

TENDER NUMBER: EPMLM/8/3/427

FOR: DICHOEUNG INTERNAL STREET

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C3.1 STANDARD SPECIFICATIONS

The standard specifications on which this contract is based are the **COLTO Standard Specifications for Road and Bridge Works for State Road Authorities 1998 edition**.

The following SANS specifications are also referred to in this document and the Contractor is advised to obtain them from Standards South Africa (a division of SABS) in Pretoria.

SANS 10396: 2003:	Implementing Preferential Construction Procurement Policies using Targeted Procurement Procedures
SANS 1914-1 to 6 (2002):	Targeted Construction Procurement
SANS 1921 – 1 (2004):	Construction and Management Requirements for Works Contracts Part 1: General Engineering and Construction Works
SANS 1921-5 (2004):	Generic Labour Intensive Specification Part 5: Earthworks.

and where accommodation of traffic is involved:

SANS 1921-2 (2004):	Construction and Management Requirements for Works Contracts Part 2: Accommodation of Traffic on Public Roads Occupied by the Contractor.
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C3.2: PROJECT SPECIFICATIONS

STATUS

The Project Specification, consisting of two parts, forms an integral part of the contract and supplements the Standard Specifications.

Part A contains a general description of the works, the site and the requirements to be met.

Part B contains variations, amendments and additions to the Standardized Specifications and, if applicable, the Particular Specifications.

In the event of any discrepancy between a part or parts of the Standardized or Particular Specifications and the Project Specification, the Project Specification shall take precedence. In the event of a discrepancy between the Specifications, (including the Project Specifications) and the drawings and / or the Bill of Quantities, the discrepancy shall be resolved by the Engineer before the execution of the work under the relevant item.

The standard specifications which form part of this contract have been written to cover all phases of work normally required for road contracts, and they may therefore cover items not applicable to this particular contract.

PART A: GENERAL

PS-1 PROJECT DESCRIPTION

The project entails the Construction of a ring Road in Dichoeung Village. The total length to be upgraded in this contract is approximately 0.82km of road and associated stormwater drainage system.

The road will be upgraded to a tarred surface. The works will include:

- Clearing of road reserve;
- Accommodation of traffic;
- Construction of road layer works and drainage structures;
- 0.820 km road of 6m width of 30mm thick Asphalt surfacing;
- Painting of white retro-reflective road markings and installation of road signs.
- De-establishment of site

PS-2 DESCRIPTION OF THE SITE AND ACCESS

2.1 Location of site

The site of works is located in Dichoeung village in the Ephraim Mogale Local Municipality, Sekhukhune District in Limpopo. The co-ordinates of the project are as follows:

- 24°38'13.47" S
- 29°26'45.23" E

2.2 Access to site

The contractor shall be responsible for the maintenance and reinstatement of damage caused by him or his agents/deliveries to vehicular access tracks and rights of way. No damage to fauna and flora located outside the limits of the road reserve will be permitted on the contract.

The contractor shall take cognizance of the aforementioned items concerning roads and tracks and allow for any costs in his Tender under the relevant section in the Bill of Quantities.

PS-3 DETAILS OF THE WORKS

A brief detail of the works for which this specification is applicable is as follows:

3.6 Climatic conditions

This route falls within the summer rainfall region of Limpopo in South Africa, with the rainy season lasting from approximately November to April.

Temperature:

This area experiences a hot semi-arid climate. Summer days are hot with temperatures varying between 26.3° - 27.8° C in October to March. Summer night temperatures are cool to mild between 13.4° - 16.6° C in October to March. Winter day temperatures are mild to hot varying between 19.6° - 25.2° C in April to September. Winter nights are cold with temperatures of 4.3° - 12.1° C in April to September.

Rainfall:

Dichoeung village, Mable Hall has little rainfall during the year. It receives about 471mm of rain per year, with most rainfall occurring during summer. It receives the lowest rainfall (3mm) in July and the highest (85mm) in January.

3.7 Labour recruitment conditions

A Project Steering Committee (PSC) will be established and is a vital means of communication between all parties involved with the project. The composition of the PSC comprises representation by the Employer, the Engineer and formal structures within the community (at least 4 people).

The contractor shall make use of these communication channels, and shall appoint from amongst his site personnel a responsible person to participate in the affairs of the PSC, and this representative may be also required to attend the monthly PSC meetings.

It is mandatory that the Contractor shall interact with the community via proactive project liaison and project participation by its leaders and constituted organisations and forums, as well as through the employment of its people, and these activities shall constitute essential facets of the project.

Local labour is to be used and the employment of such labour is to be done in conjunction with the PSC.

The PSC shall appoint a Community liaison officer (C.L.O.) (which shall be remunerated under the contract) who shall be in full time employ of the contract. The duties of the C.L.O. shall consist inter alia of the following:

- To be available on site daily between the hour of 07:00 and 17:00 and at other times as the need arises. His normal working day will extend from 07:00 in the morning until 17:00 in the afternoon.
- To communicate daily with regard to number and skills, to facilitate in labour disputes and to assist in their resolution.
- His/her remuneration shall be R4500 per Month.
- The labour/General worker rate shall be R150.00 as determined by the Municipality
- To attend all meetings in which the community and/or labour are present or are required to be represented.
- To attend all PSC meeting to report on labour.
- To assist in the identification and screening of laborers from the community in accordance with the contractor's requirements.

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- To advise and inform temporary laborers of their conditions of employment and to inform temporary laborers 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 community liaison, labour force etc.
- To attend monthly site meetings and report in writing on labour and contract matters.
- Keeping a data base of available labour.
- All such other duties as agreed upon between all parties concerned.
- Compile a list of available skills in the area (skills audit).

4.11 Construction in confined Areas

It may be necessary for the Contractor to work within confined areas. Except where provided for in the specifications, no additional payment shall be made for work done in restricted areas. In certain places the width of the fill material and pavement layers may decrease to zero and the working space may be confined. The method of construction in these confined areas largely depends on the Contractor's constructional plant.

However, the Contractor shall note that, unless provided for in terms of the scheduled payment items in the COLTO Standard Specifications or these project specifications, measurement and payment shall be in accordance with the specified cross sections and dimensions only, irrespective of the method used for achieving these cross sections and dimensions, and that the Tendered rates and amounts shall include full compensation for all special equipment and construction methods and for all difficulties encountered when working in confined areas and narrow widths, and at or around obstructions, and that no extra payment shall be made nor shall any claim for additional payment be considered in such cases.

PS-4 CONSTRUCTION AND MANAGEMENT REQUIREMENTS

4.1 General

The Contractor is referred to **SANS 1921: 2004 parts 1, 2 and 3: Construction and Management Requirements for Works Contracts**. These specifications shall be applicable to the contract under consideration and the Contractor shall comply with all requirements relevant to the project.

Certain aspects however require further attention as described hereafter.

4.2 Drawings (*Read with SANS 1921 – 1: 2004 clauses 4.1.7; 4.1.11 and 4.1.12*)

The reduced drawings which form part of the Tender documents shall be used for Tendering purposes only and is attached at the back of this document under section C4.3.

The contractor shall be supplied with three complete paper copies of the construction drawings free of charge. The Contractor shall at his own expense re-produce further paper prints required for the construction of the work.

At the completion of the Contract, the Contractor shall return to the Engineer all drawings, provided or made, during the contract period.

Any information which the Contractor has control over and which is required by the Resident Engineer to complete the as-built drawings shall be made available to the Resident Engineer before the Certificate of Completion is issued.

Only written dimensions may be used. Dimensions are not to be scaled from drawings unless ordered by the Engineer. The Engineer will supply all figures / dimensions which are not shown on the drawings. The levels or dimensions given on the drawings are subject to confirmation on site. The Contractor shall submit all levels and dimensions to the Engineer for confirmation before he commences with any structural construction work. The Contractor shall also check all clearances which are given on the drawings and inform the Engineer of any conflicting dimensions.

Any destination names on road signs which may be indicated on the drawings are subject to confirmation by the Engineer before these signs are manufactured.

4.3 Responsibilities for design and construction *(Read with SANS 1921 – 1:2004 Clause 4.2)*

4.3.1 The responsibility strategy followed in this contract shall be A.

4.3.2 The engineer responsible for the design in accordance with the specification is: Kago Consulting Engineer.

4.4 Planning, Programme and Method Statements *(Read with SANS1921-1:2004 clause 4.3)*

4.4.1 Preliminary programme

The Contractor shall include with his Tender a preliminary programme on the prescribed form to be completed by all Tenderers. The programme shall be in the form of a simplified bar chart with sufficient details to show clearly how the works will be performed within the time for completion as stated in the Contract Data.

Tenderers may submit Tenders for an alternative Time for Completion in addition to a Tender based on the specified Time for Completion. Each such alternative Tender shall include a preliminary programme similar to the programme above for the execution of the works, and shall motivate his proposal clearly by stating all the financial implications of the alternative completion time.

The Contractor shall be deemed to have allowed fully in his Tendered rates and prices as well as in his programme for all possible delays due to normal adverse weather conditions and special non-working days as specified in the Special Conditions of Contract, in the Project Specifications and in the Contract Data.

The following constraints shall be taken into account in preparing the preliminary construction programme which must be submitted with the Tender. These same constraints shall apply to the final construction programme.

- a) The Contract will be as Tendered by the contractor. Plant and personnel requirements to complete the project must be incorporated in the Tender and shown on the programme.
- b) A high standard of traffic accommodation
- c) The relocation of services
- d) Ancillary works by Emerging Contractors

4.4.2 Programme in terms of Clause 5.6 of the General Conditions of Contract

It is essential that the construction programme, which shall conform in all respects to Clause 5.6 of the General Conditions of Contract, be furnished within the time stated in the Contract Data. The preliminary programme to be submitted with the Tender shall be used as basis for this programme..

The following must be stated on the programme:

- (a) 2 weeks must be allocated at the start of the project for the setting out and confirmation of survey benchmarks. No work will be allowed prior to the survey confirmation process being completed.
- (b) The quantity of work applicable to each bar item as well as the rate at which the work will be completed.
- (c) A budget of the value of completed work, month by month, for the full contract period.
- (d) The critical path.
- (e) Work to be undertaken by Local Contractor (if applicable)
- (f) Training Courses
- (g) Schedule of plant and recourses to be utilized

The Contractor's attention is also drawn to clause 5.7 of the General Conditions of Contract 2015.

4.4.3 Time for Completion

The Time for Completion shall 14 months as indicated under section C1.2. Contract Data.

4.4.4 Delay in Completion

The Contractor shall organise the Works in such a manner that no delays occur. Delays due to faulty organisation or lack or shortage of materials or labour or co-operation with other parties or to any other cause within the control of the Contractor will not be counted and full power is reserved by the Engineer to order the Contractor to expedite the work should the work, in the opinion of the Engineer, not progress in a satisfactory way.

4.5 Quality Assurance (QA) *(Read with SANS 1921 – 1: 2004 clause 4.4)*

The Contractor will be solely responsible for the production of work that complies with the Specifications to the satisfaction of the Engineer. To this end it will be the full responsibility of the Contractor to institute an appropriate Quality Assurance (QA) system on site. The Engineer will audit the Contractor's quality assurance (QA) system on a regular basis to verify that adequate independent checks and tests are being carried out and to ensure that the Contractor's own control is sufficient to identify any possible quality problems which could cause a delay or failure.

The Contractor shall ensure that efficient supervisory staff, the required transport, instruments, equipment and tools are available to control the quality of his own workmanship in accordance with his QA-system. His attention is drawn to the fact that it is not the duty of the Engineer or the Engineer's representative to act as foreman or surveyor.

4.6 Management and disposal of water *(Read with SANS 1921 – 1 : 2004 clause 4.6)*

The Contractor shall pay special attention to the management and disposal of water and storm water on the site. It is essential that all completed works or parts thereof are kept dry and properly drained. Claims for delay and for repair of damage caused to the works as a result of the Contractor's failure to properly manage rain and surface water, will not be considered.

4.7 Earthworks *(Read with SANS 1921 – 1 : 2004 clause 4.10)*

4.7.1 Borrow pits and spoil areas

The borrow pits to be used for this contract shall be pointed out at the Site Inspection. The Contractor shall be permitted to use only those borrow pits approved by the Engineer.

The spoil sites shall be determined on site in conjunction with the Engineer, the PSC, and the local communities. The Contractor shall be permitted to use only those spoil areas approved by the Engineer.

Should the Contractor wish to use any other spoil area for the disposal of soil, rubble, vegetation, etc, its use shall be subject to the approval of the Engineer and the landowner.

4.8 Testing *(Read with SANS 1921 – 1 : 2004 clause 4.11)*

4.8.1 Process control

The Contractor shall arrange for his own process control tests. The Contractor may establish his own laboratory on site for this purpose, or he may employ the services of an independent commercial laboratory. Whatever method is used, the Contractor must submit the results of tests carried out on materials and workmanship when submitting work for acceptance by the Engineer. The costs for these tests shall be deemed to be included in the relevant rates and no additional payment will be made for testing as required.

4.8.2 Acceptance control

The process control test results submitted by the Contractor for approval of materials and workmanship may be used by the Engineer for acceptance control. However, before accepting any work, the Engineer shall have his own acceptance control tests carried out by the dedicated site laboratory as approved by the client. The cost of acceptance testing shall be to the account of the client.

4.9 Site Establishment *(Read with SANS 1921 – 1 : 2004 clause 4.14)*

4.9.1 Contractor's camp site and depot

The Contractor is responsible to provide a suitable site for his camp and to provide accommodation for his personnel and laborers. If the Employer can make any specific site available to the Contractor, such site will be pointed out to the Contractor.

The chosen site shall be subject to the approval of the Engineer and the Project Steering Committee (PSC). Possible locations for a campsite shall be pointed out at the Site inspection. The Contractor shall conform to all local authority, environmental and industrial regulations.

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

The Contractor shall provide security watchmen for the contract as he deems fit at no extra cost for the Employer. The Contractor must ensure that all his employees as well as the employees of his subcontractors are able to identify themselves as members of the construction team.

4.9.2 Accommodation of Employees

No employees except for security guards will be allowed to sleep or be accommodated on the site in urban areas.

No housing is available for the Contractor's employees and the Contractor shall make his own arrangements to house his employees and to transport them to site.

No informal housing or squatting will be allowed.

The Contractor shall provide the necessary ablution facilities at his camp site and the site of the works for the use of his employees. Chemical toilets will only be allowed where temporary facilities have to be provided.

4.10 Survey beacons *(Read with SANS 1921 – 1 : 2004 clause 4.15)*

The Contractor shall take special precautions to protect all permanent survey beacons or pegs such as bench-marks, stand boundary pegs and trigonometrical beacons, regardless whether such beacons or pegs were placed before or during the execution of the Contract. If any such beacons or pegs have been disturbed by the Contractor or his employees, the Contractor shall have them replaced by a registered land surveyor at his own cost.

4.11 Existing Services *(Read with SANS 1921 – 1: 2004 clause 4.17)*

The Contractor shall make himself acquainted with the position of all existing services before any excavation or other work likely to affect the existing services is commenced.

It is the contractors responsibility to identified services that will interact with the construction work. The contractor will be responsible to do the application and negotiation on the relocation of the sifting of services.

The Contractor will be held responsible for any damage to known existing services caused by or arising out of his operations and any damage shall be made good at his own expense. Damage to unknown services shall be repaired as soon as possible and liability shall be determined on site when such damage should occur.

Services belonging to the following service owners will be encountered.

SERVICE OWNER	TYPE OF SERVICE
Eskom	Electrical/Power lines
Telkom	Telephone lines
Greater Sekhukhune Local Municipality	Waterlines and reticulation within the rural area
Department of Water and Sanitation	Bulk water lines
Tribal Authority	Land owner, graves
Private owners	Fence line

A provisional amount is included in the bill of quantities for the protection and/or shifting of services.

Two weeks prior to commencing construction activities in a particular area, the Contractor shall also diligently enquire of local landowners as to whether there are any other known services which have not been shown on the drawings but which may be affected by the construction activities in that area, and any such services shall be brought to the attention of the Engineer immediately. The contractor shall make provision in his programme for the location and/or shifting of services.

The Contractor shall take note of the requirements of clause 1202 of the standard specifications with regard to services.

4.12 Health and Safety (Read with SANS 1921 - 1: 2004 clause 4.18)

4.12.1 General statement

It is a requirement of this contract that the Contractor shall provide a safe and healthy working environment and to direct all his activities in such a manner that his employees and any other persons, who may be directly affected by his activities, are not exposed to hazards to their health and safety. To this end the Contractor shall assume full responsibility to conform to all the provisions of the Occupational Health and Safety Act (OHSA) No 85 and Amendment Act No 181 of 1993, and the OHSA 1993 Construction Regulations 2014 issued on 7 February 2014 by the Department of Labour.

For the purpose of this contract the Contractor is required to confirm his status as mandatory and employer in his own right for the execution of the contract by entering into an agreement with the Employer in terms of the Occupational Health and Safety Act in the form as included in section C1.5.

4.12.2 Health and Safety Specifications and Plans

(a) Employer's Health and Safety Specification

The Employer's Health and Safety Specification is included in Section C3.3, of the Tender documents as part of the Particular Specifications.

(b) Tenderer's Health and Safety Plan

The Tenderer shall submit with the Tender his own documented Health and Safety Plan he proposes to be implement for the execution of the work under the contract. The Health and Safety Plan must at least cover the following:

- (i) a proper risk assessment of the works, risk items, work methods and procedures in terms of Regulations 9 to 30;
- (ii) pro-active identification of potential hazards and unsafe working conditions;
- (iii) provision of a safe working environment and equipment;
- (iv) statements of methods to ensure the health and safety of subcontractors, employees and visitors to the site, including safety training in hazards and risk areas (*Regulation 7*);
- (v) monitoring health and safety on the site of works on a regular basis, and keeping of records and registers as provided for in the Construction Regulations;
- (vi) details of the Construction Supervisor, the Construction Safety Officers and other competent persons he intends to appoint for the construction works in terms of Regulation 8 and other applicable regulations; and
- (vii) details of methods to ensure that his Health and Safety Plan is carried out effectively in accordance with the Construction Regulations 2014.

The Contractor's Health and Safety Plan will be subject to approval by the Employer, or amendment if necessary, before commencement of construction work. The Contractor will not be allowed to commence work, or his work will be suspended if he had already commenced work, before he has obtained the Employer's written approval of his Health and Safety Plan.

Time lost due to delayed commencement or suspension of the work as a result of the Contractor's failure to obtain approval for his safety plan, shall not be used as a reason to claim for extension of time or standing time and related costs

4.12.3 Cost of compliance with the OHS Act Construction Regulations

The rates and prices Tendered by the Contractor shall be deemed to include all costs for conforming to the requirements of the Act, the Construction Regulations and the Employer's Health and Safety Specification as applicable to this contract.

Should the Contractor fail to comply with the provisions of the Construction Regulations, he will be liable for penalties as provided in the Construction Regulations and in the Employer's Health and Safety Specification.

4.13 Requirements for Accommodation of Traffic (*Read with SANS 1921 - 2 : 2004*)

4.13.1 General

The Contractor will be responsible for the safe and easy passage of public traffic past and on sections of roads of which he has occupation or where work has to be done near traffic.

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

Accommodation of traffic, where applicable shall comply with SANS 1921-2: 2004: Construction and Management Requirements for Works Contracts, Part 2: Accommodation of Traffic on Public Roads occupied by the Contractor. The Contractor shall obtain this specification from Standards South Africa if accommodation of traffic will be involved on any part of the construction works.

4.13.2 Basic Requirements

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

The Contractor shall ensure that all road signs, barricades, delineators, flagmen and speed controls are effective and that courtesy is extended to the public at all times.

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Failure to maintain road signs, warning signs or flicker lights, etc, in a good condition shall constitute ample reason for the Engineer to suspend the work until the road signs, etc, have been repaired to his satisfaction.

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

The Contractor shall construct and maintain all temporary drainage works necessary for temporary deviations.

The Contractor shall provide and grant access to persons whose properties fall within or adjoin the area in which he is working.

4.13.3 Payment

The Contractor's Tendered rates for the relevant items in the Bill of Quantities shall include full compensation for all possible additional costs which may arise from this, and no claims for extra payment due to inconvenience as a result of the modus operandi will be considered.

4.14 Management of the environment (Read with SANS 1921 - 1 : 2004 clause 4.19)

Respect for the environment is an important aspect of this contract and the Contractor shall pay special attention to the following:

4.14.1 Natural Vegetation

The Contractor shall confine his operation to the limits of the road reserve for the purpose of constructing the works and where applicable detours, shall be sited in consultation with the Engineer and the local communities.

Only those trees and shrubs directly affected by the works and such others as the Engineer may direct in writing shall be cut down and stumped. The natural vegetation, grassing and other plants shall not be disturbed other than in areas where it is essential for the execution of the work or where directed by the Engineer.

4.14.2 Fires

The Contractor shall comply with the statutory and local fire regulations. He shall also take all necessary precautions to prevent any fires. In the event of fire the Contractor shall take active steps to limit and extinguish the fire and shall accept full responsibility for damages and claims resulting from such fires which may have been caused by him or his employees.

4.14.3 Environmental Management Plan

In addition to the above all requirements according to the Environmental Management Plan as detailed in C3.3, Particular Specifications, will be adhered to.

PS-5 Expanded Public Works Programme (EPWP) labour intensive specification

5.1. Labour Regulations

5.1.1 Payment for the labour-intensive component of the works

Payment for works identified in the Project Specifications as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the scope of work. Any non-payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict.

5.1.2 Applicable labour laws

The Ministerial Determination for Special Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice N° R347 of 4 May 2012, as reproduced below, shall apply to works described in the scope of work as being labour.

5.1.3 Introduction

This document contains the standard terms and conditions for workers employed in elementary occupations on a Special Public Works Programme (EPWP). These terms and conditions do NOT apply to persons employed in the supervision and management of a EPWP.

In this document –

- (a) “department” means any department of the State, implementing agent or contractor;
- (b) “employer” means any department, implementing agency or contractor that hires workers to work in elementary occupations on a EPWP;
- (c) “worker” means any person working in an elementary occupation on a EPWP;
- (d) “elementary occupation” means any occupation involving unskilled or semi-skilled work;
- (e) “management” means any person employed by a department or implementing agency to administer or execute an EPWP;
- (f) “task” means a fixed quantity of work;
- (g) “task-based work” means work in which a worker is paid a fixed rate for performing a task;
- (h) “task-rated worker” means a worker paid on the basis of the number of tasks completed;
- (i) “time-rated worker” means a worker paid on the basis of the length of time worked.

5.1.4 Terms of Work

5.1.4.1 Workers on a EPWP are employed on a temporary basis or Contract Basis.

5.1.5 Normal Hours of Work

5.1.5.1 An employer may not set tasks or hours of work that require a worker to work–

- (a) more than forty hours in any week
- (b) on more than five days in any week; and
- (c) for more than eight hours on any day.

5.1.5.2 An employer and worker may agree that a worker will work four days per week. The worker may then work up to ten hours per day.

5.1.5.3 A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks allocated (based on a 40-hour week) to that worker.

5.1.6 Meal Breaks

5.1.6.1 A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.

5.1.6.2 An employer and worker may agree on longer meal breaks.

5.1.6.3 A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.

5.1.6.4 A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

5.1.7 Special Conditions for Security Guards

- 5.1.7.1 A security guard may work up to 55 hours per week and up to eleven hours per day.
- 5.1.7.2 A security guard who works more than ten hours per day must have a meal break of at least one hour or two breaks of at least 30 minutes each.

5.1.8 Daily Rest Period

Every worker is entitled to a daily rest period of at least eight consecutive hours. The daily rest period is measured from the time the worker ends work on one day until the time the worker starts work on the next day.

5.1.9 Weekly Rest Period

Every worker must have two days off every week. A worker may only work on their day off to perform work which must be done without delay and cannot be performed by workers during their ordinary hours of work (“emergency work”).

5.1.10 Sick Leave

- 5.1.10.1 Only workers who work four or more days per week have the right to claim sick-pay in terms of this clause.
- 5.1.10.2 A worker who is unable to work on account of illness or injury is entitled to claim one day’s paid sick leave for every full month that the worker has worked in terms of a contract.
- 5.1.10.3 A worker may accumulate a maximum of twelve days’ sick leave in a year.
- 5.1.10.4 Accumulated sick-leave may not be transferred from one contract to another contract.
- 5.1.10.5 An employer must pay a task-rated worker the worker’s daily task rate for a day’s sick leave.
- 5.1.10.6 An employer must pay a time-rated worker the worker’s daily rate of pay for a day’s sick leave.
- 5.1.10.7 An employer must pay a worker sick pay on the worker’s usual payday.
- 5.1.10.8 Before paying sick-pay, an employer may require a worker to produce a certificate stating that the worker was unable to work on account of sickness or injury if the worker is –
 - (a) absent from work for more than two consecutive days; or
 - (b) absent from work on more than two occasions in any eight-week period.
- 5.1.10.9 A medical certificate must be issued and signed by a medical practitioner, a qualified nurse or a clinic staff member authorised to issue medical certificates indicating the duration and reason for incapacity.
- 5.1.10.10 A worker is not entitled to paid sick-leave for a work-related injury or occupational disease for which the worker can claim compensation under the Compensation for Occupational Injuries and Diseases Act.

5.1.11 Maternity Leave

- 5.1.11.1 A worker may take up to four consecutive months’ unpaid maternity leave.
- 5.1.11.2 A worker is not entitled to any payment or employment-related benefits during maternity leave.
- 5.1.11.3 A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.
- 5.1.11.4 A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.
- 5.1.11.5 A worker may begin maternity leave –
 - (a) four weeks before the expected date of birth; or
 - (b) on an earlier date –
 - (i) if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or
 - (ii) if agreed to between employer and worker; or
 - (c) on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.

5.1.11.6 A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.

5.1.12 Family responsibility leave

5.1.12.1 Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances -

- (a) when the employee's child is born;
- (b) when the employee's child is sick;
- (c) in the event of a death of –
 - (i) the employee's spouse or life partner;
 - (ii) the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.

5.1.13 Statement of Conditions

5.1.13.1 An employer must give a worker a statement containing the following details at the start of employment –

- (a) the employer's name and address and the name of the EPWP;
- (b) the tasks or job that the worker is to perform; and
- (c) the period for which the worker is hired or, if this is not certain, the expected duration of the contract;
- (d) the worker's rate of pay and how this is to be calculated;
- (e) the training that the worker will receive during the EPWP.

5.1.13.2 An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.

5.1.13.3 An employer must supply each worker with a copy of these conditions of employment.

5.1.14 Keeping Records

5.1.14.1 Every employer must keep a written record of at least the following –

- (a) the worker's name and position;
- (b) in the case of a task-rated worker, the number of tasks completed by the worker;
- (c) in the case of a time-rated worker, the time worked by the worker;
- (d) payments made to each worker.

5.1.14.2 The employer must keep this record for a period of at least three years after the completion of the EPWP.

5.1.15 Payment

5.1.15.1 An employer must pay all wages at least monthly in cash or by cheque or into a bank account.

5.1.15.2 a worker may not be paid less than the minimum EPWP wage rate of **R150.00** per day or per task. This will be adjusted annually on the 1st of November in line with inflation (Available CPI as provided by StatSA six (6) weeks before implementation)

5.1.15.3 A task-rated worker will only be paid for tasks that have been completed.

5.1.15.4 An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.

5.1.15.5 A time-rated worker will be paid at the end of each month.

5.1.15.6 Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.

- 5.1.15.7 Payment in cash or by cheque must take place –
- (a) at the workplace or at a place agreed to by the worker;
 - (b) during the worker's working hours or within fifteen minutes of the start or finish of work;
 - (c) in a sealed envelope which becomes the property of the worker.
- 5.1.15.8 An employer must give a worker the following information in writing –
- (a) the period for which payment is made;
 - (b) the numbers of tasks completed or hours worked;
 - (c) the worker's earnings;
 - (d) any money deducted from the payment;
 - (e) the actual amount paid to the worker.
- 5.1.15.9 If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it
- 5.1.15.10 If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

5.1.16 Deductions

- 5.1.16.1 An employer may not deduct money from a worker's payment unless the deduction is required in terms of a law. i.e UIF
- 5.1.16.2 An employer must deduct and pay to the SA Revenue Services any income tax that the worker is required to pay.
- 5.1.16.3 An employer who deducts money from a worker's pay for payment to another person must pay the money to that person within the time period and other requirements specified in the agreement law, court order or arbitration award concerned.
- 5.1.16.4 An employer may not require or allow a worker to –
- (a) repay any payment except an overpayment previously made by the employer by mistake;
 - (b) state that the worker received a greater amount of money than the employer actually paid to the worker; or
 - (c) pay the employer or any other person for having been employed.

5.1.17 Health and Safety

- 5.1.17.1 Employers must take all reasonable steps to ensure that the working environment is healthy and safe.
- 5.1.17.2 A worker must –
- (a) work in a way that does not endanger his/her health and safety or that of any other person;
 - (b) obey any health and safety instruction;
 - (c) obey all health and safety rules of the EPWP;
 - (d) use any personal protective equipment or clothing issued by the employer;
 - (e) report any accident, near-miss incident or dangerous behaviour by another person to their employer or manager.

5.1.18 Compensation for Injuries and Diseases

- 5.1.18.1 it is the responsibility of the contractor to arrange for all persons employed on a EPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.
- 5.1.18.2 A worker must report any work-related injury or occupational disease to their employer or manager.
- 5.1.18.3 The employer must report the accident or disease to the Compensation Commissioner.
- 5.1.18.4 An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.

5.1.19 Termination

- 5.1.15.1 The employer may terminate the employment of a worker for good cause after following a fair procedure.
- 5.1.19.2 A worker will not receive severance pay on termination.
- 5.1.19.3 A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.
- 5.1.19.4 A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.
- 5.1.19.5 A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.

5.1.20 Certificate of Service

- 5.1.20.1 On termination of employment, a worker is entitled to a certificate stating –
- (a) the worker's full name;
 - (b) the name and address of the employer;
 - (c) the EPWP on which the worker worked;
 - (d) the work performed by the worker;
 - (e) any training received by the worker as part of the EPWP;
 - (f) the period for which the worker worked on the EPWP;
 - (g) any other information agreed on by the employer and worker.

5.1.21 Contractor's default in payment to Labourers and Employees

Any dispute between the Contractor and labourers, regarding delayed payment or default in payment of fair wages, if not resolved immediately may compel the Employer to intervene.

The Employer may, upon the Contractor defaulting payment, pay the moneys due to the workers not honoured in time, out of any moneys due or which may become due to the Contractor under the Contract.

5.1.22 Provision of Hand tools

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

5.1.23 Reporting

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

- Signed Muster rolls/pay sheets of temporary workers and permanent staff detailing the number, category, gender, rate of pay and daily attendance.
- Plant utilization returns
- Progress report detailing production output compared to the programme of works intensive and which are undertaken by unskilled or semi-skilled workers.

9.2 Labour intensive competencies of supervisory and management staff

Contractors having a CIDB contractor grading designation of 3CE and higher shall only engage supervisory and management staff in labour intensive works who have either completed, or for the period 1 April 2004 to 30 June 2006, are registered for training towards, the skills programme outlined in Table 1.

The managing principal of the contractor, namely, a sole proprietor, the senior partner, the managing director or managing member of a close corporation, as relevant, having a contractor grading designation of 1GB, 2 GB, 3 GB and 4 GB shall have personally completed, or for the period 1 April 2004 to 30 June 2006 be registered on a skills programme for the NQF level 2. All other site supervisory staff in the employ of such contractors must have completed, or for the period 1 April 2004 to 30 June 2006 be registered on a skills programme for, the NQF level 2 unit standards or NQF level 4 unit standards.

Table 1: Skills programme for supervisory and management staff

Personnel	NQF level	Unit standard titles	Skills programme description
Team leader / supervisor	2	Apply Labour Intensive Construction Systems and Techniques to Work Activities	This unit standard must be completed, and any one of these 3 unit standards
		Use Labour Intensive Construction Methods to Construct and Maintain Roads and Storm water Drainage	
		Use Labour Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour Intensive Construction Methods to Construct, Repair and Maintain Structures	
Foreman/ supervisor	4	Implement labour Intensive Construction Systems and Techniques	This unit standard must be completed, and any one of these 3 unit standards
		Use Labour Intensive Construction Methods to Construct and Maintain Roads and Storm water Drainage	
		Use Labour Intensive Construction Methods to Construct and Maintain Water and Sanitation Services	
		Use Labour Intensive Construction Methods to Construct, Repair and Maintain Structures	
Site Agent / Manager (i.e. the contractor's most senior representative that is resident on the site)	5	Manage Labour Intensive Construction Processes	Skills Programme against this single unit standard

5.2 Employment of unskilled and semi-skilled workers in labour-intensive works – According to SANS 1914-5.

5.2.1 Requirements for the sourcing and engagement of labour.

5.2.1.1 Unskilled and semi-skilled labour required for the execution of all labour intensive works shall be engaged strictly in accordance with prevailing legislation and SANS 1914-5, Participation of Targeted Labour.

5.2.1.2 The rate of pay set for the EPWP per task or per day is **R 150.00/day or/task** as set out by the Ephraim Mogale Local Municipality.

5.2.1.3 Tasks established by the contractor must be such that:

- a) the average worker completes 5 tasks per week in 40 hours or less; and
- b) the weakest worker completes 5 tasks per week in 55 hours or less.

5.2.1.4 The contractor must revise the time taken to complete a task whenever it is established that the time taken to complete a weekly task is not within the requirements of 5.2.1.3.

5.2.1.5 The Contractor shall, through all available community structures, inform the local community of the labour intensive works and the employment opportunities presented thereby. Preference must be given to people with previous practical experience in construction and / or who come from households:

- a) where the head of the household has less than a primary school education;
- b) that has less than one full time person earning an income;
- c) where subsistence agriculture is the source of income.
- d) those that are not in receipt of any social security pension income

5.2.1.6 The Contractor shall endeavours to ensure that the expenditure on the employment of temporary workers is in the following proportions:

- a) 55 % women;
- b) 40% youth who are between the ages of 18 and 35; and
- c) 2% on persons with disabilities.

5.3 Specific provisions pertaining to SANS 1914-5

5.3.1 Definitions

Targeted labour: Unemployed persons who are employed as local labour on the project.

5.3.2 Contract participation goals

5.3.2.1 There is no specified contract participation goal for the contract. The contract participation goal shall be measured in the performance of the contract to enable the employment provided to targeted labour to be quantified.

5.3.2.2 The wages and allowances used to calculate the contract participation goal shall, with respect to both time-rated and task rated workers, comprise all wages paid and any training allowance paid in respect of agreed training programmes.

5.3.3 Terms and conditions for the engagement of targeted labour

Further to the provisions of clause 3.3.2 of SANS 1914-5, written contracts shall be entered into with targeted labour.

5.3.4 Variations to SANS 1914-5

5.3.4.1 The definition for net amount shall be amended as follows:
Financial value of the contract upon completion, exclusive of any value added tax or sales tax which the law requires the employer to pay the contractor.

5.3.4.2 The schedule referred to in 5.2 shall in addition reflect the status of targeted labour as women, youth and persons with disabilities and the number of days of formal training provided to targeted labour.

5.3.5 Training of targeted labour

5.3.5.1 The contractor shall provide all the necessary on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract in a manner that does not compromise worker health and safety.

5.3.5.2 The cost of the formal training of targeted labour will be funded by the provincial office of the Department of Labour. This training should take place as close to the project site as practically possible. The contractor, must access this training by informing the relevant provincial office of the Department of Labour in writing, within 14 days of being awarded the contract, of the likely number of persons that will undergo training and when such training is required. The employer must be furnished with a copy of this request.

5.3.5.3 A copy of this training request made by the contractor to the DOL provincial office must also be faxed to the EPWP Training Director in the Department of Public Works– Cinderella Makunike, Fax Number 012 328 6820 or email cinderella.makunike@dpw.gov.za Tel: 083 677 4026.

5.3.5.4 The contractor shall be responsible for scheduling the training of workers and shall take all reasonable steps to ensure that each beneficiary is provided with a minimum of six (6) days of formal training if he/she is employed for 3 months or less and a minimum of ten (10) days if he she is employed for 4 months or more.

5.3.5.5 The contractor shall do nothing to dissuade targeted labour from participating in training programmes.

5.3.5.6 An allowance equal to 100% of the task rate or daily rate shall be paid by the contractor to workers who attend formal training, in terms of 5.3.5.1 to 5.3.5.5 above.

5.3.5.7 Proof of compliance with the requirements of 5.3.5.1 to 5.3.5.5 must be provided by the Contractor to the Employer prior to submission of the final payment certificate.

PART B. PROJECT SPECIFICATION MATTERS RELATING TO THE STANDARD SPECIFICATIONS

B1 PROJECT SPECIFICATIONS REFERRING TO THE STANDARD SPECIFICATIONS AND ADDITIONAL SPECIFICATIONS

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.

1 STANDARD AMENDMENTS TO THE STANDARD SPECIFICATIONS ISSUED BY COLTO

No amendments have been issued.

2 PROJECT SPECIFICATIONS REFERRING TO THE STANDARD SPECIFICATIONS AND ADDITIONAL SPECIFICATIONS

In certain clauses the Standard Specifications allow a choice to be specified in the project specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternatives or additional requirements applicable to this Contract are contained in this part of the Project Specifications. It also contains some additional specifications required for this particular Contract.

The number of each clause and each payment item in this part of the Project Specifications consists of the prefix B followed by a number corresponding to the number of the relevant clause or payment item in the Standard Specifications. The number of a new clause or a new payment item which does not form part of a clause or a payment item in the Standard Specifications and 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.

B2 SECTION 1100: DEFINITIONS AND TERMS

B1115 GENERAL CONDITIONS OF CONTRACT

REPLACE CLAUSE 1115 WITH THE FOLLOWING:

The General Conditions applicable to this Contract shall be the General Conditions of Contract for Construction Works, third edition, 3rd print (2015).

All references to the COLTO General Conditions of Contract 1998 in COLTO Standard Specification for Road and Bridge Works, 1998 are to be deleted and replaced where applicable by references to the Conditions of Contract stated in this clause as detailed in the table hereunder. The context of the reference to the GCC is also noted.

The Contractor shall note that whereas every effort has been made to include all of the affected clauses in the table, there may be some omissions. In every case, however, the Conditions of Contract specified in this clause and amended in the Contract Document shall apply and the Contractor shall be responsible for interpretation of the equivalent clause.

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CHANGES TO REFERENCES BY THE COLTO STANDARD SPECIFICATIONS TO THE COLTO GENERAL CONDITIONS OF CONTRACT AND SAICE GCC 2015

COLTO Standard Specification		COLTO General Conditions of Contract 1998 (GCC)		GCC 2015	
Clause No	Page No	Clause No	Description or Reference	Clause No	Description or Reference
1115	1100-2		Definition of GCC		
1204	1200-2	15	Construction programme	5.6	Programme
1204	1200-2		General reference to GCC		
1206	1200-3	14	Setting out of works		
1209(a)	1200-4		General references to GCC		
1209(e)	1200-5	52(2)	Valuation of material brought onto site	6.9	Vesting of Plant and materials
1210	1200-5	54(1)	Certificate of practical completion	5.14.4	Certificate of completion
1212(1)	1200-7	49(2)	CPA on alternative designs	6.8	CPA on alternative designs
1215	1200-9	45(2)	Extension of time for completion due to abnormal rainfall.	5.12	Extension of time for practical completion
1217	1200-10	35	Care of the works	8.2	Care of the works
1303(ii)	1300-1		General reference to GCC		
1303(iii)	1300-1	49	Price adjustment Item 13.01(a)	6.8	Price adjustment Item 13.01(a)
1303(iii)	1300-2	49	Price adjustment Item 13.01(b)	6.8	Price adjustment Item 13.01(b)
1303(iii)	1300-1	53	Variations exceeding 20%		
1303(iii)	1300-2	53	Variations exceeding 20%		
1303	1300-2	12	Payment Item 13.01(c)	5.3	Payment Item 13.01(c)
1303	1300-2	45	Payment Item 13.01(c)	5.12	Payment Item 13.01(c)
1403(c)(ii)	1400-4	40(1)	Variation for rented accommodation	6.3	Variations
1505	1500-3	40(1)	Variation for temporary drainage	6.3	Variations
Item 15.08	1500-8	48	Payment of Provisional Sum	6.6	Provisional sums and prime cost sums
Item 15.09	1500/8	48	Payment of Provisional Sum	6.6	Provisional sums and prime cost sums
Item 15.11	1500-8	48	Payment of Provisional Sum	6.6	Provisional sums and prime cost sums
Note (2)	3100-4	40	Payment for prospecting for materials	6.6	Provisional sums and prime cost sums
3204(b)(iii)	3200-2	40	Payment for oversize material	6.3	Variations
3303(b)	3300-2	2	Engineer's decisions, with reference to materials classification	3	Employer's Agent
Item 44.06	4400-3		General reference to GCC, PC Sums	6.6	Provisional sums and prime cost sums
Item 45.06	4500-3		General reference to GCC, PC Sums	6.6	Provisional sums and prime cost sums
5803(c)	5800-3	40	Variation, for landscaping	6.3	Variations
5805(d)	5800-4	40	Variation, for grassing	6.3	Variations
Item 58.10	5800-10	48	Payment for Extra Work	6.6	Provisional sums and prime cost sums
8103(c)	8100-1	40	Variation, for testing material	6.3	Variations
Item 81.02	8100-26		General reference to GCC, Provisional Sums		
Item 81.03	8100-26	22	Clearance of site on completion, with reference to core drilling	5.15.1	Clearance of site on completion, with reference to core drilling

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B1155 WORK IN RESTRICTED AREAS

REPLACE THE CONTENTS OF THIS CLAUSE WITH THE FOLLOWING:

"No additional or extra over payment will be made for work in restricted areas except for work near structures as defined in section 6100."

ADD THE FOLLOWING CLAUSES:

"B1156 OTHER DEFINITIONS

The COLTO Standard Specifications for Roads and Bridge Works for State Road Authorities (1998 edition) has been written for all contractors, employers and engineers. Similarly, the works and the site are not defined and the general nature of the entities and elements that collectively constitute construction under a contract are characterized by the use of lower case letters throughout.

These project specifications continue to use lowercase spellings in order to avoid the appearance of the capitalised and non-capitalised words to describe or prescribe the same elements of work required on this project. However, for the purposes of this contract the following definitions shall apply:

Employer's Agent

Employer's Agent (Clause 1.1.1.16 of Conditions of Contract) shall have the same meaning and be synonymous with Engineer/engineer throughout the Contract document.

General Items

General Items (Clause 1.1.1.21 of Conditions of Contract) shall have the same meaning and be synonymous with Preliminary and General items.

Contractor

The Contractor and the contractor is the same persona defined under clause 1.1.1.9 of the General Conditions of Contract, but who will only be formally identified by the completed Form of Acceptance C1.1.2 in this document and which will be bound into the final contract document.

Employer

The Employer and employer is the same persona and is defined in clause 1.1.1.15 in the General Conditions of Contract.

Site

The site is defined in clause 1.1.1.29 of the General Conditions of Contract. It is bound by the limits of construction as shown in the drawings or the title of the project and extends to also include the following:

- Areas outside the construction zone areas where accommodation of traffic is placed.
- All borrow pits defined in the applications approved by the relevant Department of Minerals and Energy.
- All haul roads constructed by the Contractor for purposes of access.
- Any non-adjacent sites specified in the contract documentation.
- The Contractors and his subcontractors camp sites

Works

The works is described in Part C3 of this document and is as defined in clause 1.1.1.33 of the General Conditions of Contract and prescribed in Part A section A2 of this document.

B1157 **LABOUR-OPTIMISING CONSTRUCTION**

The cost-effective employment of as great a portion of labour as is practically and technically feasible to produce the standard of construction required by the Specifications: Therefore, the economic substitution of plant and mechanical equipment in favour of available labour using hand tools, on condition that this method is not more expensive than the conventional construction practices.

B1158 **SABS SPECIFICATIONS**

Where reference is made in this specification or the standard specifications to SABS specifications, the latest published national standard shall be applicable. Use:

https://www.sabs.co.za/Standard-Sales/docs/SABS_Catalogue_of_December_2018_abridged.pdf

For the most up-to-date versions of the various standards.

B1159 **AGGREGATE SIZE**

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

Aggregate size	New aggregate size
26,5	28
19	20
13,2	14
9,5	10
6,7	7
4,75	5
2,36	2
1,18	1

B1160 **PROCESS CONTROL**

Process control means all testing required to be carried out 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 Engineer.

B1161 **ACCEPTANCE CONTROL**

Acceptance control means whatever testing the Engineer 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.

Both the process and acceptance control testing will be carried out by an on-site laboratory for the Engineer.

B1162 **MONTHLY PAYMENTS**

The number of months that has been indicated for items in the Bill of Quantities that are to be billed monthly is the duration of the Construction Period only, unless it is clearly indicated that the number of months includes the duration of the Mobilisation Period."

B3 SECTION 1200: GENERAL REQUIREMENTS AND PROVISIONS

B1202 SERVICES

ADD THE FOLLOWING:

"The Contractor must be aware of existing services in the area of the Works that will affect his programme of work. It is therefore of the utmost importance for the Contractor to work in close conjunction with the owners or authorities controlling these services to ensure that the services are not disrupted in any way as a result of the Works.

Before work commences, the Contractor shall contact all private owners or public authorities controlling services to allow them to protect, move or relocate a service as required, or to confirm that all such work has been completed.

No payment will be made for inconvenience to the Contractor due to services crossing the Site or any authority working on such services, nor will delays caused by such works be accepted as a basis for claiming an extension of time for completing the Works."

Any cost of repairs, replacement and/or installation of the stations and equipment resulting from the contractor's negligence or unauthorised action shall be to the contractor's account."

B1204 PROGRAMME OF WORK

INSERT THE FOLLOWING BEFORE THE FIRST PARAGRAPH:

"A network-based programme in accordance with the precedence method shall be provided, showing the various activities in such detail as the Engineer may require. The programme shall be updated monthly in accordance with the progress made by the Contractor.

Failure to comply with these requirements entitles the Engineer to use a programme based on his own assumptions to evaluate claims for extension of time for completion of the works, or for additional compensation."

ADD PARAGRAPH (c):

"(c) Programming requirements

The Contractor's initial and all subsequent adjusted programmes to be submitted in terms of Clause 5.6.1 of the Conditions of Contract, shall show and when relevant describe in detail the entire extent of the work to be carried out, as described in or can reasonably be inferred from Part C3: Scope of Works of this document.

In addition to the requirements detailed in Clause 5.6.2 of the Conditions of Contract and with specific reference to Clause 5.6.2.5 thereof the following additional programming information shall be incorporated into the Contractor's initial and all subsequently adjusted programmes as specified in B1204(c)(i) and(ii).

(i) Format

The initial and adjusted programmes shall:

- (a) Be in the form of a network programme in accordance with the critical path method; and
- (b) Show all linkages between activities that clearly identify sequence, floats and critical path
- (c) Indicate the start and end dates and duration of all construction activities and identify the critical path
- (d) Production rates; and

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- (e) Take full cognizance of all the Contractor's risks and obligations in terms of the Contract.

The Programme and all adjustments thereto shall also be provided to the Engineers in electronic digital format using the MS PROJECT (latest version) software, unless otherwise agreed in writing with the Engineer.

- (ii) Additional information

The following programming information shall be incorporated into the Contractor's initial programme and all subsequently adjusted programmes:

- (a) Time related items, in respect of the following:
- (i) Mobilisation Period which includes the time to submit documentation before commencing to carry out the Works – refer to Clauses 1.1.35 and 5.3.1 of C1.2 - Contract Data
 - (ii) Construction Period - refer to Clause 1.1.1.36 of C1.2 - Contract Data
 - (iii) Due Completion date - refer to Clause 1.1.1.14 of C1.2 - Contract Data
- (b) All special non-working days defined in the Contract Data.
- (c) The expected delays defined in B1215: Extension of time resulting from inclement weather.
- (d) The following restricted working condition:
- (i) During the Contractor's annual shutdown period between December and January, the Contractor shall maintain two-way traffic within the contract limits.
- (e) Meeting the requirements of the environmental management plan
- (f) The time needed for preparation and approval of the various mix designs specified in the relevant construction sections of the Scope of Works.

B1205 WORKMANSHIP AND QUALITY CONTROL

INSERT THE FOLLOWING BEFORE THE FIRST PARAGRAPH:

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

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

DELETE THE SECOND, THIRD, FOURTH AND FIFTH PARAGRAPHS AND REPLACE WITH THE FOLLOWING:

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

B1206 THE SETTING-OUT OF WORK AND PROTECTION OF BEACONS

REPLACE THE FIRST PARAGRAPH WITH THE FOLLOWING:

"The Contractor shall comply with all legal provisions in regard to surveying and setting out work.

The Engineer has established survey beacons on site from which the Contractor can set out the Works. The position and co-ordinates of the permanent survey beacons have been shown on the Drawings. The Contractor shall be responsible for the protection of all these survey beacons and reference points from handing over of the beacons to the Contractor until completion of the Works.

Detail setting out of the Works from the established beacons shall be the responsibility of the Contractor. Such setting out shall be executed by a registered surveyor. No separate payment shall be made in respect of such setting out, such work being deemed as included in the rates tendered for construction of the Works."

B1207 **NOTICES, SIGNS AND ADVERTISEMENTS**

DELETE THE FINAL PARAGRAPH AND REPLACE WITH THE FOLLOWING:

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

B1209 **PAYMENT**

(b) Rates to be inclusive

IN THE THIRD LINE OF THE FIRST PARAGRAPH, INSERT "together with the payment of VAT as a separate item, "AFTER THE WORD "quantities,".

ADD THE FOLLOWING SUBCLAUSES:

"(g) Payment certificates

With reference to Clause 6.10.1 of the General Conditions of Contract, the Engineer's Certificate will only be issued after he has received a draft certificate prepared by the Contractor at his own expense in the form prescribed by the Engineer. The cost of duplicating and delivering copies of the certificate to the Contractor, the Engineer and the Employer shall be borne by the Contractor. The Engineer and the Employer require a total of five sets of A4-sized paper copies.

(h) Trade names

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

(i) Work in confined areas

Except where provided for in the specifications and the Bill of Quantities, no extra payment shall be made nor shall any claim for additional payment be considered for construction in restricted or confined areas. The omission of standard pay items from the Bill of Quantities shall be taken to be deliberate and any additional costs incurred shall be included in the tendered rates."

B1210 **CERTIFICATE OF PRACTICAL COMPLETION OF THE WORKS**

ADD THE FOLLOWING PARAGRAPH:

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

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- (i) In the case of partial completion, the estimated cost to complete the outstanding work is less than 2% of the estimated cost to construct the whole section or sections.
- (ii) In the case of the whole Works, the estimated cost to complete the outstanding work is less than 2% of the tendered value of work plus the cost of any variation or extra work orders, but excluding CPA and VAT.
- (iii) The written list of outstanding items of work can be completed within 28 days of the list having been accepted in writing by the Contractor."

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

ADD THE FOLLOWING TO THE LAST PARAGRAPH OF SUBCLAUSE (d):

"These written statements shall be handed to the Engineer before the final certificate will be issued. Failing to obtain these written statements from all landowners and authorities concerned, the period of maintenance will be extended including all conditions related to such an extension, until such time that all these statements are obtained.

The obtaining of any such written statements will not relieve the Contractor of the execution of any of his obligations to the satisfaction of the landowner or authority concerned, and to the approval of the Engineer."

B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL

ADD THE FOLLOWING:

"Extension of time for completion in terms of Clause 5.12 of the General Conditions of Contract in respect of abnormal rainfall shall be determined in terms of Method (ii) (The Critical Path Method) as described under Clause 1215 of the Standard Specifications. This formula does not take account of flood damage that could cause further or concurrent delays.

The Critical Path Method

The critical path method is specified in the project specifications for determining extension of time resulting from abnormal rainfall and it shall be applied as follows:

A delay caused by inclement weather conditions will be regarded as a delay only if, in the opinion of the Engineer all progress on the item/s of work on the critical path of the working programme of the Contractor has been brought to a halt. Delays on working days only (based on a five-day working week) will be taken into account for the extension of time, but the Contractor shall make provision in his programme of work for an expected delay of "n" working days caused by normal rainy weather, for which he will not receive any extension of time. **The value of "n" shall be given in the project specifications by the Engineer.**

Extension of time during working days will be granted to the degree to which actual delays as defined above exceed the number of "n" working days as mentioned in the project specifications.

The Value of "n" for this is indicated in the Table Below (derived from the average number of days when rainfall of 10 mm or more falls during normal rainy season using records from Rainfall Station **Polokwane weather station (0677802BX) for the period 2006 to 2016** are reproduced in the table hereunder.

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<p><i>Table 1 – RAINFALL RECORDS FOR PERIOD: 2006 – 2016</i></p> <p><i>RAINFALL STATION: Polokwane Lat: 23.8570 Lon: 29.451 Height 1226m</i></p> <p><i>Average No of Days with Rainfall exceeding 10mm:9.8 days/year</i></p> <p><i>Average Rainfall: 488.6mm/year station no: 0677802BX</i></p>												
MON	AVE	ST	N DAY	NUM	1	5.1	10.1	20.1	50.1	100.1	MAX R	MAX RAIN
MON		DEV	RAIN	MON	5	10	20	50	100	900	DAY	DATE
MON	AVE	ST	N DAY	NUM	1	5.1	10.1	20.1	50.1	100.1	MAX R	MAX RAIN
MON		DEV	RAIN	MON	5	10	20	50	100	900	DAY	DATE
JAN	65.9	39.3	65.9	11	3.4	2.1	1.3	0.7	0	0	38	1/18/2013
FEB	47.3	49.7	47.3	11	1.6	0.9	1.1	0.6	0	0	49	2/26/2006
MAR	58.4	33.2	58.4	11	3	1.3	1.1	0.7	0.1	0	51.5	3/27/2006
APR	43.3	46.6	43.3	11	1.5	1	0.7	0.5	0.1	0	68	4/4/2011
MAY	10.4	14	10.4	11	0.5	0.4	0.3	0.1	0	0	29.2	5/8/2009
JUN	1.7	3.6	1.7	11	0.3	0	0.1	0	0	0	12	6/10/2009
JUL	2.4	4.3	2.4	11	0.3	0.1	0.1	0	0	0	12.1	7/4/2007
AUG	2.3	5.6	2.3	11	0.2	0	0.1	0	0	00	19.2	8/15/2011
SEP	6.6	8.2	6.6	11	0.4	0.4	0.1	0.1	0	0	22.5	9/4/2015
OCT	48.1	29.5	48.1	11	1.5	0.7	1.4	0.6	0	0	38.2	10/29/2009
NOV	97.7	40.5	97.7	11	3.1	2	1.3	1.5	0.2	0	65.5	11/12/2008
DEC	104.6	56.3	104.6	11	3.8	1	1.7	1.9	0.1	0	55	12/16/2014
YR	488.6		67.9		19.5	9.8	9.2	6.8	0.5	0	488.6	

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B1222 USE OF EXPLOSIVES

REPLACE PARAGRAPH (g) WITH THE FOLLOWING:

"(g) The Contractor shall, seven (7) days before each blasting operation is carried out, advise the Engineer thereof in writing. Any such blasting operation shall be confirmed with the Engineer twenty-four (24) hours prior to execution. The Contractor shall make all the necessary arrangements to keep the public and the provincial traffic authorities fully informed with regard to the closures of the road for blasting purposes."

ADD THE FOLLOWING PARAGRAPH:

"(h) Where blasting needs to be carried out within the road reserve of the existing road, it shall only be allowed between 10:00 and 14:00. The road may not be closed for a period longer than thirty (30) minutes during which time all blasting shall be carried out, debris removed from the road surface and the road made safe and passable for traffic."

B1224 THE HANDING OVER OF THE ROAD RESERVE

ADD THE FOLLOWING PARAGRAPH:

"The Contractor shall carry out any maintenance work within the road reserve that the Engineer may require during the time for completion of this Contract. Such maintenance shall typically comprise the routine clearing of litter, the clearing and repair of drainage, repair of guardrails and any structural damage caused by traffic during the contract period."

B1228 LEGAL PROVISIONS

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 37305 of 7 February 2014. 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 Project Specifications, Bill of Quantities and Drawings, as well as in the Employers' health and safety specifications (regulation 5(1)) of the Construction Regulations 2014, which are bound in the Contract document).

The Contractor shall in terms of regulation 7(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 the Construction Regulations and no extension of time will be considered for delays due to non-compliance with the abovementioned plan or regulations.

A payment item is included in the Bill of Quantities to cover the Contractor's cost for compliance with the OHS Act and the abovementioned regulations.

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."

ADD THE FOLLOWING CLAUSES:

"B1230 REPORTING OF ACCIDENTS

The Contractor shall report every accident which occurs on the road, within the extent of the Works, to the Engineer, within twenty-four (24) hours of such accident occurring, irrespective of whether such accident has a bearing on damage to the Works or to persons, property or things. The report must be in writing and must contain full particulars of the accident. Photographs of each accident shall also be included in the report. The Engineer has the right to conduct any or all enquiries, either on the Site or elsewhere, as to the causes and consequences of any such accident. The Contractor shall also keep a comprehensive record of all accidents which occur on the road and shall make such records available to the Engineer on demand.

B1231 TRAINING

Structured training shall be provided to temporary personnel involved in the Contract in accordance with the provisions set out in Part D. The Contractor's selection of the candidates shall be approved by the Project Liaison Committee and the Engineer, subject to the required entrance levels. All training courses must be offered through approved accredited training organisations.

The Contractor shall provide the following for the training:

- (a) A venue with sufficient lighting, electric power points and furniture;
- (b) All necessary stationery, consumables and study material;
- (c) Transport to and from the training venue if the training is not delivered on Site;
- (d) Wages for candidates attending Engineering (technical) skills training during working hours;
- (e) Payment to approved training organisations for the provision of training.

NB: Only technical skills and entrepreneurial training may take place during normal working hours. Generic training may only take place after hours. All training courses shall commence within one month of handing over the Site and be complete before the end of the Contract Period."

B1232 MEASUREMENT AND PAYMENT

Item	Unit
B12.01 Relocation and protection of existing services:	
(a) Utility services:	
(i) Relocation of services and payments to service owners	Provisional Sum
(ii) Handling cost and profit in respect of subitem B12.04(a)(i)	percentage (%)

The provisional sum item shall be paid in accordance with the provisions of the General Conditions of Contract subclause 6.6.1 as amended by the variations to the General Conditions of Contract. The tendered percentage is a percentage of the amount actually spent under the prime-cost item, which shall include full compensation for the profit in connection with providing the specified service.

Item	Unit
B12.05 Excavation by hand to determine the position existing services:	cubic metre (m3)

The unit of measurement shall be the cubic metre of material removed by hand to expose the existing services.

The tendered rate shall include full compensation for all labour and tools required for removing the material.

Item	Unit
B12.06 CETA Accredited Training	
(a) Technical Skills.....	Prov Sum
(b) Generic and Management Skills.....	Prov Sum
(c) Training Venue.....	Lump Sum
(d) Remuneration of workers undergoing technical skills training - Wages and Salaries of Local labour employed by the contractor and subcontractor in respect of training periods for on-site training by contractor during which no productive work is executed... Provisional (P) sum	(P) sum
(e) Contractors charge to allow handling and profit in respect of subitem 12.06((a), (b) and (d))	percentage (%)

The prime cost item shall be paid in accordance with the provisions of the General Conditions of Contract sub-clause 6.6.2 as amended by Particular Conditions of Contract. The tendered percentage is a percentage of the amount actually spent under the prime-cost item, which shall include full compensation for the profit in connection with providing the specified service.

Payment of 50% of the amount quoted shall be kept in retention until such time as training certificates have been duly issued by the service provider.

Item	Unit
B12.07 Remuneration of Community Liaison Officer and PLC	
(a) Community Liaison Officer	provisional (P) sum
(b) Project Co-ordinating Committee	provisional(P) sum
(c) Handling cost and profit in respect of subitem B12.07(a and b)	percentage (%)

The prime cost item shall be paid in accordance with the provisions of the General Conditions of Contract sub-clause 6.6.2 as amended by Particular Conditions of Contract. The tendered percentage is a percentage of the amount actually spent under the prime-cost item, which shall include full compensation for the profit in connection with providing the specified service.

Item	Unit
B12.10 Compensation to land owners.	Prov Sum
(a) Cost of compensation to land owners	Prov Sum
(b) Handling costs and profit in respect off sub-clause B12.10 a)	%

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

The tendered % is a % of the actual amount spent under sub-items B12.10 a), which shall include full compensation for the handling costs and profit of the contractor.

Item	Unit
B12.11 Remuneration of student training	
(a) Student training	provisional sum
(b) Handling costs and profit in respect of sub-item B12.11 (a) percentage (%)	percentage (%)

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

The tendered percentage is a percentage of the amount actually spent under the sub-item B12.09 (a), which shall include full compensation for the handling costs of the contractor, and the profit in connection with providing student training.”

Item	Unit
B12.12 Contractor’s initial obligations in respect of the Occupational Health And Safety act (OHS), Covid-19 Regulations and Construction regulations 2014	Lump Sum

The full amount will be paid in one instalment only once: -

- (a) The contractor has notified the Provincial Director of the Department of Labour in writing of the project and to obtain construction permit.
- (b) The contractor has made the required initial appointments of employees and sub-contractors.
- (c) The client has approved the contractor’s Health and Safety Plan.
- (d) Compliance with the Covid-19 Regulations
- (e) The contractor has set up his Health and Safety File.

The tendered sum shall include full compensation to the Contractor for compliance with all the requirements of the OHS Act and Regulations (including the Construction Regulations, 2014) at all times for the full duration of the Contract, as described in clause B1228 of the project specifications. The successful Tenderer shall provide the Engineer with a complete breakdown of this tendered sum.

This sum will be paid to the Contractor in equal monthly amounts subject to proper and/or substantial compliance.

B12.13 Submission of the Health and Safety File.....	Lump Sum
---	----------

The tendered sum shall include full compensation to the Contractor for compliance with all the requirements with regard to the Health and Safety File and Approval.

B12.14 Contractor’s initial obligations in respect of the EMP.....	Lump Sum
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The tendered sum shall include full compensation to the Contractor for compliance with all the requirements of the EMP

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B4 SECTION 1300: CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS

B1301 GENERAL REQUIREMENTS

(c) Legal and contractual requirements and responsibility to the public

ADD THE FOLLOWING PARAGRAPH:

"The Contractor shall comply with all statutory and contractual requirements of the Environmental Management Programme, as included in the Project Document.

Separate items will be scheduled under payment item B13.01 (The contractor's general obligations) to cover the following components of the Contractor's preliminary and general costs, Contractor's General items (Clause 1.1.1.21 of the Conditions of Contract):

- (i) fixed,
- (ii) value-related and
- (iii) time-related in respect of the

1. Mobilisation Period:

Shall be the number of days as specified in Clause 1.1.1.35 in the Contract Data.

The Contractor shall note that on this Contract all costs associated with this period shall be deemed to be included in other rates.

2. Construction Period:

Shall be the number of days within which the Contractor has to complete the construction of the Works as specified in Clause 1.1.1.36 in the Contract Data, and as adjusted by such extensions of time or acceleration as may be allowed in terms of the Contract."

ADD THE FOLLOWING NEW SUBCLAUSE:

"(d) Contractor's ablution facilities

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

B1301 PAYMENT

Item

B13.01 The Contractor's general obligations:

DELETE SUBITEM(c) AND REPLACE WITH THE FOLLOWING:

- (c) Time related obligations:
- | | |
|--------------------------|-------|
| (i) Mobilisation Period | days |
| (ii) Construction Period | month |

INSERT THE FOLLOWING PARAGRAPH AFTER THE FOURTH PARAGRAPH:

"Should the combined total tendered for subitems (a), (b), and (c) exceed 15% of the Tender Sum (excluding CPA, contingencies and VAT), the tenderer shall state his reasons in writing for tendering in this manner. The tenderer's attention is drawn to Form B1: Contractor's establishment on Site (bound in this Volume) to be completed by the tenderer."

After the paragraph starting with "Should the combined" Insert the following:

"In the 11th paragraph, the following amendments apply:

Delete "from the date on which the contractor has received the letter of acceptance in terms of clause 12 of the general conditions of contract" *and replace with* "for subitem 13.01(c)(i) Mobilisation Period from the Commencement Date in terms of Clause 1.1.1.5 of the General Conditions of Contract, until the end of the Mobilisation Period and for subitem 13.01(c)(ii) Construction Period from the end of the Mobilisation Period.

Payment for the Mobilisation Period shall only be made if such item B13.01(c)(i) is included in the Bill of Quantities".

DELETE THE SEVENTEENTH PARAGRAPH COMMENCING WITH "The tendered rate per month for subitem B13.01(c) ..." *AND REPLACE WITH:*

"The tendered rate per month for subitem B13.01(c) represents full compensation for that part of the Contractor's general obligations which is mainly a function of construction time. The tendered sum will be paid monthly, pro rata for parts of a month, from the Commencement Date until the end of the period for completion of the Works, plus any extension thereof as provided in Clause 5.12 of the General Conditions of Contract, provided that –

- (a) Should the works be certified as having been completed before the Due Completion Date, the Contractor will then be entitled to payments in regard to the unexpired period up to the approved Due Completion Date."

ADD THE FOLLOWING AT THE END OF THIS PAY ITEM:

"The amount payable to the Contractor for time-related costs arising from extensions of time granted by the Employer, where the Contractor is fairly entitled to such compensation in terms of Clause 5.12.3 of the General Conditions of Contract, shall be calculated by taking account of only payment items for which the unit of measurement is 'month'. All pay items for which the unit of measurement is 'month' shall be deemed to be based upon an average of 30 days per month."

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B13.01 Contractor's time related obligation in respect of the month Occupational Health and Safety Act and Construction Regulations.

Payment of the rate per month shall include full compensation for all the contractor's obligation relevant to the Occupational Health and Safety Act No. 85 and Amendment Act No.181 of 1993, and OHS Act 1993 Construction Regulations 2003 issued on the 18 July 2003 by the Department of Labour.

The rate must also include a full-time Traffic Safety Officer who will be full-time on site for the duration of the contract.

B13.01 Contractor's time related obligation in respect of the month Environmental Management Plan.

Payment of the rate per month shall include full compensation for all the contractor's obligations relevant to EMP.

The rate must also include a full-time Environmental Officer who will be full-time on site for the duration of the contract.

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B5 SECTION 1400: HOUSING, OFFICES AND LABORATORIES FOR THE ENGINEER'S SITE PERSONNEL

B1402 OFFICES AND LABORATORIES

(a) General

ADD THE FOLLOWING AT THE END OF THE FIRST PARAGRAPH:

"Burglar-proofing shall comply with the requirements of CKS 338."

(b) Offices

ADD THE FOLLOWING SUBSUBCLAUSES:

"(xvi) The electric refrigerator shall have a capacity of at least 200 litres.

(xviii) Steel plan cabinets shall be able to accommodate one hundred and fifty A0-size drawings hanging vertically from approved holders

(xix) The electric refrigerator shall have a capacity of at least 200 litres.

(xx) Cell phones shall be supplied to the Engineer's site staff for the duration of the Contract. The Prime Cost Sum shall also include for the cost of all telephone calls in connection with contract administration."

(c) Laboratories

IN THE SECOND LINE OF THE SECOND PARAGRAPH, REPLACE "drawings" WITH "figure included in the project document or on the Drawings".

ADD THE FOLLOWING TO SUBSUBCLAUSE (xiv):

"The lengths of the baths are governed by the heating and water-circulation apparatus and the number of cubes to be stored, and must be approved by the Engineer before the baths are constructed."

ADD THE FOLLOWING TO SUBSUBCLAUSE (xv):

"The freezer compartment of the refrigerator shall have a capacity of approximately 50% of the volume of the refrigerator."

ADD THE FOLLOWING SUBCLAUSE:

"(i) Computers and printers

When instructed by the Engineer, the Contractor shall provide approved new computer equipment, including software and printers for use by the Engineer's site personnel. The type of equipment and software shall be as instructed by the Engineer and payment for equipment and maintenance shall be made through item B14.03.

All equipment provided shall be kept fully serviceable at all times by the Contractor. The Contractor shall repair/replace any defective equipment within 48 hours after notification by the Engineer's staff. The Contractor shall also be responsible to provide all paper and ink cartridges required by the Engineer.

At the end of the Contract, the equipment and software shall revert back to the Contractor."

B1403 HOUSING

(c) Rented accommodation

REPLACE THE FULL STOP AT THE END OF THE FIRST SENTENCE OF SUBSUBCLAUSE (c)(ii) WITH A COMMA AND ADD "and for all services connected with such accommodation."

B1408 SERVICES

(b) Water, electricity and gas

ADD THE FOLLOWING:

"The power supply shall be regulated by a suitable voltage regulator in order to maintain a constant current and voltage level at all times to prevent damage to the office and laboratory equipment and related machinery during power surges. Payment for the voltage regulator shall be deemed to be included in the rates tendered for the supply of power. In the event of damage to the office and laboratory equipment and related machinery because of a faulty voltage regulator, the Contractor shall be liable for payment of all repair or replacement costs of such damaged items."

(c) Maintenance

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The Contractor shall supply all labour, equipment and materials required for keeping the offices, laboratories, ablution units, car-ports at the offices and laboratories, and the housing for labourers in a neat and clean condition, and shall immediately undertake repairs requested by the Engineer to the offices, laboratories, ablution units, car-ports, rented houses and the housing for labourers. The Contractor is not responsible for keeping rented houses in a clean and neat condition, nor for tending to or caring for the gardens."

B1406 MEASUREMENT AND PAYMENT

Item

Unit

The variation items in the BOQ are self-explanatory.

Measurement and payment in respect of the provisional and prime sums items shall be made in accordance with the provision of the general conditions of contract.

The tendered percentages are percentages of the amount actual spent, which shall include full compensation for handling costs of the contractor and profit in connection with the payment of the cost of services relating to the use by the engineer's site staff of the services.

Add the following item:

Item

Unit

B14.01 Provision of offices, accommodation and laboratory

- a) Office accommodation for the Resident Engineer staff, including all furniture, services and carports. **Lump-Sum**

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(b) 80m² laboratory including all furniture and fittings, installation for soils and asphalt testing and services, excluding apparatus.
Lump-Sum

c) Open concrete working floors, 100mm thick including roof over. m²

(e) ablution units and kitchen area (20 m²), including fittings, services and utensils. m²

The tendered lump sum shall be in full compensation for supplying and erecting the accommodation, fittings and furniture as specifications and shown on the drawings, and for the proper maintenance and the subsequent removal thereof from the site on the completion of works.

Item	Unit
.....	
.....	
.....	

B14.03 Office and laboratory fittings, installations and equipment

b) Prov. Sum items Prov. Sum

Add the following sub-items:

- (i) The provision of telephone services, cellular services contracts including cell phones for all supervisory staff. **Prov. Sum**
- (ii) The provision of 3G data services, mobile contracts including 3G modems **Prov. Sum**
- (iii) The provision of computer hardware and software facilities for the supervisory staff. **Prov. Sum.**
- (iv) The provision of printing, copying, scanning and digital cameras facilities for the supervisory staff. **Prov. Sum**
- (v) Handling cost and profit in respect of subitem 14.03(b)..... **Percentage (%)**

The tendered percentage is a percentage of the amount actually spent under sub-item B14.03 (b).

Expenditure under this item shall be made in accordance with the General Conditions of Contract.

The tendered percentage is a percentage of the amount actually spent under subitem B14.03(b), which shall include full compensation for the handling costs of the Contractor, and the profit in connection with providing the specified equipment."

B14.07 Rented hotel and other accommodation, including offices

a): Provisional sum for providing rented housing, hotel or other accommodation, fully furnished and including services. **Prov. Sum.**

b) Handling costs and profit in respect of sub-item B14.07(a) Percentage (%)

Expenditure under this item shall be made in accordance with the general condition of contract.

The tendered percentage is a percentage of the actually spent under sub-item 14.07(a), which shall include full compensation for the handling costs of the contractor and the profit in connection with providing the rented accommodations.

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Unit

Item

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

The unit of measurement shall be in metre of security fence supplied and erected as indicated in the drawings and/or ordered by the engineer (B14.02) above. The tendered rate shall include full compensation for procuring and furnishing of all material, including two vehicle gate, labour and equipment required to erect the specified security fence, maintain it for the duration of the contract and eventually removal at the completion of the contract.

General: Method of payment

Add the following:

“The tendered rates under this section of BOQ shall also include full compensation for dismantling and removal from site of all offices, laboratories and other facilities provided for the engineers supervisory staff at the completion of contract.”

B6 SECTION 1500: ACCOMMODATION OF TRAFFIC

B1501 SCOPE

ADD THE FOLLOWING:

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

B1502 GENERAL REQUIREMENTS

(a) Safety

ADD THE FOLLOWING:

"Should the Contractor park any of his vehicles within the road reserve at night, it shall be done in such a way that the vehicle is more than 6 m away from the shoulder of the road and it shall be properly illuminated and signposted to ensure safe passing by motorists."

(b) Providing temporary deviations

ADD THE FOLLOWING PARAGRAPH:

"The Contractor shall keep the provincial traffic police and the Engineer fully informed of changes in the normal traffic flow and obtain their approval for these changes."

(f) Approval of temporary deviations

ADD THE FOLLOWING:

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

(i) Traffic Safety Officer

ADD THE FOLLOWING AFTER THE SECOND PARAGRAPH:

"The Contractor shall submit a Curriculum Vitae of the candidate to the Engineer for approval before the Traffic Safety Officer is appointed. The Traffic Safety Officer shall make himself available to discuss road safety and traffic accommodation matters whenever required by the Engineer."

REPLACE SUBSUBCLAUSES (ii) AND (iii) WITH THE FOLLOWING:

"(ii) Record on neat and dimensioned sketches and submit to the Engineer the position and sign reference number where applicable of each sign, barricade, delineator, cone, amber flicker light, guardrail and permanent or temporary painted road marking feature. The position of each shall be adequately referenced to identifiable permanent features located along the site of the Works.

These records shall also show the date and time at which the recorded traffic accommodation features are certified correct by the Traffic Safety Officer and shall be signed by the Traffic Safety Officer before being submitted to the Engineer.

The records shall be amended whenever changes are made in the field and the revised detailed sketches shall be submitted to the Engineer. This shall include the recording of the position 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 the Works twice each day, 9:30 and 16:30, to record all irregularities discovered and the remedial action taken, and to sign off as correct

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and submit to the Engineer such record sheets by 10:00 and by 17:00 each day. The Traffic Safety Officer shall keep a duplicate book for this specific purpose.

The Traffic Safety Officer shall also submit to the Engineer by 10:00 each morning, a record of all matters pertinent to site safety and traffic accommodation throughout the site of the Works the previous day. He shall also record the daily labour returns of flagmen, stop/go and traffic signal control men employed.

The Traffic Safety Officer shall be equipped with a cellular telephone and shall have a vehicle and three labourers at his disposal 24 hours a day and he shall be directly answerable to the Contractor's Site Agent. The traffic safety vehicle shall be a truck with a capacity of 5 tons and shall be equipped with a high visibility rear panel in accordance with the requirements of Part 13 of Volume 2 of the South African Road Traffic Signs Manual. The Traffic Safety Officer shall have a direct line of communication at all times with the police and traffic officers responsible for the area within the limits of the Contract. The provision of the road safety vehicle, driver, three labourers and the cost of the cellular telephone shall be deemed to be included in the rates tendered for the Contractor's establishment on Site."

ADD THE FOLLOWING SUBSUBCLAUSES:

- "(ix) Ensure that all obstructions related to the Contractor's activities be removed before nightfall where applicable and instructed by the Engineer and that the roads are safe for night traffic.
- (x) The Traffic Safety Officer shall also be responsible for arranging the removal of broken down vehicles off the roadway and implementing actions requested by the traffic authorities with regard to the work to be carried out and for the erection and maintenance of all traffic signs necessary for the accommodation of traffic."

ADD THE FOLLOWING SUBCLAUSES:

"(j) Failure to comply with provisions

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

- A fixed penalty of **R5 000,00** per occurrence shall be deducted for each and every occurrence of non-compliance with any of the requirements of Section 1500 of the Standard Specifications and/or the Project Specifications.
- In addition, a time-related penalty of **R500,00** per hour over and above the fixed penalty shall be deducted for non-compliance to rectify any defects in the accommodation of traffic within the allowable time after an instruction to this effect has been given by the Engineer. The Engineer's instruction shall state the allowable time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given.

(k) Public traffic

The travelling public shall have right of way on public roads. The Contractor shall arrange his activities so as to bring about the least possible disruption to the traffic on the roads on which he works.

The closure of one lane of the road shall only be done:

- on written instruction of the Engineer,
- after approval of a specific accommodation of traffic detail,
- subject to all the road signs and markings being implemented and
- subject to such other conditions as the Engineer would reasonably require to ensure the safety of the travelling public.

The closure of more than one lane of traffic will only be considered in exceptional cases. The Engineer shall determine the maximum period for which such a closure may be allowed. It is also an express provision that such an eventuality will be controlled by the traffic authority concerned. Should the traffic authority not be available for such control, the Contractor shall control such an event, provided that he has proven that he has exercised his best endeavours and taken all actions timeously to involve the traffic authority to control the traffic. No additional payment will be made for such control by the Contractor and the rates tendered for Section 1500 will be deemed to include full compensation for all costs pertaining to such control.

Failure or refusal on the part of the Contractor to take the necessary steps to ensure the safety and convenience of the public in accordance with these specifications or as required by the Engineer or the traffic authorities shall be sufficient cause for the closing down of all work under this Contract until all provisions prescribed have been complied with to the satisfaction of the Engineer.

(I) Handing over the Site

The road reserves of all the roads to be constructed under this Contract will be handed over to the Contractor at commencement of the Contract. The Contractor will be permitted to work on any structure or service provided that a free and safe flow of traffic is maintained at all times and that the requirements of the Specifications are complied with.

The Contractor's programme for the accommodation of traffic and any proposed deviation from the approved programme shall be subject to the Engineer's approval."

B1503 TEMPORARY TRAFFIC-CONTROL FACILITIES

ADD THE FOLLOWING AFTER THE FIRST PARAGRAPH:

"All temporary road signs, devices, sequences, layouts and spacings shall comply with the requirements set out in the National Road Traffic Act, 1996 (Act No 93 of 1996), the National Road Traffic Regulations, 2000 of the relevant authorities and on the Drawings or as instructed by the Engineer.

The Contractor shall indemnify the Employer against all proceedings, claims, actions, damages and costs which may arise from or be related to the absence or improper functioning or placement of road traffic signs, barricades, traffic-control facilities, channelization devices and warning devices.

REPLACE THE THIRD PARAGRAPH WITH THE FOLLOWING:

"The type of construction, spacing and placement of traffic-control devices shall be in accordance with Volume 2 of The South African Road Traffic Signs Manual (in particular Part 13), these special provisions and the Drawings. The recommended arrangements of the traffic-control devices illustrated in Part 13 of the above Manual and/or Drawings shall not be departed from without prior approval of the Engineer. The arrangements expected to be most commonly used on the Contract are given on the tender drawings.

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

(a) Traffic-control devices

REPLACE THE SECOND SENTENCE OF THE SECOND PARAGRAPH WITH THE FOLLOWING:

"Two-way communication systems in good working condition shall be available at both ends of those sections of the works where the road is barricaded and only one-way traffic is accommodated. A standby communication system set in good working order shall also be made available."

ADD THE FOLLOWING AFTER THE LAST PARAGRAPH:

"The Contractor shall provide portable shelters to protect his personnel who regulate the STOP and GO-RY signs against the elements. The personnel regulating the traffic shall at all times wear reflective safety jackets."

(b) Road signs and barricades

ADD THE FOLLOWING AFTER THE LAST PARAGRAPH:

"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 shall be mounted on portable supports for the easy moving of signs to temporary positions. The only permitted ballasting of the sign supports shall be by using 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 for in the tendered rates for the various types of temporary road signs.

The traffic-control devices, temporary signs and devices required in the Contract are those designated in Part 13 of Volume 2 of the South African Road Traffic Signs Manual.

No work may proceed on any section where accommodation of traffic is required until such time as the relevant requirements with regards to signposting are met and written approval of the Engineer is obtained. The Contractor shall keep sufficient surplus signs, delineators and barricades on the site to allow for the immediate replacement of damaged or missing items, in any case, within three hours of instructions having been given by the Engineer. Delineators shall be of the flexible plastic reversible variety and not of the rigid metal variety.

Should the Contractor fail to respond to an instruction to re-erect a road sign within three hours or fail to comply to the requirements, the work on that section will be suspended without any compensation to the Contractor."

(c) Channelization devices and barricades

ADD THE FOLLOWING PARAGRAPHS:

"Drums shall not be used as channelization devices.

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

- (i) They shall be manufactured from a flexible material and shall comply with SANS 1555:2011. The blade portion of the delineator shall be positively affixed to a base unit which in turn shall be stable on its own or be stabilized by means of sandbags when used on the road.

- (ii) The blade shall be retro-reflectorised, with Class I yellow sheeting on the side facing oncoming traffic.
- (iii) It shall be nominally 1 000 mm high x 250 mm wide and the bottom edge of the delineator shall not be more than 200 mm above the road surface.
- (iv) The delineators shall be subject to the approval of the Engineer.
- (v) The maximum spacing between centres of delineators shall be as shown on the Drawings or as directed by the Engineer.

(d) Barriers

ADD THE FOLLOWING:

"Guardrails mounted on steel drums shall not be used as barriers."

(e) Warning devices

ADD THE FOLLOWING TO THE FIRST PARAGRAPH:

"The flashing lights shall have a minimum intensity of 55 W."

ADD THE FOLLOWING AFTER THE FIRST SENTENCE OF THE SECOND PARAGRAPH:

"The warning boards shall be at least 1,5 m above ground level."

ADD THE FOLLOWING AFTER THE LAST PARAGRAPH:

"All construction vehicles and Plant used on the works shall be equipped with rotating amber flashing lights and warning boards as specified. Clearance permits for all vehicles and Plant shall be obtained from the Engineer before being allowed onto the Site.

Rotating lights shall have an amber lens with a minimum height of 200 mm and shall be mounted in order to be clearly 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, and 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 LDVs and cars operating on Site shall also be equipped with rotating amber flashing lights which shall be placed so as to be clearly visible and operated continuously while the vehicles are manoeuvring in or out of traffic or are travelling on or parked alongside roads open to public traffic.

The Contractor shall provide the Engineer with four (4) rotating amber-coloured flashing lights. These lights shall be at least 200 mm high, shall have magnetic bases and must be equipped with fittings to draw power from a cigarette lighter point in a vehicle. No separate payment will be made for the supply and maintenance of these flashing lights and full compensation therefor shall be included in the rates tendered for in Section 1500.

Rotating lights and the 'Construction Vehicle' signs on the Contractor's vehicles and Plant shall not be paid for separately but shall be included in the rates covering the use of the vehicles.

The Contractor shall supply and maintain lights together with temporary mounting brackets, to the approval of the Engineer. Vehicles and plant that do not comply with these requirements, shall be removed from the Site."

ADD THE FOLLOWING SUBCLAUSES:

"(g) Safety jackets

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. Reflective safety jackets shall be kept in good condition and any jackets that are, in the opinion of the Engineer, ineffective shall be replaced immediately by the Contractor.

The Engineer, his personnel and visitors shall wear safety jackets at all times when they move about the Site. The Contractor shall provide the Engineer with safety jackets. The safety jackets shall be orange in colour and shall be submitted for the Engineer's approval before they are purchased. Payment for the safety jackets will be made under item B15.14(b).

(h) Other signs or facilities

The Engineer may instruct the Contractor to provide any other road sign, reflective tape, etc not measured in standard pay items. The road signs shall conform to the requirements of Part 13 of Volume 2 of the South African Road Traffic Signs Manual, or specification provided by the Engineer.

The Contractor shall inform the general public of the intended road works, construction period and accommodation of traffic proposal through press releases in local and provincial newspapers."

B1504 WIDTH AND LENGTH OF TEMPORARY DIVERSIONS

REPLACE "10 m" IN THE FIRST SENTENCE OF THE FIRST PARAGRAPH WITH "8 m."

B1505 TEMPORARY DRAINAGE WORKS

ADD THE FOLLOWING TO THE LAST PARAGRAPH:

"The construction of temporary culverts shall be in accordance with Section 2200. Temporary culverts no longer required shall be removed as directed by the Engineer. Excavations shall be backfilled with suitable granular material and compacted to the densities specified by the Engineer."

B1507 GRAVELLING OF TEMPORARY DEVIATIONS OR OF EXISTING ROADS USED AS TEMPORARY DEVIATIONS

ADD THE FOLLOWING TO THE SECOND PARAGRAPH:

"The gravel material laid on existing roads used as diversions shall comply with the following:

Maximum size	: 37,5 mm
Oversize index (I _o)	: 0 (% retained on 37,5 mm sieve)
Shrinkage products (Sp)	: 100 - 240 (linear shrinkage x % passing 0,425 mm sieve)
Grading coefficient (G _c)	: 16 - 34 [(% passing 26,5 mm - % passing 2,0 mm) x % passing 4,75 mm/100]
CBR	: ≥ 15 at 93% of modified AASHTO density."

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ADD THE FOLLOWING CLAUSES:

"B1518 RETRO-REFLECTIVE MATERIAL

Retro-reflective material for temporary signs shall comply with the requirements of SANS 1519-2:2000. Tests shall be carried out with a field retro-reflectometer and the testing procedure and classification are described in clause B8118.

B1517 MEASUREMENT AND PAYMENT

Item

B15.01 Accommodating traffic and maintaining temporary deviations

ADD THE FOLLOWING AFTER THE SECOND PARAGRAPH:

"The accommodation of traffic and the maintenance of deviations shall be measured once only along the centre line of the road, irrespective of the type of work to be executed or the number of times necessary to accommodate traffic over any particular part of the road.

The limits for any particular section of road over which traffic has to be accommodated and deviations have to be maintained shall be the distance measured between the limits of construction of the particular section of road under consideration. Only the net distance of the road shall be measured and overlapping distance during staged rehabilitation shall not be measured.

The tendered rate shall also include the watering of the temporary deviations twice a day. Any additional watering of the temporary deviations, as instructed by the Engineer shall be paid under payment item 15.06.

The tendered rate shall also include the blading of temporary deviations once a week. Any additional balding of the temporary deviations, as instructed by the Engineer shall be paid under payment item 15.07(a)."

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B7 SECTION B1600: OVERHAUL

B1602 DEFINITIONS

(b) Overhaul

DELETE THE SUBCLAUSE AND REPLACE WITH:

"Payment shall only be made for material hauled in excess of 1,0 km. Overhaul shall be measured as the product of the volume of material hauled and the overhaul distance."

(d) Free-haul distance

REPLACE THE LAST SENTENCE WITH:

"This distance shall be 1,0 km in the case of all overhaul materials and this specification shall be deemed to have replaced the 'free-haul' distance in all other sections of the standard specifications."

B1603 MEASUREMENT AND PAYMENT

AMEND THE DESCRIPTION OF PAYMENT ITEM 16.02 AS FOLLOWS:

"Item	Unit
B16.02 Overhaul on material hauled in excess of 1,0 km	cubic metre-kilometre (m³-km)"

DELETE THE FIRST PARAGRAPH OF THE FIRST SET OF NOTES AND REPLACE IT WITH THE FOLLOWING:

"Only ordinary overhaul for haul in excess of 1,0 km will apply to all type of fill and layerwork materials. No restricted overhaul will be applicable on this Contract."

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B8 SECTION B1700: CLEARING AND GRUBBING

B1702 DESCRIPTION OF WORK

(a) Clearing

ADD "of the roadway and for temporary deviations/roads "AFTER "Clearing "IN THE FIRST PARAGRAPH.

(b) Grubbing

ADD "and along temporary deviations/roads, "AFTER "In the roadway "IN THE FIRST PARAGRAPH.

B1703 EXECUTION OF WORK

(a) Areas to be cleared and grubbed

REPLACE THE FIRST SENTENCE OF THE FIRST PARAGRAPH WITH THE FOLLOWING:

"The portions of the road reserve falling within the limits of the road prism, along temporary deviations/roads and certain borrow areas, shall be cleared and grubbed using conventional methods."

DELETE "normally" IN THE SECOND LINE OF THE SECOND PARAGRAPH.

(c) Disposal of material

REPLACE THE SECOND PARAGRAPH WITH THE FOLLOWING:

"The Contractor shall dispose of all trees, tree stumps, rubble, undesirable material removed from hydraulic structures, refuse, and all non-combustible rubbish at approved dumping sites provided by the Contractor. The material disposed of shall be covered up with soil or gravel. No extra-over or additional payment will be made for disposing of and covering up material and full compensation for this work will be deemed to be included in the rate tendered for item B17.01."

(e) Cleaning out of hydraulic structures

ADD THE FOLLOWING:

"The cleaning of hydraulic structures shall involve the removal of all undesirable materials such as earth, sand, gravel, stones and mud until the structures are completely clean, and the debris is disposed of at approved dumping sites provided by the Contractor."

B1704 MEASUREMENT AND PAYMENT

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

REPLACE THE LAST PARAGRAPH WITH THE FOLLOWING:

"The tendered rates shall include full compensation for all work necessary for the clearing and grubbing of the surface, the demolishing and disposal of structures, shelters, dwellings and out-buildings, the removal of all vegetation, shrubs, trees and tree stumps (except large trees and stumps as defined in item 17.02), cutting of branches, backfilling of cavities, the removal, transporting (including all haul) and disposal of material at approved dumping sites provided

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by the Contractor, and all additional costs incurred to clear and grub the surfaces to the Engineer's satisfaction.

Clearing and grubbing of borrow areas will only be measured and paid for in the cases specified in Clause 3104(b)."

ADD THE FOLLOWING TO THE MEASUREMENT AND PAYMENT PARAGRAPHS:

"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 under item B13.01."

Item	Unit
B17.07 Removal of topsoil and unsuitable material and temporary Stock-piling thereof in:	

- (a) Topsoil in windrows alongside the work area cubic metre (m³)
- (b) Topsoil in windrows on the edges of borrow-pits or spoil areas cubic metre (m³)

The unit of measurement for items (a) to (b) shall be the cubic metre of topsoil removed to windrow or temporary stockpile. The volume of topsoil removed shall be measured in cut, calculated from the difference in cross-sections of the natural ground level before the commencement of clearing to cross-sections taken after the removal of the topsoil.

The unit of measurement for item (b) shall be the cubic metre of material placed in stockpile at the borrow pit.

The contractor shall constantly liaise and agree with the engineer as to the depth of topsoil to be removed. Where, in the opinion of the engineer, material that would not normally be classed as topsoil to be removed. Where, in the opinion of the engineer, material that would normally be classed as topsoil has also been excavated, the excavation shall be backfilled and compacted with selected material at the contractor' expense. Should material that is deemed by the engineer not to be topsoil, be removed and stockpiled together with material classed as topsoil, the contractor shall be responsible for the removal of this unsuitable soil from the stockpile and the replacement of the quantity of topsoil contaminated by the unsuitable material at his cost. The quantity of topsoil to be replaced shall be determined by the engineer.

The rates tendered shall include for the excavation of the topsoil and where required, the loading and hauling thereof to temporary stockpile as well as the maintenance of the stockpile until re-use of the material. The rates tendered shall also include for all supervision required to ensure that only topsoil is removed."

B9 SECTION B1800: DAYWORKS

B1801 SCOPE

This section covers the listing of daywork items in accordance with the General Conditions of Contract, Clause 6.5, determining payment for work which cannot be quantified in specific units in the Bill of Quantities, or for work ordered by the Engineer during the construction period which was not foreseen at tender stage and for which no applicable rate exists in the Bill of Quantities.

B1802 ORDERING OF DAYWORK

No daywork shall be undertaken unless written authorisation has been obtained from the Engineer.

B1803 MEASUREMENT AND PAYMENT

Item	Unit
B18.01 Labourers	
(i) Unskilled Labourers:	hour (h)
(i) Semi-Skilled Labourers:	hour (h)
(ii) Skilled Labourers:	hour (h)
B18.02 Foreman:	hour (h)
B18.03 Trucks:	hour (h)
(i) 6m3.....	hour (h)
(ii) 10m3.....	hour (h)
B18.04 TLB:	hour (h)
B18.05 Loader (up to 2m3 bucket):	hour (h)
B18.06 Grader (140G or Similar):	hour (h)
B18.07 Vibratory Roller:	hour (h)
B18.08 Grid Roller:	hour (h)
B18.09 Pedestrian Roller:	hour (h)
B18.10 Water Tanker (18kl):	hour (h)
B18.11 Chainsaw:	hour (h)
B18.12 Mechanical Broom:	hour (h)
B18.13 LDV:	hour (h)
B18.14 Recycler /Milling Machine:	hour (h)
B18.15 Excavator:	hour (h)
(i) 20ton.....	hour (h)
(ii) 23ton.....	hour (h)
(iii) 30ton.....	hour (h)

The unit of measurement for items B18.01, B18.02, B18.03, B18.04, B18.05, B18.06, B18.07, B18.08, B18.09, B18.10, B18.11, B18.12, B18.13 B18.14 and B18.15 shall be the hour for the

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item of equipment or personnel. Non-working hours for transport breakdown, lack of operator of any other reason shall not be measured. The time shall be taken from the time that the personnel and/or equipment depart until return.

Measurement shall only be for work instructed and directed by the engineer, where the engineer considers no other appropriate rate is applicable in the Pricing Schedule. Prior to the commencement of any work by the personnel described under item B18.01 and B18.02 the contractor must obtain written consent from the engineer regarding their classification in terms of "unskilled", semi-skilled" and "skilled" personnel.

The tendered rates under B18.01 and B18.02 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 B18.03, B18.04, B18.05, B18.06, B18.07, B18.08, B18.09, B18.10, B18.11, B18.12, B18.13 and B18.14 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 engineer, for all administrative, supervisory, operative and contingent cost, and profit relating to the running of the plant.

The tendered rate for item B18.13 shall include full compensation for the cost of the vehicle including fuel, maintenance depreciation and running costs.

The above-mentioned tendered rates shall be full compensation for the various items as specified and no further profit shall be paid.

B10 SECTION 2100: DRAINS

B2107 MEASUREMENT AND PAYMENT

Item

B21.01 Excavation for open drains

ADD THE FOLLOWING TO THE THIRD PARAGRAPH:

"The tendered rate shall also include full compensation for trimming the open drains."

ADD THE FOLLOWING ITEMS:

Item

Unit

B21.01 Excavation for open drains

(a) Excavating soft and intermediate material, irrespective of depth, **cubic metre (m³)**

(b) Extra over subitem B21.01 (a) for excavation in hard material, irrespective of depth.....**cubic metre (m³)**

The unit of measurement is the cubic metre of material excavated from the open drains as instructed by the Engineer. Quantities shall be calculated as being the product of the length of open drain excavated times the average width and depth, in accordance with cross-sections taken at 20 m intervals.

The tendered rates shall include full compensation for excavating, shaping, cleaning and trimming the open drains and for disposal of the resulting material at approved dumping sites provided by the Contractor, including all haul.

Payment shall distinguish between soft, medium and hard material as defined in Clause B1231 (c) of the project specifications.

B11 SECTION 2200: PREFABRICATED CULVERTS

B2204 CONSTRUCTION METHODS

ADD THE FOLLOWING:

"Culverts shall be installed by the 'trench method'.

When instructed by the Engineer, measures shall be taken to reduce the effect of unsuitable material at the positions of prefabricated culverts. This will entail the additional excavation of a minimum of 1,0 m of in-situ material to a minimum width of 4,0 m, the even chamfering of the sides of the excavation to a grade of 1:4 and backfilling the excavation with imported fill material with at least G9 quality compacted to 90% of modified AASHTO density. Additional excavation as described above will be paid for under item 33.07. Backfilling of the excavation will be measured and paid for under item 33.01."

B2205 EXCAVATION FOR CONSTRUCTION BY TRENCH METHOD

(a) Depth of excavation

ADD THE FOLLOWING AFTER THE FIRST SENTENCE OF THE FIRST PARAGRAPH:

"The maximum overall depth of the trench shall, however, not exceed 2,0 m."

B2210 LAYING AND BEDDING OF PREFABRICATED CULVERTS

(a) Concrete pipe culverts

ADD THE FOLLOWING AFTER THE FIRST PARAGRAPH:

"When instructed by the Engineer or when measures are required to reduce the effect of unsuitable material below culverts, the pipe joints shall be sealed with a 500 mm wide strip of waterproofing material glued symmetrically around the joint. A 150 mm wide strip of adhesive shall be applied to the edges of the material. An overlap of 150 mm shall be provided and the two (2) layers of the material at the overlap shall be glued together over the full area of 150 mm x 500 mm."

(b) Portal and rectangular culverts

(iii) Placing the portal portions of culverts

ADD THE FOLLOWING:

"When instructed by the Engineer or when measures are required to reduce the effect of unsuitable material below culverts, the joints shall be sealed with a 500 mm wide strip of waterproofing material glued symmetrically around the joint. A 150 mm wide strip of adhesive shall be applied to the edges of the material. An overlap of 150 mm shall be provided and the two (2) layers of the material at the overlap shall be glued together over the full area of 150 mm x 500 mm."

B2212 INLET AND OUTLET STRUCTURES, CATCHPITS AND MANHOLES

(i) Prefabricated energy dissipaters in outlet structures

REPLACE THE PARAGRAPH WITH THE FOLLOWING:

"When shown on the Drawings or instructed by the Engineer, the Contractor shall supply and install prefabricated reinforced-concrete blocks in outlet structures. The blocks shall be Class 20/19 concrete manufactured to the dimensions shown on the Drawings or listed in the Bill of Quantities. All concrete work shall comply with the requirements of Series 6000."

B2215 SERVICE DUCTS

REPLACE THE LAST PARAGRAPH WITH THE FOLLOWING:

"The end of each duct shall be marked with a 300 mm x 300 mm x 100 mm Class 20/19 concrete marker block. A 200 mm x 100 mm galvanized steel or aluminium plate with the size, number and depth of pipes stamped on the surface shall be affixed to the top of the marker block. Each duct marker shall be at least 50 mm proud of the finished surface level."

B2218 MEASUREMENT AND PAYMENT

Item **Unit**

B22.02 Backfilling:

REPLACE THE DESCRIPTION OF SUBITEM 22.02(c) WITH THE FOLLOWING:

"(c) Extra over subitems B22.02(a) and (b) for soil cement (soilcrete) backfilling (percentage of cement indicated)"

Item

B22.03 Concrete pipe culverts

ADD THE FOLLOWING TO THE FOURTH PARAGRAPH:

"The standard length of a concrete pipe is 2,44 m."

REPLACE PAYMENT ITEM 22.14 WITH THE FOLLOWING:

"Item **Unit**

B22.14 Removing and stacking existing prefabricated culverts (all sizes).....metre (m)

The unit of measurement is the metre of existing culvert removed and stacked as instructed by the Engineer.

The tendered rate shall include full compensation for lifting, loading, transporting to stack, off-loading and stacking the culverts. The free-haul distance is 5,0 km.

Payment for the excavation and backfilling (including all layerworks) required to remove and stack existing prefabricated culverts will be made separately under payment items B22.01 and B22.02."

REPLACE ITEM 22.26 WITH THE FOLLOWING:

"Item

B22.26 Hand excavation:

(a) To determine the positions of existing services:

(i) In all other areas cubic metre (m³)

The unit of measurement is the cubic metre of material excavated within the lengths and widths authorised by the Engineer and the depth required to expose the service. Excavation in excess of the authorised dimensions will not be measured for payment.

The tendered rates shall include full compensation for all excavation, backfilling, compacting to 90% of modified AASHTO density, disposing of surplus excavated material, demarcating excavations with approved safety tape, keeping the excavations safe, dealing with surface or subsurface water, taking special care to ensure that services are not damaged in any way, and all other operations required to complete the work. The tendered rates shall also include for transporting surplus excavated material for a free-haul distance of 1,0 km.

No distinction will be made between hard and soft materials, nor will distinctions be made between the various types of service to be exposed or the depths to which excavations are taken.

When instructed by the Engineer, the reinstatement of the pavement layers, surfacing and kerbing will be measured for payment under item 22.27.

NB The Contractor shall supply adequate supervision of labourers excavating to expose services. Damage to a service caused by the Contractor shall be repaired at his expense, to the satisfaction of the owner of the service and the Engineer."

REPLACE PAYMENT ITEM 22.28 WITH THE FOLLOWING:

ADD THE FOLLOWING ITEM:

"Item

Unit

B22.29 Waterproofing of prefabricated culvert joints with a 500 mm wide strip of Bituthene 3000 or an approved equivalent material metre (m)

The unit of measurement is the metre of 500 mm wide strips of Bituthene 3000 or an approved equivalent material glued over the joints. The specified 150 mm overlap will also be measured for payment.

The tendered rate shall include full compensation for procuring, furnishing, installing and glueing the Bituthene strip, including the adhesive, as specified."

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B12 SECTION 2300: CONCRETE KERBING, CONCRETE CHANNELING, CHUTES AND DOWNPIPES, AND CONCRETE LININGS FOR OPEN DRAINS

B2302 MATERIALS

(b) Kerbing and channelling

ADD THE FOLLOWING:

"Irrespective of the minimum transverse strength specified in SANS 927, all concrete shall be class 30/19."

B2304 CONSTRUCTION

(e) Cast in situ kerbs and channels

ADD THE FOLLOWING:

"Cast in situ kerbs, channels and edge beams shall be provided with a contraction joint every 2,0 m and an expansion joint every 20 m. The contact area of the contraction joint shall be painted with two coats of bitumen. Alternatively, joints may be cut and finished to a depth of 50 mm. The expansion joint shall consist of 12 mm thick Flex cell or an approved equivalent placed between adjoining concrete sections. The top part of the joint shall be sealed with a 12 mm x 12 mm silicone sealant. All joints shall be provided for the full depth of the concrete."

(k) Cutting existing bituminous surfacing and pavement layers

REPLACE THE PARAGRAPH WITH THE FOLLOWING:

"Where the Engineer instructs kerbing, edge beams, channelling or concrete-lined drains to be constructed against existing bituminous surfacing and pavement layers, the full depth of the bituminous surfacing and pavement layers shall be accurately cut with a mechanical saw to the required line and level before the kerbing, edge beams, channelling or concrete-lined drain is constructed. The cut edge shall be vertical for kerbing, edge beams, concrete-lined drains and channelling. The concrete shall be placed directly against the cut edge without formwork. All material outside the cut edge shall be removed to the required depth before the concrete is placed, and the debris shall be disposed of at approved dumping sites provided by the Contractor. The bituminous surfacing shall be protected and kept clean to the Engineer's satisfaction."

B2307 MEASUREMENT AND PAYMENT

REPLACE THE DESCRIPTION OF PAYMENT ITEM 23.01 WITH THE FOLLOWING:

"Item	Unit
B23.01 Concrete kerbing, including joints <i>(class of concrete indicated for in situ concrete)</i>	metre (m)"

ADD THE FOLLOWING TO THE PAYMENT PARAGRAPH:

"The tendered rates shall also include full compensation for the construction of expansion and contraction joints as specified."

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B23.07 Trimming of excavations for concrete-lined open drains

IN THE SECOND PARAGRAPH, COMMENCING WITH "The tendered rates shall ...", DELETE IN THE FIFTH, SIXTH AND SEVENTH LINES THE FOLLOWING WORDS "including removing unsuitable ground and backfilling with suitable material."

REPLACE THE DESCRIPTION OF PAYMENT ITEM 23.14 AS FOLLOWS:

"Item	Unit
B23.14 Cutting bituminous surfacing and pavement layers for concrete kerbing, edge beams, channelling or concrete-lined drains"	

B13 SECTION 3100: BORROW MATERIALS

B3102 NEGOTIATIONS WITH OWNERS AND AUTHORITIES

ADD THE FOLLOWING AFTER SUBCLAUSE (a):

"Before the Contractor enters private property to open borrow pits, construct access roads, temporarily occupy certain land or inspect the relevant areas, he shall negotiate with the owners concerned and advise them of his intentions, in accordance with the relevant ordinances.

The Employer will negotiate with landowners only with regard to compensation for gravel material obtained from borrow pits, but not for rock which shall be the responsibility of the Contractor, and who will subsequently pay such compensation to the owners.

The Contractor shall adhere to the Environmental Management Plan for borrow pits as prepared in accordance with the requirements of the Department of Mineral Resources, for the North West Province: Department of Public Works and Roads for any of the stated borrow pits he intends to develop. This shall include the removal and storage of the topsoil within the affected area, maintenance of the area during use and the rehabilitation of the area to its natural state on completion. A photographic record shall be kept of all borrow pit areas. Any construction material spoiled within these sites shall be buried to a depth of no less than 300 mm below the surface soil. No construction material of any nature shall be left visible after topsoiling. The Engineer shall confirm this before grassing commences. The area shall be kept free of all undesirable plant material.

Should the Contractor intend to utilize any new borrow pits, an environmental management plan (EMP) should be drawn up to the requirements of and for the approval of the Department of Mineral Resources before opening such borrow pits.

The Contractor is also responsible for rehabilitating the borrow pits after completion of the project in accordance with the approved EMP."

ADD THE FOLLOWING NEW PARAGRAPHS TO THE END OF THIS SUBCLAUSE:

"The Engineer shall instruct the Contractor as to the applicable usage of borrow pits always employing the best economic alternative (lowest cost in terms of tendered rates) taking cognizance of the following:

- Quality of material;
- Haulage distance;
- Hardness of material;
- Overburden.

Under no circumstances shall the Contractor be entitled to any additional compensation in respect of any instruction by the Engineer as to the usage of borrow pit material."

B3103 OBTAINING BORROW MATERIALS

Add the following paragraph:

"The contractor shall adhere to the requirements within the environmental management plan for the preparation of the area to be utilised as a borrow pit. This shall include the removal and storage of the topsoil within the affected area, maintenance of the area during use and the rehabilitation of the area to its natural state on completion. A photographic record shall be kept of all borrow pit areas. Any construction material spoiled within these sites shall be buried to a depth of no less than 300mm below the surface soil. No construction material of any nature shall be left visible after top soiling. The engineer shall confirm this before grassing commences. The area shall be kept free of all undesirable plant material refer (5807(e))."

Careful selection of materials will be required in the borrow pits. The contractor shall refer to section 3200 of standard specifications with regard to his liabilities in respect of the contamination of good quality materials.

B3104 OPENING AND WORKING BORROW PITS AND HAUL ROADS

(a) Removing topsoil

ADD THE FOLLOWING:

"The topsoil shall not be stockpiled for longer than 6 months, nor shall the stockpile be higher than 2,5 m."

(c) Excess overburden

ADD THE FOLLOWING:

"In the case of the quarries and borrow pits, suitable overburden shall be used as fill and the Contractor must plan his operations accordingly and no payment will be made for stockpiling."

(d) Excavating borrow material

ADD THE FOLLOWING:

"The Contractor shall at all times ensure that the removal of the material is carried out in such a manner that the stability of the exposed faces is not prejudiced and safe working conditions are maintained."

B3105 FINISHING-OFF BORROW AREAS AND HAUL ROADS

(a) Borrow areas

ADD THE FOLLOWING AFTER THE FOURTH PARAGRAPH:

"The finishing-off of the borrow areas shall also be in accordance with the approved EMP."

B3108 MEASUREMENT AND PAYMENT

Item **Unit**

B31.03 Finishing-off borrow areas in:

ADD THE FOLLOWING:

"Finishing-off of borrow areas using conventional construction equipment shall be in accordance with clause B3105."

Item Unit

B3104 Protecting Borrow pits

- a) Stock proof fencing as per detail, all-inclusivekm.
- b) Corner post as per detail, all-inclusive.....no.
- c) Gates, all-inclusive.....no.

The unit of measurement shall be the km of fence supplied and erected as indicated on the drawings and/or ordered by the engineer. Separate payment will be made per corner post and/or gate supplied of all material, labour and equipment required to erect the specified security fence, maintaining for the duration of the contract and removal at the end of the contract.

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B14 SECTION 3200: SELECTION, STOCKPILING AND BREAKING DOWN THE MATERIAL FROM BORROW PITS AND CUTTINGS, AND PLACING AND COMPACTING THE GRAVEL LAYERS

B3201 SCOPE

ADD THE FOLLOWING AFTER THE FIRST PARAGRAPH:

"For safety reasons, all material for the construction of layerworks dumped in heaps next to the road surface where traffic is accommodated, shall be flattened on the same day. Payment for this activity shall be deemed to be included in the relevant tendered rates under Sections 3300, 3400 and 3600."

B3203 STOCKPILING THE MATERIAL

IN THE THIRD PARAGRAPH, REPLACE THE SECOND AND THIRD SENTENCES WITH:

"Before any stockpiling may be done the area shall be cleared of topsoil to a sufficient depth that will subsequently allow for the complete rehabilitation of the site with a cover of topsoil that does not exceed 100 mm in depth and is not less than 75 mm in depth. If there is insufficient topsoil; the Contractor shall acquire whatever balance is needed to rehabilitate the area at his own cost. No make-up topsoil shall be taken from the road reserve. The topsoil shall be stored in an area that shall not be affected by construction activities nor impede the natural flow of water. The topsoil so windrowed or stockpiled and its surrounds shall be kept free of all undesirable vegetation. The Contractor shall not commence his stockpiling activities without prior written approval from the Engineer that the site has been adequately prepared. Stockpile sites shall be graded smooth with an adequate slope to ensure proper drainage. The surface shall be watered and compacted to a depth of at least 150 mm and to a density of 90% of modified AASHTO density. The compacted surface shall be firm. Upon completion, the surface shall be swept clean.

Stockpile sites shall be large enough to allow the different types of material to be stockpiled without overlapping or exceeding the limits of the prepared site. Enlargement of the stockpile sites after the stockpiles have been placed will not be permitted without the Engineer's approval.

After the stockpiled material has been removed, the site shall be reinstated as closely as possible to its original condition by ripping of the affected areas, re-landscaping if necessary, re-instatement of the topsoil and re-vegetation."

ADD THE FOLLOWING PARAGRAPH:

"Material intended for the construction of the gravel base shall be stockpiled beforehand to allow adequate time for the Engineer to conduct the necessary material tests to confirm the suitability of the stockpiled material."

B3204 BREAKING-DOWN THE MATERIAL

B3206 CONTROLLING THE MOISTURE CONTENT OF MATERIALS

ADD THE FOLLOWING:

"With respect to the last paragraph, the onus is placed on the Contractor to show that he has taken all reasonable precautions to keep the material dry and to dry it out and this includes the scheduling of the work in the correct season."

B3208 PLACING AND COMPACTING THE MATERIAL IN LAYER THICKNESSES OF 200 mm AND LESS AFTER COMPACTION

(a) Spraying and mixing

- (i) General requirements

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ADD TO SECOND PARAGRAPH:

"When pavement material is to be stabilized, the moisture content of this material to be compacted shall be at 1% below the optimum moisture content, unless otherwise approved by the Engineer."

B3212 MEASUREMENT AND PAYMENT

IN THE INTRODUCTORY PARAGRAPH, REPLACE THE COMMA AFTER "below" IN THE PENULTIMATE LINE WITH A FULL STOP AND DELETE THE REMAINDER OF THE PARAGRAPH.

ADD THE FOLLOWING AS A SECOND PARAGRAPH:

"Separate payment for work applicable to these payment items shall be made under the relevant sections in these specifications pertaining to the construction material required. For example, material procured from borrow that is crushed and screened for use in selected and subbase layers shall be measured for payment under Section 3400: Pavement Layers of Gravel Material as:

Subitems 34/32.01(d) and 34/32.03(d) etc., whichever is the relevant pairing of payment items under Sections 3200/3400."

B15 SECTION 3300: MASS EARTHWORKS

B3301 PLACING AND COMPACTING THE MATERIALS IN LAYER THICKNESSES IN EXCESS OF 200mm AFTER COMPACTION

Add the following new subclause:

(e) Pioneer layer

"The maximum size rock used in pioneer layers shall be 500mm and the layer thickness before compaction shall not be more than one-and-a-half times the maximum actual size of the rock. Not more than 20% of pioneer layer material shall pass through the 2,0mm sieve. Pioneer layer processing and compaction shall be as specified in sub-clause 3307(c) of the standard specifications".

Add the following to the table in the second paragraph of this sub-clause:

"Pioneer layers – 350- 500mm dimension in some areas.

Not more than 20% of pioneer layer material shall pass through the 2,0mm sieve."

B3302 MATERIALS

(b) Fill

ADD THE FOLLOWING TO SUBITEM (iv):

"The maximum swell at 100% modified AASHTO compaction shall not be more than 2%."

B3303 CLASSIFICATION OF CUT AND BORROW EXCAVATION

CLASSIFICATION OF CUT AND BORROW EXCAVATION SHALL BE REVISED AS FOLLOWS:

"(a) Classes of excavation

(ii) Intermediate excavation

No distinction shall be made between soft and intermediate excavation, and all intermediate excavation shall be classified and measured as soft excavation."

B3305 TREATING THE ROADBED

(a) Removing unsuitable material:

REPLACE THE THIRD AND FOURTH PARAGRAPH WITH THE FOLLOWING:

"The removal of unsuitable material shall be paid for under payment item B33.07. For payment using conventional construction methods a distinction shall first be made in respect of the depth of the material removed and secondly in respect of the stability of the material and the construction plant to be used. For removing any stable material payment will be made under payment item B33.07. Furthermore, the thickness of the layer to be removed must be less than 200 mm. If the layer to be removed is more than 200 mm payment will be made under payment item B33.04 as for the ordinary excavated cut to spoil material.

For the purposes of this clause and of payment item B33.07, stable material shall be defined as material which can be removed effectively by means of normal road construction equipment such as bulldozers, road graders, scrapers, mechanical shovels, back hoes or excavators."

B3306 CUT AND BORROW

(e) The temporary stockpiling of materials

REPLACE THE CONTENTS OF THIS SUBCLAUSE WITH THE FOLLOWING:

"The Contractor shall plan his activities in such a manner so that materials excavated from borrow areas and cuttings can be directly transported to and placed at the designated points.

The temporary stockpiling of material will not be paid for separately unless instructed by the Engineer, and full compensation will be deemed to have been included in the rates tendered for the various payment items for work for which the stockpiled material is to be used."

(g) General

ADD THE FOLLOWING AFTER THE FIRST SENTENCE OF THE SECOND PARAGRAPH:

"The final cut surface in hard excavation shall not be more than 0,5 m below the specified slope face, measured at right angles to the strike and dip directions of the slope face."

B3307 FILLS

(d) Benching

REPLACE THE FIRST SENTENCE OF THE SECOND PARAGRAPH WITH THE FOLLOWING:

"The dimensions of benches as well as the extent to which existing fills have to be cut back to form benches shall be subject to the Engineer's approval."

(i) Widening of fills

REPLACE THE FIRST SENTENCE OF THE EIGHTH PARAGRAPH WITH THE FOLLOWING:

"No additional payment will be made for widening of existing fills along the road. The widening of fills shall be measured and paid for under item 33.01."

B3310 CONSTRUCTION TOLERANCES

ADD THE FOLLOWING SUBCLAUSE:

"(c) Layer thicknesses

The thickness tolerances referred to in clauses 8205 and 8305 for the 150 mm natural gravel fill layer compacted to 93% of modified AASHTO density, shall be as follows:

	D ₉₀	D _{max}	D _{average}
Fill layer	30 mm	40 mm	10 mm"

B3312 MEASUREMENT AND PAYMENT

General directions

- (3) Work in restricted areas

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DELETE THE CONTENTS OF THIS SUBCLAUSE AND REPLACE IT WITH THE FOLLOWING:

"No additional or extra over payment will be made for work in restricted or confined areas."

AMEND THE DESCRIPTION OF PAYMENT ITEM 33.01 AS FOLLOWS:

"Item	Unit
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B33.01 Cut and borrow to fill, including free-haul up to 1,0 km:"

IN THE FIFTH PARAGRAPH REPLACE "free-haul distance of 0,5 km" WITH " free-haul distance of 1,0 km".

REPLACE THE FIFTH MEASUREMENT AND PAYMENT PARAGRAPH WITH THE FOLLOWING:

"The tendered rates shall include full compensation for procuring furnishing and placing the material, including excavating as if in soft excavation, the cutting of benches, the transporting of material over the haul distance, for preparing, processing, shaping, watering, mixing and compacting the materials to the densities or in the manner specified herein and for removing and disposing of up to 5% oversize material from the road after processing, including all haul."

Item	Unit
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33.04 Cut to spoil, including free-haul up to 0,5 km. Material obtained from:

CHANGE THE DESCRIPTION OF PAYMENT ITEM 33.04 TO THE FOLLOWING:

"Item	Unit
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**B33.04 Cut to spoil, including free-haul up to 1,0 km.
Material obtained from:**

REPLACE THE FOURTH MEASUREMENT AND PAYMENT PARAGRAPH WITH THE FOLLOWING:

"The tendered rates for cut to spoil shall include full compensation for excavating from the road prism and roadbed in the various classes of excavation for loading, transporting the material over the haul distance, off-loading and disposing of the material as specified, including shaping and levelling off any piles of spoil material.

It shall also, where applicable, allow for spoiling at sites where borrowing is taking place at the same time. No additional payment for temporary stockpiling or double handling will be made."

IN THE FOURTH PARAGRAPH REPLACE "free-haul distance of 0,5 km" WITH " free-haul distance of 1,0 km".

B16 SECTION 3400: PAVEMENT LAYERS OF GRAVEL MATERIAL

B3402 MATERIALS

(a) General

ADD THE FOLLOWING TO THE SECOND PARAGRAPH:

"Natural gravel shoulder material shall comply with the requirements of a Type 1 material according to Table 3402/4."

ADD THE FOLLOWING AFTER THE SECOND PARAGRAPH:

"Distinction shall be made between crushed and natural G4, G5 and G6 materials. Where the crushing and/or screening of these materials has been specified, the combined grading shall conform to the grading limits specified for G4 class material in Table B3402/1.

The same shall apply for all materials obtained from commercial sources."

REPLACE THE GRADING SECTION IN TABLE 3402/1 WITH:

"TABLE B3402/1: REQUIREMENTS FOR TYPES OF G4 TO G6 MATERIALS

GRADING	Nominal aperture size of sieve (mm)	Percentage passing through sieve by mass			The percentage by mass passing the 2,00 mm sieve shall not be less than 20% nor more than 70%
		Crushed material Nominal maximum size		Uncrushed material (mm)	
		37,5 mm	28 mm		
53			100		
50			95 – 100		
37,5	100		85 – 100		
28	86 – 95				
20	73 – 86	87 – 96	61 – 91		
14	61 – 76	73 – 86			
5	37 – 54	43 – 61	31 – 66		
2	23 – 40	27 – 45	20 – 50		
0,425	11 – 24	13 – 27	10 – 30		
0,075	4 – 12	5 – 12	5 – 15		

Note:

Refer to standard COLTO table for COLTO grading if required."

(b) Compaction requirements

AMEND THE COMPACTION REQUIREMENTS AS FOLLOWS:

The compaction requirements for the layers to be constructed under this contract are:

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Layer	Description
Base	97% Modified AASHTO density (C3).
Upper Subbase	95% Modified AASHTO density (C3).
Upper Selected	93% Modified AASHTO density (G5-6).
Lower Selected	93% Modified AASHTO density (G5-6).
Roadbed preparation	90% of modified AASHTO density.

(d) Excavations

Excavations in the pavement shall be kept dry. In the event of water penetrating the underlying layers, construction of the consecutive layers shall be postponed until the underlying layers are dry enough to accommodate the construction plant without any deformation or distress."

B3403 CONSTRUCTION

ADD THE FOLLOWING SUBCLAUSE:

"(f) Temporary stockpiling of material

The Contractor shall plan his activities so that materials excavated from borrow areas and cuttings or imported from commercial sources can be directly transported to and placed at the designated points.

The temporary stockpiling of material will not be paid for separately unless instructed by the Engineer, and full compensation will be deemed to have been included in the rates tendered for the various payment items for work for which the material is to be used."

B3406 QUALITY OF MATERIALS AND WORKMANSHIP

REPLACE THE SECOND PARAGRAPH WITH THE FOLLOWING:

"Test results and measurements will be assessed in accordance with the provisions of Section 8200."

B3407 MEASUREMENT AND PAYMENT

DELETE THE FIRST PARAGRAPH AND REPLACE IT WITH THE FOLLOWING:

"No additional or extra over payment will be made for work in restricted or confined areas."

On this contract, no extra over payment will be made due to the nature of the site or the size of the work available. All costs associated with carrying out the works are deemed to be included in the tendered rates for the items in the BOQ.

B17 SECTION 3500: STABILIZATION

B3502 MATERIALS

(a) **Chemical stabilising agents**

Delete sub clauses (ii) Ordinary Portland cement and (iii) Portland blast-furnace cement and replace with the following:

"Cement shall comply with the relevant requirements of SANS 50197-1:2000. The use of strength classes greater than 32, 5 shall not be permitted."

On this contract CEMII 32.5 (B-L) shall be used for stabilisation purpose."

(h) **Curing the Stabilised work**

Add the following to paragraph (i):

"Method (iii) and (iv) shall not be applicable."

- (i) Fillers

ADD THE FOLLOWING:

"The filler to be used shall be CEM II B – L 32.5 N cement or road lime as directed by the Engineer. The nominal rate of application for tender purposes shall be 1,5% of compacted material.

The Engineer may instruct the Contractor to amend the rate of application and type of filler after tests on the Site during construction."

(h) **Curing the Stabilised work**

Add the following to paragraph (i):

"Method (iii) and (iv) shall not be applicable."

B3503 CHEMICAL STABILIZATION

(i) **Construction limitations**

Add the following:

"No Stabilisation shall be done with falling air temperatures when the air temperature falls to below 7 °C or during rising air temperatures, when the air temperature is below 3 °C.

Moisture content tests shall not be undertaken more than one day in advance of in-situ Stabilisation operations. Care shall be taken to ensure that samples are representative of the in-situ material. Checks shall be conducted when wet weather occurs between initial testing and work commencing on any section."

The surface temperature of a compacted stabilized layer shall not be allowed to fall below 1°C during the first three (3) days after stabilization. The contractor shall be responsible for taking all measures necessary in this regard and shall especially refrain from stabilizing when such night temperature are probable.

All stabilized layers which have been damaged by frost or by the formation of ice in the layer shall be removed and replaced by the contractor at his expense unless agreed otherwise by the Engineer. The contractor shall make due allowance for these requirements in his construction programme and no claims in this regard will be considered.

B3506 TOLERANCES

(b) Uniformity of mix (chemical stabilization)

ADD THE FOLLOWING:

"The coefficient of variation shall not exceed 0,3 (30%) for mixing in place and 0,2 (20%) for plant-mixed material, calculated as follows:

$$\frac{S_n}{X_n} \times 100$$

where:

X_n is the average, and
 S_n is the standard deviation of stabilizer."

B3507 CONSTRUCTION OF TRIAL SECTION

ADD THE FOLLOWING TO THE LAST PARAGRAPH:

"The fact that the Engineer has approved the mixing process shall not relieve the Contractor of his obligations in respect of the mixing specified elsewhere in the Specifications. It will serve only as a guideline to ensure that the specified mixing requirements can actually be met."

B3509 QUALITY OF MATERIALS AND WORKMANSHIP

REPLACE THE SECOND PARAGRAPH WITH THE FOLLOWING:

"Test results and measurements will be assessed in accordance with the provisions of Section 8200."

ADD THE FOLLOWING TO THE FOURTH PARAGRAPH:

"The stabilized material sampled from the layer for the compaction of modified AASHTO briquettes, shall be prepared according to SANS 3001-GR54 (Replacing TMH1 Method A16T); i.e. discard material coarser than a 37,5 mm test sieve, and compacted according to SANS 3001-GR31 (Replacing TMH1 Method A7)."

ADD THE FOLLOWING PARAGRAPHS:

"The Engineer shall be notified at least 48 hours in advance of any planned stabilization to enable him to conduct tests himself.

Stabilization strength shall be determined by incorporating the Rapid Cure Method as described in SANS 3001-GR53 (Replacing TMH1 Method A13T).

Where the stabilizing agent is to be spread by hand, pockets of the stabilizing agent shall be placed on the layer at regular intervals. However, spreading shall only commence when the Engineer is satisfied that the correct quantity of stabilizing agent has been placed on the layer and has given permission that the stabilizing agent may be spread."

B3510 MEASUREMENT AND PAYMENT

REPLACE THE FIRST PARAGRAPH WITH THE FOLLOWING:

"No additional or extra over payment shall be made for stabilization work in restricted or confined areas."

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B35.01 Chemical stabilization extra over unstabilized compacted layers

REPLACE THE FIRST PARAGRAPH WITH THE FOLLOWING:

"The unit of measurement shall be the cubic metre of stabilized material, the quantity of which shall be determined in accordance with the final in-situ authorised dimensions of the layers treated as instructed by the Engineer. Additional material preshaped to allow for finishing by cutting only will not be included in the measurement."

ADD THE FOLLOWING TO THE PAYMENT PARAGRAPH:

"The tendered rate shall also include full compensation for working in restricted areas on top of and alongside culverts where necessary."

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B35.02 Chemical stabilizing agent

REPLACE THE THIRD PARAGRAPH WITH THE FOLLOWING:

"Subject to the provisions of clause 1220, the quantity of stabilizer will be determined in accordance with the authorised rate of application and layer dimensions. Extra stabilizer added for wastage and higher preshaping levels will not be included in the quantity."

B18 SECTION 4100 : PRIME COAT

B4102 MATERIALS

(a) Priming material

ADD THE FOLLOWING:

"The prime coat shall be MC-30 cut-back bitumen/ Enviro Prime or Similar." CHECK THE BOQ.

(b) Aggregate for blinding

ADD THE FOLLOWING:

"Blinding of the primed surface with aggregate shall only be permitted to facilitate vehicular access to adjoining properties."

B4103 EQUIPMENT

ADD THE FOLLOWING BEFORE THE FIRST PARAGRAPH:

"Before any storage, dilution or spraying operations commence the Contractor has to provide a safety and security and environmental protection method statement for approval of the Engineer. All personnel involved, including brooming, prime distributor, storage and production yard operators and labour shall wear the necessary protective clothing. Appropriate fire extinguishers and medical aid devices must be provided in working order. The Engineer reserves the right to stop the Contractor's operation or order any person from the Site who does not adhere to the above."

B4104 WEATHER AND OTHER LIMITATIONS

REPLACE SUBCLAUSE (g) WITH THE FOLLOWING:

"(g) when the moisture content of the upper 50 mm of the crushed-stone base or a granular base layer, determined according to SANS 3001-GR31 (Replacing TMH1 Method A7), is more than 50% of the optimum moisture content."

B4106 APPLICATION OF THE PRIME COAT

ADD THE FOLLOWING TO SUBCLAUSE (c):

"The nominal application rate of the prime shall be 0,8 litre/m². Unless directed otherwise by the Engineer or indicated on the Drawings, the width of the primed surface shall be 150 mm wider than the edges of the surfacing on each side."

B4108 TOLERANCES

ADD THE FOLLOWING TO THIS CLAUSE

"Any unauthorised increase outside these limits shall not be paid for. However, the Engineer shall have the right to instruct the Contractor to make up any deficiency, or blind any over-application, of prime without additional payment. If under-spraying occurs, and it is accepted by the Engineer, only the actual quantities applied shall be paid for."

B4109 TESTING

ADD THE FOLLOWING

"No payment shall be made if this condition is not adhered to. The Contractor shall provide, at his cost, representative samples of every batch of prime delivered onto site."

B4110 MEASUREMENT AND PAYMENT

ADD THE FOLLOWING BEFORE THE PAYMENT ITEMS:

"No additional or extra over payment will be made for work in restricted or confined areas."

B21 SECTION 5500: FENCING

B5502 MATERIALS

(a) Straining posts, stays, standards and droppers

REPLACE THE HEADING OF THIS SUBCLAUSE WITH THE FOLLOWING:

"(a) Straining posts, corner posts, stays, standards and droppers"

ADD "corner posts, "AFTER "Straining posts, "IN THE FIRST LINE OF THE FIRST PARAGRAPH.

ADD", corner posts, "AFTER "straining posts "IN THE FIRST LINE OF THE FOURTH PARAGRAPH.

ADD THE FOLLOWING:

"Straining posts, corner posts, stays, standards and droppers shall be timber of the type and size specified on the Drawings. Timber shall comply with the requirements of SANS 457 and shall be treated with creosote which complies with SANS 616. Where the cutting of posts is unavoidable after having been treated, the Engineer may permit the required length to be cut off from the bottom of a post, provided that the exposed area is subsequently thoroughly treated with creosote."

(g) Gates

REPLACE THE THIRD PARAGRAPH WITH THE FOLLOWING:

"Gates shall be fully galvanized according to the requirements of SANS 121."

5505 CLEARING THE FENCE LINE

ADD "in accordance with clause B1705" AFTER "cleared "IN THE FIRST LINE OF THE FIRST PARAGRAPH.

REPLACE "Section 1700" IN THE EIGHTH AND NINTH LINES OF THE FIRST PARAGRAPH WITH "subclause B1705(b)."

5506 ERECTING STRAINING POSTS AND STANDARDS

REPLACE THE HEADING OF THIS SUBCLAUSE WITH THE FOLLOWING:

"B5506 ERECTING STRAINING POSTS, CORNER POSTS AND STANDARDS"

ADD "and/or corner posts "AFTER" Straining posts "IN THE FIRST LINE OF THE FIRST PARAGRAPH.

ADD "and corner posts "AFTER" Straining posts "IN THE FIRST LINE OF THE SECOND PARAGRAPH.

ADD "and corner posts "AFTER" straining posts "IN THE FIRST LINE OF THE FOURTH PARAGRAPH.

ADD", corner posts "AFTER" straining posts" IN THE FIRST AND FIFTH LINES OF THE SIXTH PARAGRAPH.

B5514 MEASUREMENT AND PAYMENT

Item	Unit
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B55.02 Supply and erect new fencing material for new fences and for supplementing material in existing fences which are being repaired or removed:

REPLACE THE DESCRIPTION OF SUBITEM (i) WITH THE FOLLOWING:

"(i) Straining posts, corner posts, stays and anchors:"

REPLACE SUBITEM 55.02(i)(i)(1) WITH THE FOLLOWING:

"(i) Vertical

(1) Steel straining posts and corner posts
 (type, size and length, and whether
 galvanized or painted indicated) number"

REPLACE THE SUBHEADING "Straining posts (Subitem (i))" WITH "Straining and corner posts (Subitem (i))".

ADD" and corner "AFTER" straining "IN THE FIRST LINE OF THE SECOND LAST PARAGRAPH.

ADD "gravel drainage layer below post footings "AFTER" concrete" IN THE SIXTH LINE OF THE SECOND LAST PARAGRAPH.

DELETE "or drilling "IN THE SEVENTH LINE OF THE SECOND LAST PARAGRAPH.

B22 SECTION 5600: ROAD SIGNS

B5601 SCOPE

REPLACE "South African Road Traffic Signs Manual "IN THE SECOND PARAGRAPH WITH "SADC Road Traffic Signs Manual"

B5602 MATERIALS

(a) Structural steel

REPLACE THE SECOND PARAGRAPH WITH THE FOLLOWING:

"All structural steel, including tubes, shall be galvanized in accordance with the requirements of SANS 121, thickness > 6 mm, as applicable."

REPLACE THE SECOND SENTENCE OF THE FIRST PARAGRAPH WITH THE FOLLOWING:

"Channels, square tubes, angle irons and other steel members on the reverse side of the sign boards and steel tubes for sign supports shall be painted in accordance with the following specifications: SANS 926 for a two-pack zinc-rich epoxy primer, SANS 681 for the undercoat and SABS 1413 for a chloro-rubber finishing coat."

(g) Retro-reflective material

IN THE FIRST SENTENCE REPLACE SABS 1519" WITH SANS 1519-1" AND DELETE "and the adhesion requirements of CRS 191".

REPLACE THE THIRD LAST PARAGRAPH WITH THE FOLLOWING:

"The Contractor shall provide proof that Classes I and III of the retro-reflective commercial products to be used have been generally and successfully used in South Africa during the last three years.

Classes I and III retro-reflective materials shall be warranted against any abnormalities as described in SANS 1519-1 for 7 and 10 years respectively."

ADD THE FOLLOWING AFTER THE SECOND LAST PARAGRAPH:

"Should a contractor manufacture signs without the necessary approval it shall be deemed that the Contractor unconditionally guarantees the sign for the full period of seven years. Should failure of the sign due to suspected incompatibility of materials (in the opinion of the Engineer) occur within seven years, the Contractor shall remanufacture the sign and re-erect the sign at no cost to the Employer."

ADD THE FOLLOWING TO THE LAST PARAGRAPH:

"Reflective sheeting shall be applied to sign faces strictly in accordance with the retro-reflective material manufacturer's specifications. Legend and background materials shall be supplied by the same manufacturer. Every batch of material used for signs on the Contract shall be identified by a batch number. A certificate of all materials' compliance with SANS 1519-1 shall be submitted to the Engineer within 3 months of the material being used. An outdoor weathering test will not be required."

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ADD THE FOLLOWING:

"Retro-reflective materials shall comply with the requirements of SANS 1519-1 but the requirements of Clauses 3 and 4 of CKS 191 shall take precedence.

When measured in accordance with SANS 1519, the coefficient of retro-reflection of a retro-reflective material shall not be less than the appropriate value given in Table 1 of SANS 1519-1 (duplicated as Table B8118/1 in these Specifications).

The colour of the retro-reflective material shall match the specified colour and shall not be faded to such an extent that its effectiveness is unacceptably impaired in the opinion of the Engineer. The surface of the material shall be undamaged and free from scratches, stains or other marks.

When, in the opinion of the Engineer, the retro-reflective material does not comply with the above requirements, the Contractor shall replace the defective material at his own cost, to the satisfaction of the Engineer."

(k) Back vinyl

IN THE SECOND SENTENCE REPLACE "SABS 1519" WITH "SANS 1519-1" AND DELETE THE REST OF THE SENTENCE.

ADD THE FOLLOWING SUBCLAUSES:

"(l) Temporary covers for road signs

When required, existing road signs shall be fully or partially covered with burlap or 0,5 mm thick black plastic or other approved material to obscure destinations that are temporarily inapplicable or irrelevant.

The covers shall be neatly applied and firmly fixed in position so that they will be able to withstand strong gusts of wind or eddies caused by passing traffic."

B5603 MANUFACTURING OF ROAD SIGN BOARDS AND SUPPORTS

(a) Road sign boards

ADD THE FOLLOWING TO THE FIRST PARAGRAPH:

"The Contractor shall submit a schedule detailing the suppliers and trade names for the main constituent components in the manufacturing process.

The Contractor shall also submit documentation from the manufacturer or the South African agents or distributors of the retro-reflective sheeting that will be used in the manufacturing of the road sign boards, attesting to the fact that the road signs manufacturer conforms with the storage, handling and application procedure recommended by the reflective sheeting material manufacturer."

INSERT THE FOLLOWING AFTER THE THIRD PARAGRAPH:

"The colour of the retro-reflective material shall match the specified colour and shall not be faded to such an extent that its effectiveness is unacceptably impaired in the opinion of the Engineer. The surface of the material shall be undamaged and free from scratches, stains or other marks.

When, in the opinion of the Engineer, the retro-reflective material does not comply with the above requirements, the Contractor shall replace the defective material at his own cost, to the satisfaction of the Engineer.

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The Contractor shall make every effort to ensure that sign boards are correct in all respect and before dispatching the boards from the manufacturer's factory shall provide the Engineer with a 100 mm x 150 mm colour photograph of each sign face for approval of the correctness of the legend. Such approval will not imply final acceptance of the board. If the Contractor is in any doubt as to the correctness of the sign detail, the sign designer shall be contacted for verification."

B5604 ROAD SIGN FACES AND PAINTING

ADD THE FOLLOWING NEW SUBCLAUSE:

"(e) Application of retro-reflective material

All sign faces shall be faced with retro-reflective material. Painted front sign faces shall not be used.

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

B5605 STORAGE AND HANDLING

ADD THE FOLLOWING:

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

- Drilling of holes, except for the fastening of overlays
- Application of any form of adhesive
- Cleaning with any chemicals that are not specifically approved by the manufacturer of the retro-reflective material
- Covering the sign face with an impermeable material that does not allow free circulation of air."

B5606 ERECTING ROAD SIGNS

(b) Excavation and backfilling

ADD THE FOLLOWING AFTER THE FIRST SENTENCE OF THE FIRST PARAGRAPH:

"A 300 mm thick gravel drainage layer shall be placed at the bottom of the excavations and shall be compacted before the excavations are backfilled.

The dimensions of the excavation for the drainage layers shall be over and above that for the footings as shown on the Drawings."

(c) Erection

ADD THE FOLLOWING PARAGRAPHS:

"After erection the sign board shall be thoroughly cleaned with a cleaning agent approved by the retro-reflective material's manufacturer.

On completion of signs on the road section, the Contractor shall clear an area immediately around the sign. The area shall be 10 m wide at the side closest to the road and 5 m wide at the side farthest from the road. The area so cleared shall be treated with an approved chemical growth-retarder in accordance with the supplier's application instructions.

No separate payment shall be made for the clearance, or the procurement and application of the growth retarder."

ADD THE FOLLOWING CLAUSES:

"B5610 DISMANTLING AND REMOVING ROAD SIGNS AND THEIR SUPPORTS

Existing overhead and ground mounted road signs that are being replaced by new signs shall be dismantled and disposed of by the Contractor. Where possible the dismantling of the signs shall not be before the replacement sign is erected and displayed. Where dismantling of the sign is required before erection of the replacement sign, the dismantling shall not take place until immediately before work is to commence on the replacement, and the replacement shall be completed and the new sign displayed as soon as possible thereafter (within 72 hours).

When instructed by the Engineer, concrete footings of existing signs shall be demolished and removed to a depth of 200 mm below the adjacent ground level.

Dismantling shall include sign panels and ground mounted sign supports.

Ground mounted sign supports shall be cut off just below ground level. Material excavated for removal of buried poles shall be replaced, and any depression made good using excess material from excavation for new signs.

Pay items are provided in the Bill of Quantities. Payment will differentiate between different types of sign panels.

B5609 MEASUREMENT AND PAYMENT

ADD THE FOLLOWING ITEMS:

Item	Unit
B56.10 Statutory road signs	number

The unit of measurement shall be the number of danger plates provided and erected in accordance with the drawings or as directed by the Engineer.

The tendered rate shall include full compensation for all labour and material, painting, posts, excavation, backfilling with soil etc., as may be necessary for completing the work in accordance with the details shown on the drawings or as directed by the Engineer.

Item	Unit
B56.11 Dismantling and disposal of road signs:	
(a) Hazard marker signs	number
(b) Single post signs (other R and W signs)	number
(c) Multiple post ground-mounted signs	number

The unit of measurement is the number of signs removed.

The tendered rate shall include full compensation for dismantling the sign boards, removing the supports and foundations of ground-mounted signs, disposing of the material and clearing the removal site. It shall also include for all labour, plant, supervision and all other incidentals.

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B23 SECTION 5700: ROAD MARKINGS

B5701 SCOPE

REPLACE SOUTH AFRICAN ROAD TRAFFIC SIGNS MANUAL IN THE SECOND PARAGRAPH WITH "SADC Road Traffic Signs Manual".

B5702 MATERIALS

INSERT THE FOLLOWING BEFORE SUBCLAUSE (a) PAINT:

"The selection of the appropriate road marking paint and materials for permanent road markings to ensure conformance with the requirements of this specification rests with the Contractor. Such paint and material shall have technical characteristics (brightness, luminance, skid resistance, durability) equal to or greater than road marking paint and materials specified in subclauses 5702(a), (b) and B5702(c).

Where plastic road-marking material (hot-melt plastic (also known as thermoplastic) and two-component (also known as cold plastic)) is used, the Contractor shall obtain an approved guarantee from the manufacturer that the paint complies with the specification. This shall be submitted to the Engineer on request."

REPLACE SUBSUBCLAUSE B5702(a)(i) WITH THE FOLLOWING:

"(i) Road marking paint

Road marking paint shall be Type 1 as specified in SANS 731-1. Only paint, manufactured in a SANS approved and accredited facility shall be accepted. The no-pick-up time of road-marking paint shall comply with the Class 1 requirement in accordance with SANS 731-1 and SANS 731-2.

The paint shall be delivered at the site in sealed containers marked in accordance with SANS 731-1.

The viscosity of the paint shall be such that it can be applied without being thinned down."

ADD THE FOLLOWING SUBITEM:

"(c) **Retro-reflective beads**

Retro-reflective glass beads shall be applied to the wet paint, thermoplastic and cold plastic.

The beads shall comply with Class A beads in accordance with EN 1424: 1998, with the following requirements or as approved by the Engineer:

- colour : crystal clear
- roundness : > 80%
- size range of : 14 – 200 US Mesh (75 – 1400 Microns)
- refractive index : > 1.5
- specific gravity : ± 2.5
- granulometry :

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CUMULATIVE RETAINED MASS		
SIEVE	MINIMUM	MAXIMUM
1 700	0	2
1 400	0	10
1 180	5	30
850	40	80
600	70	100
425	80	100
355	90	100
212	95	100
Pan	100	100

The beads shall be delivered to the site in sealed bags, marked with the name of the manufacturer, the batch number and an inspection seal of SABS, confirming that the beads form part of a lot tested by SABS and comply with the requirements of EN 1424: 1998. Alternatively, the Contractor shall at all times have a SABS certificate on the site, identifying the batches to which the inspection seals apply and certifying that they have been tested by SABS, and comply with the requirement of EN 1424: 1998."

B5704 MECHANICAL EQUIPMENT FOR PAINTING

ADD THE FOLLOWING SENTENCE AT THE END OF THE FIRST PARAGRAPH:

"The road-marking machine shall be fitted with a device to guide the operator to the centre of the line to be painted. This device shall be used at all times of operation."

B5705 SURFACE PREPARATION

ADD THE FOLLOWING AT THE END OF THE SECOND PARAGRAPH:

"The onus is on the Contractor to ensure that the surface on which the road markings are to be applied is sufficiently clean and dry to ensure that the quality of the road markings will not be adversely affected. The Contractor is also responsible for protecting road studs from being painted over, and the subsequent cleaning thereof if such over-painting did occur."

B5707 APPLYING THE PAINT

INSERT THE FOLLOWING BEFORE THE FIRST PARAGRAPH:

"The Contractor's establishment on site and general obligation shall be deemed to fully include the establishment of the road-marking team, irrespective of the number of times the road-marking team is required to be on site or is required to move within the site.

Provision is also made under item B57.07 for de-establishment and re-establishment in the contract or defects liability period if such action is required by delays not attributable to the Contractor and/or ordered by the Engineer."

REPLACE THE SIXTH PARAGRAPH WITH THE FOLLOWING:

"Solvent borne road marking paint shall be applied at a nominal rate of 0,42 l/m² or as directed by the Engineer. Thermoplastic road marking shall be applied at a nominal rate of 2,5 kg/m² to achieve a minimum thickness of 1,25 mm to 1,5 mm or as directed by the Engineer. The two-component road marking material shall be applied by hand by means of a trowel. The desired symbol or line shall be marked with a tape or a template on the road surface. Thereafter apply the required volume of material and spread uniformly over the entire area. When dry/set, remove the tape or template. A spreading rate of 4,5 kg/m² is estimated to achieve a 2,0 mm material thickness.

In order to ensure proper coverage on all types of surfaces the Engineer may order an increase in the above nominal application rates. Payment for these variations in application rates shall be made under item 57.04.

A daily log-sheet, provided by the Employer, shall be completed and signed by the Contractor and the Engineer's representative, recording the quantities of paint and glass beads used on that day and shall be available for inspection at all times. The completed and signed log-sheet for the period covered by a payment certificate shall be attached to the payment certificate."

REPLACE THE LAST PARAGRAPH WITH THE FOLLOWING:

"Solvent-based road marking as specified by the Engineer shall be carried out within 14 days of opening the road full width to traffic after the completion of the surfacing.

If in the in the opinion of the Engineer, conditions are unsafe, the centre-line shall be painted immediately after 2,0 km of continuous road has received a new asphalt layer, or 4,0 km of continuous road has received a new seal surfacing."

B5708 **APPLYING THE RETRO-REFLECTIVE BEADS**

IN THE FIRST PARAGRAPH, REPLACE THE NOMINAL APPLICATION RATE OF "0,8 kg/litre" WITH "400 gm/m²".

REPLACE THE SECOND PARAGRAPH WITH THE FOLLOWING:

"The thermoplastic road marking material and two-component road marking material shall contain insitu glass beads of minimum content of 25% in order to obtain night visibility (reflectivity). The Contractor shall immediately apply additional glass beads at 400 g/m² to obtain immediate reflectivity. The beads shall be sprayed onto the road marking layer by means of a pressure sprayer. Where letter, symbol, traverse line and island road marking is undertaken by hand, the glass beads may be applied by hand if approved by the Engineer. Prior to any hand application work, the Contractor shall first request approval from the Engineer."

ADD THE FOLLOWING:

"Beads shall be applied in accordance with EN 1424."

B5710 **TOLERANCES**

ADD THE FOLLOWING PARAGRAPHS TO SUBCLAUSE (c) ALIGNMENT OF MARKINGS:

"When an unbroken line and a broken line are painted alongside each other, the beginning and the end of the unbroken line shall coincide with the beginning of one broken line and the end of another broken line. When existing lines are repainted, the new markings shall not deviate more than 100 mm in the longitudinal direction nor 10 mm in the transverse direction from the existing marking.

The alignment of the road studs shall not deviate from the true alignment by more than 10 mm and shall be positioned so that the reflective faces are within 5° of a right angle to the centre line of the road."

ADD THE FOLLOWING SUBCLAUSE:

"(e) Testing

(1) Plant

Before painting any permanent road markings, the Contractor shall satisfy himself and the Engineer, by painting test lines on a section of pavement other than the section required to be marked:

- (i) that the painting machine is in good working order and properly adjusted;
- (ii) that the operator is fully experienced; and
- (iii) that the machine sprays at the specified rate of paint application.

The Contractor shall bear the cost of all materials and workmanship required for the above plant tests.

In addition, the Contractor shall conduct random paint thickness tests and dip/spread tests as required by the Engineer."

B5711 GENERAL

INSERT THE FOLLOWING INTO THE LAST SENTENCE OF THE LAST PARAGRAPH BETWEEN "black paint "AND" or chemical paint remover":

", bituminous emulsion, slurry"

ADD THE FOLLOWING TO THE LAST PARAGRAPH:

"Where black paint is used, it shall be matt."

ADD THE FOLLOWING CLAUSE:

"The Contractor shall provide temporary traffic control facilities in accordance with Section 1500 of the COLTO's standard specifications for road and bridge works to ensure traffic safety where work is being executed.

Property and/or road signs damaged by the Contractor, his personnel, his agents or sub-contractors shall be repaired or restored to their condition prior to the damage at his own cost."

B5712 FAULTY WORKMANSHIP OR MATERIALS

ADD THE FOLLOWING PARAGRAPH:

"Should less than 95% of the road markings comply with the specified coefficient of retro-reflected luminance when measured in accordance with SANS 6261 at a 5% sample level, the Contractor shall repaint the works at his own cost."

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B5714 MEASUREMENT AND PAYMENT

Item **Unit**

B57.05 Roadstuds

ADD THE FOLLOWING AFTER THE FIRST SENTENCE OF THE SECOND PARAGRAPH:

"No additional payment will be made should temporary or permanent road studs be replaced if lost or broken during the construction period or the maintenance period."

Item **Unit**

B57.06 Setting out and premarking the lines (excluding traffic-island markings, lettering and symbols)

ADD THE FOLLOWING:

"Referencing of existing road markings prior to milling and other operations, shall be included in the tendered rate for setting out and pre-marking."

Item **Unit**

B57.07 Re-establishing the painting unit at the end of the maintenance period

ADD THE FOLLOWING AFTER THE FIRST SENTENCE OF THE FIRST PARAGRAPH:

"The tendered lump sum shall also include for the erection and removal, on a daily basis as the work progresses, the minimum accommodation of traffic facilities specified in clause 5713."

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

B5901 SCOPE

ADD THE FOLLOWING:

"Where reference is made in this section to 'the road and road reserve', this shall also be deemed a reference to 'the Site of the Works'."

B5904 MEASUREMENT AND PAYMENT

Item **Unit**

B59.01 Finishing the road and road reserve:

REPLACE SUBITEM (b) WITH THE FOLLOWING:

"(b) Single-carriageway road:

(i) Roads with bituminous surfacingkilometre (km)

Item **Unit**

B59.02 Treatment of old roads and temporary deviations:

ADD THE FOLLOWING SUBITEM:

(a) Gravel roads (including service and access roads) kilometre (km)

B31 SECTION 8100: TESTING MATERIAL AND WORKMANSHIP

B8102 TESTING METHODS

INSERT THE FOLLOWING AS A NEW FIRST PARAGRAPH:

"Where reference is made to TMH test methods in this specification or the standard specifications, it shall be replaced with the relevant current published SANS test method."

B8103 THE COSTS OF TESTING

(a) Process Control

RENAME THE HEADING AS "Materials Quality Control" AND REPLACE THE CONTENTS WITH THE FOLLOWING:

"Testing shall be undertaken by a combined laboratory facility for process control (where the process control testing can be utilised as acceptance control), acceptance control and correlation testing subject to the following requirements laid down by the Employer:

- (i) The Contractor accepts the test results of the combined laboratory. Should there be any doubts with regard to certain test results, this will be settled by an independent laboratory mutually agreed upon. The cost in such cases will be to the account of the party at fault. The Contractor shall apply in writing, quoting this clause, as to which specific tests are in doubt, providing test reference numbers and details as to the reasons why the test result is in doubt.
- (ii) The Contractor accepts that the Engineer will be in charge of the combined laboratory.
- (iii) The Contractor will be allowed to place a permanent representative in the combined laboratory to observe the laboratory operations. The cost of such representation cannot be claimed as a payment contribution towards payment item B81.04, but will be for the account of the Contractor. The Contractor shall indicate in writing within 14 days of the commencement date if such representation will be required or declined.

The estimated cost per month to establish and operate the combined laboratory for the contract period as listed above, allows for the following items:

- (i) Establishment of laboratory buildings
- (ii) Salaries and labour for all laboratory staff members
- (iii) Housing for all laboratory staff members
- (iv) Transport requirements (based on distance) for staff and material testing
- (v) Provision of laboratory equipment (as required for the contract)

A pay item for the monthly contribution from the Contractor's interim payment certificates has been provided under payment item B81.04."

B8105 TESTING THE AGGREGATES

ADD THE FOLLOWING SUBCLAUSES:

"(g) Ethylene Glycol Weathering Test for durability of aggregates used in seals

- (i) Select 100 number single sized chippings from a representative sample retained on the 14 mm sieve but passing the 20 mm sieve. The selected aggregate chippings shall be oven dried for 12 hours and the mass of the chippings shall then be determined to the nearest 0,001 kg. The chippings shall then be immersed in ethylene glycol contained in a glass container for 28 days. After 28 days the chippings shall be removed from the ethylene glycol and oven dried for 12 hours. All friable and loose pieces shall then forcibly be removed by fingers from the chippings. The mass of the chippings shall then be determined and the percentage weathering loss shall be calculated from the results.
- (ii) Acceptance Criteria
Only aggregate that shows a breakdown after 26 days in ethylene glycol of less than 2% shall be used in seals or in asphalt.

(h) Ethylene Glycol Weathering Test for durability of aggregates used in concrete

- (i) A 2 kg sample of single sized (20 mm) stone is washed, air dried and then soaked in ethylene glycol for six days.
- (ii) On the sixth day the sample is removed from the ethylene glycol, washed thoroughly with tap water and oven dried overnight.
- (iii) A conventional dry sieve analysis is carried out on day 7. The sample is re-submerged in ethylene glycol and the above 7-day cycle is repeated.
- (iv) On day 14, following the dry sieve analysis, the sample is again submerged in ethylene glycol and allowed to stand for a further thirteen days.
- (v) After thirteen days the sample is removed from the ethylene glycol, washed and oven dried overnight.
- (vi) On day 28 the final sieve analysis is carried out.

Photographs of the rock samples are to be taken after each of the above cycles.

Acceptance Criteria

Only aggregate that shows a breakdown of the initial sizes of less than 20% by weight after the 28 days testing in ethylene glycol shall be used as coarse aggregate in concrete."

B8109 TESTING TAR, BITUMEN AND ASPHALT

(a) Tests described in the standard specifications for tars, bitumen's and bituminous emulsions

ADD THE FOLLOWING:

"The Contractor shall submit all relevant test results of the tests stated above to the Engineer for approval, prior to any bituminous surfacing being applied to any section of road.

The Contractor shall supply a delivery sheet, as well as a bitumen sample (this sample of one litre minimum must be contained in a galvanised tin and properly cross-referenced) for every single batch of tar or bituminous product that is delivered to the site and shall issue the same to the Engineer.

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The delivery sheet must state the product delivered to site, the name and address of the manufacturer as well as the compliance of the product to all relevant SANS specifications.

Only after the Engineer has received the relevant information and approved it may the Contractor commence with the bituminous surfacing."

ADD THE FOLLOWING CLAUSES:

"B8118 TESTS ON RETRO-REFLECTIVE MATERIAL FOR USE ON ROAD SIGNS

On site testing of the retro-reflective properties of road signs shall be done with a field retro-reflectometer measuring at an entrance angle of 5,0° and an observation angle of 0,33°. The coefficient of retro-reflection so determined shall not be less than the relevant values given in Table B8118/1 below. The coefficients of retro-reflection are expressed in candelas per lux per square metre (cd/(lux/m²)).

TABLE B8118/1: CO-EFFICIENTS OF RETRO-REFLECTION

1	2	3	4	5	6	7	8	9	10	11
Class	Observation angle (degrees)	Entrance angle (degrees)	Coefficient of retro-reflection for different colours of material when measured with Standard Illuminant A* (cd/(lux/m²)) minimum							
			Red	Orange	Yellow	Green	Blue	Purple	White	Brown
I	0,33	5	10	20	35	7	3	2	50	3
II	0,33	5	20	40	70	14	6	4	100	6
III	0,33	5	30	60	105	21	9	6	150	9

*See CIE Publication 15(E-1.3.1)

B8119 TEST PROCEDURE TO DETERMINE THE WET-DRY DURABILITY TEST FOR CEMENT-TREATED MATERIALS USING THE HAND BRUSHING METHOD

(a) Scope

This method covers the procedure for determining the soil-cement losses obtained by repeated wetting, drying and hand brushing of hardened soil-cement specimens (see note B8119(e)(iii)).

(b) Apparatus

- (i) A moisture curing room capable of maintaining a relative humidity of 95% to 100% and a temperature of 22 °C to 25 °C, or suitable plastic bags capable of holding specimens and carriers in an airtight condition in a water bath as described in B8119(b)(ii) below.
- (ii) A suitable water bath with thermostatic control capable of maintaining a temperature of 22 °C to 25 °C.
- (iii) A balance to weigh up to 10 kg, accurate to 0,5 g.
- (iv) A drying oven capable of maintaining temperatures of 71 ± 3 °C and 110 ±5 °C.
- (v) A wire scratch brush made of 50 mm by 1,6 mm flat 26 gauge wire bristles assembled in 50 groups of 10 bristles and mounted to form five longitudinal rows and 10 transverse rows on a 200 by 65 mm wooden block.

(c) Method

(i) Preparation of specimens

Prepare specimens in accordance with the procedure described in the Appendix to method A 19 in the TMH1 with the following exceptions:

Use the material passing the 37,5 mm sieve and discard the material remaining on the sieve.

Use the apparatus and compaction method as described in SANS 3001-GR30 (Replacing TMH1 Method A7) (Modified AASHTO).

(ii) Curing of specimens

Cure the specimens for seven days at a relative humidity of 95% to 100% and a temperature of 22 °C to 25 °C in a suitable curing room or in plastic bags and a suitable water bath. Alternatively, the specimens may be rapid cured (see note B8119(e)(v)).

(iii) Wetting, drying and brushing

After curing, remove the specimens from the curing room or plastic bags, allow to cool if necessary, and submerge them in water at room temperature for a period of five hours.

Remove the specimens from the water and place them in an oven at 71 °C for 42 hours.

Remove the specimens from the oven. Give each specimen two firm strokes on all areas with the wire scratch brush. The brush must be held parallel to the long axis of the specimen or parallel to the ends as required to cover all areas of the specimen. Apply these strokes to the full height and width of each specimen with a firm stroke corresponding to approximately 13,5 kN force (see note B8119(e)(iv)).

The procedure described so far constitutes one cycle (48 hours) of the wet-dry durability test. After brushing the specimens are again submerged in water the procedure repeated for a total of 12 cycles (see note B8119 (e)(ii)).

(iv) Determination of soil-cement losses

After 12 cycles, dry the specimens to constant mass at 110 °C and determine the oven-dry mass of the specimens. The data collected will permit the calculation of the soil-cement losses of the specimens after the prescribed 12-cycle test.

(d) Calculations

(i) Calculate the soil-cement loss of the specimens as a percentage of the original oven-dry mass of the specimens as follows:

$$L = \frac{W - M}{W} \times 10$$

Where:

L = soil-cement loss (%)

W = original calculated oven-dry mass (g) (calculated according to paragraph 3.5 in the Appendix to Method A19 in the TMH 1)

N = final oven-dry mass (g).

- (ii) The percentage loss shall be calculated and reported to the nearest 0,1 per cent. These results are normally required for designing a mix and are reported graphically against relevant cement content.

(e) Notes

- (i) Mass determination of the specimens before and after brushing are usually made at the end of each cycle during research or special investigations.
- (ii) If it is not possible to run the cycle continuously because of Sundays or holidays or for any other reason, the specimens should be held in the oven during the lay-over period.
- (iii) The test was originally developed to determine the wet-dry durability of cement-treated material. It can, however, be used with equal success on material tested with other chemical stabilisers, for example lime, or mixes of lime and milled blast furnace slag, or cement and milled blast furnace slag.

- (iv) The pressure is measured as follows:

Clamp a specimen in a vertical position on the edge of a platform scale and zero the scale. Apply vertical brushing strokes to the specimen and note the force necessary to register approximately 1,36 kg.

- (v) Rapid curing:

Seal each specimen airtight in a suitable container or plastic bag. Carefully place the briquettes on suitable holders or in pans and place in the oven at the relevant temperature and period given below:

Stabilizing Agent	Temp (°C)	Time (hours)
Cement	70 - 75	24 ± 0,5
PBFC	70 - 75	24 ± 0,5
Lime	60 ± 2	45 ± 1
Lime/FA	60 ± 2	45 ± 1
Lime/MBFS	60 ± 2	45 ± 1"

B8117 MEASUREMENT AND PAYMENT

REPLACE ITEM 81.02 WITH THE FOLLOWING:

"Item	Unit
B81.02 Other special tests requested by the Engineer:	
(a) Cost of testing	Provisional Sum (Prov Sum)
(b) Handling costs and profit in respect of subitem B81.02(a) above	percentage (%)

The provisional sum provided to cover the cost of special tests as requested by the Engineer in terms of Clause 8115 shall be expended in accordance with the provisions of the General Conditions of Contract. Payment will not be made for any special test should the test indicate that the specifications have not been complied with.

The percentage tendered is a percentage of the amount spent under subitem B81.02(a), which shall include full compensation for the handling costs of the Contractor and the profit in connection with the tests requested by the Engineer.

The Contractor shall appoint a reputable company to perform the applicable tests with a field retro-reflectometer. This company is subject to the Engineer's approval and his approval must be obtained before any test results will be accepted."

PART C: PROVISION OF THE TEMPORARY WORKFORCE

CONTENTS

C 01 SCOPE

This Specification covers the provisions and requirements relating to the provision of the temporary workforce.

C 02 INTERPRETATIONS

1) C 02.01..... Supporting documents

The Tender Rules, Conditions of Contract, Standard and Project Specifications, Drawings and statutory minimum requirements relating to the employment and remuneration of labour shall *inter alia* be read in conjunction with this Specification.

2) C 02.02..... Definitions and abbreviations

For the purposes of this specification, the definitions given in the Conditions of Contract, the Standard Specifications and the Project Specifications, together with the following additional definitions shall, unless the context dictates otherwise, apply:

- (a) **"Key Personnel"** means all contracts managers, site agents, materials and survey technicians, trainers, supervisors, foremen, skilled plant operators, artisans and the like, and all other personnel in the permanent employ of the Contractor or Subcontractor who possess special skills and/or who play key roles in the Contractor's or Subcontractor's operation
- (b) **"Project Committee"** means a committee consisting of the Employer, the Engineer, the Contractor, (or their nominated representatives) as well as representatives of the temporary workforce, which is convened from time to time at the discretion of the Engineer, for the purposes of acting as an avenue for effective communication and liaison between all the parties referred to, in all matters pertaining to the Contract
- (c) **"Subcontractor"** means any person or group of persons in association, or firm, or body corporate (whether formally constituted or otherwise) not being the Contractor, to whom specific portions or aspects of the Works are sublet or subcontracted by the Contractor in accordance with the provisions of the Contract
- (d) **"Worker"** for the purposes of this Specification means any person, not being one of the Contractor's key personnel, nor any key personnel of any Subcontractor, who is engaged by the Contractor, a Subcontractor or the Employer to participate in the execution of any part of the Contract Works and shall include unskilled labour, semi-skilled and skilled labour, clerical workers and the like
- (e) **"Workforce"** means the aggregate body comprising all workers and shall, unless the context dictates otherwise, include the workforces of the Contractor and all Subcontractors
- (f) **"Liaison Officer"** means a representative from the temporary workforce, duly elected by them, to act on their behalf and through whom all matters pertaining to the temporary workforce can be channelised.

3) C 02.03..... Status

Where any provisions or requirements of this Specification are in conflict with anything elsewhere set out in the Contract, the provisions and requirements of this Specification shall take precedence and prevail.

C 03 PERMITTED SOURCES OF TEMPORARY WORKERS

The Contractor shall as far as possible make optimum use of the human resources outside his own workforce and the workforces of all subcontractors. The temporary workforce that is to be used in the execution of the Works in terms of Part A may consist of the workers of various communities, and shall not be bound to one particular community.

C 04 EMPLOYMENT RECORDS TO BE PROVIDED

- (a) **The Contractor shall maintain accurate and comprehensive records of all workers engaged on the Contract and shall provide the Engineer at monthly intervals from the commencement of the Contract, with interim records substantiating the actual numbers of employment opportunities that shall have been generated to date and the amounts actually paid in respect thereof. Such interim records shall be in a format approved by the Engineer.**
- (b) The Contractor shall, on completion of the Contract, and as a pre-requisite event to the release of any retention money in terms of the Conditions of Contract, provide the Engineer with copies of the Terms of Employment as well as independently audited documentary evidence of the total number of temporary and permanent employment opportunities actually generated during the Contract.

C 05 VARIATIONS IN WORKER PRODUCTION RATES

Notwithstanding anything to the contrary as may be stated in or inferred from any other provision of this Contract, the Contractor shall not be entitled to any additional payment or compensation whatever, in respect of any differences as may result between the production rates actually achieved by workers in the course of the execution of the Contract Works and those production rates on which he has based his tender.

C 06 TRAINING OF THE TEMPORARY WORKFORCE

- (a) Selected members of the workforce are to be provided with structured training in accordance with the provisions of Part D.
- (b) The Contractor shall make all necessary allowances in his programme of work to accommodate and facilitate the delivery of such structured training and shall comply fully with the requirements of Part D.
- (c) The provision of structured training as described in Part D shall not relieve the Contractor of any of his obligations in terms of the Conditions of Contract and the Contractor shall remain fully liable for the provision, at his own cost, of all training of the workforce, additional to that as provided for in Part D, as may be necessary to achieve the execution and completion of the works strictly in accordance with the provisions of the Contract.

C 07 RECRUITMENT AND SELECTION PROCEDURES

- C 07.01** The Contractor shall be fully responsible for the recruitment and selection of workers to constitute the temporary workforce.
- C 07.02** The Contractor shall advise the Engineer in writing of the numbers of each category of temporary worker which he requires, together with the personal attributes which he considers desirable that each category of worker shall possess (taking due cognisance of the provisions of the Contract relating to training).
- C 07.03** The Contractor shall, at his own cost, take all necessary actions to advertise within the communities comprising the personnel resources, the fact that temporary employment opportunities exist and the time and place where recruiting will occur.

C 07.04 The Contractor shall record in writing, the details of all persons applying for employment, including *inter alia*:

- (a) Name, address, age and sex
- (b) Marital status and number of dependants
- (c) Qualifications and previous work experience (whether substantiated or not)
- (d) Period since last economically active
- (e) Preference for type of work or task.

C 07.05 The Contractor shall make his selection of workers from amongst the applicants, taking due cognisance of his requirements for the workforce and the provisions of the contract in regard to the provision of training to the workforce and in accordance with the following principles:

- (a) No potential temporary worker shall be precluded from being employed by the Contractor on the execution of the Works, by virtue of his lack of skill in any suitable operation forming part of the Works, unless-
 - (i) all available vacancies have been or can be filled by temporary workers who already possess suitable skills, or
 - (ii) the Time for Completion allowed in the Contract, or the remaining portion of the Contract Period (as the case may be) is insufficient to facilitate the creation of the necessary skills.
- (b) Preference shall be given to the unemployed and single heads of households.
- (c) The Contractor shall, in so far as is reasonably practicable, give priority to accommodating the applicants' expressed preferences regarding the types of work for which they are selected.
- (d) The selection process shall not be prejudicial to youth (over the age of fifteen years) and women.

C 07.06 After making his selection, the Contractor shall advise the Engineer thereof, in writing and the Engineer shall, without undue delay, ratify the Contractor's selection.

C 07.07 The provisions of this clause shall apply *mutatis mutandis* in respect of the selection of additional or replacement members of the workforce as may be necessary from time to time during the Contract.

C 07.08 The Contractor shall, after selecting his temporary workforce, arrange at his own cost for the appointment of the Liaison Officer as representative of the workforce to act on their behalf with regards to all matters pertaining to the workforce."

C 08 TERMS AND CONDITIONS PERTAINING TO THE EMPLOYMENT OF THE TEMPORARY WORKFORCE
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C 08.01 All temporary workers engaged in accordance with the provisions of Part A of the Project Specifications, shall be employed on the terms and conditions of employment as are consistent with those as set out in this Contract. The Contractor shall implement and adhere strictly to such terms and conditions relating to the employment of the temporary workforce, and subject only to the provisions of this Contract, shall not employ any temporary worker on terms and conditions which are less favourable to the worker or inconsistent with the standards and norms generally applicable to temporary workers in the Civil Engineering Industry and applicable to the particular area.

C 08.02 The Contractor shall pay to all temporary workers engaged in terms of Part A of the Project Specifications, not less than the minimum rate of remuneration as specified in Part A – General Clause A17.2.

C 09 LABOUR RELATIONS AND WORKER GRIEVANCE PROCEDURES
--

C 09.01 The Contractor, as the Employer of the workforce, shall be fully responsible for the establishment and maintenance at his own cost, of satisfactory labour relations on site and the resolution of all grievances of temporary workers as may occur.

- C 09.02** The Contractor shall at all times adhere to the accepted norms and standards of labour relations prevailing generally in the Civil Engineering Construction Industry and shall conduct himself in a fair and reasonable manner, within the constraints as may be imposed upon him by the terms of the Contract.
- C 09.03** In the event of any temporary worker engaged by the Contractor in terms of the Contract, being aggrieved with regard to his Terms of Employment, working conditions and training, he shall have the right, at his discretion, to be supported in any inquiry or disciplinary hearing or investigation instituted by the Contractor in terms of Subclause C 09.02 above, by one member of the temporary workforce and one member of the Project Committee, which persons shall be nominated by the worker.
- C 09.04** In the event of any grievance not being satisfactorily resolved through the application of normal dispute resolution procedures in accordance with Subclauses C 09.02 and C 09.03, then either the Contractor or the worker concerned may require that the matter be referred to the Project Committee for further consideration, with a view to facilitate the resolution thereof.

C 10 THE SUBCONTRACTORS' WORKFORCES

- C 10.01** The provisions of this Part C shall apply *mutatis mutandis* to the workforces employed by all subcontractors engaged by the Contractor and the Contractor shall be fully responsible for ensuring, at his own cost, that the terms of every subcontract agreement entered into are such as to facilitate the application of these provisions in respect of the workforces of all subcontractors.
- C 10.02** The Contractor shall at his own cost and to the extent necessary, assist and monitor all subcontractors in the application of the provisions of this Specification, and shall, in terms of the Conditions of Contract, remain fully liable in respect of the acts, omissions and neglects of all subcontractors, in respect of the application of the provisions of this Specification.

C 11 PROJECT LIAISON OFFICER (PLO)

The Contractor or his appointed agent will appoint a Project Liaison Officer (PLO) after consultation with the local communities, the Engineer and the Employer. The Contractor shall direct all his liaison efforts with the local communities through the appointed officer. The Contractor shall, however, accept the appointed as part of his management personnel.

1) C 11.01..... Duties of the Project Liaison Officer

The Community Liaison Officer's duties will be:

- (i) To be available on site daily between the hours of 07:00 and 18:00 and at other times as the need arises. His normal working day will extend from 07:00 in the morning until 18:00 in the afternoon.
- (ii) To determine, in consultation with the Contractor, the needs of the temporary labour for relevant skills training. He will be responsible for the identification of suitable trainees and will attend one of each of the training sessions.
- (iii) To communicate daily with the Contractor and the Engineer to determine the labour requirements with regard to numbers and skill, to facilitate in labour disputes and to assist in their resolution.
- (iv) To assist in and facilitate in the recruitment of suitable temporary labour and the establishment of a "labour desk".
- (v) To attend all meetings in which the community and/or labour are present or are required to be represented.

- (vi) To assist in the identification, and screening of labourers from the community in accordance with the Contractor's requirements.
- (vii) To inform temporary labour of their conditions of temporary employment and to inform temporary labourers as early as possible when their period of employment will be terminated.
- (viii) To attend disciplinary proceedings to ensure that hearings are fair and reasonable.
- (ix) To keep a daily written record of his interviews and community liaison.
- (x) To attend monthly site meetings to report on labour and RDP matters.
- (xi) All such other duties as agreed upon between all parties concerned.
- (xii) To submit monthly returns regarding community liaison in a format prescribed by the Engineer.

2) C 11.02..... Payment for the project liaison officer

A special pay item is incorporated in section 1200 of the Bill of Quantities relating to payment of the liaison officer on a prime cost sum basis. This payment shall only be made for the period for which the duties of the liaison officer are required and not necessarily for the full duration of the contract. The remuneration of the PLO shall be determined jointly by the Contractor, Engineer and Employer.

3) C 11.03..... Period of employment of the project liaison officer

The period of employment of the community liaison officer shall be as decided upon jointly by the Contractor, Engineer and Employer.

PART D: PROVISION OF STRUCTURED TRAINING

CONTENTS

D 01 SCOPE

This specification covers the requirements for the provision of the following training:

- (a) Specified structured training to selected members of the workforce and small, medium and micro enterprises (SMME's) by an approved Training Service Provider as accepted by the Employer.
- (b) Additional training deemed necessary by the Contractor, to members of the workforce and small, medium and micro enterprises (SMME's).

D 02 INTERPRETATIONS

D 02.01 Supporting documents

The tender rules, conditions of contract, standard, supplementary and specific specifications and project specifications and drawings shall *inter alia* be read in conjunction with this specification.

D 02.02 Application

The provisions of this specification shall apply in respect of all workers and small, medium and micro enterprises other than the Contractor's key personnel, who are engaged on the execution of the works.

D 03 ENGINEERING SKILLS TRAINING

- D 03.01 The Contractor shall, from the commencement of the contract, implement a structured training programme comprising of the training delivered by the selected subcontractor and any additional training as provided for by the Contractor, in which the various skills required for the execution and completion of the works are imparted to the workers, and where applicable, small, medium and micro enterprises engaged thereon, in a programmed and progressive manner. Selected workers shall be trained progressively throughout the duration of the contract in the various stages of a particular type of work.
- D 03.02 The skills training programme to be implemented by the selected subcontractor shall comply with the following minimum standards:
 - (a) Be accredited by the Civil Engineering Training Authority (CETA) or other institutions recognised by the Department of Labour, as being appropriate for application on this project. Accredited training refers to both the trainers as well as to the training materials.
 - (b) Be delivered by suitably qualified and experienced trainers accredited to do so.
- D 03.03 The Contractor shall provide with his tender, full details of any additional accredited and in-house training, viewed to be necessary by the Contractor, which he intends to implement at his own cost. These details shall include the following:
 - (a) The name of the accredited training institution and programme
 - (b) The various aspects of each type of training comprised in the programme
 - (c) The manner in which the training is to be delivered
 - (d) The numbers and details of the trainers to be utilised.

D 03.04 The Contractor shall be responsible for the provision of the necessary items for the delivery of the specified and additional skills training programme, including the following:

- (a) Sufficient skilled, competent and accredited trainers to deliver the additional training programme to workers in accordance with the training programme
- (b) A suitably furnished venue
- (c) Transport of the workers as required
- (d) Tools, equipment, and teaching aids
- (e) Stationery and all other necessary materials.

D 03.05 Selection of candidates

- (a) Members of the workforce will be selected by the Engineer, assisted by the Contractor and the Liaison Officer, to receive specific training as approved by the Engineer.
- (b) The following will be taken into account in the selection of the workers to receive the specified training:
 - i. Previous experience (if any)
 - ii. Previous courses completed (if any)
 - iii. Module specific requirements.

D 03.06 Duration of training

- (a) The Contractor shall allow in his programme for the selected members of the workforce to be engaged in the specified training modules.
- (b) Provision must also be made by the Contractor for members of the workforce to receive any additional training as provided for by the Contractor.

D 03.07 All specified skills-related training shall take place only during normal working hours and the Contractor shall ensure that the selected workers are available at the appropriate times to undergo such training.

D 03.08 Both the selected subcontractor's and the Contractor's additional training programme shall be subject to the approval of the Engineer, and if so instructed by the Engineer shall alter or amend the programme and course content to suit changing conditions on site and all changes in the Contractor's programme of work.

D 03.09 The Contractor shall keep comprehensive records of the training given to each worker involved in training as well as the nature and number of each task executed by the worker and whenever required shall provide copies of such records to the Engineer.

D 03.10 Workers shall be remunerated in respect of all time spent undergoing the specified training in terms of Clause D03.02, at the minimum specified wage as per BCCEI.

D 03.11 Use of workers

The Contractor shall, in so far as it is reasonably feasible take due cognisance of the nature of the works to be executed at any given time, and use trained workers on those aspects of the works for which they have been trained.

D 04 GENERIC TRAINING

- D 04.01 The Contractor shall, from the commencement of the contract, implement a structured progressive training programme comprising of the training delivered by the selected subcontractor and any additional training as provided for by the Contractor. Selected workers shall be trained progressively throughout the duration of the contract.
- D 04.02 The generic training programme is to be implemented by a training subcontractor to be nominated by the Engineer, upon the instruction of the Employer's Capex Programme Manager.
- D 04.03 The Contractor shall provide with his tender, full details of any additional recognised and in-house training viewed to be necessary by the Contractor, which he intends to implement at his own cost. These details shall include the following:
- (a) The name of the training institution and programme
 - (b) The various aspects of each type of training comprised in the programme
 - (c) The manner in which the training is to be delivered
 - (d) The numbers and details of the trainers to be utilized.
- D 04.04 The Contractor shall be responsible for the provision of the necessary items for the delivery of the specified and additional generic training programme, including the following:
- (a) A suitably furnished venue
 - (b) Transport of the workers as required
 - (c) Tools, equipment, and teaching aids
 - (d) Stationery and all other necessary materials.
- D 04.05 All generic training shall take place outside of normal working hours.
- D 04.06 The Contractor's training programme, if any, shall be subject to the approval of the Engineer, and if so instructed by the Engineer shall alter or amend the programme and course content.
- D 04.07 The Contractor shall keep comprehensive records of the training given to each worker involved in training and whenever required shall provide copies of such records to the Engineer. At the successful completion of each course provided by the Contractor each student shall be issued with a certificate indicating the course contents as proof of attendance and completion.
- D 04.08 No remuneration in respect of time spent undergoing training in terms of this Clause will be made to any of the workers.

D 05 ENTREPRENEURIAL SKILLS TRAINING

- D 05.01 Training needs assessments of the Contractor and his sub-contractors will be undertaken during the course of the Contract by a sub-contractor to be nominated by the Engineer, on the instruction of the Employer's Capex Programme Manager. The training needs assessments shall have as their focus contractor development, and shall identify needs for business development, business management and technical construction management skills. Such training needs may be identified in personnel both in the permanent employ of the Contractor and/or his sub-contractors, as well as temporary employees thereof.

- D 05.02 Once the needs assessments have been completed, training to meet the needs identified in the assessment phase will be provided, again by a sub-contractor to be nominated by the Engineer, upon the instruction of the Employer's Capex Programme Manager.
- D 05.03 The Contractor shall assist in facilitating in the delivery of the training, by instructing and motivating personnel and subcontractors regarding attendance and participation therein.
- D 05.04 The Contractor shall further make all reasonable efforts to co-ordinate the programming of the subcontractor's work with that of the delivery of the structured training.
- D 05.05 Following completion of the structured training, members of small, medium and micro contractors/subcontractors that have demonstrated understanding of and competence in the training material are to be appropriately certified by the accrediting body.
- D 05.06 The Contractor shall provide with his tender, full details of any additional accredited and in-house training, viewed to be necessary by the Contractor, which he intends to implement at his own cost. These details shall include the following:
- (a) The name of the training institution and programme
 - (b) The various aspects of each type of training comprised in the programme
 - (c) The manner in which the training is to be delivered
 - (d) The numbers and details of the trainers to be utilized.
- D 05.07 The Contractor shall be responsible for the provision of the necessary items for the delivery of the entrepreneurial training programme, including the following:
- (a) A suitably furnished venue
 - (b) Transport of the subcontractors as required
 - (c) Tools, equipment, and teaching aids
 - (d) Stationery and all other necessary materials.
- D 05.08 All specified entrepreneurial training shall take place within normal working hours.
- D 05.09 The Contractor's training programme, if any, shall be subject to the approval of the Engineer, and if so instructed by the Engineer shall alter or amend the programme and course content.
- D 05.10 The Contractor shall keep comprehensive records of all training given to personnel and subcontractors involved in training and whenever required shall provide copies of such records to the Engineer. At the successful completion of each course each subcontractor shall be issued with a certificate indicating the course contents as proof of attendance and completion.
- D 05.11 No remuneration in respect of time spent undergoing specified training in terms of this Clause will be made to any of the subcontractors.

D 06 MEASUREMENT AND PAYMENT

D 06.01 Basic principles

(a) General

Measurement and payment for all work executed in terms of this contract shall be measured and paid for in accordance with the principles set out in Clause D 06.02 of the project specifications, irrespective of whether the work is executed as an integral part of the provision of training in terms of this specification.

b) Training

The Contractor shall only be reimbursed for the amounts actually paid by the Contractor to the selected subcontractors appointed as directed by the Employer, in execution of the Engineer's written instruction, plus a percentage as tendered to cover all his charges and profits.

D 06.02 Scheduled items

Payment items are included in the Bill of Quantities under Section 1200 for the provision of the specified training by selected subcontractors only. Any additional training as viewed by the Contractor to be necessary shall be viewed to be included under Section 1300 and shall not be paid for separately.

Item	Unit
D 06.03 Training:	
(a) Engineering (technical) skills	Provisional Sum
(b) Generic skills	Provisional Sum
(c) Training venue	Provisional sum
(d) Contractor's handling costs, profit and all other charges in respect of subitems D 06.03(a),(b) and (c):	
(i) Technical skills.....	percentage (%)
(ii) Generic skills	percentage (%)
(iii) Training venue	percentage (%)
(e) Training allowance paid to targeted labour i.r.o. formal training(equal to pay for 1 day of task)	person days
(f) Extra over (e) for the administration of payment of training allowances to targeted labour.	person days
(g) Transport and accommodation of workers for training where it is not possible to undertake the training in close proximity of the site.	Provisional Sum
(h) Contractor's handling costs, profit and all other charges in respect of subitem (g).....	percentage (%)

Payment under subitems D 06.03(a) and (b) shall be the amounts actually paid to the training institutions and

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

The provisional sum for subitem D 06.03 (c) shall include full compensation for the provision of a suitable training venue, for all necessary lighting, furniture, stationery, consumables and study material, and for transportation of the workers to and from the training venue. Payment of the provisional sum shall be made in accordance with the provisions of the General Conditions of Contract:

The percentages tendered for subitem D 06.03 (d) shall be the percentages of the amounts actually reimbursed to the Contractor under subitems D 06.03 (a), (b) and (c) and shall be in full and final compensation in respect of the Contractor's handling costs, profit, mentoring, record keeping, reporting and all other charges in connection with providing the services.

Payment under subitem D 06.03 (e) shall be the actual sum paid to workers undergoing training. The Contractor will be reimbursed directly for his administrative costs under subitem D 06.03 (f).

Payment under subitems D 06.03(g) shall be the amount actually paid for transporting the labourers to the training venue and shall be made in accordance with the provisions of the General Conditions of Contract.

The percentages tendered for subitem D 06.03 (h) shall be the percentage of the amount actually reimbursed to the Contractor under subitem D 06.03 (g) and shall be in full and final compensation in respect of the Contractor's handling costs, profit and all other charges in connection with providing the transport.

PART E: HIV/AIDS SPECIFICATION

CONTENTS

E 01 SCOPE

- E 01.01 This specification contains all requirements applicable to the Contractor for creating HIV/AIDS awareness amongst all of the Workers involved in this project for the duration of the construction period, through the following strategies:
- E 01.02 Raising awareness about HIV/AIDS through education and information on the nature of the disease, how it is transmitted, safe sexual behaviour, attitudes towards people affected and people living with HIV/AIDS, how to live a healthy lifestyle with HIV/AIDS, the importance of voluntary testing and counselling, the diagnosis and treatment of Sexually Transmitted Infections, and the closest health service providers.
- E 01.03 Informing Workers of their rights with regard to HIV/AIDS in the workplace.
- E 01.04 Providing Workers with access to condoms and other awareness material that will enable construction Workers to make informed decisions about sexual practices.

E 02 DEFINITIONS AND ABBREVIATIONS

1) **E 02.01..... Definitions**

- Service Provider: The natural or juristic person recognized and approved by the Department of Public Works and Roads as a specialist in conducting HIV/AIDS awareness programmers.
- Service Provider Workshop Plan: A plan outlining the content, process and schedule of the training and education workshops presented by a Service Provider, which has been approved by the Representative/Agent.
- Worker: Persons in the employ of the Contractor or under the direction or supervision of the Contractor or any of his sub-contractors, who are on site for a minimum period of 30 days in all.

2) **E 02.02..... Abbreviations**

- HIV : Human Immunodeficiency Virus.
- AIDS : Acquired Immune Deficiency Syndrome.
- STI : Sexually Transmitted Infection.

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E 03 BASIC METHOD REQUIREMENT

E 03.01 The Contractor shall, through a Service Provider, conduct onsite workshops with the Workers.

E 03.02 The Service Provider shall develop and compile a Service Provider Workshop Plan to be presented at the workshops and which will be best suited for this project to achieve the specified objectives with regards to HIV/AIDS awareness. The Contractor shall submit the Service Provider Workshop Plan for approval within 21 days after the tender acceptance date. After approval by the Department's Tender Committee, the Contractor shall make available an appropriate venue that will be conducive to education and training.

E 03.03 The Service Provider Workshop Plan shall address, but will not be limited to the following:

- (a) The nature of the disease;
- (b) How it is transmitted;
- (c) Safe sexual behaviour;
- (d) Post exposure services such as voluntary counselling and testing (VCT) and nutritional plans for people living with HIV/AIDS;
- (e) Attitudes towards other people with HIV/AIDS;
- (f) Rights of the Worker in the workplace;
- (g) How the awareness champion will be equipped prior to commencement of the HIV/AIDS awareness programme with basic HIV/AIDS information and the necessary skills to handle questions regarding the HIV/AIDS awareness programme on site sensitively;
- (h) How the Service Provider will support the awareness champion;
- (i) Location and contact numbers of the closest clinics, VCT facilities, counselling services and referral systems;
- (j) How the workshops will be presented, including frequency and duration;
- (k) How the workshops will fit in with the construction programme;
- (l) How the Service Provider will assess the knowledge and attitude levels of attendees to structure workshops accordingly;
- (m) How the video will be used;
- (n) How the Service Provider will elicit maximum participation from the Workers;
- (o) A questions and answers slot (interactive session).

The Service Provider Workshop Plan shall encompass the Specific Learning Outcomes (SLO) as stipulated

E 04 HIV/AIDS AWARENESS EDUCATION AND TRAINING

1) E 04.01..... Workshops

The Contractor shall ensure that all the Workers attend the workshops.

The workshops shall adequately deal with all the aspects contained in the Service Provider Workshop Plan. In order to enhance the learning experience, groups of not exceeding 25 people shall attend the interactive sessions of the workshops.

E 04.02 Recommended practice

Workshop Schedule

Presenting information contained in the Service Provider Workshop Plan can be divided in as many workshop sessions as deemed practicable by the Contractor, provided that all Workers are exposed to all aspects of the workshops as outlined in the Service Provider Workshop Plan.

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Breaking down the content of information to be presented to Workers into more than one workshop session however, has the added advantage that messages are reinforced over time while providing opportunity between workshop sessions for Workers to reflect and test information. Workers will also have an opportunity to ask questions at a next session.

An attendance register should be kept by the Service Provider at every workshop and should be handed to the Department's Project Manager on a monthly basis together with Process Indicator Forms.

Service Providers

A data base of recommended Service Providers is available from the Department of Public Works, Private Bag X65, Pretoria, 0001, located at the Central Government Offices, corner of Bosman and Vermeulen Streets, Pretoria and at all Public Works Regional Offices.

HIV/AIDS Specific Learning Outcomes and Assessment Criteria

Workers shall be exposed to workshops for a minimum duration of two-and-a-half hours. In order to set a minimum standard requirement, the following specific learning outcomes and assessment criteria shall be met:

(a) UNIT 1: The nature of HIV/AIDS

After studying and understanding this unit the Worker will be able to differentiate between HIV and AIDS and comprehend whether or not it is curable. The Worker will also be able to explain how the HI virus operates once a person is infected and identify the symptoms associated with the progression of HIV/AIDS.

Assessment Criteria:

1. Define and describe HIV and AIDS
2. List and describe the progression of HIV/AIDS

(b) UNIT 2: Transmission of the HI virus

After studying and understanding this unit the Worker will be able to identify bodily fluids that carry the HI virus. The Worker will be able to recognise how HIV/AIDS is transmitted and how it is not transmitted.

Assessment Criteria:

1. Record in what bodily fluids you will find the HI virus.
2. Describe how HIV/AIDS can be transmitted.
3. Demonstrate your ability to distinguish between how HIV/AIDS is transmitted and misconceptions around transmittance of HIV/AIDS.

(c) UNIT 3: HIV/AIDS preventative measures

After studying and understanding this unit the Worker will comprehend how to act in a way that would minimize the risk of HIV/AIDS infection and to use measures to prevent the HI virus to enter the blood stream.

Assessment Criteria:

1. Report on how you could minimize your risk of HIV/AIDS infection.
2. Report on precautions that can be taken to prevent HIV/AIDS infection.
3. Explain or demonstrate how to use a male and female condom.
4. List of factors that could jeopardize the safety condoms provide against HIV/AIDS transmission.

(d) UNIT 4: Voluntary HIV/AIDS counselling and testing

After studying and understanding this unit the Worker will be able to recognize methods of testing for HIV/AIDS infection. The Worker will be able to understand the purpose of voluntary HIV/AIDS testing and pre- and post-test counselling.

Assessment Criteria:

1. Describe kinds of testing for HIV/AIDS infection.
2. Report on why voluntary testing is important.
3. Report on why pre- and post-test counselling is important.

(e) UNIT 5: Living with HIV/AIDS

After studying and understanding this unit the Worker will be able to recognize the importance of caring for people living with HIV/AIDS and be able to manage HIV/AIDS.

Assessment Criteria:

1. List and describe ways to manage HIV/AIDS.
2. Describe nutritional needs of people living with HIV/AIDS.
3. Describe ways to embrace a healthy lifestyle as a person living with HIV/AIDS.
4. Explain the need of counselling and support to people living with HIV/AIDS.

(f) UNIT 6: Treatment options for people with HIV/AIDS

After studying and understanding this unit the Worker will be familiar with the various treatments available to HIV/AIDS infected or potentially HIV/AIDS infected people.

Assessment Criteria:

1. Discuss anti-retroviral therapy
2. List methods of treatment to prevent HIV/AIDS transmission from mother-to-child.
3. Describe the need for treatment of opportunistic diseases for people living with HIV/AIDS.
4. Describe post exposure prophylactics.

(g) UNIT 7: The rights and responsibilities of Workers in the workplace with regards to HIV/AIDS

After studying and understanding this unit the Worker will be able to identify the rights and responsibilities of the Worker living with HIV/AIDS in the workplace. The Worker will recognise the importance of accepting colleagues living with HIV/AIDS and treating them in a non- discriminative way.

Assessment Criteria:

1. Discuss the rights of a person living with HIV/AIDS in the workplace.
2. Discuss the responsibilities of a person living with HIV/AIDS in the workplace.
3. Report on why acceptance and non-discrimination of colleagues living with HIV/AIDS is important.

E04.03 Displaying of plastic laminated posters and distribution of information booklets

- (a) The Contractor shall obtain a set of four posters conveying different key messages, and information booklets from the Construction Industry Development Programme Unit (CIDP), Room A520 located in the Central Government Offices, corner of Bosman and Vermeulen Streets, Pretoria or at all Regional Offices of the Department of Public Works. The postal address is the Department of Public Works, Private Bag X65, Pretoria, 0001.
- (b) The above-mentioned posters and information booklets have been prepared to raise awareness and to share information about HIV/AIDS and STI's.

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- (c) Posters or display stands shall be displayed on site as soon as possible but not later than 14 days after the date of site hand over.
- (d) Posters shall be displayed in areas highly trafficked by Workers, including toilets, rest areas, the site office and compounds.
- (e) The posters on display should always be intact, clear and readable.
- (f) Information booklets must be distributed to all Workers as soon as possible but not later than 14 days after site hand over, or as soon as the Worker joins the site.

E05 PROVIDING WORKERS WITH ACCESS TO CONDOMS

- E05.01 The Contractor shall provide and maintain condom dispensers and make both male and female condoms complying with the requirements of SANS 4074:2003 available at all times to all Workers at readily accessible points on site, for the duration of the contract. The Contractor may obtain condom dispensers from the Department of Health and condoms may be obtained from the local clinic or the Department of Health.
- E05.02 At least one male and one female condom dispenser and a sufficient supply of condoms, all to the approval of the Representative/Agent, shall be on site within 14 days of site hand over. Contractors should note that arrangements to obtain condoms from the Department of Health Clinics prior to site hand over may be necessary to ensure that condoms are available within 14 days of site hand over.
- E05.03 Condoms shall be made available in areas highly trafficked by Workers, including toilets, the site office and compounds.

E06 ENSURING ACCESS TO HIV/AIDS TESTING AND COUNSELLING FACILITIES AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS (STI)

- E06.01 The Contractor shall provide the Workers with the names of the closest Service Providers that provide HIV/AIDS testing and counselling and Clinics providing Sexually Transmitted Infection (STI) diagnosis and treatment. Information on these Service Providers and Clinics should be displayed on a poster of a size not smaller than A1 in an area highly trafficked by Workers.

E07 APPOINTMENT OF AN HIV/AIDS AWARENESS CHAMPION

- E07.01 Within 14 days of site hand over the Contractor shall appoint an Awareness Champion, from, amongst the Workers, who speaks and understands all the languages spoken by the Workers and he/she shall be on site during all stages of the construction period. The Contractor shall ensure that the Awareness Champion has been trained by the Service Provider on basic HIV/AIDS information, the support services available and the necessary skills to handle questions regarding the HIV/AIDS programme in a sensitive way.

The Awareness Champion shall be responsible for:

- (a) Liaising with the Service Provider on organising awareness workshops;
- (b) Filling condom dispensers and monitoring condom distribution;
- (c) Handing out information booklets;
- (d) Placing and maintaining posters

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E08 MONITORING

- E08.01 The Contractor shall grant to the Representative/Agent reasonable access to the construction site in order to conduct unannounced site visits in order to establish that the Contractor complies with his obligations regarding HIV/AIDS awareness under this contract.
- E08.02 The Representative/Agent shall conduct the site visits with the least possible disruption to the Contractor's daily routine.
- E 08.03 Contractors must report problems that they experience in implementing the HIV/AIDS requirements to the Representative/Agent.
- E 08.04 A SITE CHECKLIST (SCHEDULE A) shall be completed and submitted at every construction progress inspection to the Representative/Agent.
- E08.05 A SERVICE PROVIDER REPORT (SCHEDULE B) shall be completed and submitted on a monthly basis to the Department's Project Manager through the Representative/Agent.
- E08.06 The Contractor shall, at the end of the contract, complete and submit a close out programme report CONTRACTOR HIV/AIDS PROGRAMME REPORT (SCHEDULE C).

E09 MEASUREMENT AND PAYMENTS

- E09.01 It is required of tenderers to thoroughly study the HIV/AIDS Specifications of the Department that must be read together with and is deemed to be incorporated in the Bill of Quantities. Provision for pricing of HIV/AIDS awareness must be made under Item E10.01 hereafter and it is explicitly pointed out that all requirements of the aforementioned specifications are deemed to be priced hereunder as the said item represents the only method of measurement and no additional items or extras to the contract in this regard shall be entertained.
- E09.02 Contractor should take note that compliance with the HIV/AIDS Specification is compulsory. In the event of partial or total non-compliance, the Representative /Agent, notwithstanding the provisions of any other clause to the contrary, reserves the right to delay issuing any progress payment certificate until the Contractor provides satisfactory proof of compliance. The Contractor shall not be entitled to any compensation of whatsoever nature, including interest, due to such delay of payment

Item	Unit
E10.01 HIV AIDS Awareness obligations	Lump Sum

The tendered lump sum shall be in full compensation for the Contractor providing an approved selected service provider to comply with the requirements and conditions of the Department's HIV/AIDS Specifications, including the workshop education and training within an HIV/AIDS Awareness programme and the Contractor's handling costs, profit, record keeping, reporting and all other charges in connection with providing the HIV/AIDS Awareness programme.

Payment under item E10.01 will be made as follows:

80% of the amount will be paid once the service provider has complied with the requirements and conditions of the Department's HIV AIDS Specifications, including the workshop education and training within an HIV/AIDS Awareness programme.

The outstanding 20% will be paid on completion of the contract, subject to the Contractor's compliance in all respects with the requirements and conditions of the Department's HIV/AIDS Specifications.

PART F: GENERIC LABOUR-INTENSIVE SPECIFICATION

CONTENTS

F 01 SCOPE

This specification establishes general requirements for activities, which are to be, executed by hand involving the following:

- (a) trenches having a depth of less than 1.5 metres
- (b) storm water drainage
- (c) low-volume roads and sidewalks

F 02 PRECEDENCE

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail.

F 03 HAND EXCAVATEABLE MATERIAL

Hand excavatable material is material:

(a) Granular materials:

- (i) Whose consistency when profiled may in terms of Table 1 be classified as very loose, loose, medium dense, or dense; or
- (ii) Where the material is gravel having a maximum particle size of 10 mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

(b) Cohesive materials:

- (i) whose consistency when profiled may in terms of table 1 be classified as very soft, soft, firm, stiff and stiff / very stiff; or
- (ii) where the material is gravel having a maximum particle size of 10 mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100 mm;

- Note: (1) A boulder, a cobble and gravel is material with a particle size greater than 200 mm, between 60 and 200 mm.
- (2) A dynamic cone penetrometer is an instrument used to measure the in-situ shear resistance of a soil comprising a drop weight of approximately 10 kg, which falls through a height of 400 mm and drives a cone having a maximum diameter of 20 mm (cone angle of 60° with respect to the horizontal) into the material being used.

Table 1: Consistency of materials when profiled

GRANULAR MATERIALS		COHESIVE MATERIALS	
CONSISTENCY	DESCRIPTION	CONSISTENCY	DESCRIPTION
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of geological pick; requires many blows for excavation.	Stiff	Can be indented by thumbnail; slight indentation produced by pushing geological picks point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumbnail with difficulty; slight indentation produced by blow of a geological pick point.

F 04 LABOUR INTENSIVE WORKS

Trench excavation

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

Compaction of backfilling to trenches (areas not subject to traffic)

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100 mm. Each layer shall be compacted using hand tampers

- (a) To 90% Proctor density;
- (b) Such that in excess of 5 blows of a dynamic cone penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders; or
- (c) Such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

Excavation

All hand excavatable material including topsoil classified, as hand excavatable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand.

The excavation of any material, which presents the possibility of danger or injury to workers, shall not be excavated by hand.

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Clearing and grubbing

Grass and small bushes shall be cleared by hand.

Shaping

All shaping shall be undertaken by hand.

Loading

All loading shall be done by hand, regardless of the method of haulage.

Haul

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

Offloading

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilised for haulage

Spreading

All material shall be spread by hand.

Compaction

Small areas may be compacted by hand provided that the specified compaction is achieved.

Grassing

All grassing shall be undertaken by sprigging, sodding, or seeding by hand.

Stone pitching and rubble concrete masonry

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150 m.

Grout shall be mixed and placed by hand.

Manufactured Elements

Elements manufactured or designed by the Contractor, such as manhole rings and cover slabs, pre-cast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320 kg. In addition, the items shall be large enough so that four workers can conveniently and simultaneously acquire a proper handhold on them.