

FETAKGOMO- TUBATSE MUNICIPALITY

MOTAGANENG ACCESS BRIDGE

CONTRACT

C1: AGREEMENTS AND CONTRACT DATA

C2: PRICING DATA

C3: SCOPE OF WORK

C4: SITE INFORMATION

FETAKGOMO- TUBATSE MUNICIPALITY

MOTAGANENG ACCESS BRIDGE

TABLE OF CONTENTS

C1: AGREEMENTS AND CONTRACT DATA (YELLOW COLOUR)

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.2: CONTRACT DATA

C1.2.1: CONDITIONS OF CONTRACT

C1.2.2: PART A: CONTRACT DATA PROVIDED BY THE EMPLOYER

C1.2.2: PART B: CONTRACT DATA PROVIDED BY THE CONTRACTOR

C1.2.3: FORM OF GUARANTEE

**C1.2.4: AGREEMENT IN TERMS OF SECTION 37(2) OF THE
OCCUPATIONAL HEALTH AND SAFETY ACT No 85 OF 1993**

C2: PRICING DATA (YELLOW COLOUR)

C2.1: PRICING INSTRUCTIONS

C2.2: BILL OF QUANTITIES

C3: SCOPE OF WORK (WHITE COLOUR)

C3.1: STANDARD SPECIFICATIONS

C3.2: PROJECT SPECIFICATIONS

C3.3: PARTICULAR SPECIFICATIONS

C 4: SITE INFORMATION (WHITE COLOUR)

C4.1: LOCALITY PLAN

C4.2: DRAWINGS

FETAKGOMO- TUBATSE MUNICIPALITY

MOTAGANENG ACCESS BRIDGE

C1.1 Form of Offer and Acceptance

Offer

The employer, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of: CONTRACT: MIG/R/LP/17885/21/22: MOTAGANENG ACCESS BRIDGE.

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

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

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

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

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

Signature Date
Name
Capacity

for the tenderer

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

Acceptance

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

contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

- Part C1: Agreements and contract data, (which includes this agreement)
- Part C2: Pricing data
- Part C3: Scope of work.
- Part C4: Site information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts 1 to 4 above.

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

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

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

Signature Date

Name

Capacity

for the

Employer FETAKGOMO- TUBATSE MUNICIPALITY

Name and signature Date

of witness

Schedule of Deviations

1 Subject

Details

.....

.....

.....

2 Subject

 Details

.....

.....

.....

.....

3 Subject

 Details

.....

.....

.....

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

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

FETAKGOMO- TUBATSE MUNICIPALITY

MOTAGANENG ACCESS BRIDGE

C1.2: CONTRACT DATA

C1.2.1: CONDITIONS OF CONTRACT

C1.2.2 PART A: CONTRACT DATA PROVIDED BY THE EMPLOYER

C1.2.2 PART B: CONTRACT DATA PROVIDED BY THE CONTRACTOR

C1.2.3 FORM OF GUARANTEE

C1.2.4 AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT No 85 OF 1983

C1.2.1 CONDITIONS OF CONTRACT

GENERAL CONDITIONS OF CONTRACT

This Contract will be based on the "General Conditions of Contract for Construction Works – 3rd Edition 2015", issued by the South African Institution of Civil Engineering. (Short title: "**General Conditions of Contract 2015**") and can be obtained from:

SAICE

Waterfall Park
Howick Gardens
Vorna Valley Half way House
Becker Street
MIDRAND
1685
Gauteng Province
Tel: (011) 805-5947/8
Fax: (011) 805-5971.

It is agreed that the only variations from the General Conditions of Contract 2015 are those set out hereafter under "Special Conditions of Contract".

SPECIAL CONDITIONS OF CONTRACT

1. GENERAL

These Special Conditions of Contract (SCC) form an integral part of the Contract. The Special Conditions shall amplify, modify or supersede, as the case may be, the General Conditions of Contract 2015 to the extent specified below, and shall take precedence and shall govern.

The clauses of the Special Conditions hereafter are numbered "SCC" followed in each case by the number of the applicable clause or sub clause in the General Conditions of Conditions 2015, and the applicable heading, or (where a new special condition that has no relation to the existing clauses is introduced) by a number that follows after the last clause number in the General Conditions, and an appropriate heading.

2. AMENDMENTS TO THE GENERAL CONDITIONS OF CONTRACT

No amendments.

C1.2.2: CONTRACT DATA (Applicable to this contract)**PART A: DATA PROVIDED BY THE EMPLOYER**

The following contract specific data are applicable to this contract.

REFERENCE	CONTRACT SPECIFIC DATA BY THE EMPLOYER						
Clause 1.1.1.13:	The Defects Liability Period to this contract is 12 months measured from the date of the Certificate of Completion.						
Clause 1.1.1.14:	The time for achieving Practical Completion of the whole of the Works is within Eight (8) Months including special non-working days and the year end break.						
Clause 1.1.1.15:	Name of Employer: FETAKGOMO- TUBATSE MUNICIPALITY						
Clause 1.2.1.2:	Address of Employer: <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><u>Physical:</u></td> <td style="width: 50%;"><u>Postal:</u></td> </tr> <tr> <td>1 Kastania Street Burgersfort 1150</td> <td>P.O Box 206 Burgersfort 1150</td> </tr> <tr> <td>Telephone No: (013) 231 1000</td> <td>Fax No: (013) 231 7467</td> </tr> </table>	<u>Physical:</u>	<u>Postal:</u>	1 Kastania Street Burgersfort 1150	P.O Box 206 Burgersfort 1150	Telephone No: (013) 231 1000	Fax No: (013) 231 7467
<u>Physical:</u>	<u>Postal:</u>						
1 Kastania Street Burgersfort 1150	P.O Box 206 Burgersfort 1150						
Telephone No: (013) 231 1000	Fax No: (013) 231 7467						
Clause 1.1.1.17:	Name of Engineer: TMS Consulting Engineers and Project Management						
Clause 1.2.1.2:	Address of Engineer: <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><u>Physical:</u></td> <td style="width: 50%;"><u>Postal:</u></td> </tr> <tr> <td>39A Ehmke Street Nelspruit 1200</td> <td>P.O. Box 603 Nelspruit 1200</td> </tr> <tr> <td>E-Mail: Telephone No: (013) 752 8478</td> <td>info@tmsconsulting.co.za</td> </tr> </table>	<u>Physical:</u>	<u>Postal:</u>	39A Ehmke Street Nelspruit 1200	P.O. Box 603 Nelspruit 1200	E-Mail: Telephone No: (013) 752 8478	info@tmsconsulting.co.za
<u>Physical:</u>	<u>Postal:</u>						
39A Ehmke Street Nelspruit 1200	P.O. Box 603 Nelspruit 1200						
E-Mail: Telephone No: (013) 752 8478	info@tmsconsulting.co.za						
Clause 1.1.1.26	The Pricing strategy is Re-measurement Contract						
Clause 3.2.3	The Engineer is required to obtain the specific approval of the Employer for the following: The Engineer requires the Municipality approval in order to authorise any expenditure in excess of the tender Sum plus 10% Contingencies.						
Clause 5.3.1	Health and Safety Plan (refer to Clause 4.3) Initial Programme (Refer to Clause 5.6) Security (Refer to Clause 6.2) Insurance (Refer to Clause 8.6)						
Clause 5.3.2	The time to submit the documentation required before commencement with the Works execution is 28 days						

REFERENCE CONTRACT SPECIFIC DATA BY THE EMPLOYER

-
- Clause 5.8.1 (1) Special non-working days are Sundays and the following statutory public holidays as declared by National or Regional Government:
- New Year's Day, Human Rights Day, Good Friday, Family Day, Freedom Day, Workers day, Youth Day, National Women's Day, Heritage Day, Day of Reconciliation, Christmas Day and the Day of Goodwill including the construction industry year end break.
- (2) The year end break commences on the first working day after 15 December and ends on the first working day after 6 January of the next year.
- Clause 5.12.2.3 An extension of time due to abnormal rainfall shall be determined by means of the critical path method
- The rainfall gauge shall be suitably located and accurate rainfall readings shall be taken on the Site daily at 08:00, unless otherwise agreed to by the Engineer and the records entered in a book. The Contractor shall, at his own expense, take all necessary precautions to ensure that unauthorized persons cannot interfere with the rainfall gauge. The record book shall be handed to the Engineer for his signature no later than ten (10) days after rain has fallen and that is considered to justify an extension of time.
- Clause 5.13.1: The penalty for failing to complete the whole of the Works is R1500 per calendar day
- Clause 5.14.5.2 The Defects Liability Period to this contract is 12 months measured from the date of the Certificate of Completion.
- Clause 5.16.3 The latent defect period is 10 years
- Clause 6.5.1.2.3 The maximum percentage allowance to cover overhead charges is 15%
- Clause 6.10.1.5 The percentage advance on materials not yet built into Permanent Works is Eighty (80).
- Clause 6.10.3 Retention money guarantee is not allowed.
- Clause 8.6.1.1.2 The value of materials supplied by the Employer to be included in the insurance sum is R.00.
- Clause 8.6.1.1.3 The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is 2.5% of Contract Amount.
- Clause 8.6.1.3 The limit of indemnity for liability insurance is R 1 000 000.00 for any single liability claim.
- Clause 8.6.1.2: Special risk insurance issued by SASRIA is required.
- Clause 8.6.1.3 The number of Adjudication Board Members to be appointed is one.

C1.2.2: CONTRACT DATA (Applicable to this contract)

PART B: DATA PROVIDED BY THE CONTRACTOR

The following contract specific data are applicable to this contract.

REFERENCE CONTRACT SPECIFIC DATA BY THE CONTRACTOR

Clause 1.1.1.9: **Name of Contractor:**

Clause 1.2.1.2: **Address of the Contractor:**

Physical: Postal:

.....

.....

E-Mail:

Telephone No: Fax No:

Clause 6.2.1 The Security to be provided by the Contractor (incl Vat) shall be one of the Following

Type of Security	Contractor's choice Indicate "Yes" or "No"
Cash deposit of 10% of the Contract Sum	
Performance guarantee of 10% of the Contract Sum	
Retention of 10% of the value of the Works	Not available
Cash deposit of 5% of the Contract Sum plus retention of 5% of the value of the Works	
Performance guarantee of 5% of the Contract Sum plus retention of 10% of the value of the works	

Clause 6.8.3: The variation in cost of all special materials is to be provided in the table SM 1 for special materials.

The rates and prices for the special materials shall be furnished by the Tenderer, which rates and prices shall not include VAT but shall include all other obligatory taxes and levies. The quoted price is the ruling price on the 1st of Month prior to close of tender.

TABLE: SM1

Special Materials	Unit*	Rate or Price for the base month
.....
.....

* Indicate whether the material shall be delivered in bulk or in containers. When called upon to do so, the Contractor shall substantiate the above rates or prices with acceptable documentary evidence.

Signed on behalf of Tenderer :

REFERENCE

CONTRACT SPECIFIC DATA BY THE CONTRACTOR

Clause 4.4.3:

Selection of Sub-Contractors

The Tenderer shall list below the Subcontractors and Suppliers whom he intends to appoint in respect of the various specialist items of work to be done or goods supplied on this contract. Alternatives may be mentioned.

The Tenderer shall state whether he intends to carry out any specialised work or supply of goods himself.

Acceptance of this tender shall not be construed as approval of all or any of the listed specialist Subcontractors or Suppliers. Should any of or all of the specialist Subcontractors or Suppliers not be approved subsequent to the acceptance of the tender, it shall in no way invalidate this tender, and the tendered unit rates for the various items of work shall remain final and binding, even in the event of a Subcontractor or Supplier not listed below being approved by the Employer.

SCHEDULE OF SPECIALIST SUB-CONTRACTORS AND SUPPLIERS

Specialised Item	Name and Details of Specialist Sub-Contractors

Signed on behalf of Tenderer:

PRO FORMA

C1.2.3 PERFORMANCE GUARANTEE

For use with the General Conditions of Contract for Construction Works, Second Edition, 2010.

GUARANTOR DETAILS AND DEFINITIONS

“Guarantor” Means:.....
 Physical address:.....
 “Employer” means: FETAKGOMO- TUBATSE MUNICIPALITY
 “Contractor” means:.....
 “Engineer” means: TMS Consulting Engineers
 “Works” means: Whole works involved in the MOTAGANENG ACCESS BRIDGE
 “Site” means: the area of the Works including site office and camps
 “Contract” means: The Agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties.

 “Contract Sum” means: The accepted amount inclusive of tax of R.....
 Amount in words.....
 “Guaranteed Sum” means: The maximum aggregate amount of R.....
 Amount in words:.....
 “Expiry Date” Means:.....

CONTRACT DETAILS

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

PERFORMANCE GUARANTEE

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

terms of the Contract of the sum certified in 4.

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

Signed at.....

Date:.....

Guarantor’s signatory (1)

Capacity.....

Guarantor’s signatory (2)

Capacity.....

Witness signatory (1)

Witness signatory (2)

C1.2.4: AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT No 85 OF 1993

THIS AGREEMENT is made between FETAKGOMO- TUBATSE MUNICIPALITY represented by the Municipal Manager. (hereinafter called the EMPLOYER of the one part, herein represented by:

.....
in his capacity as:

AND:
(hereinafter called the CONTRACTOR) of the other part, herein represented by

.....
in his capacity as:

duly authorised to sign on behalf of the Contractor.

WHEREAS the CONTRACTOR is the Mandatory of the EMPLOYER in consequence of an agreement between the CONTRACTOR and the EMPLOYER in respect of

CONTRACT No: for the.....
.....

AND WHEREAS the EMPLOYER and the CONTRACTOR have agreed to enter into an agreement in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act No 85 of 1993, as amended by OHS Act Amendment Act No 181/1993 (hereinafter referred to as the ACT);

NOW THEREFORE the parties agree as follows:

1. The CONTRACTOR undertakes to acquaint the appropriate officials and employees of the CONTRACTOR with all relevant provisions of the ACT and the regulations promulgated in terms thereof.
2. The CONTRACTOR undertakes to fully comply with all relevant duties, obligations and prohibitions imposed in terms of the ACT and Regulations: Provided that should the EMPLOYER have prescribed certain arrangements and procedures that same shall be observed and adhered to by the CONTRACTOR, his officials and employees. The CONTRACTOR shall bear the onus of acquainting himself/herself/itself with such arrangements and procedures.
3. The CONTRACTOR hereby accepts sole liability for such due compliance with the relevant duties, obligations, prohibitions, arrangements and procedures, if any, imposed by the ACT and Regulations, and the CONTRACTOR expressly absolves the EMPLOYER and the Employer's CONSULTING ENGINEERS from being obliged to comply with any of the aforesaid duties, obligations, prohibitions, arrangements and procedures in respect of the work included in the contract.
4. The CONTRACTOR agrees that any duly authorised officials of the EMPLOYER shall be entitled, although not obliged, to take such steps as may be necessary to ensure that the CONTRACTOR has complied with his undertakings as more fully set out in paragraphs 1 and 2 above, which steps may include, but shall not be limited to, the right to inspect any appropriate site or premises occupied by the CONTRACTOR, or to take such steps it may deem necessary to remedy the default of the CONTRACTOR at the cost of the CONTRACTOR.
5. The CONTRACTOR shall be obliged to report forthwith to the EMPLOYER any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the ACT

and Regulations, pursuant to work performed in terms of this agreement, and shall, on written demand, provide full details in writing of such investigation, complaint or criminal charge.

Thus signed at for and on behalf of the **CONTRACTOR**

on this the day of 20.....

SIGNATURE:

NAME AND SURNAME:

CAPACITY:

WITNESSES: 1.

2.

Thus signed at for and on behalf of the **EMPLOYER** on this

the day of 20.....

SIGNATURE:

NAME AND SURNAME:

CAPACITY:

WITNESSES: 1.

2.

FETAKGOMO- TUBATSE MUNICIPALITY

MOTAGANENG ACCESS BRIDGE

C2.1 Pricing Instructions

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

2. The units of measurement described in these Bills of Quantities are metric units. Abbreviations used in the Bills of Quantities are as follows:

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

3. For the purpose of these Bills of Quantities, the following words shall have the meanings hereby assigned to them:

Unit:	The unit of measurement for each item of work as defined in the COLTO Standard Specification for Road and Bridge Works for State Authorities (1998 edition).
Quantity:	The number of units of work for each item.
Rate:	The agreed payment per unit of measurement.
Amount:	The product of the quantity and the agreed rate for an item.
Lump sum:	An agreed amount for an item, the extent of which is described in the Bills of Quantities but the quantity of work of which is not measured in any units.

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

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

information on standards)

6. The prices and rates in these Bills of Quantities are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices will be used as a basis for assessment of payment for additional work that may have to be carried out.
7. Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount tendered such items
8. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bills of Quantities. A single lump sum will apply should a number of items be grouped together for pricing purposes.
9. The quantities set out in these Bills of Quantities are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in these Bills of Quantities.
10. Reasonable compensation will be received where no pay item appears in the Bills of Quantities in respect of work required in terms of the Contract and which is not covered in any other pay item.
11. The short descriptions of the items of payment given in these Bills of Quantities are only for the purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work.
12. The item numbers appearing in the Bills of Quantities refer to the corresponding item numbers in the COLTO Standard Specification for Road and Bridge Works for State Authorities (1998 edition).

FETAKGOMO- TUBATSE MUNICIPALITY

MOTAGANENG ACCESS BRIDGE

C2.2 Bills of Quantity

FETAKGOMO- TUBATSE MUNICIPALITY

MOTAGANENG ACCESS BRIDGE

C3: SCOPE OF WORK

C3.1 STANDARD SPECIFICATIONS

C3.2 PROJECT SPECIFICATIONS

PART A: GENERAL

- PS-1 Project Description
- PS-2 Description of the Site and Access
- PS-3 Details of the Works
- PS-4 Construction Management Requirements

PART B: AMENDMENTS TO THE STANDARD SPECIFICATIONS

- PS Covers variations and additions to the COLTO Standardised Specifications Series that is applicable to the Contract.

C3.3 PARTICULAR SPECIFICATIONS

PART C: ENVIRONMENTAL MANAGEMENT PLAN

FETAKGOMO- TUBATSE MUNICIPALITY

MOTAGANENG ACCESS BRIDGE

C3: SCOPE OF WORK

C3.1 STANDARD SPECIFICATIONS

C3.2 PROJECT SPECIFICATIONS

PART A: GENERAL

PS-1	Project Description
PS-2	Description of the Site and Access
PS-3	Details of the Works
PS-4	Construction Management Requirements

PART B: AMENDMENTS TO THE STANDARD SPECIFICATIONS

B1	Project Specifications Relating to the Standard Specifications and Other Additional Specifications
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Section	1100	Definitions
Section	1200	General Requirements and Provisions
Section	1300	Contractor's Site Establishment on Site and General Obligations
Section	1400	Housing, Offices and Laboratories for the Engineer's Site Personnel
Section	1500	Accommodation of Traffic
Section	1600	Overhaul
Section	1700	Clearing and Grubbing
Section	2100	Drains
Section	2200	Prefabricated Culverts
Section	2300	Concrete Kerbing, Concrete Channelling, Chutes and Down pipes and Concrete Linings for Open Drains
Section	3100	Borrow Materials
Section	3300	Mass Earthworks
Section	3400	Pavement Layers of Gravel Material
Section	3500	Stabilisation
Section	4100	Prime Coat
Section	4200	Asphalt Base and Surfacing
Section	4300	Seals : Materials and General Requirements
Section	5200	Gabions
Section	5400	Guardrails
Section	5500	Fencing
Section	5600	Road Signs
Section	5700	Road Markings
Section	5800	Landscaping and Planting Plants
Section	8100	Testing Materials and Workmanship
Section	8200	Quality Control (Scheme 1)

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 and where accommodation of traffic is involved:
- SANS 1921-2 (2004): Construction and Management Requirements for Works Contracts; and
Part 2: Accommodation of Traffic on Public Roads Occupied by the Contractor.

FETAKGOMO- TUBATSE MUNICIPALITY

MOTAGANENG ACCESS BRIDGE

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 Construction of MOTAGANENG ACCESS BRIDGE in Ward 18 of FETAKGOMO-TUBATSE MUNICIPALITY. The Access Bridge is located about 600m from road D2537 on a local road servicing the community of Ga-Manoke.

The project will also entail construction of Precast Portal Culverts over the stream and eroded area including road layer works, asphalt surfacing of about 1.8km, erosion protection and associated works, Road length is 1.8km. 6m road width.

The scope of will include but not limited to,

- Accommodation of traffic
- Earthworks
- Roadbed, selected layer, sub-base and base layer
- Surfacing of the road with 40mm Asphalt surfacing
- Precast Portal Culverts (2.1m x 2.1m)(7 Cells) (16.8m length)
- Gabions
- Kerbing and Edge beams
- Gabion
- Construction of V-drainage
- Speed humps, road markings and signs
- Road Markings and Signs
- Training of Targeted local Labours

PS-2 DESCRIPTION OF THE SITE AND ACCESS**2.1 Location of site**

The project location is in Ward 18 of FETAKGOMO- TUBATSE MUNICIPALITY, Sekhukhune District Municipality in the province of Limpopo. The GPS co-ordinates are as follows:

S 24° 37' 41.45" E 30° 20' 44.37"

The locality plan is also included in this document showing the road under consideration (See Section C4).

2.2 Access to site

Access to site is at the intersection with road D2537. The Access Bridge is located about 600m from road D2537 on a local road servicing the community of Ga-Manoke

PS-3 DETAILS OF THE WORKS

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

3.1 Roadworks

The proposed works required to stabilize the road layers include,

- Ripping, shaping and compaction of existing top 150mm layer (roadbed).
- Fill compacted in layers not exceeding 150mm from approved borrow pit.
- Base layer (stabilized)
- Asphalt surfacing (40mm)
- Road marking and signs and speed humps

Drainage and Drainage Structures

- Excavation for bridge foundation
- Prepare foundation with reinforcement, Dowels and Concrete.
- 2.1m x 2.1m Precast Portal Culverts (Access Bridge), 7 cells, 16.8m total length
- Installation of gabions
- Construction of V-drains

Road Safety and Road Signs

- Accommodation of traffic
- Hazards plates (W413) on the positions of culverts
- Speed limit signs
- Guardrails

3.2 Nature of ground conditions and subsoil conditions

Geotechnical investigation for the road was carried and the field comprised Test Pits (Soil Profile) and Dynamic Cone Penetration tests.

The (Test Pits) profiles indicated that the material is between (G7-G9). The pavement is underlaid by silty/clayey sub-rounded medium to very dense material. No Groundwater / seepage was encountered, during the investigation below existing ground level.

3.3 Labour recruitment conditions

A Project Steering Committee will be formed before contractor establishment on site. It is mandatory that the Contractor shall employ un-skilled labour from local community. Employment of such labour is to be done in conjunction with the PSC.

3.4 Construction in confined Areas

The road is in a confined area, with road reserve being up to 7m in some sections. Contractor must make all necessary arrangements for working under such conditions.

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.

4.1.7 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.

The contractor shall be supplied with two complete paper copies of the construction drawings free of charge. The Contractor shall at his own expense produce therefrom all 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 completion certificate 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.

4.2 Responsibilities for design and construction

Engineer

The Engineer responsible for the design in accordance with the specification is: Mr C T Pagiwa of TMS Consulting Engineers

4.3 Planning and Programme *(Read with SANS1921-1:2004 clause 4.3)*

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 time is 8 months. Plant and personnel requirements to complete the project in 8 months must be incorporated in the Tender.
- b) A high standard of traffic accommodation
- c) Ancillary works by Emerging Contractors

Programme in terms of Clause 12 of the General Conditions of Contract

It is essential that the construction programme, which shall conform in all respects to Clause 12 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 Contractor's attention is also drawn to clause 40.3 of the General Conditions of Contract 2004.

4.4 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 stormwater 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.

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

Borrow pits and spoil areas

The Contractor will have to source material from commercial sources, and must supply the Engineer with test results of such materials before ordering them to site.

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 tip area for the disposal of soil, rubble, vegetation, etc, its use shall be subject to the approval of the Engineer and the landowner.

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

Process control

The Contractor shall arrange for all tests required for process control to be done by a laboratory acceptable to and approved by the Engineer

The Contractor may establish his own laboratory on site 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.

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 may have further control tests carried out by a laboratory of his choice. The cost of such additional tests will be covered by a provisional sum provided in the schedule of quantities, but tests that failed to confirm compliance with the specifications, will be for the account of the Contractor.

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

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 labourers. 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, the local Tribal Authorities 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.

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 only will be allowed where temporary facilities have to be provided.

4.15 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 trigonometrically 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.

4.17 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.

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.

A provisional amount is included in the bill of quantities for the protection of services.

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

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

4.18.1 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 No 85 and Amendment Act No 181 of 1993, and the OHS Act 1993 Construction Regulations 2003 issued on 18 July 2003 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 C1.2.4

Health and Safety Specifications and Plans

(a) Employer's Health and Safety Specification

The Employer's Health and Safety Specification will be included in the tender documents as part of the

(b) Tenderer's Health and Safety Plan

The Tenderer shall submit with his tender his own documented Health and Safety Plan he proposes to implement for the execution of the work under the contract. His 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 7 to 28;
- (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 5*);
- (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 6 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 2003.

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

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.

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

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.

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.

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.

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.

4.19 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:

(a) 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.

(b) 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.

(c) 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.

PART B: AMENDMENTS TO THE STANDARD AND PARTICULAR SPECIFICATIONS**B1 PROJECT SPECIFICATIONS RELATING TO THE STANDARD SPECIFICATIONS AND OTHER ADDITIONAL SPECIFICATIONS**

In certain clauses in the standard, standardised and particular specifications, allowance is made for a choice to be specified in the project specifications between alternative materials or methods of construction, and for additional requirements to be specified to suit a particular contract. Details of such alternative or additional requirements applicable to this contract are contained in this part of the project specifications. It also contains the necessary 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 relevant clause or payment item in the standard specification.

The number of a new clause or 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, but followed by a new number which follows on the last clause or item number used in the relevant section of the standard specifications.

SECTION 1200: GENERAL REQUIREMENTS AND PROVISIONS**B1202 SERVICES**

Delete and replace the words :

“Clause 15 of the general conditions of contract” in the first sentence of the eleventh paragraph with Clause 5.6.1 of the General Conditions of Contract for construction works 2015 edition.

B1205 WORKMANSHIP AND QUALITY CONTROL

Add the following :

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

B1206 THE SETTING-OUT OF WORK AND PROTECTION OF BEACONS

Delete the entire contents of the first paragraph and the following words in the first sentence of the sixth paragraph.

“and of clause 8.1 of the general conditions of contract.”

Add the following:

The contractor will be responsible for verifying all dimensions of existing structures before preparing fabrication shop drawings or setting out the works.

The Engineer’s approval of shop drawings or dimensions does not remove the responsibility for the work from the Contract.

Where services are to be connected to, the Contractor will verify the dimensions of these services before preparing shop drawings or ordering of materials.

B1209 PAYMENT

Amend sub clause (e) Materials on site by deleting and replacing the words :

“Clause 52 of the general conditions of contract” in the first sentence of the first paragraph with Clause 6.10.2 of the General Conditions of Contract for construction works 2015 edition.

B1210 CERTIFICATE OF PRACTICAL COMPLETION OF THE WORKS

Delete and replace the words in the first paragraph :

“Clause 54 of the general conditions of contract” in the fourth line of the first sentence with Clause 5.14.1 of the General Conditions of Contract for construction works 2015 edition.

B1212 ALTERNATIVE DESIGNS AND OFFERS

Add the following to the end of sub clause (m) :

"The provision for contract price adjustment in the original tender summary must not under any circumstances be altered in an alternative tender"

B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL

Delete and replace the words in the first paragraph:

“Clause 45 of the general conditions of contract” in the first line of the first sentence with Clause 5.12.2.2 of the general conditions of contract for construction works 2015 edition.

Add the following after the first paragraph:

Method (ii) (Critical-path method) shall be used on this contract.

Method (ii) (Critical-path method)

Delete and replace the words in the second paragraph with the following :

Replace the word "five-day" in the second paragraph with "six-day".
The value of "n" is zero (0).

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

Delete and replace the words in the first paragraph :

“Clause 35 of the general conditions of contract” in the second line of the first sentence with Clause 8.2.1 of the General Conditions of Contract for construction works 2015 edition.

B1224 THE HANDING-OVER OF THE ROAD RESERVE

Add the following:

The full extent of the road reserve will be handed over to the Contractor at the beginning of the contract. He shall be responsible for the maintenance along this portion of the road until completion of the contract.

B1229 SABS CEMENT SPECIFICATIONS

The standard cement specifications SABS 471, SABS 626, SABS 831 and SABS 1466 have been withdrawn and are replaced by the new SANS 50197-1 and -2: Common cements, and SANS 50413-1 and -2: Masonry cement. These specifications will be applicable to this contract, and the descriptions and types of cements specified, will be based on the designations as defined in these specifications.

B1230 ENVIRONMENTAL IMPACT CONTROL

Respect for the environment is an important aspect of this contract. The environmental control of the site shall be governed by the Environmental Management Plan (EMP) included in Particular Specification C3.3 of this document, which provides, inter alia for:

- (a) The Contractor must allow for the satisfactory combating of dust and noise nuisance throughout the contract length during construction.
- (b) The Contractor must make provision for the prevention of excessive erosion and siltation throughout the Contract and in particular on adjacent land. Should excessive erosion and/or siltation take place outside the road reserve as a direct result of the Contractor's construction activities it will be the Contractor's responsibility to make good the erosion/siltation to the satisfaction of the landowner and the Engineer.

- (c) No littering by construction workers shall be allowed. A refuse control system shall be established for the collection and removal of refuse to the satisfaction of the engineer.
- (d) Adequate provision shall be made for temporary toilet requirements in construction areas. Use of the veld for this purpose shall not, under any circumstances be allowed.
- (e) Streams, rivers and dams shall be protected from direct or indirect spillage of pollutants, such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate tailings, wash water, organic materials and bituminous products. In the event of spillage, prompt action shall be taken to clear the affected area. Emergency measures in the event of spillage must be set out and the responsible person made aware of the required action. The construction of temporary and or permanent dams must be done with the necessary approvals from the Department of Water Affairs and Forestry and Environmental Affairs and Tourism.
- (f) Bituminous and/or other hazardous products shall not be spoiled on site and may only be disposed of in licensed authorised disposal facilities.
- (g) Control of invader species of plants.
- (h) Clearing shall be limited to the road prism and, where applicable, detours, which shall be sited in consultation with the Engineer and the local communities.

No separate payment will be made for observing these requirements as it is deemed to be included in the amount tendered for Item 13.01(c) but any avoidable non-compliance with these rules may be considered sufficient grounds for withholding payment of part or all of the amounts to be paid for the above item.

B1231 WORKMEN'S COMPENSATION ACT

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

The manner in which Workmen's Compensation shall be handled shall be resolved by the Contractor at the commencement of the contract.

B1232 CARE OF WORKS, DAMAGE, INJURY AND INSURANCE

Compliance with Road Traffic Act:

When a service necessitates vehicles or plant travelling or working on a public road the following shall apply:

- The vehicles and plant shall be licensed in terms of the National Road Traffic Act 1996 (Act No. 93 of 1996) as amended.
- Every driver and operator of a vehicle or an item of plant shall be in possession of a valid permit in respect of the class of vehicle or item of plant he is driving or operating.

The contractor shall provide, erect and maintain sufficient road signs, barricades, fencing and guarding as may be necessary or required by the Engineer or by any act, regulation or statutory authority in order to minimise the danger and inconvenience caused to vehicle and pedestrian traffic.

The Contractor by accepting this contract shall be deemed to have indemnified the Employer and the Engineer against any claims, damages and / or costs that may arise in this regard.

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

B1301 PAYMENT

Add the following at the end of Item 13.01(1).

"..... and provided the Contractor has fulfilled his obligations as far as the Engineer's office, laboratory and housing accommodation is concerned".

Add the following new pay item:-

Item	Unit
B13.01(a) Services for Community Liaison Officer The CLO will be paid R7000/pm . Contractor will only claim Handling fee under item B13.01 (b)	Prov Sum
B13.01(b) Handling cost and profit in respect of sub-items B13.01(a)	%
B13.02 (a) Community Participation: PSC will be paid R150.00/month for a maximum of 10 members. Payment is to cater for PSC meetings. Contractor will only claim Handling fee under item B13.02 (b)	Prov Sum
B13.02(b) Handling cost and profit in respect of sub-items B13.02(a)	%
B13.03(a) Training:	
(a) Provisional sum for training allowance to targeted labour undergoing training	Prov Sum
(i) Technical Skills	
(ii) Generic Skills	
(iii) Entrepreneurial skills	
(iv) Remuneration of labours undergoing technical skills training.	
(v) Training Venue	
<p>Payment of items will be based on acceptable quote from at least three accredited training service providers. Payment will be as invoiced from nominated service provider after completion of training. Contractor will claim handling fee under item B13.03 (b)</p>	
(b) Contractors handling costs, profit and all other charges in respect of sub-item B13.03 (a)	%
B13.04(d) Contractors time related obligation in OHS:	Months
<p>All staff and compliance in respect of occupational health and safety Act and construction regulation will be paid by the contractor</p>	
B13.04(e) Contractors time related obligation EMP:	
<p>All staff and compliance in respect of Environmental Management Plan regulation will be paid by the contractor</p>	
	Months

B13.05	Relocation and/or protection of existing services: (a) By the contractor	Prov Sum
	<p>Payment of the item will be based on actual time of personnel and equipment to carry out the required relocation and/or protection of services. Any materials to be used must be approved by the Engineer on site.</p> <p>(b) By the service provider</p> <p>Invoice of nominated and approved service provider will be Certified for payment after work done. Contractor will claim handling fee under item B13.02 (c).</p> <p>(c) Handling cost in respect of B13.05 (b)</p>	%
B13.06	Information Board Supply, transport to site and erect contract signboard as indicated on drawing	Number (No.)
B13.07	Hand excavation to determine the position of existing service in soft material	m ³
	<p>Payment for excavation in soft material by hand as directed By Engineer on site</p>	
B13.08	Covid 19 Health and Safety Mitigation Plan (a) Sanitizer, Digital Thermometer, Face Mask, Fumigation Services, Surgical Gloves and Transparent Mask.	Months
	(b) Handling cost in respect of B13.08 (a)	%

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

B1401 OFFICES AND LABORATORIES

(a) **General**

Delete the fourth sentence in the first paragraph of Sub-clause 1402 (a) and replace with:

Office buildings shall have timber or concrete floors covered with edge-to-edge foam-backed needle-punched carpeting, and laboratory buildings shall have concrete floors.

Add the following new paragraph at the end of this sub-clause:

The offices, laboratory and stores shall, unless otherwise agreed, be erected in close proximity to the contractor's offices and laboratory, and the entire area shall be fenced with security fencing and provided with a gate. The contractor shall take all reasonable precautions to prevent unauthorised entry to the Engineer’s offices and laboratories and to ensure the general security of the offices and laboratories.

B1401 MEASUREMENT AND PAYMENT

Amend the following pay items under item:

Item	Unit
14.01 (a) Provisional items and items paid for in a lump sum:	
(a) Provisional sum for the office accommodation for the Engineer.	Prov sum
Payment will be from agreed quotation of renting the office of the Engineer from local office parks or rental of mobile office space.	
(b) Handling cost and profits in respect of sub-item B1401 (a)	%
B14.03 (b) Prime cost items and items paid for in a lump sum: Add the following sub-items	
(d) Provisional Sums items	
(i) Provision for use by the Engineer for an independent laboratory	Prov sum
Payment will be as invoice by the independent laboratory for test conducted On instruction of Engineer	
(ii) Handling cost and profits in respect of sub-item B1403 (d) (i)	%
(iii) Provision for Training of Engineering Technician	Prov sum
Payment will be made monthly for the remuneration of Engineering Technician appointed by Client/Engineer for on-site Training.	
(iv) Handling cost and profits in respect of sub-item B1403 (d) (i)	%
(v) Provision for use by Engineer of Surveyor	Prov Sum
Payment will be as invoiced by the Surveyor for work conducted On instruction of Engineer	
(vi) Handling costs and profit in respect of subitem B14.03 (d)(v) above	%

- (vii) Provision for Compensation of Land Owners Prov Sum
Payment will be as invoiced by the Land Owner from the instruction of Engineer
(viii) Handling costs and profit in respect of subitem B14.03(d)(vii) above %
- (ix) Provision for use by Engineer of Environmental Specialist Prov Sum
Payment will be as invoiced by the Environmental Specialist for work conducted On instruction of Engineer
(x) Handling costs and profit in respect of subitem B14.03(d)(ix) above %
- (xi) Provision for COVID Compliance Officer Prov Sum
Payment will be as invoiced by the COVID Compliance Officer for work conducted on instruction of Engineer
(xii) Handling costs and profit in respect of B14.03(d)subitem (xi) above %
- (xiii) Provision of safety consultant Prov Sum
Payment will be as invoiced by the Safety Consultant for work conducted On instruction of Engineer
(xiv) Handling costs and profit in respect of subitem B14.03(d)(xiii) above %
- (xv) Provision of a direct independent telephone line for the Engineer Prov Sum
, including the cost of calls in connection with contract administration and telephone rental
(xvi) Handling costs and profit in respect of subitem B14.03(d)(xv) above %
- (xvii) Provision of social facilitator Prov Sum
Payment will be as invoiced by the Social Facilitator for work conducted On instruction of Engineer
(xviii) Handling costs and profit in respect of subitemB14.03(d)(xvii) above %
- (xix) Provision for Risk Mitigation Plan Prov Sum
Payment will be as invoiced by the Contractor for work conducted On instruction of Engineer
(xx) Handling costs and profit in respect of B14.03(d)subitem (xix) above %

SECTION 1500 : ACCOMMODATION OF TRAFFIC**B1501 SCOPE**

Add to Clause 1501 the following:

The scope of this section shall also include the preparation and submission to the Engineer for approval of traffic management plans. The traffic management plans shall demonstrate how the Contractor intends accommodating and controlling traffic through the site. The plans must incorporate all the requirements of the specifications in respect of the accommodation of traffic, including the traffic control devices and the personnel involved. A traffic safety officer shall be specifically named in the Plan together with 24 hr contact details. Copies of the plans shall be made available to the Engineer, the Employer, Local Authorities, the Police and Emergency Services.

The accommodation of traffic shall generally be undertaken in the following manner:

- (a) Via gravel diversions, where practical in terms of space and the terrain.
- (b) By dealing with traffic under construction where no diversions are possible.
- (c) By diverting traffic along the existing road where the route is being realigned.

B1502 GENERAL REQUIREMENTS**(a) Safety**

Add to Sub-clause 1502(a) the following:

Information in respect of intersections, accesses, bus stops, traffic volumes, pedestrians etc is given in Part B of these Project Specifications.

(b) Providing Temporary Deviations

Add to Sub-clause 1502(b) the following :

The contractor shall keep the provincial traffic police, the municipal traffic departments and the engineer fully informed with regard to any changes in the normal traffic flow and obtain their approval for these changes.

During the non-working hours, all unnecessary obstructions to the traffic shall be removed and all signs no longer applicable to the situation shall be removed or effectively covered.'

It is a condition of this contract that not more than 1.5 km of deviation should be open to public traffic at any one time, and that not more than three separate deviations should be open at any one time. No additional payments will be made where situations arise that the contractor has deviations cross over the roadway under construction.

(i) Traffic Safety Officer

Add to Sub-clause 1502(i) the following :

The Contractor shall submit a CV of the candidate to the Engineer for approval before the Traffic Safety Officer is appointed. The Traffic Safety Officer shall be made available to discuss road safety and traffic accommodation matters whenever required by the Engineer.

Delete Sub-clause 1502(i), sub-sub-clauses (ii) and (iii) and replace 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 unit 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 works twice each day by 9:30 and by 16:30, to record all irregularities discovered and the remedial action taken, and to sign off as correct and submit to the Engineer such record sheets by 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 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 3 labourers at his disposal 24 hrs 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 as shown on Figure 24 of Road Signs Note No.13. 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 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 to Sub-clause 1502(i) the following new sub-sub-clauses:

- (ix) Ensure that all obstructions, soil and gravel heaps, related to the Contractors activities be removed before nightfall where applicable and as instructed by the Engineer and that the roads are safe for night traffic.
- (x) The Traffic Safety Officer shall, in addition to the duties listed in Clause 1502 (i), also be responsible for 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 shall be responsible for the erection and maintenance of all traffic signs necessary for the accommodation of traffic.”

Add the following new Sub-clauses to Clause 1502 :

(j) **Public traffic**

The contractor must plan and conduct his activities so as to bring about the least possible disruption to the traffic on the road. All halting of traffic will require the prior approval of the engineer and must be pre-arranged with the appropriate traffic authorities.

In all dealings with the public the Contractor shall bear in mind the public's right to enjoy the use of the road, and the Employer's desire to interfere as little as possible with this right. At all points of contact with the public, the Contractor shall deal with deliberate courtesy and understanding in any discussions or disputes.

(k) **Failure to comply with provisions**

The failure or refusal of the Contractor to provide barricades or traffic signs at the proper time, or to take the necessary precautions for the safety and convenience of public traffic as specified or instructed by the Engineer, shall be sufficient cause for the suspension of all work under this Contract without any additional compensation to the Contractor until the required accommodation of traffic has been completed to the satisfaction of the Engineer. The above 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 section B1500 of 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.

The penalties shall be deducted from the payment certificate for the month in which the non-compliance occurs.

Payment will also be deducted in accordance with Payment Item B15.01 of these Project Specifications.

(l) **Access to work area**

Construction traffic will only be permitted to enter or leave the work area at points approved by the Engineer and as clearly indicated on the traffic management plans. When any access point is in use, flagmen shall be provided for each such point. At least two flagmen shall be stationed at the access point to control the movement of construction traffic, and to warn public traffic on both lanes of the existing road. It is not the purpose of these flagmen to stop public traffic flow.

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

Accommodation of public traffic on the works or any delays caused thereby, as well as any suspensions due to failure by the Contractor to comply with the provisions for the accommodation of traffic, will not be regarded as special circumstances for an extension of time.

B1503 TEMPORARY TRAFFIC-CONTROL FACILITIES

Replace the first sentence of the first paragraph of Clause 1503 with the following :

The Contractor shall provide, erect and maintain the necessary traffic-control devices, road signs, channelisation devices, barricades, warning devices and road markings (hereinafter referred to as traffic-control devices) in accordance with these special provisions and as shown on the drawings and in the South African Road Traffic Signs Manual in conjunction with the latest edition of Road Signs Note No.13 Roadworks, and remove them when no longer required. It shall be incumbent upon the Contractor to see to it that the abovementioned traffic-control devices are present where required at all times and are functioning properly, and he shall replace any that have been damaged, lost, stolen or obliterated at his own cost.

Replace the third paragraph of Clause 1503 with the following:

The type of construction, spacing and placement of traffic-control devices shall be in accordance with the latest edition of Road Signs Note No.13, Roadworks, these special provisions, the drawings and the South African Road Signs Manual. The recommended arrangements of the traffic control devices illustrated in Appendices 1 to 6 of Road Signs Note No.13 and/or drawings shall not be departed from without prior approval of the Engineer. Typical arrangements expected to be used in the Contract are given on the tender drawings.

However, this shall not absolve the Contractor of his obligations in preparing traffic management plans as per this Project Specification.

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

(b) **Road signs and barricades**

Add to Sub-clause 1503(b) the following :

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 method of ballasting the sign supports shall consist of durable sandbags filled with sand of adequate mass to prevent signs from being blown over by wind. The cost of the sandbags shall be included 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 Road Signs Note No.13.

The covering of permanent road signs, if applicable, shall be by utilising a hessian bag, which shall be pulled over the sign in the form of a hood and fastened to the sign posts. Plastic bags or other materials and fastening by means of adhesive tape shall not be permitted. The cost of covering of permanent road signs shall be deemed to be covered by the tendered rates of items B15.03.

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 the designated time or fail to comply to the requirements, the work on that section will be suspended without any compensation to the Contractor.

(c) **Channelisation devices and barricades**

Add to Sub-clause 1503(c) the following :

Delineators shall be of plastic and shall be capable of withstanding winds caused by passing traffic in typical working conditions without falling over. To achieve this, the base shall be ballasted using sand bags.

Traffic cones manufactured in a fluorescent red-orange or red plastic material shall be used only at short term lane deviations during daylight. Cones used on all deviations shall be 750 mm high. Lane closures which continue into the night time shall be demarcated by delineators only.

The use of steel drums as channelization devices will not be allowed on this Contract unless instructed by the Engineer. Channelization shall be effected by the use of delineators or cones as detailed in Road Signs Note No. 13 - Roadworks.

(e) **Warning devices**

Add to Sub-clause 1503(e) the following :

All construction vehicles and plant used on the works shall be equipped with rotating amber flashing lights and warning boards as specified. All vehicles and plant shall obtain a clearance permit from the Engineer before being allowed onto the site.

Rotating lights shall have an amber lens of minimum height of 200 mm and shall be mounted to ensure clear visibility 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 LDV's 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 or parked alongside roads open to public traffic.

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

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

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 immediately replaced by the Contractor.

Add the following New Sub-clauses to Clause 1503 :

(g) Other signs and 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 with the requirements of the South African Traffic Signs Manual, Road Note 13 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."

Cones shall be manufactured and positioned in accordance with the details specified on the drawings.

All traffic cones and road signs shall be kept clean and visible at all times. All bituminous or other foreign material shall be removed by the Contractor, or the dirty traffic cones and road signs shall be replaced with new ones at the cost of the Contractor, as directed by and to the satisfaction of the Engineer.

(h) Safety jackets

The Contractor will be responsible to ensure that all construction workers, staff of the Engineer and visitors shall wear safety jackets when moving around on site. The jackets shall be of an approved type, orange in colour and shall be to the approval of the Engineer. The Contractor shall provide the Engineer with two jackets. Payment for Engineer's jackets will be as deemed to be included in rates for accommodation of traffic item 15.01

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

Amend Clause 1513 as follows :

In the third line of the third paragraph, delete "4 km" and replace with "1 km".

In the second line of the fourth paragraph, delete the word "four" and replace with "three". Also, delete "2 km" and replace with "3 km".

SECTION 1700: CLEARING AND GRUBBING**B1702: DESCRIPTION OF WORK**

a) Clearing

Add the following:

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

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

B1704: MEASUREMENT AND PAYMENT

Item

Unit

B17.07 Removal of topsoil material and temporary stockpiling thereof in:

a) Topsoil in windrows alongside the work area	cubic metre (m ³)
b) Topsoil in windrows on the edges of borrow pits or spoil areas	cubic metre (m ³)

The unit of measurement for items (a) and (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 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's 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.

SECTION 2100: DRAINS**B2101: SCOPE**

Amend the first paragraph to read:

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

B2104: SUBSOIL DRAINAGE

(a) Materials

(ii) Natural permeable material

Add the following to the 2nd paragraph:

“The crushed stone shall be coarse (19mm nominal) and shall be washed clean of all fines”, conforms to the following specification:

Percentage passing through a 26,5mm sieve: 100 %. Percentage passing through a 19,0mm sieve: 60-85 %.

(iii)

(iv) Synthetic-fibre filter fabric

Under item (4) Selection, of this sub-clause, replace the 1st paragraph with the following:

“The filter-fabric used for subsoil drains shall be grade 2 and shall satisfy the criteria for a grade 2 geotextile as given in Table 2104/2.”

(b) Construction of subsoil drainage systems Add the following sub-clause:

“(v) Proving of pipes in subsoil drainage systems

On completion of the pipe laying and prior to backfilling, all pipe joints shall be surveyed as proof of their installation to line and level. After backfilling the pipes shall be proved by pulling through a cylindrical cleaning brush followed by a wooden mandrill \pm 400mm long and 5mm in diameter less than the bore of the pipe. Proving of pipes shall not be paid for separately and the cost thereof shall be deemed to be included in the rate tendered for laying the pipe.”

B2107: MEASUREMENT AND PAYMENT

Item

Unit

B21.01 Excavation for open drains

Add the following to the penultimate paragraph:

“The tendered rate shall also include full compensation for trimming the open drains” “This item does not include the excavations for the earth channel along the road profile as per typical cross section, which is deemed included in the mass earthworks (Section 3300). This item is specifically for additional open drains leading away from the road profile, like mitre drains, etc.”

SECTION 2200 : PREFABRICATED CULVERTS**2203 MATERIALS**

The prefabricated culvert units shall be factory produced by a reputable manufacture of the articles and shall comply with the following requirements

(a) Prefabricated concrete pipe culverts units

Prefabricated concrete pipe culverts unit shall comply with the requirements of SABS 677. Pipes with ogee joints shall be provided, unless otherwise specified.

B2204 CONSTRUCTION METHOD

Add to clause the following:

Prefabricated culverts shall be installed by the trench method. The entire length of the excavated trench should be exposed to ensure no other services are present that may affect the slope of the prefabricated pipe culverts. Care should be taken not to damage existing services when laying prefabricated culverts.

B2205 EXCAVATION FOR CONSTRUCTION BY TRENCH METHOD**(a) Depth of excavation**

Add to Sub-clause the following:

(i) Concrete pipe culverts

The minimum cover for the pipe culverts shall be at least 300mm or as stated by the Engineer on site

B2213 REMOVAL OF EXISTING WORK

Where shown on the drawings or directed by the Engineer, existing inlets or outlets to pipe culverts shall be demolished and debris or rubbish disposed of as directed by the Engineer. All such work shall be carried out so as to prevent damage being done to former work which is to remain

SECTION 2300 : CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES AND CONCRETE LININGS FOR OPEN DRAINS**B2302 MATERIALS****(b) Kerbing and channeling**

Add to Sub-clause 2302(b) the following :

Precast kerbs shall preferably be factory produced by a reputable manufacture of the articles and shall comply with the requirements of SABS 927 .

B2304 CONSTRUCTION**(b) Prefabricated concrete kerbing and channeling**

Add to Sub-clause 2304(b) the following:

All precast kerbs shall be provided with continuous in-situ concrete backing (haunching), the cost of which shall be included in the tendered rate.

Dimensions of the triangular-shaped (in cross-section) haunching shall be calculated as follows : If the difference in levels between the top of the kerb and the sub base on which the kerb is laid is (h), then the height of the haunch is $2/3h$ and the width of the haunch is h.

(e) Cast in-situ kerbs and channels

Add to Sub-clause 2304(e) the following :

Where new kerbing and channeling has to be laid in an existing bitumen surface, the surface shall be neatly cut to a straight line with an angle grinder or similar approved means along the edge of the channel. The existing road foundation shall then be carefully removed over the width and depth required to construct the new kerb and channel.

During the construction of the in situ channel, the contractor shall take care not to stain or damage the existing road surface. Any damage, excess overbreak, undermining or staining shall be repaired by the Contractor at his own expense.

Add the following new Sub-clauses to Clause 2304 :

(m) Formwork and finish

All visible edges of cast in-situ channels shall be rounded with a rounding tool.

CLASSIFICATION OF CUT AND BORROW

(a) Classes of excavation

Add to Sub-clause 3303(a) the following:

(i) Soft excavation

Add the following at the end:

Or

“Soft excavation shall be excavation in material which can be efficiently ripped by a bulldozer with a mass of at least 35 tons when fitted with single tine ripper and an engine developing approximately 220 kW at the flywheel”.

Remove item 3303 (a) (ii) Intermediate excavation. There will be no intermediate material measured in this contract and except from hard excavations all excavations must be considered as soft excavation.

(iii) Hard Excavation Add the following:

A full survey including proto report of all dwellings within a radius of 200m of a blasting area needs to be conducted before blasting operations commence. The Contractor is liable for any damage that occurs to any structure, cable, sewer, pipe, etc. and immediately notifies the Employer's Agent of any such damage. The Employer's Agent arranges for the damage to be repaired by the owners of the damaged service and the cost of such repairs is deducted from any monies due to the Contractor.

CUT AND BORROW

(a) Dimensions of Cuts

Delete the third paragraph from Clause 3306(a), apart from the first sentence thereof. Add the following:

Cut and borrow to fill will be measured under Item 33.01. The Contractor shall take note of the nature of the earthworks alongside the existing road. No extra over payments will be made in respect of the nature of the site or due to the dimensions of a particular cutting.

FILLS

(d) Benching

Add the following:

“Benching of fill and pavement layer material is required to be undertaken into the existing fill embankments and pavement layers. No additional payment shall be made over and above the normal pay items applicable to earthworks and pavement layers where benching is required for widening of the existing road formation. Benching shall be undertaken as shown on the drawings.

It is a requirement that benching shall always be started at the bottom of the existing fill progressing to the top of the formation. The dimensions and details of benching are shown on the drawings.”

(i) Widening of fills

In the eight paragraph of Sub-clause 3307(i), delete the sentence "An extra over payment for the widening of existing fills will apply under Item 13.16.”

Add the following:

No extra over payments will be made in respect of the nature of the site or due to the dimensions of the fills being widened or constructed.

MEASUREMENT AND PAYMENT

General directions

Delete Note (3) Work in Restricted Areas and replace with the following:

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

Item

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

B33.04 Cut to spoil, including free-haul up to 1,0 km:

The free-haul distance for cut and borrow to fill and cut to spoil is 1,0 km for this contract.

SECTION 3400: PAVEMENT LAYERS OF GRAVEL MATERIAL**B3402: MATERIALS**

(a) General

All layers shall comply with the requirements of Tables 3402/1, 3402/2, 3402/4 and 3402/5 of the Standard Specification. The requirements of Section 3500: Stabilization shall also apply to the relevant layers.

Material requirements for gravel pavement layers are in accordance with TRH4 and shall be indicated on the drawings.

There shall be no measurement of Intermediate class excavation. All excavation that is not Hard shall be deemed as Soft.

B3406: QUALITY OF MATERIALS AND WORKMANSHIP

Add to Clause 3406 the following:

Test results and re-measurements shall be assessed in accordance with the provisions of Section 8200: Quality Control (Scheme 1) of the standard specifications, as amended in these project specifications.

B3407: MEASUREMENT AND PAYMENT

Delete the note at the start of the measurement and payment clause dealing with work in restricted areas. On this Contract, no extra over payment will be made due to the nature of the site or the size of the work area available. All costs associated with carrying out the works are deemed to be included in the tendered rates for the items in the Schedule of Quantities.

B34.04: In-situ reconstruction of existing pavement layers as:

- (a) Gravel selected layer compacted to 93% of modified AASHTO density using
- ii) Non cemented material, 150mm thick (m³)

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

B34.06: Extra over item 34.04 for adding extra material as specified

- (a) Gravel selected layer (neat G7 or better commercially sourced) m³)

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

The tendered rates shall provide full compensation for procuring from commercial sources, furnishing and placing all materials and compacting of the material, over an unlimited free haul distance where material is obtained from commercial sources, and for the testing, protecting and maintaining of layers as specified.

SECTION 3500 : STABILISATION**B3502 MATERIALS****(a) Chemical stabilizing agents**

Add to Sub-clause 3502(a) the following :

The new SABS ENV 197-1 standard specifications will be applicable to this Contract (Refer to Clause B1229 in the Project Specification). According to these specifications the following cements are prescribed:

- (ii) Ordinary Portland cement : CEM 1
- (iii) Portland blast-furnace cement : CEM III/A, III/B AND III/C
- (iv) *Ground granulated blast-furnace cement : As specified in 3502(a)(iv)*
- (v) Portland fly-ash cement : CEM II/A-V, CEM II/B-V, CEM II/A-W, CEM II/B-W

B3503 CHEMICAL STABILIZATION**(i) Construction limitations**

Add to Sub-clause 3503(i) the following :

Cement stabilization shall not be carried out during falling temperatures when the ambient air temperature falls below 7°C or during rising temperatures when the ambient temperature is below 3°C.

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

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

B3509 QUALITY OF MATERIALS AND WORKMANSHIP

Add to Clause 3509 the following:

Test results and re-measurements shall be assessed in accordance with the provisions of Section 8300: Quality Control (Scheme 2) of the standard specifications, as amended in these project specifications.

The Contractor shall advise the Engineer at least 24 hours in advance of any stabilization work to enable him to organise and conduct his own control tests.

Where the stabilising agent is to be spread by hand, the pockets of stabilising agent shall be placed on the layer at regular intervals. However, spreading shall not be carried out before the engineer is satisfied that the correct quantity of stabilising agent can be spread.

Stabilised layers shall be covered for curing within 24 hours, as specified. If the stabilised layer is found to have failed, the cover material shall be removed and the layer rectified if instructed by the engineer. No additional payment shall be made for such removal and remedial work.'

B3510 MEASUREMENT AND PAYMENT

Delete the note at the start of the measurement and payment clause dealing with work in restricted areas. On this Contract, no extra over payment will be made due to the nature of the site or the size of the work area available. All costs associated with carrying out the works are deemed to be included in the tendered rates for the items in the Bill of Quantities.

Payment Item 35.02

Chemical stabilising agent

Add the following note to this payment item:

The notation used for Portland cement and Portland blast-furnace cement corresponds with the notation specified in SABS ENV 197-1.

SECTION 4100 : PRIME COAT

B4102 MATERIALS

(a) **Priming Material**

Add to the words “, such as MSP 1 or similar, ” to the last of the listed priming materials, that is inverted bitumen emulsion.

(a) Aggregate for blinding

Add the following sentence:

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

B4104 WEATHER AND OTHER LIMITATIONS

Delete adverse condition (g) of Clause 4104 and replace with the following :

(g) when the moisture content of the top 50mm of the base layer is more than 50% of the optimum moisture content as determined according to TMH 1, Method A7”.

B1406 APPLICATION OF THE PRIME COAT

Add the following to paragraph (c):

“The nominal application rate of the prime shall be 0,8 l/m². Unless directed otherwise by the engineer or indicated on the drawings, the edges of the primed surface shall be 150mm wider than the edges of the surfacing.”

“(j) Application in areas treated by reworking and construction of a new base shall be primed using a mechanical distributor complying with sub-clause 4103(a). The edges of the previously constructed or existing surfacing shall be adequately protected by approved means to ensure that an overlap of prime not exceeding 50mm is sprayed onto the previously constructed or existing surfacing.”

B4108: TOLERANCES

Replace the first paragraph with the following:

"The actual spray rates measured at spraying temperature shall not deviate by more than 8.0% from that ordered by the engineer. The engineer may, at his discretion, conditionally accept application rates falling outside this tolerance at reduced payment in accordance with Table B4108/1.

TABLE B4108/1: Payment reduction factors for conditionally accepted prime coat

Deviation specified spray rate at spraying temperature. (%)	Payment reduction factor of tendered rate.
±8,0	1.00
±9,0	0.97
±10,0	0.95
±11,0	0.90
±12,0	0.85
±13,0	0.80

Any deviation outside these limits shall not be paid for, however, the engineer shall have the right to instruct the contractor to make up any deficiency, or blind excessive prime without additional payment. Where so instructed, the material for blinding shall consist of approved, but shall consist of screened 4,75mm nominal single size aggregate. The use of crusher dust for blinding shall not be permitted. If under-spraying occurs, and it is accepted by the engineer, only the actual quantities applied shall be paid for.”

B4109: TESTING

Add the following:

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

SECTION 4200 : ASPHALT BASE AND SURFACING**B4202 MATERIALS**

Add to Sub-clause the following:

(a) Bituminous binders

Road-grade bitumen shall comply with SABS 307. B8 (80/100) penetration grade bitumen shall be used.

(b) Aggregates

“Only Grade 1 aggregate shall be used for Asphalt.”

(Viii) Grading

Grading limits for Medium Continuously Graded shall be used as the target for grading

B4205 GENERAL LIMITATIONS AND REQUIREMENTS AND THE STORAGE OF MIXED MATERIAL**(a) Weather conditions**

Amend the following:

Asphalt may be mixed and placed only under favourable weather conditions and shall not be mixed or placed when rain is imminent or during misty or wet conditions.

The following wind and temperature conditions are regarded as being suitable for paving work:

- (i) While the air temperature is rising, work may be performed at temperature of – 7°C with an allowable wind velocity of less than 25km/h
- (ii) With the falling air temperatures, work must be stopped when the temperature reaches 7°C regardless of the wind velocity and may not be restarted before the temperature is definitely rising.

SECTION 5100: PITCHING, STONEMWORK AND PROTECTION AGAINST EROSION**B5101 SCOPE**

Add to Clause 5101 the following;

The section also covers the saw cutting of various types of in-situ material with a mechanical saw cutting machine.

B5102 MATERIALS

Add new Sub-Clause to Clause 5102

5102 (i) Mechanical Saw Cutting

(a) plant

Saw cutting machines shall be power driven saws suitable and capable to cut accurately to required depths and alignment in various materials as specified. Skill operator shall be required for operating sawing machines. Operators shall be equipped with suitable safety equipment (e.g. industrial goggles, suitable boots as well as clothing) for operating the sawing machines.

(b) Preparation to saw cutting

Before saw cutting may commence, the cut line shall be accurately pre-marked to the specified dimensions in term of the drawings or as instructed by the engineer.

(c) Construction tolerances

Mechanical saw cutting shall be undertaken within the following dimensional tolerances:

(a) Horizontally

Mechanical deviation from the specified line shall not be more than 5mm

(b) Vertically

The cut depth shall never be less than the specified depth but shall not exceed the specified depth by more than 15mm.

SECTION 5200: GABIONS**B5202: MATERIALS**

Add the following new sub-clause:

(g) Concrete

Concrete work shall be carried out in accordance with the provisions of Sections 6200, 6300 and 6400.

B5203: CONSTRUCTION OF GABION CAGES

(a) General

Add the following new sub-clause:

“(iii) Reno mattresses or similar may be used as alternative to gabion boxes. These Reno mattresses are to be manufactured of 80mm x 100mm mesh (2,5mm diameter wires, diaphragm spacing 0,6m).

B5204: CONSTRUCTING GABIONS

(c) Assembly

Delete and substitute with:

(c) Assembly, erection and stretching

(i) Assembly

“Prior to assembly, the gabion material shall be opened out flat on the ground and stretched to remove any kinks and bends. The gabion boxes shall then be assembled individually by raising the sides, ends and diaphragms ensuring that all creases are in the correct position and that the tops of all four sides are even. The four corners of the gabion boxes shall be laced first followed by the edges of internal diaphragms to the sides. In all cases lacing shall commence at the top of the box by twisting the end of the lacing wire around the selvages. It shall then be passed round two edges being joined, through each mesh in turn and securely tied off at the bottom. The ends of all lacing wire shall be turned to the inside of the box on completion of each lacing operation.

Gabion mattresses may be cut and rejoined to form a curved shape, or any other appropriate shape. An extra over rate shall apply when mattresses have to be cut and joined on instruction from the Engineer.

(ii) Erection

Only assembled boxes, or groups of boxes, shall be positioned in the structure. The side, or end, from which work is to proceed, shall be secured to either completed work or by rods or stakes driven into the ground at the corners. These must be secured and reach at least to the top of the gabion box. Further gabions shall then be positioned in the structure as required, each being securely laced to the preceding one at all corners and diaphragm points.

(iii) Stretching

On completion of erection of a suitable length of gabion, the gabion boxes shall be stretched using a wire strainer or winch of at least one ton capacity firmly secured to the free end of the assembled gabion boxes.

Whilst under tension the gabion boxes shall be securely laced along edges (top, bottom and sides) and at diaphragm points, to all adjacent boxes and shall thereafter be filled.”

(c) Rock filling

Add the following new sub-sub-clause:

(iii) General

"Filling shall be carried out only whilst gabion boxes are under tension. Filling material shall consist of rock of size not less than 120mm and not greater than 250mm so placed to produce a neat face and line with a minimum of voids.

Internal horizontal bracing wire shall be provided at 500mm vertical centres or such spacing to ensure a ratio of four to every 1m³ of filling. These bracing wires shall be wrapped around two mesh wires and extended from front to back so positioned to ensure a neat face and line free of excessive bulges and depressions. Gabion boxes shall be filled in stages and horizontal bracing wires inserted as filling is brought up. Similar bracing wires used vertically shall be provided in 0,5mm deep gabions at 330mm horizontal centres where water falls directly onto gabions or where a neat face is required.

Tension on the gabion boxes shall be released only when sufficiently full to prevent the mesh from slackening.

Gabion boxes shall be overfilled by 20 to 50mm above their tops to allow subsequent settlement of the filling."

Add the following new sub-clauses:

(e) Final wiring

"Closing and wiring down of lids shall proceed as soon as possible after filling operations and certainly in the likelihood of storms or floods during construction. The wiring down shall consist of wrapping around wire at such intervals as required or specified.

Lids shall be stretched tight over the filling with bars and wired down securely through each mesh along all edges, ends and diaphragms. The ends of all tying and bracing wires shall be turned into the gabion box on completion of all lacing operations.

Tightness of mesh, well packed filling and secure lacing is essential in all structures."

(f) ...Removal, dismantling and stacking of gabions

"Existing gabions, either damaged or not, that require to be removed or moved to a new location shall be dismantled. Material not required for re-assembly or unsuitable for re-use shall be neatly stacked at approved locations in accordance with the Engineer's instructions. Payment will be made only for gabions removed in accordance with the written instruction of the Engineer.

Where gabions require moving, or as declared suitable by the Engineer are re-usable, the contractor shall re-use all the material, plus supply such new materials as may be required to re-assemble the gabion again to the standard specification for new gabions."

(g) ..Blinding Layer

Where indicated on the drawings, a blinding layer of 15MPa concrete 75mm thick shall be laid as a surface on which to place the gabions. The surface of the concrete shall be properly compacted and screeded to form a Class U1 surface finish as specified in Clause 6209 of the standard specification.

SECTION 5400 : GUARDRAILS**B5402 MATERIALS****(a) Guardrails**

Add the following:

Guardrails shall be of either 3.81m or 4m in length and shall comply with the requirements of SABS 1350.

(b) Guardrail posts

Timber posts shall be 1800mm long x 150 -175mm diameter and shall be pre-drilled.

(c) Reflective Plates

Type D reflectors are to be used.

SECTION 5600: ROAD SIGNS**B5601 SCOPE**

Replace "South African Road Traffic Signs Manual" in the second paragraph with:

"SADC Road Traffic Signs Manual and the Road Traffic Act No. 29 of 19137 and Regulations"

Add the following:

"This section also covers the supply and erection of permanent danger plates at culverts and bridges at the locations indicated on the drawings or as directed by the engineer."

B5603 MANUFACTURING OF ROAD SIGN BOARDS AND SUPPORTS**(a) Road signboards**

Add the following:

"The contractor shall make every effort to ensure that signboards are correct in all respect and before dispatching the boards from the manufacturer's factory shall provide the Engineer with a 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."

(a)(ii) Steel profile road signboards

Add the following:

"Where the letter or legends cross the horizontal joints of the sign panels, the letter shall be cut on the joint and both ends folded around the radius.

Retro-reflective material to adjoining Chromadek panels on a sign shall be practical visual match of the specified colour."

B5604 ROAD SIGN FACES AND PAINTING

Add the following new sub-clause:

"(e) Application of retro-reflective material

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

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

B5605 STORAGE AND HANDLING

Add the following:

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

Drilling of holes, except for the fastening of overlays
Application of any form of adhesive

Cleaning with any chemicals that are not specifically approved by the manufacturer of the retro-reflective material

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

B5606 ERECTING ROAD SIGNS

(c) Erection

Add the following:

“After erection the signboard shall be thoroughly cleaned with a cleaning agent approved by the retro-reflective material’s manufacturer.

All vegetation obstructing the new or replaced sign board shall be removed and disposed of as instructed by the Engineer.”

B5608 DISMANTLING, STORING AND RE-ERECTING EXISTING ROAD SIGNS

Add the following:

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

Dismantling shall include sign 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

Amend the following payment item:

‘ITEM	UNIT
B56.01 Road sign boards with painted or coloured semi-matt background. Symbols, lettering, and borders in diamond grade retro-reflective material, where the sign board is constructed from:”	m²

Amend the last two lines of the second paragraph to read:

“completion, delivery, installation of the road sign board complete as specified, and the removal and disposal of all vegetation obstructing the motorists’ view of the new or replaced sign board.”

Add the following payment item:

‘B56.10 Hazard plates at culverts

(a) Provision and erection of hazard plates at culvert structures as per drawing	No
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The tendered rate shall include full compensation for all the labour and material, painting, lettering posts, excavation, backfilling with soil-cement, etc. as may be necessary for completing the work in accordance with the details shown on the drawing.’

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

Add the following sub-clause to item 5702(a):

“(v)..... Retro-reflective Glass beads

The retro-reflective beads shall be glass beads that comply with the requirements for glass beads specified in CKS 192.

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 the SABS, confirming that the beads form part of a lot tested by the SABS and comply with the requirements of CKS 192. 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 the SABS, and comply with the requirement of CKS 192.”

B5704 MECHANICAL EQUIPMENT FOR PAINTING

Add the following sentence at the end of the first paragraph:

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

B5706 SETTING OUT THE ROAD MARKINGS

Add the following:

“Where road markings are to be replaced after milling/overlay seal, it is essential that all existing barrier lines and other road marking lines be accurately referenced before commencement of milling or other operations which will obliterate the existing road markings. The position of barrier lines shall be re-assessed on site by the Engineer before the Contractor commences with the road marking.”

B5707 APPLYING THE PAINT

Add the following:

“The Contractor’s establishment on site and general obligations shall be deemed to fully include the establishment of the road-marking team, irrespective of the number of times the road-marking team is required to be onsite or is required to move within the site.”

B5710 TOLERANCES**(c) Alignment of markings**

Add the following paragraphs:

“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 sub-clause:

“(e) Testing

(i) 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:

- (1) that the painting machine is in good working order and properly adjusted;
- (2) that the operator is fully experienced; and
- (3) 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

new clause:

“B5715 REMOVAL OF EXISTING ROAD STUDS

The existing road studs shall be removed from the road surface prior to milling.”

B5714 MEASUREMENT AND PAYMENT

ITEM

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

Add the following:

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

SECTION 6300 : STEEL REINFORCEMENT FOR STRUCTURES**B6302 MATERIALS****(a) Steel bars**

Add the following:

Steel reinforcement bars shall comply with the requirements of SABS 920 2005, Grade 450. Cold-worked reinforcement bars may not be used.

B6306 PLACING AND FIXING

Add the following:

Reinforcement shall be positioned as shown on the drawings and shall be firmly secured in position within the tolerance given in subclause 6803 (f) by being tied with 1.6mm or 1.25mm diameter annealed wire or by substitute clips being used.

SECTION 6400: CONCRETE FOR STRUCTURES**B6402 MATERIALS****(b) Cement**

Replace this sub-section with the following:

"Refer to section 1142 for specification of cement."

CEM I 42,5, CEM II A-S 32,5, CEM II/A-V 32,5, or CEM III A may be used for the manufacture of reinforced concrete members.

B6404 CONCRETE QUALITY**(c) Strength concrete**

Add the following paragraph:

"The cement content for any class of structural concrete or mass concrete used in structures shall not be less than 300 kg/m³ of concrete.

The contractor must provide the engineer with complete mix designs and materials for strength concrete at least six (6) weeks before the first concrete is cast on the project".

B6405 MEASURING THE MATERIALS**(d) Aggregates**

Add the following:

"All concrete for structures shall be manufactured by mechanical mass batching unless authorised otherwise by the engineer for minor concrete structures or for labour-intensive methods."

B6407 PLACING AND COMPACTING**(a) General**

Add the following after the third paragraph:

"Concrete shall only be placed up to 20:00 at the latest. Under exceptional circumstances the Engineer may allow night work on condition that proper lighting arrangements can be made and a new and rested shift for night work is provided and ambient temperatures are such as to not adversely affect the setting of the concrete."

B6408 CONSTRUCTION JOINTS**(a) General**

Add the following:

"No construction joints other than those indicated on the drawings will be permitted without the written approval of the engineer".

B6409 CURING AND PROTECTING

Add the following:

"The surface area of bridge and culvert floor slabs and decks shall be cured as follows:

- (i) The area of freshly cast and finished concrete surface shall be immediately covered as specified in clause 6409(e).

- (ii) After the concrete has set sufficiently the entire area shall be treated with an approved curing compound as specified in clause 6409(f)."

B6414 QUALITY OF MATERIALS AND WORKMANSHIP

(a) Criteria for compliance with the requirements

Add the following:

"Quality control shall be carried out by the engineer as specified in Section 8200: Quality Control (Scheme 1)."

Add the following new paragraph:

- (d) Concrete cores - strength requirements

"Cores will only be drilled if authorised by the engineer. This will only be considered if the contractor's own cubes, when crushed by the engineer, attained the required 28-day cube strength."

B6414 QUALITY OF MATERIALS AND WORKMANSHIP

(a) Criteria for compliance with the requirements

Add the following sentence:

'Judgement plan B of Section 8200 shall apply.'

C3.3 PARTICULAR SPECIFICATIONS

In addition to the Standardised and Project Specifications the following Particular Specifications shall apply to this contract and are bound in hereafter.

PART C ENVIRONMENTAL MANAGEMENT PLAN

PART C : ENVIRONMENTAL MANAGEMENT PLAN

C.1 General

In order to ensure that the construction works is carried out in an environmentally sensitive matter, strict compliance to the Environmental Management Plan (EMP) guidelines is required. The purpose of the EMP is to:

- Encourage good management practices through planning and commitment to environmental issues,
- Provide rational and practical environmental guidelines to:
 - i. Minimise disturbance of the natural environment,
 - ii. Prevent pollution of land, air and water,
 - iii. Prevent soil erosion and facilitate re-vegetation.
- Adopt the best practicable means available to prevent or minimise adverse environmental impact,
- Develop waste management practices based on prevention, minimisation, recycling, treatment or disposal of wastes,
- Train employees and contractors with regard to environmental obligations.

C.2 Training and Induction of Employees

- The Contractor has a responsibility to ensure that all those people involved in the project are aware of and familiar with the environmental requirements for the project (this includes sub-contractors, casual labour, etc.). The EMP shall be part of the terms of reference for all contractors, sub-contractors and suppliers.

C.3 Complaints Register and Environmental Incident Book

Any complaints received by the project team from the public will be recorded. The complaint should be brought to the attention of the site manager, who will respond.

The following information must be recorded:

- Time, date and nature of the complaint,
- Type of communication (telephone, letter etc),
- Name, contact address and telephone number of the complainant,
- Response and investigation undertaken and
- Actions taken and by whom.

All complaints received will be investigated and a response given to the complainant within 14 days.

All environmental incidents occurring on the site will be recorded. The following information will be provided:

- Time, date, location and nature of the incident,
- Actions taken and by whom.

C.4 Site Cleanliness and Neatness

- Location of a construction camp is to be approved by the Engineer and is to be restored to its previous condition after completion of construction.
- The construction camp should preferably be fenced with a 1.8m bonnox fence or similar approved.
- All materials, equipment, plant and vehicles must be stored within the construction camp.
- A dedicated area must be made available for construction staff to change and store their personal belongings.

C.5 Access

- Access to existing roads, schools, buildings, shops and residential properties must not be impeded during construction.
- Access roads utilised by the Contractor must be maintained in good condition.

C.6 Borrow Pits

- Mining authorisations (permits) for borrow pits must be obtained from the Department of Minerals and Energy (DME) in consultation with the Department of Water Affairs (DWA).
- Spoil dumps resulting from borrow pits must not interfere with any natural surface drainage.
- Borrow pits must be rehabilitated after use in accordance with the requirements of DME and DWA.

C.7 Dust Control / Air Quality

- Dust suppression measures must be implemented during construction by ensuring that all surfaces prone to dust generation are kept damp (e.g. use of water tanker).
- Ensure that vehicles and equipment are in good working conditions and that emissions are not excessive.
-
- Ensure that vehicles and equipment are in good working conditions and that emissions are not excessive.
- Special care must be taken in areas where the route passes close to schools and residential areas.
- The speed of construction vehicles must be reduced.

C.8 Fauna

- Contractor staff may not chase, catch or kill animals encountered during construction.

C.9 Fire Prevention and Control

- Smoking is prohibited in the vicinity of flammable substances.
- The contractor must ensure that fire-fighting equipment is available on site, particularly where flammable substances are being stored or used, and that construction staff are aware of where it is kept and how it is operated.
- Fires started for comfort (warmth) are prohibited, due to the risk of veld fires and risk to adjacent property owner's lands.

C.10 Grave Sites

- Gravesites in close proximity to the road must not be disturbed during construction.

C.11 Materials Handling and Spills Management

- Any hazardous materials to be used during construction (e.g. lime, fuel, paint, etc) are to be stored in a designated area at the campsite.
- The storage containers/facilities (including any diesel/petrol tanks) must be placed on an impermeable surface and surrounded by a bund wall, in order to ensure that accidental spillage does not pollute the environment.
- Workers must at all times be made aware of the health and safety risks associated with any hazardous substances used (e.g. smoking near fuel tanks), and must be provided with appropriate protective clothing/equipment in case of spillages or accidents.
- Ensure all staff and contractors undergo relevant training in the maintenance of equipment to prevent the accidental discharge or spill of fuel, oil, lubricants and other chemicals.
- Any spill of potentially hazardous materials must be cleaned up immediately

(Potentially hazardous materials on site include paint, oil, grease, fuel, turpentine, etc).

- The area of contaminated soil or spill must be deposited into the hazardous waste container(s).
- The contractor should keep Peat Sorb or a similar absorbent on site to clean up any spills. The absorbent must be stored in a designated area and be available for inspection.
- All spills are to be recorded in the environmental incident book.

C.12 Noise

- Noise generating activities must be restricted to between 07h00 and 17h00 Monday to Friday, unless otherwise approved by the appropriate competent person in consultation with adjacent landowners/affected persons.
- All equipment, vehicles and machinery must be in good working condition and be equipped with sound mufflers if necessary.
- Construction staff must be trained and made aware of not creating unnecessary noise such as hooting and shouting.

C.13 Pollution Control

- Soil and water pollution through usage of fuel, oil, paint, bitumen or other hazardous substances must be avoided.
- All construction vehicles are to be maintained in good working order so as to prevent soil or water pollution from oil, fuel or other leaks, and to reduce noise pollution.

C.14 Rivers and Streams

- Excavated material must not be stockpiled on or near riverbanks, in order to prevent sedimentation occurring.
- Erosion control measures must be employed both during and after construction.
- No impediments to natural surface water flow, other than approved erosion control measures, must occur.

C.15 Safety

- Safety measures, such as detour signs, must be implemented during construction to ensure the safety of workers, pedestrians and drivers/passengers in vehicles in the vicinity of construction work.
- Special care must be taken in the vicinity of schools to ensure the safety of children wishing to cross the road under construction.
- The relevant signage (e.g. speed control signs) must be erected alongside the road during the operation phase in order to control traffic.
- Accommodation must be made for pedestrian pathways alongside the road during the construction and operation phases.

C.16 Soil Management

- Stormwater drainage pipes must be installed alongside the road in all areas susceptible to soil erosion.
- Erosion should be minimised by the construction of meadow drains and the planting of indigenous vegetation on the side slopes and drains to reduce flow velocity of stormwater.
- Spoil from cuts may be used in existing erosion galleys.
- Stone pitching and gabions should be constructed at pipe culvert outlets.
- Accidental spills of contaminants onto the ground e.g. oil, concrete, fuel and chemicals should be removed together with the contaminated soil.
- If necessary an absorbent such as Peat Sorb should be used the aid in cleaning up the spill. The contaminated soil should be disposed of in an appropriate container, depending on its classification.
- Servicing and re-fuelling of vehicles must only be carried out at construction camp.

C.17 Worker Conduct

Code of Conduct for Construction Personnel:

- Do not leave the construction site untidy and strewn with rubbish which will attract animal pests.
- Do not set fires.
- Do not cause any unnecessary, disturbing noise at the construction camp/site or at any designated worker collection/drop off points.
- Do not drive a construction-related vehicle under the influence of alcohol.
- Do not exceed the national speed limits on public roads or exceed the recommended speed limits on the site.
- Do not drive a vehicle which is generating excessive noise or gaseous pollution (noisy vehicles must be reported and repaired as soon as possible).
- Do not litter along the roadsides, including both the public and private roads.
- Do not pollute any water bodies (whether flowing or not).
- No member of the construction team is allowed to enter the areas outside the construction site.

C.18 Traffic Disturbances and Diversions

- Any traffic diversions must be undertaken with the approval of all relevant authorities and in accordance with all relevant legislation.
- Wherever possible, traffic diversion must only take place on existing disturbed areas and remain within the existing road reserve.
- Traffic diversion routes must be rehabilitated after use.

C.19 Vegetation

- Only vegetation falling directly on the route must be removed where necessary.
- Alien vegetation within the road reserve must be eradicated, and management measures must be implemented for future control of these species.
- Vegetation that has been removed from large areas (e.g. on traffic diversion routes) during construction must be replaced with indigenous vegetation after construction has been completed.

C.20 Waste Management

- All general, non-hazardous waste must be placed in a skip container and disposed of at a registered waste disposal site.
- The contractor is to ensure that the portable toilet facilities at the campsite are properly maintained and in working order.
- No disposal, or leakage, of sewage must occur on or near the site.
- All hazardous waste (e.g. oil, paint, empty lime bags, contaminated wash water, etc) must be stored in leakproof containers and disposed of at a registered hazardous waste disposal site.
- The contents of waste storage containers must, under no circumstances, be emptied to the surrounding area. In general, littering, discarding or burying of any materials is not allowed on site or along the route.
- Adequate waste receptacles must be available at strategic points around the construction camp and site for all domestic refuse and to minimise the occurrence of littering.
- Concrete rubble must be collected and disposed of as directed by the Project Manager.
- Each working area must be cleared of litter and building waste (e.g. rubble, wood, concrete packets etc) on completion of the day's work.
- Any spill around the container(s) should be treated as per Section C11 and C16.

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C4 Site Information

C4.1 LOCALITY PLAN



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C4 Site Information

C4.2 DRAWINGS