the relevant standard and Scope of Works, or as instructed by the Employers Agent. The Contractor is to commence work within 24 hours of being instructed by the Employers Agent. Should the Contractor not perform within the specified response and completion times or not conduct the said works with the due diligence, penalties will be applied as set out in the Contract.

The Contractor's attention is drawn to the fact that reinstatement work is generally restricted by its nature in confined working areas.

B10303 MEASUREMENT AND PAYMENT

Item **Unit**

(f) **B103.01 Percentage mark-up for emergency maintenance** .....percentage (%)

All work ordered by the Employers Agent as “emergency maintenance” shall be executed in accordance with the requirements of the sections covering the work and shall be paid for under the relevant pay items.

However, the applicable rates used to conduct the “emergency maintenance” activities will be subject to a percentage mark-up by the contractor to cover the additional costs incurred to conduct the works outside his normal routine programme.

Depending on the nature of the said emergency, the maximum duration that the adjusted rates will be applicable, will be 5 days from the date of the instruction. From and including the sixth day the rates will revert to the tendered rates and the works will then be viewed as routine repair / maintenance activities.

If the said emergency is of such a nature that plant is required, the relocation cost of the plant will be paid for under dayworks and is not to be covered in the percentage mark up.

SECTION 12000 ENVIRONMENTAL MANAGEMENT SPECIFICATIONS & IMPLEMENTATION

CONTENTS

B12001 SCOPE
B12002 INTERPRETATIONS
B12003 DEFINITIONS AND ABBREVIATIONS
B12004 OBJECTIVES OF THE ENVIRONMENTAL MANAGEMENT SPECIFICATION
B12005 ROLES AND RESPONSIBILITIES
B12006 METHOD STATEMENTS
B12007 MATERIALS, PLANT AND FACILITIES
B12008 CONSTRUCTION ACTIVITIES
B12009 EMERGENCY PROCEDURES
B12010 ENVIRONMENTAL AWARENESS TRAINING
B12011 EXTERNAL AUDITING AND EVALUATION
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B12014 MEASUREMENT AND PAYMENT
B12015 WORK STOPPAGE
B12016 PENALTIES
B12017 MITIGATORY MEASURES REQUIRED BY THE DEPARTMENT OF MINERAL RESOURCES

B12001 SCOPE

This Specification covers the generic requirements for the effective implementation of Environmental Management procedures for controlling the impact on the environment during the road construction activities. The purpose of the Environmental Management Specification is to help control those construction activities that can have potentially adverse environmental implications on the site and surrounding areas. In short, the Environmental Management Specification describes good environmental practice principles which must be applied for the duration of the construction activities.

The Environmental Management Specification needs to be read in conjunction with the Environmental Assessment and the approved EMPr for materials sources as well as the conditions of authorisation issued by the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) and the Department of Mineral Resources (DMR) respectively. It should be noted that the approved EMPrs and conditions of the DEDEAT and DMR 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 use licence for water abstraction, issued in terms of the National Water Act (Act No 36 of 1998).

(ii) A water use licence for alterations to a river bank or permanent deviation of a stream flow, issued in terms of the National Water Act.

(iii) A permit for atmospheric emissions produced by an asphalt plant, issued in terms of the National Environmental Management: Air Quality Act (Act No 39 of 2004).

(iv) A permit for the removal or destruction of protected flora (plants and trees), issued in terms of the National Forestry Act (Act No 84 of 1998), National Environmental Management Biodiversity Act (Act 10 of 2004) and the Nature and Environmental Conservation Ordinance (No 19 of 1974).

B12002 INTERPRETATIONS

B12002.1 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) (NEMA) 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) (MPRDA);

(iii) Statutory requirements of the National Water Act (Act No 36 of 1998) (NWA);

(iv) Statutory requirements of the National Forests Act (Act No 84 of 1998) (NFA); and

(v) Statutory requirements of the National Heritage Resources Act (Act No 25 of 1999) (NHRA).

(vi) Statutory requirements of the National Environmental Management: Waste Act (Act No 59 of 2008) (NEM:WA)

Note 1 : In the Eastern Cape Province, the NEMA falls under the authority of the Department of Economic Development, Environment Affairs and Tourism (DEDEAT), whilst the MPRDA falls under the authority of the Department of Mineral Resources (DMR).

Note 2 : Environmental Management Programmes (EMPr's) relating to road maintenance programmes need to be authorised by the DMR in accordance with the requirements of the MPRDA.

Note 3 : The National Department of Environmental Affairs (DEA) is the relevant environmental authority for the temporary storage or treatment of hazardous substances, including sewage package plants.

B12002.2 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.

B12003 INTERPRETATIONS

DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DWA	Department of Water Affairs
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ENVIRONMENT	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.

ENVIRONMENTAL IMPACT	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.
INVASIVE ALIEN VEGETATION	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 (Act 43 of 1983).
MSDS	Material Safety Data Sheets.
NO-GO AREAS	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 EMPr.
RE	Resident Engineer.
TOPSOIL	Natural soil covering, including all the vegetation and organic matter, with variable depth.
WORKING AREAS	Working areas are those areas required by the Contractor to construct the works, as approved by the Resident Engineer.

B12004 OBJECTIVES OF THE ENVIRONMENTAL MANAGEMENT PROGRAMME

The Environmental Management Specification, which is in accordance with the Environmental Policy of the Client, is intended primarily as a management tool, for the guidance of the Consulting Engineers, the Contractor and his subcontractors.

The objective is to control the impacts firstly of materials, plant and facilities and secondly of construction activities on the surrounding environment. The effective implementation 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 Environmental Management Specification 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 Specification outlines structures and procedures to be implemented by the Contractor and his subcontractors to minimise and manage potential environmental impacts which the Contractor's construction related activities might have on the receiving environment.

An independent Environmental Control Officer (ECO) will be appointed by the Client to ensure that the Environmental Management Specification and approved EMPr is being effectively implemented. The ECO shall undertake monthly site inspections, the results of which will be reported to the Client, Consulting Engineer, Contractor and to the relevant government departments.

B12005 ROLES AND RESPONSIBILITIES

B12005.1 Responsibilities of the Resident Engineer

Specific to environmental management, the role of the Resident Engineer (RE) will be to ensure enforcement of the Environmental Management Specification, approved EMPr and supplementary recommendations made by the ECO; review and approve the Method Statements submitted by the Contractor; and liaise with the Contractor, the ECO and DEDEAT on environmental matters as necessary.

Responsibilities of the RE will include, but not be limited to:

- communicating the advice of the ECO and/or/contents of the ECO's reports;
- issuing site instructions where applicable;
- communicating to the ECO any new/amended construction activities;
- informing the ECO 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 ECO.

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 ECO, 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.

B12005.2 Responsibilities of the Environmental Control Officer (ECO)

The role of the ECO will be to independently monitor, review and verify the implementation of the EMPr and liaise with the RE and/or Client, and DEDEAT to confirm the level of compliance achieved and make appropriate recommendations on improvements/actions required.

The *responsibilities* of the ECO will include, as a minimum:

- advising the RE 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 regular site inspections and submitting reports on the level of compliance to the EMPr demonstrated by the Contractor; and
- undertaking any damage assessments with the RE where incidents, accidents and/or serious infringements have occurred on/off site, and advising on remedial actions required.
- appropriate and communicating these changes to the Resident Engineer and Contractor.

B12005.3 Responsibilities of the Contractor

The Contractor will be contractually required to undertake his activities in an environmentally responsible manner. The role of the Contractor will include the following, at a minimum:

- to implement the Environmental Management Specification and approved EMPr (and any subsequent revisions) for the duration of the construction related activities;
- to appoint an Environmental Officer for the daily implementation and monitoring of activities;
- to provide reasonable resources for the effective control and management of environmental risks associated with the construction related activities, as per the EMPr;
- 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 Environmental Management Specification, approved EMPr and to comply with the EMPr;
- submit the necessary Method Statements and plans to the RE for approval;
- review the ECO Reports and undertake corrective actions for non-compliance and take cognisance of the information/recommendations made;
- notify the RE immediately in the event of any accidental infringements of the Environmental Management Specifications and ensure appropriate remedial action is taken;
- notify the RE 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.

B12005.4 Responsibilities of the Environmental Officer

The Contractor shall on commencement of the Project appoint an Environmental Officer who, in addition to his normal duties, shall have direct responsibility for the implementation and monitoring of the Environmental Management Specifications and the approved EMPr. The Environmental Officer cannot be the Site Agent (Contract Manager).

The Environmental Officer shall liaise with the RE, the ECO and the Contractor, in order to ensure effective implementation of the Environmental Management Specification and EMPr at site level. The Environmental Officer will be responsible for the practical implementation and daily monitoring of the Environmental Management Specification and EMPr and shall report to the Contractor and RE in this regard. The Environmental Officer shall daily inspect and monitor operations on and off site and shall take the necessary action where required to ensure compliance with the environmental management requirements. The Environmental Officer shall attend all regular site works meetings for reporting, discussing and reviewing the performance of the Contractor (which shall be a standard item on the agenda).

B12006 METHOD STATEMENTS

The Contractor shall be required to submit Method Statements to the RE outlining proposed construction activities, phasing and procedures and methods to comply with the targets stipulated in the Environmental Management Specification and EMPr. 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.

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 Specification and EMPr. It is anticipated that in addition to assessing the systems and performance of the Contractor , the ECO will monitor the Contractor's adherence to Method Statements.

Method Statements must be submitted at least 10 days prior to the proposed commencement of related activities and must be approved by the RE, in consultation with the ECO. The Environmental Officer 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 RE for approval and in consultation with the ECO.

The following Method Statements shall be submitted by the Contractor 10 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, 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 Incidents for spillage procedures, including hydrocarbons, and compounds to be used;
- Emergency procedures and preventative measures for fire;
- Method of diverting stormwater during construction; and
- Solid waste control and removal of waste from Site;

B12007 MATERIALS, PLANT AND FACILITIES

B12007.1 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 Environmental Management Specifications of the EMPr.

The Contractor shall ensure that these delivery drivers are supervised during off-loading by the Contractor's Environmental Officer.

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 shall be incorporated inside the construction camp as approved by the RE. In the event that additional areas outside of the construction camp be required, this shall be subject to the RE's approval (in consultation with the ECO), which shall not unreasonably be withheld.

Fuel lubricants, solvents, paints, and other chemicals must be stored within the Contractor's camp in a facility secured with lock and key. Storage should be on a bunded, impervious site (secondary containment).

B12007.2 Hazardous substances

Hazardous chemical substances (as defined in the Hazardous Chemical Substances Regulations, Regulation 1179 of 1995 in terms of the Occupational Health and Safety Act) used during construction shall be stored in secondary containers and in an impermeable bunded area.

The relevant Material Safety Data Sheets (MSDS) shall be available on Site.

Procedures detailed in the Method Statement for Emergency Incidents shall be followed in the event of an emergency situation.

Potentially hazardous substances shall be stored, handled and disposed of in a suitable manner.

B12007.3 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 and in compliance with SANS 10089.

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 area is not to be within 100m from a water resource.

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 (sealed concrete) base with an impermeable bund (no plastic may be used). 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 have a roof covering to prevent the ingress of rain water.

The Contractor shall prevent unauthorised access into the fuel storage area.

The Contractor shall have on Site all the necessary materials and equipment (i.e. spill kits) 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 is to include immediate communication with the RE and ECO. A number of the Contractor's staff shall be appropriately trained to deal with any minor 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 into a hazardous waste container, and serviced when necessary. Drip trays shall be closely monitored during rain events to ensure that they do not overflow and a small spill absorbent sock should be placed within the drip tray for such occasions.

The appropriate signage must be erected at the diesel bowser and workshops.

B12007.4 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 50m 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.

Conservancy tanks may be used only once the soil conditions have been checked and found to be suitable. Septic tanks may not be used.

B12007.5 Living Accommodation

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 secure 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.

B12007.6 Solid waste management

No on-site burying or dumping of any waste materials, vegetation, litter or refuse shall occur.

All recyclable rubble and waste, for example, scrap metal, bottles, cans and plastics are collected and disposed of through a registered recycling company.

Recyclable waste, including glass, paper and plastic must be separated at the construction camp, stored and recycled, where economically feasible.

All non-recyclable rubble and solid waste be collected and disposed of at a registered waste disposal facility.

The Contractor shall provide sufficient bins with secure 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 off-site at least once weekly at a registered landfill site. The Contractor shall supply the RE with a certificate of disposal.

B12007.7 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.

The Contractor shall prevent discharge of any pollutants, such as cements, concrete, lime, chemicals and fuels into any watercourses or stormwater channels.

Water that has been contaminated with suspended solids, like soils and silt may be released into natural watercourses or stormwater channels provided that the minimum regulatory requirements in terms of the NWA are met. However, all suspended solids shall be removed from water before it is discharged by settling out these solids in settling ponds.

B12007.8 Site camp

All site establishment components (as well as equipment) shall be positioned to limit visual intrusion on neighbours and the size of area disturbed.

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 must approve this in consultation with the ECO.

Where site camps are to be established the feasibility of removing topsoil from the site, before site establishment, shall be investigated by the ECO. Removed topsoil should then be stockpiled for use in rehabilitation of the 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.

All water requiring discharge, including wastewater from kitchen and ablution facilities, should be led to soak pits or discharged in a manner approved by the RE and in compliance with GNR 399 of the NWA. 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 to its former or better condition as agreed with the landowner once the works are complete.

B12007.9 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.

B12007.10 Workshop, equipment maintenance and storage

Where practical, all maintenance, including servicing and repairs, 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 repairs 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 maintaining and 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.

B12007.11 Drinking and construction water

Water for drinking and construction purposes should be obtained from a designated municipal supply, or an approved source. Unless approved by the local authority and by the 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.

B12008 CONSTRUCTION ACTIVITIES

B12008.1 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.

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.

B12008.2 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:

- No plant species may be removed unless agreed by the ECO 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 ECO should be consulted and the plant(s) then replanted in a nearby 'safe' area of similar habitat. Permits are to be obtained from the DEDEAT regarding protected plant species and the Department of Agriculture, Forestry and Fisheries (DAFF, Eastern Cape) regarding protected trees.
- 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.

B12008.3 Sites of Archaeological and or Cultural Interest

The Contractor shall take responsible precautions to prevent any person from removing or damaging any items and infrastructure of heritage importance, such as fossils, coins, articles of value or antiquity, structures (older than 60 years) and other remains of archaeological interest discovered on the Site, immediately upon discovery thereof and before removal.

All archaeological sites identified in the environmental assessment must be demarcated with safety netting 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.

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 SAHRA. 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 temporarily suspended terminated until a qualified archaeologist or historian can examine the item or find.

The Contractor 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.

B12008.4 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.

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, open water bodies) for the purposes of swimming, personal washing and the washing of machinery or clothes.

B12008.5 Aesthetics

The Contractor shall take reasonable measures to ensure that construction activities do not have an unreasonable impact on the aesthetics of the area.

B12008.6 Conservation and Stockpiling Of Topsoil

Topsoil shall be removed from the following areas no longer than 10 days before construction begins:

- All areas to be excavated;
- Areas to be occupied by roads, including the temporary haulage road;

- Areas for the storage of fuels;
- Areas to be used for batching / mixing of concrete;
- Areas for stockpiling of construction materials;
- Areas for stockpiling of crushed rock; and
- 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, subsoils etc) and wind erosion of the topsoil stockpiles must be prevented.

Topsoil stockpiles shall not be higher than 2m with slopes of 1m vertical to 2m horizontal and convex (rounded) at the top.

B12008.7 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 indigenous grass species 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 ECO. Topsoil that has been washed away shall be replaced at the Contractor's expense.

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.

B12008.8 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 meters of any wetlands and rivers.
- 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 fee of leaks from oil, fuel or hydraulic fuels and is cleaned in an area with a suitable controlled runoff.
- Refuelling 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.

B12008.9 Stockpiling / Spoiling of Materials

The RE and ECO shall approve all stockpiling and spoiling sites and confirm the end-use or rehabilitation for these sites.

The stockpiles should be located within demarcated construction sites. Material stockpiled should be done 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, wetland or water course.

The Contractor, upon completion of the project shall reinstate areas used for stockpiling to their former states.

B12008.10 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).
- 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.

B12008.11 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 100m from any water course or wetland and not below the 1:100yr floodline of any water course or wetland.

The batching plant shall be located on a smooth impermeable surface (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 cement bags shall be stored in weatherproof containers to prevent wind blown cement dust and water contamination. Used cement bags shall be disposed of on a regular basis via the solid hazardous 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.

B12008.12 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 at all times. 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.

Dust control is to be undertaken in compliance with SANS 69 and SANS 1929.

B12008.13 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 Machinery and Occupational Safety Act, 1983 (Act No. 6 of 1983), as well as the requirements of the Occupational Health and Safety Specification which forms part of these documents.

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.

B12008.14 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 500m of the Site, the vehicles of the Contractor and his suppliers shall not exceed a speed of 60 km/hr.

B12008.15 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 laws with regard to road safety and transport. The Contractor 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 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 Department aware of road closures 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.

B12008.16 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, subcontractors and all employees are expected to be conscious of fire risks. The Contractor shall hold fire prevention training with his staff to create an awareness of the risks of fire. Regular reminders to his staff on this issue are required.

The Contractor shall ensure compliance with the National Veld and Forest Fire Act (Act 101 of 1998).

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 National Environmental Management: Air Quality Act (Act No 39 of 2004) , 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. No fires, including cooking fires, are permitted on “Red” days as per the Fire Danger Index.

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 Client must be indemnified.

B12008.17 Blasting

All blasting is to be done in terms of the Mine Health and Safety Act (Act 29 of 1996) and explosive regulations (Occupational Health and Safety Act).

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 injuries 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. 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.

B12008.18 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 as 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 culvert bridge must be removed as soon as the new bridge has been completed and opened to traffic. 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 waterbodies. 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 DWA and DEDEAT.

Avoid channel changes and protect the embankments of streams and rivers.

B12008.19 Water Abstraction

Water for construction purpose may be abstracted from rivers or other small streams crossing the road. The required licences must be obtained from the DWA prior to abstraction. The Contractor shall abstract this water from a temporary sump constructed adjacent to the river.

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.

B12008.20 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.

B12008.21 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 Client, other than that allowed for in the Bill of Quantities.

The Contractor should implement progressive rehabilitation: once works are complete in a particular area, rehabilitation / re-vegetation should 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 Client.

The Contractor shall provide the ECO and RE with a comprehensive Method Statement for rehabilitation of the entire site. This Method Statement must meet the approval of the ECO and RE. The following points must be taken into account when drawing up the Rehabilitation Method Statement:

- The Method Statement should be flexible – where measures are found to be inefficient, the plan shall be modified, at no additional cost to the Client.
- 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 Method Statement shall include the eradication of alien invasive plant species that may become established during the construction and defects notification period, in impacted areas and in rehabilitated areas.
- The growth of alien invasive plant species shall be monitored and removed during the 12 month period following construction.
- The Method Statement shall include endemic grass seed mixes applicable to summer and winter.
- The Method Statement shall include suitable fertilisers and application rates.
- Successful re-vegetation means ≥ 80 % of the seeded area is covered with grass / groundcover.
- Where the initial stripping works of the site/borrow pits was conducted by the Contractor, he will be fully responsible for topsoiling the said disturbed areas to the specified depth, at no cost to the Client.
- Consideration should be given to using established seedlings of indigenous grasses such as *Digitaria eriantha* and *Cenchrus ciliaris* to at least augment 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.

B12008.22 Alien Invasive Vegetation

Alien 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 alien species, soil should not be moved from one part of the site to another without the consent of the ECO.

The ECO shall assist in the identification of alien plant species. The Contractor is responisible for the removal and eradication of alien plant species. Methods of removal / eradication may involve hoeing by hand or the controlled application of herbicides.

B12008.23 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.

B12008.24 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 and alternative fencing should be put in place. 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.

B12008.25 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.

B12008.26 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.

B12008.27 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 service providers, shall be posted conspicuously in the Contractor's office near the telephone.

No authorised firearms are permitted on Site.

B12009 EMERGENCY PROCEDURES

The Contractor's procedures for the following emergencies shall include:

B12009.1 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.

B12009.2 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 and ECO.

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 service provider's 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.

B12010 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 ECO. The Contractor shall liaise with the RE prior to the Commencement Date to fix a date and venue for the course. The ECO 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.

B12011 EXTERNAL AUDITING AND EVALUATION

In order to ensure that the EMPr is effectively implemented, it is important that monthly external audits of the EMPr are conducted. An ECO will be appointed by the Client to undertake these audits. 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.

B12012 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:

- All cleared sites are rehabilitated with indigenous grass material with a cover of at least 80%.
- All visible alien plants are removed from disturbed sites.
- All recyclable rubble and waste, for example, scrap metal, bottles, cans and plastics are collected and disposed of through a registered recycling company.
- All non-recyclable rubble and solid waste be collected and disposed of at a registered waste disposal facility.
- Provision has been made for stormwater control to prevent erosion from taking place post construction.
- All borrow pits and quarries shall conform to the designed closure specifications, including drainage, slope stability, top-soiling and grass planting.
- Certificates of final completion as required by the appropriate EMPr shall be obtained for all borrow pits and quarries.

B12013 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.

B12014 MEASUREMENT AND PAYMENT

The Contractor shall not be separately reimbursed or compensated in respect of his compliance with the provisions of this Section B12000 of the Scope of Works. All costs so incurred shall, save and except to the extent provided for in the Bill of Quantities under Section 1300: Contractor's Establishment on Site and General Obligations, be deemed to be included in the rates tendered for the various items of work listed in the Bill of Quantities.

The financial guarantee for the rehabilitation of land disturbed by quarrying as per the approved EMPr will be returned upon the granting of a Closure Certificate by the DMR. This Closure Certificate will comply with the terms of the MPRDA.

B12015 WORK STOPPAGE

The RE shall have the right to order work to be stopped in the event of significant infringements of the Environmental Management 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 EMPr will entitle the RE to certify work stoppage subject to the details set out.

The RE shall be the judge as to what constitutes a transgression subject to the provisions of the General Conditions of Contract. In the event that transgressions continue, the Contractor's attention is drawn to the provisions of the General Conditions of Contract, under which the Contract Supervisor and/or Client 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 RE.

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.

B12016 PENALTIES

The imposition of penalties will be at the discretion of the Client.

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.

Payment of any penalty in terms of the Contract shall not absolve the Contractor from being liable from prosecution in terms of the any appropriate law. Fines may also be imposed by the relevant authority (DEDEAT or DMR) in terms of NEMA if the Contractor is found to have unlawfully and intentionally or negligently committed any act or omission which causes significant pollution or degradation of the environment.

B12017 MITIGATORY MEASURES REQUIRED BY THE DEPARTMENT OF MINERAL RESOURCES

Mitigatory Measures

The mitigatory measures in the Environmental Management Specifications are to manage potential environmental impacts arising due to the construction activities as well as the activities of the construction staff. These mitigating measures are to be read in conjunction with the mitigating measures and recommendations contained in the approved EMPr, including any additional recommendations contained in the Record of Decision (ROD) from the DMR.

1. Responsibilities

   (a) The Contractor (through the RE) will:

      (i) be held responsible for the implementation of these mitigatory measures,
      (ii) identify the need and be responsible for the implementation of an environmental awareness training programme for the construction staff,
      (iii) supply on request a "Method Statement," which will indicate the procedures to be applied in order to meet the requirements of any aspect of these mitigatory measures, and
      (iv) ensure that any problems identified during environmental audits or inspections, are addressed and rectified as soon as reasonably possible.

2. Mitigatory Actions

   2.1 Should it be necessary to store materials and equipment on site for short periods, only previously disturbed areas located >100 m from a watercourse / wetland should be used for this purpose.

   2.2 Any construction camp set up should be clearly demarcated and secured against theft or vandalism and any hazardous materials (cement, oil, petrol, diesel, etc) should be very strictly controlled and secured. Such a construction camp should be located >100 m from a watercourse / wetland and should be completely rehabilitated on completion of construction activities.

   2.3 All damaged areas in the riparian zones resulting from construction operations, should be rehabilitated to prevent erosion and undermining of the riverbank.

   2.4 All "surplus" soil and rock excavated during construction should be removed from the water course.

   2.5 No concrete shall be mixed on the soil surface, all concrete mixers to be placed on trays, and precautions to be taken against contamination of the soil through spillage of pre-mixed concrete.

   2.6 Precautions are to be taken against oil spillage from heavy equipment such as compressors and generators, e.g. through the use of sawdust filled drip trays. All contaminated material (including soil) to be disposed of at a registered waste site.

   2.7 Adequate toilet facilities (e.g. chemical toilet) shall be provided for workers on site, and all ablutions are to take place in these facilities.

   2.8 Scavenger-proof litter containers shall be provided on site and strict control over littering enforced.

   2.9 All waste material, including excess construction material, litter and sewerage, shall be regularly removed from site and disposed of at a registered waste facility.

   2.10 Strict precautions shall be taken when making open fires.

   2.11 No wild animals shall be disturbed unnecessarily in any way.

3. These mitigating measures are to be read in conjunction with the mitigating measures and recommendations contained in the approved EMPr, including any additional recommendations contained in the Record of Decision (ROD) from the DMR.

SECTION 13000	OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS

PROVINCE OF THE EASTERN CAPE
DEPARTMENT OF TRANSPORT

TENDER NO.
SCMU10-21/22-0019

C3-6 : PROJECT SPECIFIC OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS

1. INTRODUCTION

1.1 LIST OF ABBREVIATIONS

AIA	Approved Inspection Authority
BoQ	Bill of Quantities
CC	Compensation Commissioner
CR	Construction Regulations
DRPW	Department of Roads and Public Works of the Eastern Cape Provincial Government
DME	Department of Mineral and Energy
DMR	Driven Machinery Regulations
DoL	Department of Labour
DOT	Department of Transport
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
MH&SA	Mine Health and Safety Act No. 29 of 1996 (as amended)
OH	Occupational Health
OHSA	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

1.2 DEFINITIONS

The definitions used will be those set out in the Regulation Gazette No 10113 of 7 February 2014 with the following additions:

Client: The Head of Department, Department of Transport of the Province of the Eastern Cape.

Designer Means a competent person appointed by the Client as Agent to design (if required), supervise and monitor construction on their behalf

Employers Agent: 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 works assignment.

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.

1.3 KEY ROLE-PLAYERS

Client Representatives As indicated in Contract Data

Engineer

Engineers Representative

H&S Agent

1.4 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)
- Routine maintenance procedures manual of the Department of Roads and Public Works Eastern Cape.

- Regravelling Procedures Manual of the Department of Roads and Public Works Eastern Cape.

2. PREAMBLE

The Department of Transport (DOT) 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 DOT 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 DOT 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 DOT, 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 each works assignment and provide it to the Principal Contractor/s making a bid or appointed to perform construction work for the project, or parts thereof.

2.1 PURPOSE OF THE OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION (OHSS)

The idea of this document is to enable the Department to appoint a contractor onto a framework agreement whereby he can be assigned various works assignments over a three year period. The scope of works is therefore unknown. Thus a separate OHS Plan will be required to be produced for each specific works assignment.

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. Employers Agents, 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 OHSA S.37.2 Mandatary 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.

3. IMPLEMENTATION OF THE OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION (OHSS)

The works assignment 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 OHSA, it's 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, 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 OHSA S.37.2 Mandatary Agreement found in the Tender Document must be fully completed by the PC prior to commencement of the Works.

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, Employers Agent 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 Employers Agent or Engineer's Representative (ER) as determined at the commencement of the project.

4. REQUIREMENTS AT TENDER STAGE

Adequate pricing for H&S is 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 with his completed Tender:

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;
An organogram of the site relationships showing at least the minimum qualifications of the proposed Construction Manager, Health and Safety Officer, and a Temporary Works Designer.

Further method statements are to be submitted prior to, and during the works which will require the approval of the Client before work on that aspect or activity can commence.

4.1 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 Client.

The contractor must provide a Covid 19 mitigation plan as part of the Health and Safety Plan. This should form an integral part of the management of Health and Safety Plan.

5 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 OHSA. 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 which do not conform to those outlines in the Departmental Procedures Manual, are to be developed for all key activities as they relate to the programme and approved by the Client. 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).

6 GENERAL REQUIREMENTS

6.1 SUMMARY OF RISKS IDENTIFIED DURING DESIGN

The scope of work is specified the Department's Procedures Manual and Road Betterment & Regraveling Manuals. The P.C. is advised to use this as a Base Method Statement from which to conduct the HIRA.

There a generic risk associated with work on or near an operational road way- the members of the public who use that roadway may be put at risk by the activities of the contractor (section 9 OHS act and the employees of the contractor may be put at risk by the road user (section 8 OHS act)
Due to this being a maintenance contract without a fixed scope of works but rather a fixed scope of possible activities

6.1.1 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.

6.1.2 Drainage (Series 2000) Excavations, traffic management and possible contact with vermin

6.1.3 Earthworks and Pavement Layers of Gravel or Crushed Stone (Series 3000)
Heavy plant tipping of material

6.1.4 Asphalt Pavements and Seals (Series 4000)
Traffic management for base and surface repairs. Cold premix

6.1.5 Ancillary Roadworks (Series 5000)

6.1.6 Specified Hazardous Chemical Substances
Contact with humans (employed or not), vegetation and animals. Possible spills which will affect the environment.

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 a product that has not been specified, the onus is on the PC to provide proof that most environmentally friendly alternative has been used, based on the material safety data sheets. Medical surveillance may be required for those.

PRODUCT	POTENTIAL HEALTH OR OTHER RISKS
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
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 MSDSs 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

7. NOTIFICATION OF COMMENCEMENT OF CONSTRUCTION WORK/ APPLICATION FOR CONSTRUCTION WORK PERMIT (DEPENDING ON AWARD AMOUNT)

For works assignments awarded above Forty million rand the Clients agent will apply for a construction works permit once the contractors Health and Safety Plan has been approved by the Agent for implementation.

For works assignments awarded under Forty million Rand, 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 works assignment, 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.

8. 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.

8.1 APPOINTMENT OF COMPETENT SITE PERSONNEL

The CEO (OHSA S16.1) 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 (OHSA 16.2). Knowledge and training in H&S is required, and certificates indicating H&S training as well as experience to be included in CVs.

All other legal appointments are to be made with relevance to the type of work required and kept current with the project programme. The construction team is to ensure the 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:

8.1.1 Construction Management

A Competent CM must be appointed to manage all of the works and must have had training and/or experience in the area of responsibility. He/She 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.).Proof of this must be presented in the Health and Safety file. The Construction Manager must be appointed as the Covid manager.

8.1.2 Construction Health and Safety Officer

The PC will employ at least one competent, full-time H&S Officer for the duration of the works.

The H&S Officer's CV is to be submitted for approval by the Engineer as well as the H&S Agent. The PC is to ensure adequate resources are provided in order to undertake all responsibilities (i.e. mobile phone, computer and internet access, availability of a vehicle solely for H&S use during working hours etc.)
The Officer shall be in the possession of a certificate from SACPCMP and be in good standing with this council.
The CHSO must hold a valid driver's license.

The Construction Manager, 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 Contractors may commence work without approval of the H&S plan as submitted. The submission must be done seven days prior to expected start date to allow for comprehensive review.
Failure to do so will be considered a serious offence.

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, and
No inductions of Contractor staff until the H&S documentation is approved by the H&S Officer.
The H&S Officer/s may not be removed or replaced without the approval of the H&S Agent, nor may the site be left unattended for more than 1 day without adequate, competent cover.

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 (when work is being done) of all H&S activities and incidents is required to be given to the Agent or Official of the department.

The H&S Officer will be responsible for collating the H&S documentation (electronically) at the close out of the three year appointment. A list of the typical aspects that should be provided is available as an Annexure to this document.

8.1.3 Traffic Safety Officer (TSO)

The Construction Manager will assume the role of the TSO this must be noted in his appointment
The CV of the construction supervisor is to be submitted to the Employers Agent and H&S Agent for approval as a TSO. Attention is drawn to the provisions of Section 1500 of the COLTO specifications as given in the Contract Data and Scope of Work.

Traffic accommodation drawings will be provided by the Employers Agent, and any changes suggested or required are to be discussed and approved by the Employers Agent. Speed controls must be clearly stipulated and managed. Speed limits must be strictly adhered to by all construction traffic. Unreasonable limits may be revised by the Employers Agent 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 Employers Agent.
The construction supervisors will be issued with layouts for traffic control by the Construction Manager and be responsible for completing daily check lists before work starts and monitoring during works. The construction Manager will be responsible for checking layouts on site. This must be done at least once a week and must be recorded.
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. All photos are to be date and timed stamped and are to form part of the consolidated H&S file.

It must be noted that further penalties are specified for non-compliances in this PSHSS.

8.2 HEALTH AND SAFETY REPRESENTATIVES AND COMMITTEE

The requirements of the OHS act shall apply.

8.3 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 a Contract Specific 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.

9. GENERAL RISK MANAGEMENT

9.1 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.

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.

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.

9.1.1 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.

9.1.2 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.

9.2 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 are 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
- Public Injury motor vehicle accidents.
- Serious injury to workers(Medical or work related)
- COVID Response
- Any other major risks identified during risk assessments.

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.

9.2.1 First Aiders and First Aid Equipment

Competent, trained First Aiders level 3 are to be formally appointed for the project.

The PC shall provide an on-site First Aid Station with first aid facilities, including first aid boxes containing, at least the requirements of 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.

9.2.2 Fires and Emergency Management

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 are 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;
- Falls from heights,
- Motor vehicle accidents.
- Any other possible emergency identified in the P.C.'s HIRA

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. The emergency plan is to include the risk of fire on site and related to any specific activities where gas, welding, cutting etc. occur.

Fire extinguishers and fire extinguishing equipment will be appropriate for the risk and in sufficient numbers to deal with the type of fires that could occur. All mobile plant is to have fire extinguishers. Hot work permits are required for any such activities. The positions of equipment at the site camp must to be shown on the sketch plan of the site.

9.2.3 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 Employers Agent 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.

9.3 PERSONAL PROTECTIVE EQUIPMENT (PPE) AND CLOTHING

The PC is to provide a procedure as an addendum to indicate how PPE is managed within the Company.

The wearing of the identified SANS approved PPE at all times is non-negotiable. The PC shall ensure that all workers (Including Contractors) are issued with and shall wear as required; the first 3 items are mandatory for all workers: All PPE defined is SARTSM must conform to SANS and SARTSM specifications.

- Hi Visibility broad rimed hats ;
- Protective footwear;
- Reflective jackets (no bibs) which comply with the environmental regulations
- Overalls that ensure worker visibility
- Eye protection;
- Hearing protection;
- Respiratory protection (minimum of FF2),
- Any employees required to work in rain or missed are to be provided with reflective rain suits.
- Any other necessary PPE identified from MSDSs and/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 (including Client, Designers etc.) found on site without the necessary PPE will be removed from site until the PPE is supplied and worn.

The Contractor shall carry adequate stocks of Hi-visibility Jackets and hard hats for visitors
Failure to comply will result in penalties being applied.

9.4 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 at site camp is to include (but not be limited to) the following:

- ‘no unauthorised entry”
- “Warning, Construction site – Keep out” or similar
- “hard hat area” or other PPE requirements noted;
- First aid box positions (including vehicles), and
- Fire extinguishers
- Covid signage as per contractor’s plan.

Signs shall be posted 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 works area.

Areas of work are to be signed in accordance to layouts agreed by the Employers Agent’s representative and construction supervisor.

Records are to be kept and signed by both parties. These records, daily check lists and photographic evidence will need to be kept on file and form part of the consolidated file at the end of the project.

9.5 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, including Covid training.

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.

9.6 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 Employers Agent (registered with ECSA) who has sufficient experience in the design of the type of temporary work in question to be able to assess the design. The appropriate competent persons are to be appointed to manage and monitor such works to the satisfaction of the Employers Agent. Where the scaffolding, and /or support work is to be supplied and designed by a specialist company, care must be taken to comply with all the requirements of the supplier. Records and registers are to be properly completed and kept in the H&S file.

A fall protection plan is to be available and supplied as an addendum to the H&S plan. The fall protection plan must be appropriate for the project. Method statements, appropriate risk assessments, safe work procedures and training are to be available prior to work commencing.
Construction drawings shall be required for all temporary structures as they relate to the project. The drawings shall be accompanied by full calculations, design loads and any relevant test results as required by the SANS code, and ensure adequate allowance for the development of appropriate documentation and training. All drawings are to be checked and signed by a competent structural Employers Agent (registered with ECSA).
The focus for working at height shall include fall restraint systems where possible except during assembling or dismantling top components or where it is not deemed safe. The relevant SANS codes are to be applied as they apply to the works and the project, such as:

- SANS 10085
- SANS 10333 (parts 1-3)

Should part of the works be contracted out, competent Contractors are to be appointed and submit documentation according to the project requirements. The PC is to note if such work is to be contracted to specialists in the H&S Plan. The plan is to be developed and work managed by a competent person for the duration of the project. The following aspects must be included:

- The public or users of structures are to be protected at all times by way of hoarding, barricading or fencing
- Notices to be posted
- Restrictions or stoppage when weather conditions are deemed hazardous
- Permit system for working at heights
- Prevention of falling tools, equipment or people
- Link to emergency plan regarding rescue

All workers are to be in possession of valid certificates of fitness that extend for the duration of the works. Note the requirements in the section relating to medical surveillance.

Registers and all relevant documentation are to be placed in the H&S file. Work will be stopped and penalties applied to any work at heights that is not compliant.

Failure to do so will be considered a serious offence.

9.7 TESTING LABORATORY AND THE USE OF RADIOACTIVE EQUIPMENT

When the P.C. makes use of a service provider, the service provider will be seen as a Contractor and all the H&S rules and requirements are to be met by the Service Provider. Mandatary 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.

9.8 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 comply with the National traffic act. The licence disc of the

vehicle shall prescribe the number of persons transported. No equipment or materials shall be transported in the same compartment at the same time as workers.
Covid 19 regulations are to be adhered to.

Failure to transport workers in a safe manner will be regarded as a serious offence.

9.9 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 1966 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 OHSA and MH&SA or other legislation as they apply. Method statements and risk assessments will be required before blasting will be permitted. The Employers Agent 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.

Failure to do so will be considered a serious offence.

9.10 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.

Should any form of lifting device or crane (fixed or mobile) be used during the project for deliveries, moving of supplies or equipment, the appropriate documentation must be made available. Method statements, risk assessments, safe work procedures and training are to be available prior to work commencing. A procedure for managing loads and lifting must be made available as an addendum to the H&S Plan

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 (CM) 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.

9.11 EXCAVATIONS

Steep slopes require careful management. Shoring may be required, where indicated in the Geotechnical report or by the Employers Agent. The PC is to ensure that the Community Liaison Officer (CLO) and the local community, schools and general public are aware of the dangers of open excavations.

The H&S Officer is to ensure that all Contractors follow the same requirements as they relate to excavations. The Employers Agent may stop work at any time should the working area be deemed unstable. Method statements are to be approved by the Employers Agent 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 1m high should be used (approved by the Employers Agent). 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 900mm, and the ladder is to extend at least 1m 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.

9.12 INCLEMENT WEATHER

Information regarding climates for the specific regions must be accessed from http://www.saexplorer.co.za

Should the discomfort index rise above 105, work may be partially or totally stopped. Workers must be supplied with adequate protective clothing and shelters provided as necessary. A wind speed should be set at which work may be stopped or the workers in an affected area moved. Note must be taken of the environmental regulations particularly section2.*1 "Provided that, where outdoor work is performed, the employer shall take such measures and such precautions in an environment in which the actual dry-bulb temperature is less than 6°C at <u>any time</u>"*

The emergency plan is to include how these and other weather extremes identified are to be managed.
All decisions regarding work stoppage will be decided between the PC, the H&S Officer and the Employers Agent.

Failure to manage specific conditions or address issues timeously will be considered a serious offence.

9.13 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 Employers Agent. 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, Employers Agent 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.

9.14 COMMUNICATION ON SITE

All communication on site will be done through the Employers Agent 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.

9.15 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 safe, 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.

9.16 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 Employers Agent.

9.17 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. Plugs and sockets shell 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.

10. 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; Including Covid plan;

- Appointment by Client;
- Mandatary Agreement with Client;
- Notification of construction work; Noting contract period and area
- Detailed list of Contractors with contact details, appointments, Mandataries etc.;
- Record of Competencies;
- Training Records.
- Permits;
- Method statements; Pot hole repair (P01)
  Regravelling (G01)
  Dry blading (G02)
  Culvert installation (D02)
  Guard rail repair (F08)
  Fencing Repair (R07A)

- Risk assessments; Pot hole repair (P01)
  Regravelling (G01)
  Dry blading (G02)
  Culvert installation (D02)
  Guard rail repair (F08)
  Fencing Repair (R07A)

- Safe work procedures; when required by HIRA
- Emergency and injury management;
- Safety data Sheets.
- Medical surveillance records; of proposed management
- Registers, and
- Records of audits, minutes etc.
- Plant lists
- Temporary electrical installations
- Employee records (who is on site)

10.1 SUPPORTING DOCUMENTATION

The following list is not absolute, and the PC is expected to assess if further 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 be closed out following the end of the three year appointment.

11 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:

Minor: **Penalty: R50/count**	**Medium:** **Penalty: R500/count and a non-conformance**	**Severe** **Penalty: R5000/count, a non-conformance and/or activity stoppage**
		No adhering to Covid 19 Regulations. Spot fine.
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
	Working without approved method statements	Employees performing work without a medical certificate of fitness allowing them to perform such activities.
	Working without approved method statements	Any breach of legal requirements

11.1 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 Employers Agent or the Client's H&S Agent, shall be sufficient cause for the Employers Agent to apply penalties as follows:

(i) 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.

(ii) In addition a time-related penalty of R500,00 per hour over and above the fixed penalty shall be deducted for non-compliance to rectify any non-conformance within the allowable time after a site instruction to this effect has been given by the RE or Employers Agent. The site instruction shall state the agreed time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

12 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

B13001 Preparation of Contractor's Project Specific Health and Safety Plan. (Lump Sum (L.S))

The rate for this item must cover all expenses incurred in preparing the Contractor's project specific Health and Safety Plan as required by the Client's project specific Health and Safety Specification in this document for each works assignment. This plan must include Covid Regulations

B13002 Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations. (Lump Sum (L.S))

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.

B13003 Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations. (Month (Mth)

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

B13004 Provision of Personal Protective Equipment (PPE) as listed in the Bill of Quantities. (Number (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 Principle Contractor, full or part time, requiring them. Contractors are responsible for their on costs in this regard. Any items of PPE not included on the list will be paid for only after the Employers Agent 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 overalls, waterproof clothing, gum boots and standard workshop safety equipment such as welding masks and goggles will not be paid for.

Payment will be based on the issues register for PPE as kept by the Construction Health and Safety Officer, backed up by paid invoices if requested.

B13005 Provision of full time Construction Health and Safety Officer as per 8.1.2 (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. The Health and Safety Officer will attend site meetings.

B13006 Costs of Medical Surveillance (Unit (No))

This item shall covers all costs in involved in the obtaining of baseline, periodic (at least annually) and exit medical certification and conducting medical surveillance for all workers and especially operators of Construction vehicles and mobile plant as contemplated in CR 21(d) (ii); Workers at Heights, Regulation 10 (2) of the Construction Regulations and Workers exposed to hazardous chemicals including bituminous fumes under Regulation 7 of the HCSR; for temporary workers and workers exposed to noises at or above the limits given in the Noise-induced Hearing Loss regulations, as stipulated above.
Workers in the permanent employ of the Contractor will only be paid for if their certificates require updating. Chest x-rays will be required in the case of workers who may be exposed to high concentrations of dust (silica).

(i) Initial (baseline) medical examinations, including audiometric and lung function testing.
ii) Periodic examinations
iii) Exit examinations.

B13007 Induction Training (Unit (No)

This item shall cover all costs incurred for the health and safety inductions as set out on Regulation 7 of the Construction regulations and the proof of induction required. Payment will be made on the figures contained in the induction section of the Health and Safety File.

B13008 Environmental Monitoring. (Unit (No) of tests)

i) Air quality monitoring

Payment for this item shall cover all costs incurred in testing and monitoring the environment in respect of general health hazards including the presence of hazardous chemicals, as required by the Construction Regulations and the Mine Health and Safety Act.

ii). Compliance with Amendment of the Occupational Exposure Control Limit for Silica in Table 1 of the Hazardous Chemical Substances Regulations (February 2010) **(Unit (No))**
iii) Air sampling in situ **(Unit (No))**
iv) Analysing samples **(Unit (No))**
v) Tests on Workers **(Unit (No))**

The rates for these items shall include for all air monitoring, air sample testing and tests in 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.

B13009 Establishment of noise levels (Unit (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.

B13010 Payment for Health and Safety Representatives at H&S committee meetings. (Unit 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. This does not include the appointed OHS Officer.

B13011 Provision of First Aid Boxes. (Unit (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.

B13012 Transportation of Workers. (Lump Sum)

The Lump sum tendered under this Item shall cover all costs involved in the safe transportation of workers as outlined above. Payment will be made in equal amounts for the duration of the contract.

B13013 Submission of the Consolidate 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 and only at the end of the three year appointment.

ANNEXURE A

RECORDS TO BE KEPT ON SITE

ITEM	RECORD TO BE KEPT	RESPONSIBLE PERSON
1.	Notification to Provincial Director – Annexure A - Available on site	Principal Contractor
2.	Copy of Principal Contractor's Health & Safety Plan - Available on request	Client (Consultant)
3	A Valid Letter on Good Standing in respect of Workman's Compensation.	
4	Copy of Principal Contractor's Health & Safety Plan as well as each Subcontractor's Health & Safety Plan - Available on request	Principal Contractor
5	Health & Safety File opened and kept on site (including all documentation-required in respect of the OHSA & Regulations - Available on request	Principal Contractor
6.	Consolidated Health & Safety File handed to Client on completion of Construction work. To include all documentation required by the OHSA & Regulations.	Principal Contractor
7.	Comprehensive and Updated List of all Contractors on site, the agreements between the parties and the work being done.	Principal Contractor
8.	Keep record on the Health & Safety File of the input by Construction Health and Safety Officer [CR 8 (5)]	Principal Contractor
9.	Risk Assessments, kept up to date and available on site for inspection	Principal Contractor
10.	Proof of Health & Safety Induction Training	Every Employee on site
11.	Construction Supervisor CR 8 (1)	Principal Contractor
12.	Inform Principal Contractor in writing of dangers and hazards relating to construction work	Designer of Structure
13.	All drawings pertaining to the design of structure - Available on site for inspection	Principal Contractor
14.	Record of inspection of the structure [First 2 years – once every 6 months, thereafter yearly]	Owner of Structure
15.	Maintenance records – safety of structure - Available on request	Owner of Structure
16.	Drawings pertaining to the design of formwork/support work structure - Available on site for inspection	Principal Contractor
17.	Record of excavation inspection. On site available on request	Principal Contractor
18.	Suspended Platform inspection and performance test records. Kept on site available on request	Principal Contractor
19.	Material Hoist daily inspection entered and signed in record book kept on the premises	Principal Contractor
20.	Maintenance records for Material Hoist. Available on site	Principal Contractor
21.	Records of Batch Plant maintenance and repairs. On site available for inspection	Principal Contractor
22.	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.	Findings of daily inspections (prior to use) of Construction Vehicles and Mobile Plant	Principal Contractor
24	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

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{if required during contract} (suspended beams/scaffolds etc)
p) Copies of test results, policies and procedures for environmental monitoring (silica, noise, dusts etc.)
q) Traffic management records and photographs,

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.

ANNEXURE C

NON CONFORMANCES

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 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 RE			

SECTION 15000: UTILISATION OF ME's AND LOCAL LABOUR

CONTENTS

B15001 SCOPE : ME MANAGEMENT

B15002 BASIC METHOD REQUIREMENT : ME MANAGEMENT

B15003 SCOPE : UTILISATION OF LOCAL LABOUR AND LIMITED TECHNICAL TRAINING

B15004 BASIC METHOD REQUIREMENT : TRAINING OF LOCAL LABOUR

B15005 MEASUREMENT AND PAYMENT

15000 OBJECTIVE

A major objective of the targeted procurement procedure is to extend economic opportunities and entrepreneurial capacity to all localities by the optimum utilisation of the resources existing in the vicinity of the works assignments, the development of these resources in the execution of the works, and by maximising the amount of funds retained within the works assignment locality.

A minimum of 30% of the value of each works assignment be subcontracted to Micro Enterprises (ME's) in the relevant 1 to 4 CIBD grading. The ME's must be based within the LMA as far as possible. It is the Employers objective to maximise the usage of ME's and a minimum number of four ME Contractors, where possible, are to be appointed on for each works assignment. This amount is to be agreed with the District Roads Engineer in writing prior to the commencement of each works assignment. The Department will strive to ensure that each works assignment will lend itself to the usage of ME contractors.

B15001 SCOPE:

This section provides the specifications that relate to the contractor's implementation of the policies and initiatives of the Government, community participation, and employment of Micro Enterprises (ME), training and mentoring of Micro Enterprises, and engagement and training of labour recruited from local communities. These specifications should be read in conjunction with the various statutes and legislation that relate to small businesses and Broad-Based Black Economic Empowerment.

In this regard all tenders will be considered with specific reference to applicable legislation in force from time to time and which are specifically applicable to organs of state for example the following:-

(i) The Constitution of the Republic of South Africa, 1993;

(ii) Public Finance Management Act, 1999 (Act No 1 of 1999);

(iii) Preferential Procurement Policy Framework Act, 2000 (Act No 5 of 2000);

(iv) Broad-Based Black Economic Empowerment Act, 2003 (Act No 53 of 2003);

(v) Construction Industry Development Board Act, 2000 (Act No 38 of 2000) and Regulations; and

(vi) National Small Business Amendment Act, 2003 (Act No 26 of 2003).

15001.1 DEFINITIONS

The following words and expressions shall have the meanings stated.

Project Management Team (PMT): three persons comprising the Employer, Employers Agent and Contractor.

Micro Enterprise (ME): a separate and distinct business entity, including cooperative enterprises and non-governmental organisations, managed by one owner or more, including its branches or subsidiaries, if any, and is registered with the South African Revenue Service, and which can be classified as a micro enterprise by satisfying the size variation criteria according to the type of enterprise in table 15001a below:

TABLE 15001a: SMME SUPPLIERS AND OTHER SERVICE PROVIDERS *				
Size	**Total Full-time Equivalent of Paid Employees**	**Total Annual Turnover**	**Total Gross Asset Value (fixed property excluded)**	**CIDB Grading**
	less than	*less than*	*less than*	
Medium	200	R26 m	R5 m	7
Small	50	R6 m	R1 m	5 & 6
Micro	5	R0.2 m	R0.1 m	1 to 4

* In terms of the National Small Business Amendment Act, 2003 (Act No 26 of 2003)

It is the Employers objective that a minimum of 30% of 30% of the value of each works assignment be subcontract

15002 BASIC METHOD REQUIREMENT : ME MANAGEMENT

15002.1 Project Management Team (PMT)

(a) Appointment

A Project Management Team is to be set up comprising a representative from each of the Employer, Employers Agent and Contractor.

(b) The duties and functions of the PMT are as follows:

(i) determine the scope and extent of the works to be included in any particular subcontract;

(ii) make decisions regarding the tender pre-qualification process;

(iii) compile subcontract tenders

(iv) adjudicate and approve subcontract tenders;

(v) approve the extension of subcontracts, which shall be subject to satisfactory performance by the subcontractor and;

(vi) Decide when a ME requires dedicated and structured mentoring from the Departmentally appointed Professional Service Provider in this regard. This will be provided on an ad hoc basis as and when required.

Once the appointment of the ME's has been made, the relationship between the Main Contractor and the ME will be strictly as set out in sub-clause 4.4 of the General Conditions of Contract for Construction Works, 2015.

15002.2 General responsibilities of the Contractor

(a) Obligations

The Contractor shall ensure that he complies with the following obligations:

(i) identify work to be executed from his inspections, and submit these to the Employers Agent who will determine which work must be carried out;

(ii) institute a quality assurance system;

(iii) provide training (limited to technical matters), general on site mentoring (not dedicated or structured mentoring), general guidance and assistance to ME's;

(iv) ensure that the contract goals and objectives are achieved, and

(v) compile subcontract agreements with the ME's

(vi) submit a monthly report to the Employers Agent on items (iii) and (iv) above

(b) Subcontracts involving ME's

In the subcontracts arranged by the contractor involving ME's, the following shall apply:

(i) no provision or requirements set out in the specifications shall be deemed to relieve the Contractor of any liability or obligation under the contract and in accordance with the provisions of clause 4 of the General Conditions of Contract for Construction Works, 2015, the Contractor shall be fully liable for the acts, defaults and neglects of any ME, their agent or employees, as fully as if they were the acts, defaults and neglects of the Contractor, his agents or employees;

(ii) the appointment of the ME subcontractor by the Contractor, shall be made according to sub-clause 4.4 of the General Conditions of Contract for Construction Works, 2015; and

(iii) any failure or neglect by the Contractor to comply with the provisions of the specifications, or any omission or neglect by the Contractor in adhering to or applying the principles as are described and inherent in the specifications, shall be deemed to constitute a warrant for the Employers Agent to act in terms of clause 9 of the General Conditions of Contract for Construction Works, 2015.

15002.3 Selection of ME's for tender purposes

The Contractor is to subcontract a minimum of 30% of the value of each works assignment to local ME Contractors.

The tender process for the ME's procured locally will be via to the required ME forum based in the LMA in which the Contractor indicates the work package and required CIDB grading. A list of prospective tenderers will then be to the Contractor to be invited to tender on the said package.

The department is currently compiling a list of prospective ME's that are to be utilized. Once this is functional, all applications for ME's will be through the Department.

15002.3.1 Compilation of tenders

In compiling the tenders the Contractor shall take note of the following.

(a) The PMT shall compile the tenders in such a manner that it will facilitate the achievement of all objectives and principles pertaining to the use and development of the ME's, as are stated in or as may reasonably be inferred from the conditions of this contract.

The Contractor shall be responsible for the compilation of each subcontract agreement and for ensuring that the terms and conditions are consistent with all requirements therefore, as

are specified in or reasonably to be inferred from the provisions of this contract. The Contractor shall bear all costs associated with the compilation of the documentation for the subcontracts and the conclusion of the agreement.

(a) Nothing contained in the specification shall be deemed to constitute or imply any warranty given by the Contractor to any party that any ME to whom a subcontract is awarded in accordance with the provisions of the specification:

(i) can or will actually achieve the successful execution and completion of the subcontractor, nor;

(ii) will not suffer losses or damages as a result of the acceptance of his tender.

(b) Scope of work for subcontracts ;

In determining the scope of work to be included in any particular subcontract, the PMT shall be responsible for the identification of the:

(i) total number of subcontracts to be let;

(ii) scheduling of the time when subcontracts will be let;

(iii) limitation, if any, of how many subcontracts may be awarded to the same tenderer on the same contract.

(d) Types of subcontracts

The following types of subcontracts may be let to ME's:

(i) full or part service for a specific activity on the whole road;

(ii) full or part of service on a section of road;

(iii) labour only;

(e) Target tender amount

(i) The target tender amount of all the subcontracts shall be a minimum of 30% of the value of each works assignment.

15002.3.2 Tender process for ME's

(a) Tender invitation

The ME's who are selected from LMA or list of ME's from the Department (when available), will be invited to tender for the scope of work as specified.

(b) Issue of tender documents

The tender documents shall be issued by the Contractor at his site office.

(c) Tender closure

Tenders shall close at the stipulated date and time, and be deposited in a proper tender box at the Contractor's site office. Tenders shall be opened in public in the presence of the Employers Agent and Contractor.

(d) Adjudication of Tender

Tenders are to be adjudicated by the PMT. Should the preferred ME tendered amount for a specific package vary by more than 15% to that of the average price of works items determined from the top five responsive tenderers for the specific framework agreement in which this contract is let, approval is to be obtained from the Department.

15002.3.3 Management of Subcontracts

The Contractor shall compile the subcontract agreements, and provide the necessary management support to the ME's as set out in this section. Failure by the subcontractor to comply with the terms and conditions of the subcontract agreement shall result in penalties being applied or the subcontract terminated.

15002.3.4 Compilation

The Contractor in liaison with the Employers Agent shall be responsible for the compilation of each subcontract agreement. The agreement shall be in accordance with the provisions of sub-clause 4.4 of the General Conditions of Contract for Construction Works, 2015, and shall be consistent with the terms and conditions in this contract. The agreement shall be subject to approval by the Project Management Team.

15002.3.5 Quality of work and performance of the subcontractor

(a) The Contractor shall closely monitor and supervise all ME's and shall guide and assist each ME in all aspects of management, execution and completion of his subcontract. This shall typically include assistance with planning of the works, sourcing and ordering of materials, labour relations, monthly measurements and invoicing procedures. The extent and level of such guidance and assistance, to be provided by the Contractor shall be commensurate with the basic level of subcontract applicable and shall be directed at enabling the ME to achieve the successful execution and completion of his subcontract.

(c) The Contractor shall give reasonable warning to the ME when any contravention of the terms and conditions of the subcontract has occurred or appears likely to occur. The Contractor shall, whenever feasible, give the ME reasonable opportunity to make good any such contravention or to avoid such contravention and shall render all reasonable assistance to the ME in this regard.

B15003 UTILISATION OF LOCAL LABOUR AND LIMITED TECHNICAL TRAINING

B15003.1 EMPLOYMENT OF LOCAL LABOUR

The Contractor is to create a minimum of 6 (six) job opportunities on site for the duration of each works assignment. These employment opportunities can be created by the ME's.

The ratio of all local labour employed on the project must conform to the following:

- At least 20% women (Preference must be given to single heads of household)
- At least 40% youth (Persons above school going age of 18 to 35 years old)
- 40% men (Over the age of 35 years)

B15003.2 LABOUR INTENSIVE WORK

The guiding principles upon which the labour intensive work to be provided is based, include:-

- creating sustainable job opportunities,
- poverty alleviation,
- local authority empowerment, and
- ensuring financial accountability

In line with the above, the following targets have been set in order to reach objectives and this Contract will be subject to these targets:

- **Labour intensive methods of construction** are to be used where possible.

- **Women** are to make up at least **20%** of the **Total Local Labour** employed on this project with an emphasis on "*Women who are the single head of households and have dependants*".
- **Youth** are required to make up at least **40%** of the **Total Local Labour** employed.
- **Men** are required to make the balance of the **Total Local Labour** employed.

The Contractor shall therefore be required to plan his activities to maximise the use of local labour. A "local labourer" is defined as a person whose domicilium citandi ex executandi shall be in the Local Municipal Area in which the works is being implemented. The rates tendered shall cover the full cost of the all labour intensive work.

B15003.3 LIMITED TECHNICAL TRAINING – LOCAL LABOUR

The Contractor shall be responsible for providing limited technical accredited training to local labour employed on the project (eg. 2 day on site SARF courses – patching potholes). The Contractor shall facilitate initial training sessions as approved by the Employers Agent, as well as training sessions at specified intervals to revive and supplement the initial training. An accredited trainer shall present all training sessions.

Training for ME Contractors will be provided by the Departments Professional Services Providers as and when required on and ad hoc basis.

This specification includes all requirements and methods to be employed, for the training of the Local personnel, as well as the measurement and payment.

B15004BASIC METHOD REQUIREMENT : TRAINING OF LOCAL LABOUR

The Contractor shall be responsible for conducting a complete investigation of the groups that need to be trained in order to compile an approved **training plan**.

The investigation shall cover at least the following aspects:

(a) Assess likelihood of conformance to task-specific requirements *(status quo)* of capabilities in terms of a formal skills audit.

(b) Identify minimum pre-qualification criteria in terms of existing knowledge and skill levels in relation to reaching target requirements.

(c) Evaluate personnel in terms of pre-qualification criteria and tasks to be performed (skills profile).

(d) Identify training needs.

(e) Identify the appropriate accredited training courses in terms of task-specific activities and identified training needs. The Contractor is to ensure that the identified course content is as per the activities listed in the Routine Road Maintenance Procedures Manual of the Department.

The Contractor shall identify an accredited training service provider to assist in the above skills audit and to help finalise the compilation of a training plan setting out the proposed courses. Once the training plan and proposed courses have been approved by the Employers Agent, the Contractor shall liaise with the accredited service provider to establish a date and appropriate training venue that would be conducive to learning and to perform training. On-site training is preferred.

The training shall be reviewed within one month after initial training to determine its effectiveness. Further regular training sessions shall be scheduled according to the effectiveness of initial training.

The Contractor will be responsible for recording all training sessions and shall keep an attendance register.

B15005 PAYMENT OF ME CONTRACTORS

It is an express condition of the project that the Main Contractor pay all his ME Contractors within 14 days of the ME submitting their invoice of work done. Should there be a discrepancy between the

value of the certificate submitted by the ME and the value calculated by the Main Contractor, the ME will be paid the amount determined by the Main Contractor, all still within 14 days.

A PMT meeting may then be called to discuss and resolve the differences.

B15006 PROVISION OF BRIDGING FINANCE TO CIDB REGISTERED 1 & 2 ME CONTRACTORS

The Main Contractor will make "bridging finance" available to the ME's (only CIDB grade 1 & 2), to a maximum of 20% of the package value, to act as start-up capital or to assist in purchasing materials and small items of plant, eg. weed eaters.

The amount of bridging finance provided to an ME will be paid in instalments as agreed to and set out in the Sub Contract agreement between the two parties.

B15007 MEASUREMENT AND PAYMENT

Item **Unit**

B15007.1 Conducting of skills audit and the development of a training plan..... Provisional Sum

A provisional sum is allowed for the conducting of a skills audit of the Local Labour, as well as the compilation of a training plan.

The provisional sum shall include full compensation for identification of pre-qualification criteria and training needs, staff assessment and evaluation prior to training, all technical research, identification of accredited training courses, and all other actions necessary for commencement of official training sessions in accordance with the specification.

Any expenditure under this item requires the written prior approval of the Employers Agent and Employer.

Item **Unit**

B15007.2 Presenting accredited training course for Local Labour/MEs..... Provisional Sum

The provisional sum shall include full compensation for presenting the courses, including lectures, demonstrations, on-site training and hands-on development, and improvement of maintenance personnel's skills to enable them to maintain and repair installations safely and efficiently at the satisfactory functional condition specified.

The provisional sum shall also include full compensation for the Contractor's time, appointment of the accredited trainer for the course, and for all material expenses such as paper hand-outs and slides for the whole group of trainees, the number of which shall be determined during development of the training course.

Any expenditure under this item requires the written prior approval of the Employers Agent and Employer.

Item **Unit**

B15007.3 Mark Up for Management of MEs ..... %

The percentage Mark Up tendered on the value of the ME's work shall include full compensation **for all** guidance, supervision, setting out and monitoring activities that may be deemed necessary to ensure the Works carried out by MEs are in accordance with the technical and OHS specifications and within the agreed timeframes.

The payment will be made on a monthly basis, based on the actual certificate value of the ME, for the said month.

Item	Unit
B15007.4 Provision of bridging finance to MEs (only CIDB 1 & 2)	%

The percentage tendered on the value of the bridging finance will cover all costs incurred such as interest, bank charges and any other costs.

Payment will be made on a monthly basis on actual bridging funds made available to the ME's for the particular month. Proof of funds made available for the month will be required before payment is made for this item.

Item	Unit
B15007.4 Provisional Sum to cater for ME Rate Variance	Prov Sum

The Provisional Sum shall cater for the difference in price between the value of works conducted at the Main Contractors tendered rates, versus that of the ME Contractors. This amount may not be more than 15% higher than that of the average price of works determined from the top five responsive tenderers for the specific framework agreement in which this contract is let The Main Contractor will get paid, in his certificate, the **actual value of the ME's work** under a new item "B15007.5 - Payment to ME Contractors" to be created in the payment certificates. The rate variance is merely to make an allowance for any anticipated financial difference in price between the two parties works, at Tender Stage and will not be used, as a payment item once the Contract is awarded.(Any savings will remain in the Contract to be used for additional work).

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-21/22-0019

FRAMEWORK AGREEMENTS FOR AD HOC ROUTINE MAINTENANCE WORKS TO VARIOUS PROVINCIAL ROADS IN THE SARAH BAARTMAN DISTRICT OVER A PERIOD OF 3 YEARS (TWO PER LMA – 18 APPOINTMENTS)

C3.5 : MANAGEMENT

C3.5.1 MANAGEMENT OF THE WORKS

C3.5.1.1 Applicable standards

The following documents and COLTO standards and associated specification data are applicable and form part of the Contract:

i) **Volume 1**: The General Conditions of Contract (2015 Edition), issued by SAICE, which the tenderer must purchase himself.
ii) **Volume 2**: The COLTO Standard Specifications for Road and Bridge Works for State Road Authorities (1998 Edition), issued by the Committee of Land Transport Officials which the tenderer must purchase himself.
iii) **Volume 3A**: Part 1 of this document (2 volumes)
iv) **Volume 3B**: Part 2 of this document (2 volumes)
v) **Volume 4**: Set of Drawings issued with Volume 3
vi) **Volume 5***:*The Routine Road Maintenance Procedures Manual as issued by the Department Roads and Public Works of the Eastern Cape (Version 1, February 2002)
vii) **Volume 6***:* Regravelling and Road Betterment Procedures Manual (Version : 3–Feb 2005)
viii) Guidelines for the Implementation of Labour-Intensive Infrastructure Projects under the Expanded Public Works Programme (EPWP).
ix) Health and Safety Specification (may be bound in at the back of Volume 3 or issued as a separate volume)
x) South African Road Traffic Signs Manual
xi) Occupational Health and Safety Act
xii) Environmental Management Programme

C3.5.1.2 Particular or Generic specifications

a) 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.

b) In addition the following Particular Specifications that are bound into this document will also apply:

- Section 1800 : Collection & Removal of Debris & Litter
- Section 1900 : Dayworks (provisional)
- Section 9100 : Controlling Vegetation Growth –Cutting
- Section 12000 : Environmental Management Programme implementation
- Section 13000 : Occupation Health & Safety specifications

- Section 15000 : ME Management & Training of Local Labour

C3.5.1.3 Selection of Contractor for individual work assignments

Two eligible Contractors will be appointed via Framework Agreement for each LMA. Works assignments will be allocated for a maximum duration of 12 months at a time. Once completed, a performance review will be undertaken to determine the suitability of further works being allocated to the specific service provider. The maximum value of Work Assignments which can be awarded to any one contractor in terms of this agreement shall not exceed the maximum amount allowed per annum based on the Contactors CIDB Grading inclusive of VAT.

The Department will first allocate works to the first preferred service provider (the service provider that scores the highest points in the tender evaluation). The second preferred service provider for a specific LMA will only receive works packages if the available budget allocated for the financial year is sufficient to accommodate two service providers affectively, or if the first appointed contractor can no longer fulfil his obligations..

For each Works assignment to be executed under this appointment the Department will identify the quantities of Works required and develop a schedule of quantities and price, based on the selected Contractors tendered / approved rates. The preferred Contractor will then be allocated the agreed Work assignment for that specific scope of works and value. Contract price Adjustment will be applicable to payment certificates (6.8.2)

Each specific works assignment shall be limited to a maximum duration of 12 months. On completion of the works assignment, the Contractor's Performance will be evaluated by the DMT consisting of the District Roads Engineer, District Manager and Head of Supply Chain in the specific district. Should the work have not been conducted to a satisfactory standard (within time, budget and to the required specifications) the Department shall have the right to decide not to award any further works assignments to the said contractor and remove said contractor from this Framework appointment.

C3.5.1.4 Planning and programming

The extent of the Works contained in the Bill of Quantities are purely fictitious and is only included to obtain a competitive tender. The Works will be set out on an "ad-hoc" basis per Works assignment.

The time for completion of each works assignment will be agreed to by the Employers Agent and Contractor. The total duration of the Framework contract will be 36 months, however, each specific Works assignment shall be limited to a **maximum duration of 12 months.**

The Employers Agent will determine the extent of the work to be executed in each Works assignment.

The Contractor should also note that the Department is intending various other contracts for a number of maintenance activities in addition to this Framework contract. Consequently it is possible that during the period of an awarded Works assignment, other contractors may be executing contracts simultaneously on the same sections of road requiring maintenance.

The Contractor should take cognisance of this for his programme and will be required to fully accommodate these contractors. No additional payment will be made for any inconvenience in this regard.

The Contractor shall submit his programme within the time stated during the assessment of the works assignment to the Employers Agent in bar chart form showing clearly, in addition to the requirements of Clause 5.6 of the General Conditions of Contract, the following:

- The various stages of work planned to be completed per month / week to suite the overall programme.
- Critical path activities
- Anticipated value of work to be done during each month / Works assignment.
- His labour resources schedule which must distinguish between the Contractor's permanent labour and his temporary local labour employment and ME sub-contractors.

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

- Expected weather conditions and their effects (e.g. whether wet or dry blading work).
- The accommodation and safeguarding of public access and traffic.
- Presence of other contractors on site (if any).
- All other actions required in terms of this document.

The Employers Agent will agree on a general programme of work per Works assignment with the Contractor and any changes to this programme will be agreed to by the Employers Agent. When drawing up his construction programme, the Contractor shall take into account the time for completion for the activity as indicated in the Preliminary Programme.

Once the Works assignment programme has been approved by the Employers Agent, the Contractor will be notified of **the work to be undertaken by means of a <u>Works Instruction</u> from the Employers Agent** (which should indicate the activity to be executed, the locality and quantity of Works as well as the applicable payment item).

Failure on the part of the Contractor to submit or to work according to the programme or revised programmes shall be sufficient reason for the Employers Agent to take steps as set out in Clause 5.13 of the General Conditions of Contract.

Certain activities may be restricted on certain roads on days with increased traffic flows. The Contractor must allow for these restrictions in his programme and no extension of time or claims in this regard will be considered. For this contract, the days with restrictions are indicated in the table below:

DATE	ACTIVITY TO BE RESTRICTED	PERIOD OF RESTRICTION
Weekends	All work activities.	From 16h00 on Friday till 07h00 on Monday
Long weekends		From 12h00 on day preceding, for duration
December holidays		Duration of holidays (taken as 15/12 – 08/01)

The Contractor will only be allowed to undertake work on the affected roads during these periods with the approval of the Employers Agent.

Should the Contractor fall behind his programme he shall submit a revised programme to the Employers Agent for approval, showing the variation to the original programme necessary to ensure completion of the Works, or any part thereof, within the time for completion as agreed to or any extended time granted.

Failure to produce a revised programme may prejudice the Contractor in any claim for an extension of time.

C3.5.1.5 Sequence of the works

The Employers Agent will agree on a programme of work per Works assignment with the Contractor and any changes to this programme will be finalised with the Contractor in advance. When drawing up the construction programme, the Contractor shall take into account the time for completion for the activity as indicated in the Preliminary Programme.

Failure on the part of the Contractor to submit or to work according to the approved programme or revised programmes shall be sufficient reason for the Employers Agent to take steps as set out in Clause 5.13 of the General Conditions of Contract.

C3.5.1.6 Methods and procedures

All work to be carried out will be in compliance with the following minimum requirements

- The Routine Road Maintenance Procedures Manual as issued by the Department Roads and Public Works of the Eastern Cape (Version 1, February 2002)

- Regravelling and Road Betterment Procedures Manual (Version : 3–Feb 2005)
- The OHS Act
- Environmental Management Programme
- Departmental Details drawings
- COLTO Standard Specifications for Road and Bridge Works for State Road Authorities (1998 edition)

C3.5.1.7 Materials and Road Condition Reports

Preliminary road condition surveys and road logs indicating the existing condition of the proposed roads to be maintained are available at the Employers Agent's offices for perusal during working hours.

Control Testing of Earthworks and Road Layers

The Contractor is required to carry out his own control testing, but if he so wishes, and agrees to abide by the results of the Employers Agent's check test, he may dispense with his own tests. However, should the Contractor wish to use the Employers Agent's testing facilities, he will be charged for the various tests at the rates ruling at the time.

Any additional tests requested by the Contractor or any retests required, due to failure of the initial tests, will be charged to the Contractor at the rates ruling at the time.

Process Control Testing

The Contractor is required to carry out his own control testing. The results of these control tests together with the location of the tests shall be submitted to the Employers Agent for approval. No payments will be made without this information, unless partial payment is allowed for special items in terms of the project specification.

Acceptance Control Testing

The Employers Agent may order that additional tests be carried out from time to time. A provisional sum is allowed for these additional tests. The cost of any additional tests that might fail, together with the remedial work ordered by the Employers Agent, will be for the account of the Contractor.

C3.5.1.8 Environment

The Contractor will prior to the commencement of any construction or repair work prepare and submit an Environmental Management Programme (EMPR), for approval by the Employers Agent.

The EMPR shall clearly demonstrate how the Contractor intends mitigating damage to the environment, as a result of their construction activities.

The Contractor shall further appoint an Environmental Control Officer (ECO), who shall inspect all construction related activities and who shall report on non-compliance items.

Further, the ECO will submit the Environmental Audits at monthly site meetings, for discussion by all role players.

a) Sand and dust control

The Contractor shall, for the duration of the contract, take appropriate measures to control the dust and soil movement which may arise due to his operations.

b) Environmental Management

The Contractor will be required to compile a comprehensive Environmental Management Programme (EMPR), which should address the management and monitoring of environmental impacts related to this repair contract.

The EMPR should therefore identify potential environmental impacts and should further demonstrate how there would be mitigated and controlled.

The Contractor shall be responsible for implementing and managing an Environmental Management Programme in terms of the particular specifications for the borrow pits. The Contractor's authorised agent shall report to the Employers Agent regarding compliance with the conditions as stipulated in the Environmental Management Programme.

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 Section 12000 of the Project Specifications. Where, in the opinion of the Employers Agent, the Contractor has not adhered to these requirements, the Contractor shall rectify the damage at his expense and to the satisfaction of the Employers Agent.

Trees and shrubs established in the landscaped areas of the road reserve may under no circumstances be disturbed without specific instruction from the Employers Agent for their removal. Trees and shrubs inadvertently destroyed by the Contractor shall be replaced with the equivalent at the Contractor's expense.

Disposal of any bituminous-based material shall only be at an approved location and by means of an approved method, arranged beforehand with the Employers Agent.

Storage sites for all bituminous products in the road reserve, or on private property, are to be approved by the Employers Agent prior to use. The containers used for storage shall be free of leaks and placed on a firm surface. No spoiling of any bituminous products shall be allowed in these areas. Unused or rejected products shall be removed from site and returned to the supplier. Solvents used for flushing spray tankers shall be treated likewise.

No separate payment items will be scheduled for the compliance by the Contractor with the EMPR. These costs will be deemed to be inclusive of the rates tendered for the works.

C3.5.1.9 Accommodation of traffic on public roads occupied by the contractor

The Works will be undertaken in a manner that will minimise the interference with public traffic, consistent with established routine road maintenance practices. Although inconvenience to road users will be inevitable, the Contractor must ensure that road users have continuous access on and to, a public road.

Temporary road traffic signs shall at all times be displayed at the works as specified on the drawings and in accordance with the requirements of this document, as well as the South African Road Traffic Signs Manual, in conjunction with Manual K56 "Safety at Roadworks in Rural Areas", and the Routine Road Maintenance Procedures Manual of the Department of Transport and Roads of the Eastern Cape. The Contractor may not commence constructional activities before adequate provision has been made to accommodate traffic in accordance with the above requirements.

The traffic signs shall be covered or removed when not required at night and over weekends. No diversions are generally required and the Contractor shall regulate the traffic with flagmen and take all precautions necessary to promote the safe and easy flow of traffic on or next to the roadway under repair.

The Contractor, if so instructed in writing, shall nevertheless provide a diversion at places with a high traffic safety risk. Except where otherwise specified, additional payment over and above payment under the payment items included in the Contract, will be made for the construction of the diversion and the additional measures required to control traffic as specified by the Employers Agent.

Should the Contractor neglect to apply the road traffic safety measures specified without due diligence, the Employers Agent may temporarily stop the works until the Contractor has rectified the situation or impose a penalty for each contravention of the requirements of the Specifications as detailed in Section 1500.

The Contractor will be responsible for the accommodation of traffic on, and maintenance of the existing roadways used by the public as instructed by the Employers Agent, from the date of site handover, to the issuing of the Certificate of Completion for the works as a whole.

<u>NOTE</u>: No separate payment items have been scheduled for the accommodation of traffic or traffic signage and all these costs will be deemed to have been included in the relevant payment items of the appropriate works.

The Contractor must ensure that a competent person, that can act as a Traffic Safety Officer, is present on site at all times to deal will all issues relating to traffic accommodation. This person will, at all times, be responsible for the construction, spacing, placement and maintenance of traffic control devices.

C3.5.1.10 Other Contractors on site

When drawing up his programme, the Contractor shall also, inter alia, take into consideration and make allowance for the presence of other contractors on site

C3.5.1.11 Testing, completion, commissioning, and correction of defects

The Routine Road Maintenance Procedures Manual (RRMPM) of the Department of Roads and Public Works of the Eastern Cape describes the causes and type of defects, as well as providing a guide on how to conduct the works. This is covered in the Scope of Works.

C3.5.1.12 Recording of weather

The Contractor will be responsible for recording and maintaining a daily log of weather conditions throughout the duration of the contract. During the execution of the Works, The Employers Agent's Representative will certify a day lost due to abnormal rainfall and adverse weather conditions only if less than 30% of the work force and plant on site could work during that specific working day.

C3.5.1.13 Format of communications

The Contractor will keep on site at all times a Site Instruction Book in which the Employers Agent's Representative will issue any Site Instructions for variations of the Work. All correspondence will be written, signed, copied to the Employer and Contractor. The Employers Agent will maintain a file of all original correspondence.

The Contractor shall furnish the Employers Agent daily with records, as per the Employers Web Based Reporting System of work executed by him for each activity. The records shall include information such as description, location, measurement, plant and labour hours, where applicable, and all other information the Employers Agent may require for the record and measurement purposes.

C3.5.1.14 Key personnel

A Schedule of Key Personnel is included in Volume 3 of the Contract document.

C3.5.1.18 Use of borrow pits

The Contractor is to obtain all gravel wearing course material from the existing or new borrow pits in the vicinity of the project, as instructed by the Employers Agent. The Contractor is to adhere to the specific requirements contained in the EMPR pertaining to work methods in borrow pits.

C3.5.1.19 Construction Regulations, 2014

The Contractor shall be required to comply with the Occupational Health and Safety Act, 1993: Construction Regulations, 2014 (the regulations) as promulgated in Government Gazette No 25207 and Regulation Gazette No 7721 of 18 July 2003. Non-compliance with these regulations, in any way whatsoever, will be adequate reason for suspending the Works.

The proposed type of work, materials to be used and potential hazards likely to be encountered on this Contract are detailed in the Scope of Works, the Bill of Quantities, the Drawings, and in

the Employers' Health and Safety specification (regulation 4(1) of the Construction Regulations 2014), which is bound into the Contract document.

The Contractor shall, in terms of regulation 5(1), provide a comprehensive Health and Safety Plan detailing his proposed compliance with the regulations, for approval by the Employer.

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

Payment items are included in the Schedule of Quantities to cover the Contractor's cost for compliance with the OHS Act and the abovementioned Regulations.

C3.5.1.20 HANDING OVER SITE, SETTING OUT AND CONFIRMING THE SCOPE OF WORKS WITH THE CONTRACTOR

The entire road reserve for each works assignment will be handed over to the Contractor at the commencement of the works.

The Contractor will be responsible for executing the repair and construction activities as specified in the agreed scope of works. He will work on only the road/s as agreed to and indicated in the approved programme.

The Employers Agent, the Contractor and supervisory staff shall together carry out a joint inspection at the time of the handing over of the site. During such an inspection the scope of the works will be set out for each of the roads / road sections indicating the various activities to be conducted, as well as making notes of all damaged fences, guardrails, signs and any other notable problems or features that exist.

The following matters are to be confirmed at the time of handing over and before the commencement of any work:

(i) Confirming position of the site camp and\or any additional temporary site camps that may be required.
(ii) The construction limits, lengths, widths and areas of routine maintenance or construction to be conducted for the various sections of road.
(iii) The determination of the trial section for each type of maintenance / construction activity to be performed.
(iv) The location of kilometre markers and reference beacons to be used for setting out purposes.
(v) The scope of remedial / repair / general maintenance and preparatory work to be carried out.
(vi) The location of the proposed stockpile areas and the responsibilities of the Contractor with regard to the road reserve area in terms of the clearing and grubbing if required, fencing, motor gates, stock grids, road markings, road signage, mowing of grass and the like.
(vii) The proposed method of accommodation of public traffic with regard to safety, sight distance, interference with existing road signs and road markings within the work section and providing advance warning before the work section.
(viii) The method of construction / treatment envisaged for each of the sections (sections to be receive edge break repair, crack sealing, light blading, pothole patching etc.) and the like, are to be confirmed and set out with the Contractor.
(ix) Supervisory, test control measures and procedures are to be confirmed.
(x) The position of all the existing pipe culverts (all hydraulic control structures), concrete lined cause ways and the like, is to be confirmed.
(xi) Confirm the position of all existing services.

C3.5.1.21 TRIAL SECTION

Before the Contractor commences with the construction/maintenance works, he shall demonstrate on a **test section** (for each type of maintenance activity) that the **equipment and processes he intends to use**, will enable him to execute the Works in accordance with the specified requirements. The trial sections for the various maintenance activities shall also serve as a basis to agree the interpretation of the Specifications for application during the Contract Period and the criteria and methods to be used by the Employers Agent for acceptance control.

Only when the trial sections have been satisfactorily completed in conformity with the specified requirements, will the Contractor be allowed to commence the maintenance/repair works. The Employers Agent shall, as far as is practical, select the location of the trial section at a position with characteristics which are representative of the general conditions to be found with the balance of the proposed works. The Employers Agent may require the construction of additional trial sections should the materials available or methods of construction significantly change during the course of the Contract.

No additional payment will be made for the demonstration at the trial section, other than for the work completed and accepted as part of the Works, at tender rates.

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-21/22-0019

FRAMEWORK AGREEMENTS FOR AD HOC ROUTINE MAINTENANCE WORKS TO VARIOUS PROVINCIAL ROADS IN THE SARAH BAARTMAN DISTRICT OVER A PERIOD OF 3 YEARS (TWO PER LMA – 18 APPOINTMENTS)

CONTRACT

PART 4 (OF 4) : SITE INFORMATION

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-21/22-0019

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C4 : SITE INFORMATION

C 4.1 **Scope**

The documentation included in this section describes the site as at the time of tendering to enable the tenderer to price his tender and to decide upon his method of working and programming.

Only actual information about physical conditions on the site and its surroundings have been included in this section and interpretation is a matter for the tenderers.

C 4.2 **Borrow pit Investigations**

Nil

C 4.3 **Subsoil Investigations, Borehole Records and Test Results**

Nil

C 4.4 **Reports obtained by the Employer concerning the physical conditions within the site or its surroundings, including mapping, hydro-graphic data and hydrological information**

Nil

C 4.5 **References to publicly available information about the site and its surroundings such as published papers and interpretations of the geotechnical investigation**

Nil

C 4.6 **Information about piped and other services below the surface of the site for contracts involving ground works and about hook-up and boundary details for contracts with plant interfaces, in addition to anything about the physical site which impacts upon the contract**

Nil

C 4.7 **Information about adjacent buildings and structures and about existing buildings and structures on the site (Restrictions for heavy loads etc)**

Nil

C 4.8 **Atmospheric and Environmental Criteria**

Nil

APPENDIX A
LOCALITY PLAN

Province of the EASTERN CAPE TRANSPORT

Limits of Liability and Disclaimer of Warranty EAS makes no warranty of any kind, expressed or implied, with regard to the data and shall not be held liable in any event for any incidential or consequential damages in connection with or arising out of the use of this data. The data remains the sole property of the CLIENT and may only be used for the purposes of a project with the prior written approval of the CLIENT.

N

Project Title: Framework Agreements For Routine Maintenance Works To Various Provincial Roads Over A Period of 3 Years (38 Appointmens)		
Drawing Title: Sarah Baartman District	*Drawing Date:* September 2019	Prepared by : SS Checked by : JT

APPENDIX B
EPWP FORMS

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

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)	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	**Total Work days**	**Total Training Days**	**Total work days & training days**
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	**TOTALS**																															**TOTALS**					0	0	0

Signature of CLO

Week 1 -2: Signature of Contractor Organisation

Week 3-4: Signature of Contractor Organisation

Week 1: Signature of Contractor

Week 2: Signature of Contractor

Week 3: Signature of Contractor

Week 4: Signature of Contractor

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

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		
											0		
20	**Totals for month**								**0**	**0**	**0**		

Signature Consultant

APPENDIX C

MONTHLY REPORT FORMS TO BE COMPLETED BY THE CONTRACTOR

PROVINCE OF THE EASTERN CAPE

DEPARTMENT OF TRANSPORT

TENDER NO. SCMU10-21/22-0019

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MONTHLY REPORT FORMS TO BE COMPLETED BY CONTRACTOR

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CONTRACTOR: ……..

CLAIM FOR PAYMENT NO: …… DATE: ……

I, the undersigned, ……..

in my capacity as ……..

of ……..

(hereinafter referred to as "the TRANSFEROR") (I having been duly authorised hereto by virtue of Resolution of the Board of Directors of the Transferor passed on the . . . . . .day of . . . . . 20. . . . . .) hereby warrant that the materials and goods listed are the Transferor's bona-fide property, ownership of which vests in the Transferor, and I hereby transfer, cede and assign all the Transferor's rights, title and interest in and to the said materials and goods unto and in favour

of ……..

(hereinafter referred to as "the TRANSFEREE"). Insofar as the Transferor retains actual control of the materials and goods, the right of ownership thereof passes to the Transferee by constitutum possessorium.

This transfer shall become effective upon conclusion of the Transferor receiving payment from the Transferee or from any other person on behalf of the Transferee for the materials and goods as Materials on Site (payment of retention money thereon excluded).

I further confirm that I am fully responsible for all materials and goods listed under this transfer of rights and that they have been insured adequately against all risks and will remain insured until they are built into or used in the permanent works and taken over by the Employer.

<u>TOTAL VALUE OF CLAIM FOR MATERIALS ON SITE IN ACCORDANCE WITH THE ATTACHED LIST :</u>

……

……

……(R……)

SIGNED: ……..

DATE: ……..

MONTHLY PROGRESS REPORT

xxx District	PROGRESS REPORT		xxx 2020									
SCMU10-20/21-00xx												
							PERIOD					
MUNICIPAL AREA	IN HOUSE OR OUTSOURCED PROJECT	ROAD NO.	SURFACED or GRAVEL	ACTIVITY CODE	ACTIVITY DESCRIPTION	UNIT	FROM	TO	PLANNED	ACTUAL	MMS NO.	COMMENTS
WEEK 1												
WEEK 2												
WEEK 3												
WEEK 4												
WEEK 5												
REPORT COMPILED BY: (PRINT NAME)			DESIGNATION				SIGNATURE			DATE		