

CONTRACT

PART C1: AGREEMENTS AND CONTRACT DATA

PART C2: PRICING DATA

PART C3: SCOPE OF WORK

PART C4: SITE INFORMATION

CONTRACT

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PART C1: AGREEMENTS AND CONTRACT DATA

C1.1: FORM OF OFFER AND ACCEPTANCE

C1.1.1: OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following works:

CONTRACT NO. ZNB 02214/00000/00/HOD/INF/23/T: THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION

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

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

The offered total of the prices inclusive of Value Added Tax is:

Amount 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: (of person authorised to sign the tender)

Name: (of signatory in capitals)

Capacity: (of signatory)

Name of Tenderer: (organisation)

Address:

.....

Telephone number: **E-mail:**

Witness:

Signature:

Name: (in capitals)

Date:

[Failure of a Tenderer to sign this form will invalidate the tender]

This form is to be completed by the Employer only

C1.1.2: ACCEPTANCE

By signing this part of the 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 the schedules, forms, drawings and documents or parts thereof, which may be incorporated by reference into Parts C1 to C4 above.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules as well as any changes to the terms of the Offer agreed by the Tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representatives of both parties.

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 at, or just after, the date this Agreement comes into effect. 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 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:

Name: *(in capitals)*

Capacity:

Name of Employer: *(organisation)*

Address:

.....

Witness: Signature: **Name:** *(in capitals)*

Date:

This form is to be completed by the Employer and the successful tenderer only, upon acceptance of the successful tenderer's offer

C1.1.3: SCHEDULE OF DEVIATIONS

The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Tender Data and the Conditions of Tender.

A Tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid, become the subject of agreement reached during the process of offer and acceptance, the outcome of such agreement shall be recorded here.

Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here.

Any change or addition to the tender documents arising from the above agreement and recorded here shall also be incorporated into the final draft of the Contract.

- 1 Subject:**
Details:
.....
- 2 Subject:**
Details:
.....
- 3 Subject:**
Details:
.....
- 4 Subject:**
Details:
.....
- 5 Subject:**
Details:
.....

By the duly authorised representatives signing this Schedule of Deviations, the Employer and the Tenderer agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, as well as

any confirmation, clarification or change to the terms of the offer agreed by the Tenderer and the Employer during this process of offer and acceptance.

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

FOR THE TENDERER:

Signature:

Name:

Capacity:

Tenderer: *(Name and address of organisation)*
.....

Witness:

Signature:

Name:

Date:

FOR THE EMPLOYER:

Signature:

Name:

Capacity:

Employer: *(Name and address of organisation)*
.....

Witness:

Signature:

Name:

Date:

C1.2: CONTRACT DATA

C1.2.1: CONDITIONS OF CONTRACT

C1.2.1.1 GENERAL CONDITIONS OF CONTRACT

This Contract will be based on the 'General Conditions of Contract for Construction Works, Third Edition (2015)', issued by the South African Institution of Civil Engineering (abbreviated title: 'GCC 2015').

It is agreed that the only variations from the GCC 2015 are those set out hereafter under "C1.2.1.2 SPECIAL CONDITIONS OF CONTRACT".

C1.2.1.2 SPECIAL CONDITIONS OF CONTRACT

C1.2.1.2.1 GENERAL

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

The clauses of the Special Conditions of Contract hereafter are numbered "SCC" followed in each case by the number of the applicable clause or subclause in the GCC 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 GCC 2015, and an appropriate heading.

C1.2.1.2.2 AMENDMENTS TO THE GCC 2015

SCC 1.1 Definitions

SCC 1.1.1.14: *delete* "Commencement Date" *in the definition and substitute* "date of commencement of the Works".

Add the following to the end of Clause 1.1:

"SCC 1.1.1.35 "Construction Manager" means the person approved of in writing by the Employer's Agent, as the Contractor's representative on Site.

SCC 1.1.1.36 "Targeted Enterprise" means an enterprise as defined in Part G: Small Contractor Development of section C3.3 Particular Specifications in Part C3: Scope of Work.

SCC 1.1.1.37 "Targeted Labour" means labour as defined in Part G: Small Contractor Development of section C3.3 Particular Specifications in Part C3: Scope of Work."

SCC 4.1.1 Extent of Contractor's obligations

Add the following new paragraphs to the end of Clause 4.1.1:

"If the Contractor fails to achieve the monetary value of the contract participation goal stated in the Contract Data for local labour content in terms of Part F: Expanded Public Works Programme of section C3.3 Particular Specifications in Part C3: Scope of Work, the Contractor shall be liable to the Employer for a sum calculated in accordance with the Contract Data and the aforementioned Scope of Work as a penalty for such underachievement.

If the Contractor fails to achieve the monetary value of the contract participation goal stated in the Contract Data for contract participation by Targeted Enterprises in terms of Part G: Small Contractor Development of section C3.3 Particular Specifications in Part C3: Scope of Work, the Contractor shall be liable to the Employer for a sum calculated in accordance with the Contract Data and the aforementioned Scope of Work as a penalty for such underachievement."

SCC 4.4.2 Subcontractor to be approved

Add the following to Clause 4.4.2:

“The Contractor shall comply with the subcontracting restrictions stated in the Contract Data.”

SCC 4.10.1 Engagement of employees

Add the following to Clause 4.10.1:

“The contractor shall pay rates and wages, and observe conditions of labour, which are not lower than those established for the trade or industry where the work is carried out, as stated in the Contract Data.”

SCC 5.3.1 Commencement of the Works

Delete the first sentence of Clause 5.3.1 and substitute the following:

“The Employer’s Agent shall give the Contractor not less than 7 days’ notice of the date of commencement of the Works on which date the Contractor is instructed to commence carrying out the Works, save as may be otherwise provided in the Contract, or be legally or physically impossible. The date of commencement of the Works shall be within the period after the Commencement Date stated in the Contract Data.”

SCC 5.3.3 Time to instruct commencement of the Works

Delete Clause 5.3.3.

SCC 5.14.4 Certification of Completion

Insert the following in the first sentence after the words “has been duly completed,”:

“and the Contractor has submitted the information stated in the Contract Data.”

SCC 5.14.6 Occupation by the Employer

Add the following to Clause 5.14.6:

“The use of any completed roadway or parts of the Works, whether for unhindered use by the public or for accommodation of traffic, while other parts are being constructed, shall not constitute occupation of the Works by the Employer.”

SCC 6.2.1 Delivery of security

In the last two lines of Clause 6.2.1, delete the words “the type of security for the due performance of the Contract, as selected in the Contract Data” and replace them with the words “a fixed performance guarantee as security for the due performance of the Contract in accordance with the Contract Data Part A: Data Provided by the Employer”.

Delete the entirety of Clause 6.2.2 and replace it with the following:

“SCC 6.2.2 Contractor failing to provide security

If the Contractor fails to provide the required fixed performance guarantee within the time period stated in the Contract Data, or if the performance guarantee shall differ substantially from the pro forma, it shall legally be deemed that the Contractor has selected a security of ten per cent retention of the value of the Works without limiting the Employer’s right to terminate the Contract in terms of Clause 9.2.”

SCC 6.2.3 Validity of performance guarantee

Delete the entirety of the first sentence of Clause 6.2.3 and replace it with the following:

"The Contractor shall ensure that the performance guarantee remains valid and enforceable until the Certificate of Completion is issued."

SCC 6.10.4 Delivery, dissatisfaction with and payment of payment certificate

Delete "within 28 days" in the third sentence and substitute "within 30 days".

SCC 6.10.8 Contractor's completion statement

Delete "within 28 days" in the third sentence and substitute "within 30 days".

SCC 6.10.9 Final Payment Certificate

Delete "within 28 days" in the second sentence and substitute "within 30 days".

SCC 10.1.5 Employer's Agent's ruling on Contractor's Claim

Delete "within 28 days" in the first sentence and in Clause 10.1.5.1, and substitute "within 56 days".

C1.2.2: DATA PROVIDED BY THE EMPLOYER

The following contract specific data are applicable to this contract.

CLAUSE	CONTRACT SPECIFIC DATA PROVIDED BY THE EMPLOYER
1.	GENERAL
1.1.1.13	The Defects Liability Period is 12 months.
SCC 1.1.1.14	The time for achieving Practical Completion is 24 months from the date of commencement of the Works, including non-working days and special non-working days.
1.1.1.26	Pricing Strategy: The Contract is to be a Re-measurement Contract.
1.1.1.15	Name of Employer: Province of KwaZulu-Natal represented by Head of Department: Department of Transport
1.2.1.2	Address of Employer: <div> <div>Physical:</div> <div>Postal:</div> </div> <div> <div>172 Burger Street</div> <div>Private Bag X9043</div> </div> <div> <div>Pietermaritzburg</div> <div>Pietermaritzburg</div> </div> <div> <div>3201</div> <div>3200</div> </div> <div>E-mail: njabulo.vezi@kzntransport.gov.za</div> <div>Telephone No: 033 355 8600</div>
1.1.1.16	Name of Employer's Agent: HN Consulting Engineers (Pty) Ltd
1.2.1.2	Address of Employer's Agent: <div> <div>Physical:</div> <div>Postal:</div> </div> <div> <div>Block B, Hilltop Office Park</div> <div>PO Box 13214</div> </div> <div> <div>73, Villiers Drive,</div> <div>Cascades, Pietermaritzburg</div> </div> <div> <div>Clarendon, Pietermaritzburg</div> <div>3202</div> </div> <div> <div>3201</div> <div></div> </div> <div>E-Mail: pierre@hn.co.za</div> <div>Telephone No: 033 394 2352</div> <div>Fax No: 033 394 2356</div>
3.	EMPLOYER'S AGENT
3.2.3	The Employer's Agent is required to obtain the specific approval of the Employer before executing any of his functions or duties according to the following Clauses: SCC 5.3.1: Give the Contractor notice of the commencement date of the Works. 6.3.1: Order any work as a Variation Order. 6.3.1: Order any work which requires the utilisation of the provision for contingencies in the Contract Sum. 6.3.1: Order any work which requires the Contract Price to exceed the Contract Sum. 10.1.5: Ruling on a Contractor's claim.

CLAUSE	CONTRACT SPECIFIC DATA PROVIDED BY THE EMPLOYER
4.	CONTRACTOR'S GENERAL OBLIGATIONS
SCC 4.1.1	<p>The contract participation goal for local labour content is <u>6.5%</u>.</p> <p>The penalty for failing to achieve the monetary value of the above target set by the Employer for local labour content in terms of PART E: Expanded Public Works Programme of section C3.3 Particular Specifications in Part C3: Scope of Work, is 5% of the monetary value by which the achieved monetary value falls short of the target monetary value.</p> <p>The contract participation goal for Targeted Enterprises is <u>30%</u>.</p> <p>The successful tenderer must subcontract a minimum of <u>30%</u> of the value of the Constructions Works to Targeted Enterprises through Contract Participation Goals (CPG) for a bidder that is BEE Level 1 EME or QSE that is more than 51% owned by black person(s) in terms of the requirements of the cidb B.U.I.L.D Programme with respect to Indirect Targeting for Enterprise Development.</p> <p>The implementation of the Indirect Targeting for Enterprise Development shall be as per PART F: SMALL CONTRACTOR DEVELOPMENT of section C3.3 Particular Specifications in Part C3: Scope of Work and the Standard for Indirect Targeting for Enterprise Development through Construction Works Contracts, published in the Government Gazette No. 36190 of 29 January 2013, issued in terms of sections 5(2) of the Construction Industry Development Board Act, 2000(Act no. 38 of 2000).</p> <p>The penalty for failing to achieve the monetary value of the above target set by the Employer for contract participation by Targeted Enterprises in terms of PART F: Small Contractor Development of section C3.3 Particular Specifications in Part C3: Scope of Work, is 5% of the monetary value by which the achieved monetary value falls short of the target monetary value.</p>
SCC 4.4.2	<p>The Contractor may not subcontract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level of contributor than the Contractor, unless the contract is subcontracted to an EME that has the capability and ability to execute the subcontract.</p> <p>The Contractor and his subcontractors shall be registered with the Bargaining Council for the Civil Engineering Industry, and comply with the wage rates and conditions of labour agreed by the Bargaining Council for the Civil Engineering Industry, except where a specific industry publishes its own wage rates and conditions of labour.</p>
SCC 4.10.1	<p>The wage rates and conditions of labour employed under the Expanded Public Works Programme, shall comply with the Ministerial Determination 4, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No. R347 of 4 May 2012.</p> <p>The Standard for Skills Development is set at a maximum development support of 0.25% of the project's contract value as per the CIDB B.U.I.L.D Programme.</p> <p>The successful tenderer must employ Learners from TVET colleges and universities by providing them with opportunities for workplace learning through placements, thereby acquiring work experience and young professionals seeking candidacy and registration through work placements.</p> <p>The wage rates and the implementation shall be as per the Standard for Developing</p>

CLAUSE	CONTRACT SPECIFIC DATA PROVIDED BY THE EMPLOYER
	<p>Skills through Infrastructure Contracts, Published in the Government Gazette No. 43495 of 3 July 2020, issued in terms of sections 5(2) of the Construction Industry Development Board Act, 2000(Act no. 38 of 2000).</p> <p>The penalty for failing to achieve the monetary value of the above target set by the Employer for Skills Development in terms of PART G: Contract Skills Development Goals of section C3.3 Particular Specifications in Part C3: Scope of Work, is 5% of the monetary value by which the achieved monetary value falls short of the target monetary value</p>
<p>5.</p> <p>SCC 5.3.1 and 5.3.2</p>	<p>TIME AND RELATED MATTERS</p> <p>The date of commencement of the Works shall be within 28 days, or 56 days if a construction work permit is required, after the Commencement Date.</p> <p>The following documentation shall be submitted within <u>14 days</u> of the Commencement Date by the Contractor before commencing to carry out the Works:</p> <ul style="list-style-type: none"> (i) Health and Safety Plan (refer to Clause 4.3); (ii) Form C1.4 'Agreement in terms of Section 37(2) of the Occupational Health and Safety Act No. 85 of 1993' to be signed by the Contractor and the Employer (refer to Clause 4.3); (iii) Proof of registration and good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993 (Act No. 130 of 1993) (refer to Clause 4.3); (iv) Initial Programme (refer to Clause 5.6); (v) Security (refer to Clause 6.2); and (vi) Insurance (refer to Clause 8.6); <p>and if the Employer is required to apply for a construction work permit to perform construction work in terms of regulation 3(1) of the Construction Regulations 2014, the following documentation shall also be submitted:</p> <ul style="list-style-type: none"> (vii) Temporary works designer's appointment duties in terms of Regulation 6(2) as have been agreed upon plus proof of registration with ECSA [CR 3(5)(b)(iii) read with CR 5(1)(e) and CR 6(2)]; (viii) Evidence that the principal contractor has made adequate provision for the cost of Health and Safety, i.e., bill of quantities [CR 3(5)(b)(iii) read with CR 5(1)(g)]; and (ix) Evidence that the principal contractor has the necessary competencies to carry out construction work safely, namely, schedule of activities, relevant appointments and proofs of competency [CR 5(1)(h)].
5.8.1	<p>The non-working days are Sundays.</p> <p>The special non-working days are:</p> <ul style="list-style-type: none"> (i) the statutory public holidays in terms of the Public Holidays Act; (ii) the foreseeable election days declared as a statutory public holiday; and (iii) the annual year-end shutdown period as recommended by the Bargaining Council for the Civil Engineering Industry.
5.13.1	The penalty for failing to complete the Works is 0,05% of the Contract Sum per day, up to a maximum limit of twenty-five thousand rand per day (R25 000,00 per day).
5.14.1	The requirements for achieving Practical Completion are as stated in General Conditions of Contract 2015.
SCC 5.14.4	The Contractor shall submit the following:

CLAUSE	CONTRACT SPECIFIC DATA PROVIDED BY THE EMPLOYER
	<p>(i) evidence that the local labour has been paid, and that the Targeted Enterprise subcontractors have received all amounts due in terms of their respective subcontract agreements; and</p> <p>(ii) the survey and materials information which the Employer's Agent requires to complete the as-built drawings and records.</p>
5.16.3	The latent defects period is 10 years.
6.	PAYMENT AND RELATED MATTERS
SCC 6.2.1	<p>The security to be provided by the Contractor shall be:</p> <p style="padding-left: 40px;">Fixed Performance Guarantee of 8% of the first One Million Rand plus 3,5% of the balance of the Contract Sum.</p>
6.5.1.2.3	The percentage allowance to cover overhead charges is 10%.
6.8.2	<p>The value of payment certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following data.</p> <p>The values of the coefficients for calculating the Contract Price Adjustment Factor are: Compiler to select coefficients and Civil Engineering Material Index according to the work category (Scope of Work) detailed in the Employer's 'Open Tender Document Checklist'.</p> <p style="padding-left: 40px;">Structures & General (Schedule B, E, F, G):</p> <p style="padding-left: 40px;">a = 0,15 b = 0,2 c = 0,55 d = 0,1</p> <p>"L", "P", "M" and "F" are defined as follows:</p> <p>"L" is the "Labour Index" and shall be the Consumer Price Index for "Geographic Indices > CPI per province > KwaZulu-Natal" as published in Table A of the Statistical Release P0141 of Statistics South Africa.</p> <p>"P" is the "Construction Equipment Index" and shall be the Construction Materials Price Index for "Plant and equipment" as published in Table 4 of the Statistical Release P0151.1 of Statistics South Africa.</p> <p>"M" is the "Materials Index" and shall be the Construction Materials Price Index as published in Table 6 of the Statistical Release P0151.1 of Statistics South Africa for:</p> <p style="padding-left: 40px;">Structures (Schedule B, E, F, G):</p> <p style="padding-left: 40px;">"Civil engineering material – (excluding reinforcing metalwork and bitumen)"</p> <p>"F" is the "Fuel Index" and shall be the Producer Price Index for "Coke, petroleum, chemical, rubber and plastic products > Coal and petroleum products > Diesel" as published in Table 1 of the Statistical Release P0142.1 of Statistics South Africa.</p> <p>The base month is the month preceding the month of tender closure.</p> <p>Any index calculated by means of a linking factor between an old and new index, shall be rounded to one decimal place.</p>
6.8.3	Price adjustments for variations in the cost of steel reinforcing as a special material are allowed. This applies only to relevant payment items in chapters 12.1 and 13.3 of the Pricing Schedule, both for the main contractor and the relevant subcontractors.

CLAUSE	CONTRACT SPECIFIC DATA PROVIDED BY THE EMPLOYER
6.10.1.5	Price adjustments for variations in the cost of bitumen as a special material are allowed. Only the net bitumen content of asphalt and bituminous products shall be subject to variations in cost, and no account shall be taken of transport, emulsifiers, diluents or modifiers that may be supplied ex refinery or added later.
6.10.3	The percentage advance on Plant and materials not yet built into the Permanent Works is 80%. The percentage retention on the amounts due to the Contractor is 10%. The limit of retention money is 5% of the first One Million Rand plus 1,6% of the balance of the Contract Sum excluding contingencies, contract price adjustment, and VAT. A retention guarantee in lieu of a cash retention is permitted.
8.	RISKS AND RELATED MATTERS
8.6.1.1.2	The value of Plant and materials supplied by the Employer to be included in the insurance sum is <u>nil</u> .
8.6.1.1.3	The amount to cover professional fees for repairing or reinstatement of damage to the Works to be included in the insurance sum is <u>nil</u> .
8.6.1.2	Special Risks Insurance issued by SASRIA is required.
8.6.1.3	The limit of indemnity for liability insurance is <u>R10 000 000,00 (ten million Rand only)</u> for any single liability claim. Liability insurance shall include spread of fire risk.
10.	CLAIMS AND DISPUTES
10.5.2	Disputes shall be referred to ad-hoc adjudication.
10.5.3	The number of Adjudication Board members to be appointed shall be one.
10.8.1	Unresolved disputes shall be determined by court proceedings.
	DATA WITH REFERENCE TO C3.3 PARTICULAR SPECIFICATIONS
PART F	SMALL CONTRACTOR DEVELOPMENT
F2.9	The target area for local labour shall be local wards from the uMfolozi and uMhlathuze Local municipalities within the King Cetshwayo District Municipality in which the project is located. The target area for Targeted Enterprises shall be the uMfolozi and uMhlathuze Local Municipalities within the King Cetshwayo District Municipality in which the project is located.

C1.2.3: DATA PROVIDED BY THE CONTRACTOR

The following contract specific data are applicable to this contract.

CLAUSE	CONTRACT SPECIFIC DATA PROVIDED BY THE CONTRACTOR									
1.	GENERAL									
1.1.1.9	Name of Contractor:									
1.2.1.2	Address of Contractor:									
	<div> <div><u>Physical:</u></div> <div><u>Postal:</u></div> </div> <div> <div>.....</div> <div>.....</div> </div> <div> <div>.....</div> <div>.....</div> </div> <div> <div>.....</div> <div>.....</div> </div> <div> <div>.....</div> <div>.....</div> </div>									
6.	PAYMENT AND RELATED MATTERS									
6.8.3	<p>The tenderer shall complete the table below with respect to each of the special materials listed. This information shall be used to calculate the variation in cost of the special materials.</p> <p>The rates and prices for the special materials for the base month which is the month preceding the month of tender closure, shall exclude VAT but shall include all other obligatory taxes and levies.</p> <p>The tenderer shall append to this page a letter from the supplier confirming the supply price for the net bitumen content of asphalt and bituminous products.</p> <p>A change of supplier due to circumstances beyond the control of the Contractor may be considered, subject to the submission of supporting documentation to the Employer's Agent for valuation to calculate the difference between the rate or price of the special material entered in the table below and the equivalent rate or price actually paid by the Contractor, and for approval.</p> <table border="1"> <thead> <tr> <th>SPECIAL MATERIALS</th><th>UNIT</th><th>RATE OR PRICE FOR THE BASE MONTH</th></tr> </thead> <tbody> <tr> <td>50/70 penetration grade bitumen</td><td>ton</td><td>.....</td></tr> <tr> <td>Steel reinforcing (rate furnished by supplier, excluding delivery)</td><td>ton</td><td>.....</td></tr> </tbody> </table> <p>Signed on behalf of the Tenderer:</p>	SPECIAL MATERIALS	UNIT	RATE OR PRICE FOR THE BASE MONTH	50/70 penetration grade bitumen	ton	Steel reinforcing (rate furnished by supplier, excluding delivery)	ton
SPECIAL MATERIALS	UNIT	RATE OR PRICE FOR THE BASE MONTH								
50/70 penetration grade bitumen	ton								
Steel reinforcing (rate furnished by supplier, excluding delivery)	ton								

C1.3: PERFORMANCE GUARANTEE

PRO FORMA

PERFORMANCE GUARANTEE

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

1. GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means:

Physical address:

"Employer" means:

"Contractor" means:

"Employer's Agent" means:

"Works" means:

"Site" means:

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

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

Amount in words:

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

Amount in words:

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

2. CONTRACT DETAILS

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

3. GUARANTOR'S LIABILITY

3.1 The Guarantor's liability shall be limited to the amount of the Guaranteed Sum.

3.2 The Guarantor's period of liability shall be from and including the date on which the Performance Guarantee is signed, up to and including the Expiry Date, or the date of issue by the Employer's Agent of the Certificate of Completion of the Works, or the date of payment in full of the Guaranteed Sum, whichever occurs first.

3.3 The Employer's Agent and/or the Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion of the Works has been issued.

4. CONDITIONS APPLICABLE TO THIS PERFORMANCE GUARANTEE

4.1 The Guarantor hereby acknowledges that:

4.1.1 Any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship.

4.1.2 Its obligation under this Performance Guarantee is restricted to the payment of money.

4.2 Subject to the Guarantor's maximum liability referred to in 3.1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 4.2.1 to 4.2.3:

4.2.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Employer's Agent in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 4.2.2;

4.2.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 4.2.1 and the sum certified has still not been paid;

4.2.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 4.2.

4.3 Subject to the Guarantor's maximum liability referred to in 3.1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:

4.3.1 the Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 4.3; or

4.3.2 a provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 4.3; and

4.3.3 the aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.

4.4 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4.2 and 4.3 shall not exceed the Guarantor's maximum liability in terms of 3.1.

4.5 Where the Guarantor has made payment in terms of 4.3, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

4.6 Payment by the Guarantor in terms of 4.2 or 4.3 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

4.7 Payment by the Guarantor in terms of 4.3 will only be made against the return of the original Performance Guarantee by the Employer.

4.8 The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may consider fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

- 4.9 The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.
- 4.10 This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 3.2, 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.
- 4.11 This Performance Guarantee, with the required demand notices in terms of 4.2 or 4.3, shall be regarded as a liquid document for the purposes of obtaining a court order.
- 4.12 Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrates' Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at

Date

Guarantor's signatory (1)

Capacity

Guarantor's signatory (2)

Capacity

Witness signatory (1)

Witness signatory (2)

C1.4: AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT NO. 85 OF 1993

THIS AGREEMENT is made between The Province of KwaZulu-Natal represented by Head of Department: Department of Transport (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 Mandatary of the EMPLOYER in consequence of an agreement between the CONTRACTOR and the EMPLOYER in respect of:

CONTRACT NO. ZNB02214/00000/00/HOD/INF/23/T: THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION

for the construction, completion and maintenance of the works;

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 the Occupational Health and Safety Amendment Act No 181 of 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 AGENT 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 the EMPLOYER 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 **EMPLOYER**

on this the day of 20.....

SIGNATURE:

NAME AND SURNAME:

CAPACITY:

WITNESSES: 1.

2.

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

on this the day of 20.....

SIGNATURE:

NAME AND SURNAME:

CAPACITY:

WITNESSES: 1.

2.

C1.5: RETENTION MONEY GUARANTEE

PRO FORMA

RETENTION MONEY GUARANTEE

THE HEAD: TRANSPORT
PROVINCE OF KWAZULU-NATAL
PRIVATE BAG X9043
PIETERMARITZBURG
3200

CONTRACT NO. _____ FOR _____

ISSUED TO: the **PROVINCE OF KWAZULU-NATAL**, represented by **HEAD: TRANSPORT** (hereinafter referred to as "the Employer")

ON BEHALF OF: (hereinafter referred to as "the Contractor")

In connection with

CONTRACT NO. ZNT (hereinafter referred to as "the Contract")

WHEREAS the Employer and the Contractor have agreed that the Contractor may provide a guarantee in lieu of the whole or portion of the retention monies provided for under the Contract;

NOW THEREFORE we, the undersigned, undertake, in accordance with the following provisions, to pay the Employer such amounts as the Employer may, from time to time, demand from us.

1. Each demand by the Employer shall be in writing signed by the Employer and delivered to us at

.....
or such other address as we shall in writing notify to the Employer and shall be accompanied by a certificate complying with Clause 2, signed by the Employer's Agent as such in terms of the Contract.

2. The Employer's Agent's certificate referred to in Clause 1 shall certify

- (a) that he is the Employer's Agent in terms of the Contract,
- (b) that the Contractor is in breach of his obligations under the Contract, and
- (c) that the amount demanded, which amount the certificate shall specify,

- (i) does not exceed the amount of retention monies which, but for this guarantee, would have been retained by the Employer in terms of the Contract at the date of the certificate, less the aggregate of the amounts of retention money actually retained by the Employer and the amounts previously paid by us to the Employer in terms hereof, and
- (ii) does not exceed a genuine estimate of the cost to the Employer of having the breach referred to in paragraph (b) remedied less the aggregate of any amounts withheld by the Employer from payments due the Contractor in terms of the Contract by reason of the breach referred to, and any amount in retention money actually held by the Employer save to the extent that the same had been deducted from any previous demand in terms hereof.

3. We shall within 28 days after our receipt of a demand complying with the provisions of Clauses 1 and 2 make payment to the Employer of the amount demanded at 172 Burger Street, Pietermaritzburg or at such other address as the Employer shall in writing notify us.
4. Subject to compliance with the provisions thereof, our liability to make the payments herein referred to shall be unconditional and shall not be affected nor diminished by any disputes, claims or counterclaims between the Employer and the Contractor.

5. Our aggregate liability under this guarantee is limited to R
6. This guarantee shall expire on the date on which the last of the retention monies, which but for this guarantee would have been retained by the Employer, becomes payable to the Contractor.
7. This guarantee is not transferable and must be produced for endorsement if any part payment is made and must be returned to us against final payment of our aggregate liability or on the date of the expiry of the guarantee in terms of Clause 6, whichever is the earlier.

Signed in the presence of the witnesses named hereunder:

At for and on behalf of

on this day of

Signature:

Capacity:

Address:

As Witnesses:

1. Name in Block Letters ...
2. Name in Block Letters

C1.6: TRANSFER OF RIGHTS

TRANSFER OF RIGHTS AND INDEMNITY

(To be completed during construction by successful Tenderer only)

Claim for Plant and materials on site, Payment Certificate No. Date:

Contract No: For (contract title)

I, the undersigned (name of signatory) in my capacity as

..... of (name of Contractor)

duly authorised hereto on behalf of the Contractor hereby transfer, cede and assign all the Contractor's rights, title and interest in and to the Plant and materials, for which evidence of bona fide ownership is attached hereto, unto and in favour of (name of Employer)

Insofar as the Contractor retains actual control of the materials and goods, the right of ownership thereof passes to the Employer by *constitutum possessorium*.

I herewith indemnify the Employer against any claim to and in respect of the said Plant and materials by reason of the Contractor's sequestration or liquidation or of any defect in the Contractor's title to the materials and agree that no payment for materials on site will be made by the Employer until such time as I have submitted documentary proof of bona fide ownership of the said Plant and materials.

This transfer shall become effective upon conclusion of the Contractor receiving payment from the Employer or from any other person on behalf of the Employer for the Plant and materials as Plant and materials on Site, payment of retention money thereon excluded.

I further confirm that I am fully responsible for all Plant and materials listed under this Transfer of Rights and that they have been insured adequately against all risks and will remain insured until they are built into or used in the permanent works and taken over by the Employer.

This certificate of Transfer of Rights applies only to the Plant and materials as listed in the following table.

DESCRIPTION OF ITEM	UNIT	QUANTITY	RATE	AMOUNT	SUPPLIER
TOTAL VALUE OF PLANT AND MATERIALS					

Signed by: **Date:**
for and on behalf of the Contractor.

Witnessed by:

NOTE: This form, together with the documentary proof of ownership or proof of payment by the Contractor to the supplier, shall accompany the Contractor's claim for payment for Plant and materials on site in terms of Clause 6.10.1.5 of the General Conditions of Contract 2015.

PART C2: PRICING DATA

C2.1 PRICING ASSUMPTIONS

1. GENERAL

The Bill of Quantities forms part of the Contract Documents and must be read and priced in conjunction with all the other documents comprising the Contract Documents, which include the Conditions of Tender, Conditions of Contract, the Specifications (including the Project Specifications) and the Drawings.

The contractor shall determine the contract skills participation goals, expressed in Rand, which shall not be less than the **SUB-TOTAL 1** multiplied by a percentage factor given in Table 2 in the Standard for the applicable class of construction works. For this contract, the percentage shall be 0.25%. This is indicated by the percentage factor in the Final Tender Summary section. **Minimum Contract Skills Development Goal (CSDG) sum = Civil Engineering CE (0.25%) x SUB – TOTAL 1** of the tender amount.

2. DESCRIPTION OF ITEMS IN THE SCHEDULE

The Bill of Quantities has been drawn up generally in accordance with the relevant provisions of the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.

The short descriptions of the items in the Bill of Quantities are for identification purposes only and the measurement and payment clause of the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020. and the Particular Specifications, read together with the relevant clauses of the amendments and additions contained in the Project Specifications and directives on the drawings, set out what ancillary or associated work and activities are included in the rates for the operations specified.

The item numbers appearing in the Bill of Quantities refer to the corresponding item numbers in the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020. Item numbers prefixed by the letter PS refer to items of payment described in Part B Amendments to the Standard Specifications

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

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

3. QUANTITIES REFLECTED IN THE BILL OF QUANTITIES

The quantities given in the Bill of Quantities are estimates only, and are subject to re-measure during the execution of the work. The quantities finally accepted and certified for payment, and not the quantities given in the Bill of Quantities, shall be used to determine payments to the Contractor. The Contractor shall obtain the Employer's Agent's detailed instructions for all work before ordering any materials or executing work or making arrangements for it. The quantities of material or work stated in

the Bill of Quantities shall not be regarded as authorisation for the Contractor to order material or to execute work.

The Works as finally completed in accordance with the Contract shall be measured and paid for as specified in the Bill of Quantities and in accordance with the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020, the Project Specifications and the Drawings. Unless otherwise stated, items are measured net in accordance with the Drawings, and no allowance has been made for waste. The validity of the contract will in no way be affected by differences between the quantities in the Bill of Quantities and the quantities finally certified for payment.

4. PROVISIONAL SUMS

Where Provisional sums or Prime Cost sums are provided for items in the Bill of Quantities, payment for the work done under such items will be made in accordance with Clause 6.6 of the General Conditions of Contract 2015. The Employer reserves the right, during the execution of the works, to adjust the stated amounts upwards or downwards according to the work actually done under the item, or the item may be omitted altogether, without affecting the validity of the Contract.

The Tenderer shall not under any circumstances whatsoever delete or amend any of the sums inserted by the Employer in the "Amount" column of the Bill of Quantities and in the Summary of the Bill of Quantities unless so ordered or authorised in writing by the Employer before closure of tenders. Any unauthorised changes made by the Tenderer to provisional items in the Bill of Quantities, or to the provisional percentages and sums in the Summary of the Bill of Quantities, at the Employer's discretion, may invalidate the Tenderer's offer or may be treated as arithmetical errors and the provisional items and percentages corrected without change to the Contract Sum.

5. PRICING OF THE BILL OF QUANTITIES

The prices and rates to be inserted by the Tenderer in the Bill of Quantities shall be the full inclusive prices to be paid by the Employer for the work described under the several items, and shall include full compensation for all costs and expenses that may be required in and for the completion and maintenance during the defects liability period of all the work described and as shown on the drawings as well as all overheads, profits, incidentals and the cost of all general risks, liabilities and obligations set forth or implied in the documents on which the Tender is based. The rates and lump sums shall be comprehensive in accordance with Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.

Each item shall be priced and extended to the "Amount" column by the Tenderer, with the exception of the items for which only rates are required, or items which already have Prime Cost or Provisional Sums affixed thereto. If the Tenderer omits to price any items in the Bill of Quantities, then these items will be considered to have a nil rate or price.

All items for which terminology such as "inclusive" or "not applicable" have been added by the Tenderer will be regarded as having a nil rate which shall be valid irrespective of any change in quantities during the execution of the Contract.

Should the Tenderer group a number of items together and tender one lump sum for such group of items, this single lump sum shall apply to that group of items and not to each individual item.

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

The Tenderer shall fill in rates for all items where the words "rate only" appear in the "Amount" column. The provisions of subclause C1.1.3.6 of the COTO Standard Specifications for Road and Bridge Works for State Road Authorities (Draft Standard (DS) October 2020) shall apply to rate only items. "Rate Only" items have been included where:

- (a) an alternative item or material is contemplated;

- (b) variations of specified components in the make-up of a pay item may be expected; and
- (c) no work under the item is foreseen at tender stage but the possibility that such work may be required is not excluded.

For "Rate Only" items, no quantities are given in the "Quantity" column but the quoted rate shall apply in the event of work under this item being required. The Tenderer shall, however, note that in terms of the Tender Data the Tenderer may be asked to reconsider any such rates which the Employer may regard as imbalanced.

Reasonable compensation will be received where no pay item appears in respect of work required in terms of the Contract which is not covered in any other pay item.

All rates and amounts quoted in the Bill of Quantities shall be in Rands and cents and shall include all levies and taxes (other than VAT). VAT will be added in the summary of the Bill of Quantities. Note that fractions of a cent in all rates shall be omitted.

6. CORRECTION OF ENTRIES

Incorrect entries shall not be erased or obliterated with correction fluid but must be crossed out neatly. The correct figures must be entered above or adjacent to the deleted entry, and the alteration must be initialled by the Tenderer.

7. INTERIM PAYMENTS

Unless otherwise specified, progress payments in Interim Certificates, referred to in Clause 6.10 of the General Conditions of Contract 2015, in respect of "sum" items in the Bill of Quantities shall be by means of interim progress instalments assessed by the Employer's Agent and based on the measure in which the work actually carried out relates to the extent of the work to be executed by the Contractor.

Notwithstanding any custom to the contrary, the work as executed will be measured for payment in accordance with the methods described in the contract documents under the various items of payment.

Attention is directed to the provisions of Clause C1.1.2 of the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020 regarding the measurement of quantities for payment. Except where specified otherwise, the nett measurements or mass of the finished work in place shall be taken for payment, but any quantity of work in excess of that prescribed shall be excluded.

8. ITEMS SCHEDULED FOR CONSTRUCTION USING LABOUR-INTENSIVE METHODS

Those parts of the Works to be constructed using labour enhanced methods are numbered with the specific COTO, Draft Standard (DS), October 2020 Specifications items in the Bill of Quantities.

9. UNITS OF MEASUREMENT

The units of measurement described in the Bill of Quantities are metric units. The following abbreviations are used in the Bill of Quantities:

mm	= millimetre	m ³ .km	= cubic metre kilometre	Prov sum	= provisional sum
m	= metre	l	= litre	kPa	= kilopascal
km	= kilometre	kl	= kilolitre	MPa	= megapascal
km.pass	= kilometre pass	kg	= kilogram	MN	= meganewton
m ²	= square metre	t	= ton (1 000 kg)	t.km	= ton kilometre
m ² .pass	= square metre pass	No	= number	h	= hour
ha	= hectare	%	= percent	dia	= diameter
m ³	= cubic metre	PC sum	= prime cost sum	Sum	= lump sum
kW	= kilowatt	MN.m	= meganewton metre		

10. CONSISTENCY OF RATES

In order to ensure that payments certified by the Employer's Agent are reasonably consistent with the market value of the work done, and that variations in quantities do not distort the contract valuation, the rates, prices and amounts tendered in the Bill of Quantities are required to be in balance.

A tender will be considered out of balance if:

- (i) the combined, extended total tendered for the item:

C1.3.1 The contractor's general obligations:

C1.3.1.1	Fixed obligations
C1.3.1.2	Value-related obligations
C1.3.1.3	Time-related obligations

exceeds a maximum of 15% of the Contract Sum (excluding contingencies, contract price adjustment and VAT).

- (ii) the rate, price or amount tendered for any other item differs by more than 20 (twenty) percent from the average of the rates, prices or amounts for the same item as tendered by those tenderers who submitted the lowest five responsive tender offers (or as tendered by all the responsive tenderers if there are less than five responsive tenderers).

Any such out of balance tender may be rejected if, after three (3) working days of having been given written notice by the Employer to adjust those rates or lump sums which are unreasonable or out of balance, the Tenderer fails to make the necessary satisfactory adjustments. These adjustments in rectification will be such that increases are balanced by decreases, leaving the tender offer unchanged.

C2.2 BILL OF QUANTITIES

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THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C1.2	GENERAL REQUIREMENTS AND PAYMENT					
C1.2.1	Environmental Management					
C1.2.1.1	Monitoring of compliance with and reporting on the EMP	month	LI	24		
C1.2.1.2	Dedicated environmental officer	month		24		
PS C1.2.2	Programming and Reporting					
C1.2.2.3	Submission of a Scheme 2 Initial Programme	Lump Sum		1		
C1.2.2.4	Submission of a Scheme 2 Full Programme	Lump Sum		1		
C1.2.2.5	Reviewing and updating a Scheme 2 Programme every month	month		24		
PS C1.2.2.6	Preparation and submission of all information and reports specified in the Contract Documentation	month		24		
C1.2.4	Stakeholder Liaison					
PS C1.2.4.1	Provision of a Project Liaison Officer (PLO)					
(a)	Wages, salary and allowances.	PC Sum		272 000	R1.00	R 272 000.00
(b)	Handling costs and profit in respect of the above subitem	%		272 000		
PS C1.2.4.2	Provision for Project Liaison Committee (PLC)					
(a)	Wages, salary and allowances.	PC Sum		36 000	R1.00	R 36 000.00
(b)	Handling costs and profit in respect of the above subitem	%		36 000		
C1.2.5	Safety					
C1.2.5.1	Health and safety plan	Lump Sum		1		
C1.2.5.2	Implementation of health and safety plan	month		24		
PS C1.2.5.3	Fixed obligations for completing and checking the Project Health & Safety file and handing it over to the Employer on completion of the Works	Lump Sum		1		
C1.2.7	Road Safety Audits					
C1.2.7.1	Stage 4 work zone traffic management audit	Prov Sum		30 000	R1.00	R 30 000.00
C1.2.7.2	Handling cost, profit and all other charges in respect of item C1.2.7.1	%		30 000		
C1.2.7.3	Stage 5 pre-opening stage traffic safety audit	Prov Sum		30 000	R1.00	R 30 000.00
C1.2.7.4	Handling costs and profit in respect of item C1.2.7.3	%		30 000		
C1.2	TOTAL CARRIED FORWARD					

SCHEDULE A: ROADWORKS						CHAPTER C1.2
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT		QUANTITY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD					
C1.2.8	Dayworks					
C1.2.8.1	Personnel					
(a)	Unskilled labourer	hour		100		
(b)	Semi-skilled labourer	hour		100		
(c)	Skilled labourer	hour		50		
(d)	Gang leader	hour		20		
C1.2.8.2	Construction Equipment					
(b)	Vibratory roller					
i)	Up to 1,0m wide & mass 0.5t	hour		30		
ii)	More than 80kW and mass 8t	hour		50		
(e)	Tractor loader backhoe	hour		100		
(f)	Excavator (on tracks up to 100kW and mass of 25t)	hour		50		
(g)	Compressor (450 cfm with hoses and tools)	hour		50		
(h)	Other equipment					
i)	Water tanker and spraybar (up to 10000l)	hour		50		
ii)	Rammer compactor	hour		30		
iii)	Tamping rammer (15 kN/blow compaction force)	hour		50		
iv)	Concrete mixer up to 0.6 m³ dry capacity	hour		50		
v)	Water pump (75 mm diameter with 50 m hose)	hour		50		
vi)	Oxy-acetylene cutting torch	hour		50		
vii)	Welding equipment including generator or alternator	hour		50		
C1.2.8.3	Vehicles					
(a)	Light delivery vehicle (min 1600cc)	km		1 000		
(b)	Flatbed truck (min 7t capacity with 5t crane)	km		600		
(d)	Tipper Truck (> 8m³ capacity)	km		1 200		
C1.2.8.4	Materials					
(a)	Procurement of materials	Prov Sum		15 000	R1.00	R 15 000.00
(b)	Contractor's handling costs, profit and all other charges in respect of item C1.2.8.4(a)	%		15 000		
C1.2	TOTAL CARRIED FORWARD					

SCHEDULE A: ROADWORKS						CHAPTER C1.2
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT		QUANTITY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD					
C1.2 / C4.1.18	Compensation to landowners or legal occupants in respect of land acquisition, royalties and/or loss of crops					
C4.1.18.1	Amount allowed, expenditure to be approved or instructed by the Employer	Prov Sum		50 000	R1.00	R 50 000.00
C4.1.18.2	Handling costs and profit in respect of item C4.1.18.1	%		50 000		
C1.2 / C2.1.1	Location, identification and relocation of existing services					
C2.1.1.2	Permanent services relocation or protection work by others	PC Sum		1 000 000	R1.00	R 1 000 000.00
C2.1.1.3	Handling costs and profit in respect of item C2.1.1.2 above	%		1 000 000		
PS C1.2.10	Construction of new survey beacons and protection of existing survey beacons					
(a)	Provision for new survey beacons to be constructed or for existing survey beacons to be protected during construction	PC Sum		25 000	R1.00	R 25 000.00
(b)	Handling costs and profit in respect of subitem PS C1.2.10(a) above	%		25 000		
C1.2 / C5.3.1	Compiling and implementing M&U plans for the construction of all the pavement layers	No		4		
C1.2 / C9.1.1	Asphalt mix designs					
C9.9.1.1	Stone skeletal mixes:					
(a)	Continuously graded base or surfacing (Asphalt surfacing, continuously graded (medium grade), using 50/70 penetration grade bitumen binder)	Lump Sum		1		
C1.2 / C2.1.3	Obtaining construction or work permits	Lump Sum		1		
PS C1.2.11	Maintenance of the new road during the defects liability period					
PS C1.2.11.1	(i) Grass cutting	PC Sum		40 000	R1.00	R 40 000.00
	(ii) Handling costs and profit in respect of item PS C1.2.11.1(i)	%		7.00%		
PS C1.2.11.2	(i) Drain cleaning	PC Sum		40 000	R1.00	R 40 000.00
	(ii) Handling costs and profit in respect of item PS C1.2.11.2(i)	%		7.00%		
PS C1.2.11.3	(i) Cleaning out culverts	PC Sum		40 000	R1.00	R 40 000.00
	(ii) Handling costs and profit in respect of item PS C1.2.11.3(i)	%		7.00%		
C1.2	TOTAL CARRIED FORWARD					

SCHEDULE A: ROADWORKS						CHAPTER C1.2
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT		QUANTITY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD					
PS C1.2.10	Construction of new survey beacons and protection of existing survey beacons					
	a) Provision for new survey beacons to be constructed or for existing survey beacons to be protected during construction	PC Sum		30 000	R1.00	R 30 000.00
	b) Handling costs and profit in respect of subitem PS C1.2.10(a) above	%		30 000		
PS C1.2.11.4	(i) Repair of guardrails	PC Sum		20 000	R1.00	R 20 000.00
	(ii) Handling costs and profit in respect of item PS C1.2.11.4(i)	%		20 000		
PS C1.2.11.5	(i) Replacement of Road studs	PC Sum		10 000	R1.00	R 10 000.00
	(ii) Handling costs and profit in respect of item PS C1.2.11.5(i)	%		10 000		
PS C1.2.11.6	(i) Road marking	PC Sum		40 000	R1.00	R 40 000.00
	(ii) Handling costs and profit in respect of item PS C1.2.11.6(i)	%		40 000		
PS C1.2.11.7	(i) Repair of road signs	PC Sum		20 000	R1.00	R 20 000.00
	(ii) Handling costs and profit in respect of item PS C1.2.11.7(i)	%		20 000		
C1.2	TOTAL CARRIED FORWARD TO SUMMARY (Page C55)					

SCHEDULE B: STRUCTURES **CHAPTER C1.3**
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION

ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C1.3	CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS					
C1.3.1	The Contractor's general obligations					
C1.3.1.1	Fixed obligations	Lump Sum		1		
C1.3.1.3	Time-related obligations	month		24		
C1.3.2	Contract sign boards	m ²		12		
C1.3	TOTAL CARRIED FORWARD TO SUMMARY (Page C55)					

SCHEDULE B: STRUCTURES THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C1.4
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C1.4	FACILITIES FOR THE ENGINEER					
C1.4.1	Site accommodation					
C1.4.1.1	Offices and conference room	m ²		72		
C1.4.1.2	Laboratories	m ²		72		
C1.4.1.3	Open concrete working floors and verandas	m ²		160		
C1.4.1.4	Roofs over open concrete working floors and verandas	m ²		125		
C1.4.1.5	Store rooms inside the laboratory	m ²		12		
C1.4.1.6	Car ports	No		8		
C1.4.1.7	Ablution unit (equipment as specified - Minimum of a Sanitech VIP Toilet including all plumbing fittings, water supplies, septic tank, soakaways etc)	No		30		
C1.4.1.9	Kitchen unit (equipment as specified)	No		1		
C1.4.2	Items measured by area					
C1.4.2.1	Shelving as specified, complete with brackets	m ²		40		
C1.4.2.2	Work benches with a concrete slab top (min thickness 75mm)	m ²		35		
C1.4.2.3	Work benches with a wooden top (min thickness 25mm)	m ²		20		
C1.4.2.4	Constant temperature baths of concrete and/or plastered brick	m ²		15		
C1.4.2.5	Concrete footings and pedestals for laboratory equipment	m ²		15		
C1.4.2.6	Roller blinds, opaque type	m ²		25		
C1.4.2.7	Venetian blinds	m ²		20		
C1.4.2.8	Notice boards (1000 mm x 1800 mm Grey)	m ²		2		
C1.4.2.9	White boards (4 x 2000 mm x 1000 mm)	m ²		8		
C1.4.3	Items measured by number					
C1.4.3.2	Office chair	No		10		
C1.4.3.3	Draughtsman's stool	No		2		
C1.4.3.4	Laboratory high chair	No		8		
C1.4.3.5	Office desk with 3 drawers (at least one lockable drawer)	No		2		
C1.4.3.7	Drawing table	No		2		
C1.4.3.8	Conference table	No		1		
C1.4	TOTAL CARRIED FORWARD					

SCHEDULE A: ROADWORKS						CHAPTER C1.4
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT		QUANTITY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD					
C1.4.3.9	Bookcases	No		5		
C1.4.3.10	Filling cabinet	No		5		
C1.4.3.11	General purpose steel cabinet with shelves	No		5		
C1.4.3.12	Wall mounted pivot plan filling system (Plan rack capable of accomodating a minimum of fifteen aluminium plan hangers each, 10 x aluminium plan hangers)	No		4		
C1.4.3.13	220/250 volt power outlet plug point (including voltage stabilisers and regulators as specified)	No		12		
C1.4.3.14	400/231 volt 3-phase power outlet plug point	No		1		
C1.4.3.15	Single 1500 mm, 58 watt fluorescent tube ceiling light	No		8		
C1.4.3.16	Single 1500 mm, 22 watt LED tube ceilling light	No		8		
C1.4.3.18	7 watt LED bulb ceiling light	No		8		
C1.4.3.19	Wash-hand basin	No		4		
C1.4.3.20	Laboratory basin (complete with swan-neck taps and drains)	No		4		
C1.4.3.21	Extractor fan (complete with own power connection)	No		4		
C1.4.3.22	Fume cupboard (complete according to drawings)	No		1		
C1.4.3.23	Fire extinguisher 9,0 kg, dry powder type	No		2		
C1.4.3.24	Air-conditioning unit	No		4		
C1.4.3.25	Heater (space-heating type, minimum capacity 1.5 kW)	No		6		
C1.4.3.26	Concrete specimen curing bath	No		1		
C1.4.3.28	UPS / Voltage stabiliser (1 hour)	No		4		
C1.4.3.30	A4 colour printer, copier, scanner	No		2		
C1.4.3.31	Rain gauge	No		1		
C1.4.3.32	Minimum / maximum atmospheric temperature guage	No		3		
C1.4.3.33	Digital thermometer	No		3		
C1.4.3.35	3,0 m aluminium straight edge complete with two measuring wedges	No		3		
C1.4.3.36	Measuring wheel	No		1		
C1.4.3.37	First aid kit	No		2		
C1.4.3.38	Standpipe complete with 30m of 19 mm dia. Heavy duty hose pipe	No		1		
C1.4	TOTAL CARRIED FORWARD					

SCHEDULE A: ROADWORKS					CHAPTER C1.4	
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT		QUANTITY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD					
C1.4.4	Prime cost items					
C1.4.4.1	Cell phones costs, including pro-rate rentals, for calls made in connection with contract administration	PC Sum		48 000	R1.00	R 48 000.00
C1.4.4.2	Handling cost and profit in respect of item C1.4.4.1	%		48 000		
C1.4.4.7	The provision of paper and ink for a combination colour printer/copier/scanner	PC Sum		10 000	R1.00	R 10 000.00
C1.4.4.8	Handling cost and profit in respect of item C1.4.4.7	%		10 000		
C1.4.4.11	The provision of a complete 440/231 volt three phase electrical power installation, including all poles, insulators, wiring, switchboards, mains connection, meters, etc.	PC Sum		13 000	R1.00	R 13 000.00
C1.4.4.12	Handling cost and profit in respect of item C1.4.4.11	%		13 000		
C1.4.4.15	The provision of all gas installations required at the site offices, laboratories and at the Engineer's staff accommodation (if required), including gas storage cylinders, tubing, regulators, gas burners and shut-off cocks	PC Sum		7 000	R1.00	R 7 000.00
C1.4.4.16	Handling cost and profit in respect of item C1.4.4.15	%		7 000		
C1.4.5	Services at site offices, laboratories and site accommodation					
C1.4.5.1	Fixed costs	Lump Sum		1		
C1.4.5.2	Running costs	month		24		
C1.4.8	Site security measures for the Engineer's facilities					
C1.4.8.1	Supply and installation of all required security measures at the Engineer's site offices and laboratories	Lump Sum		1		
PS C1.4.10	Provision of unskilled labour for the use by the Engineer					
(a)	Wages, salaries and allowances	PC Sum		5 000	R1.00	R 5 000.00
(b)	Handling cost and profit in respect of subitem PS C1.4.10 (a) above	%		5 000		
C1.4	TOTAL CARRIED FORWARD TO SUMMARY (Page C55)					

SCHEDULE B: STRUCTURES						CHAPTER C1.5
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C1.5	ACCOMMODATION OF TRAFFIC					
C1.5.2	Accommodation of vehicular traffic	month		23		
C1.5.5	Maintenance of temporary deviations					
C1.5.5.1	Grass cutting	ha		1		
C1.5.5.2	Drain cleaning	km		3		
C1.5.5.4	Collection of rubbish / litter	km		10		
C1.5.5.6	Base and/or surface patching using cold premixed asphalt	kg		200		
C1.5.5.11	Other road maintenance work ordered by the Engineer	Prov Sum		50 000	R1.00	R 50 000.00
C1.5.5.12	Handling cost, profit and all other charges in respect of item C1.5.5.12	%		50 000		
C1.5.7	Temporary traffic control facilities					
C1.5.7.1	Delineators including mounting bases and ballast:					
(a)	Single sided, reversible left or right (TW401/TW402, 800 mm x 200 mm)	No		25		
(b)	Double sided, reversible left or right (TW401/TW402, 800 mm x 200 mm)	No		75		
C1.5.7.2	Traffic cones, minimum height 750 mm	No		25		
C1.5.7.3	Flagmen	man-shift	LI	500		
C1.5.7.5	Provision of illuminated traffic signs					
(a)	Sign mounted flashing amber lights (2 lights with the specified power supply) mounted on a backing board which is:					
(a.i)	900 mm wide x 150mm high	No		4		
C1.5.7.8	Traffic control stations	month		23		
C1.5.7.9	Cleaning of traffic control facilities	month	LI	23		
C1.5.8	Traffic safety officer	Man-month		24		
C1.5.12	Additional traffic accommodation facilities ordered by the Engineer:					
C1.5.12.1	Provision of additional traffic accommodation facilities	Prov Sum		10 000	R1.00	R 10 000.00
C1.5.12.2	Handling cost, profit and all other charges in respect of item C1.5.12.1	%		10 000		
PS C1.5.13	Protective barrier works to close off the approaches to the existing bridge:					
(a)	Protective barrier works ordered by the engineer	Prov Sum		50 000	R1.00	R 50 000.00
C1.5	TOTAL CARRIED FORWARD					

SCHEDULE A: ROADWORKS						CHAPTER C1.5
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT		QUANTITY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD					R 2 184 700.00
PS C1.5.14	The provision and maintenance of traffic safety equipment for use by the Engineer					
(a)	Amber flashing lights magnetically attached to vehicles	No		3		
(b)	Construction' sticker for vehicles with 100 mm high lettering	No		3		
(c)	Provision of high visiblty reflective safety vests	No		3		
(d)	Hard hats	No		3		
C1.5 / C11.6.1	Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class I retro-reflective material, where the sign board is constructed from:					
C11.6.1.3	Prepainted galvanised steel plate (Chromadek sheet, 1.4mm thick):					
(a)	Area 0 to 0,5 m²	m²		2		
(b)	Area exceeding 0,5 m² but not 2,0 m²	m²		3		
(c)	Area exceeding 2,0 m² but not 10 m²	m²		3		
C11.6.1.8	Regulatory signs, temporary					
(c)	1200 mm diameter (galvanised steel sheet, Class I retro-reflective compliant with SANS 1519)	No		16		
C11.6.1.10	Warning signs, temporary					
(d)	1500 mm size (galvanised steel sheet, Class I retro-reflective compliant with SANS 1519)	No		16		
C11.6.1.12	Supplementary plates to temporary regulatory or warning signs (galvanised steel sheet, Class I retro-reflective compliant with SANS 1519)	m²		8		
C1.5	TOTAL CARRIED FORWARD TO SUMMARY (Page C55)					R 2 223 400.00

SCHEDULE A: ROADWORKS
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION **CHAPTER C11.7**

ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C11.7	ROAD MARKINGS AND ROAD STUDS					
C11.7.2	Retro-reflective road marking:					
C11.7.2.1	White lines broken or unbroken (retro-reflective road-marking paint)					
	i) 100mm wide	km		1.2		
C11.7.2.2	Yellow lines broken or unbroken (retro-reflective road-marking paint)					
	i) 100mm wide	km		1.2		
C11.7.5	Variations in rate of application:					
C11.7.5.1	White paint	/		15		
C11.7.5.2	Yellow paint	/		15		
C11.7.5.4	Retro-reflective beads	kg		15		
C11.7.7	Road studs					
C11.7.7.1	Permanent road studs compliant to SANS 1442 (Type C80 any colour)	No		100		
C11.7.7.3	Temporary road studs compliant to SANS 1442 or 1463	No		50		
C11.7.8	Setting out and premarking the lines (excluding traffic island markings, lettering and symbols)	km		2		
C11.7.9	Re-establishing the painting unit during the defects notification period and at other instances on instruction of the Engineer	No		1		
C11.7	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION **CHAPTER C11.8**

ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C11.8	LANDSCAPING AND PLANTING PLANTS					
C11.8.3	Preparing the areas for grassing:					
C11.8.3.3	Topsoiling within the road reserve where the following materials are used:					
(a)	Topsoil obtained from within the road reserve or borrow areas	m ³		200		
C11.8.3.5	Providing and applying chemical fertilisers and/or soil-improvement material:					
(d)	2:3:2 (22)	t		0.3		
C11.8.4	Grassing					
C11.8.4.2	Sodding by using the following types of sods:					
(a)	Nursery sods (Buffalo grass)	m ²		1 000		
C11.8.6	Watering the already planted grass, trees and shrubs during the growing season	kℓ		50		
C11.6 / C4.1.11	Constructing a platform for the stockpile site	m ³		100		
C11.6 / C1.6.9.1	Stockpiling topsoil	m ³		200		
C11.8	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C11.9
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C11.9	FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS					
C11.9.1	Finishing the road and road reserve:					
C11.9.1.2	Single carriageway road	km		0.6		
C11.9 TOTAL CARRIED FORWARD TO SUMMARY						

SCHEDULE B: STRUCTURES

CHAPTER C12.1

THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION

ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C12.1 PILING						
C12.1.3 Establishment on site for piling (oscillator piles)		Lump sum		1		
C12.1.4 Moving to, and setting up equipment at each position for installing piles (oscillator piles)		No		23		
C12.1.5 Augered or bored holes (oscillator piles) for piles with a diameter of 1000 mm for 900 mm diameter permanently cased piles through material situated within the following successive depth ranges						
C12.1.5.2 Bored piles						
(a) 0 m up to 10 m provided for in pay item C12.1.6		m		273		
(b) Exceeding 10 m and up to 15 m		m		25		
(c) Exceeding 15 m and up to 20 m		m		5		
C12.1.6 Extra over item C12.1.5 irrespective of the depth, to form augered and bored pile holes through identified materials consisting of:						
C12.1.6.1 Coarse gravel with a matrix content of less than 60%		m		85		
C12.1.6.2 Boulders (hard rock of maximum size 400 mm)		m		20		
C12.1.6.3 Rock formation		m				
i) Soft rock highly weathered basalt with a class R2 rock classification		m		30		
ii) Medium hard rock highly weathered basalt with a class R3 rock classification		m		30		
iii) Hard rock slightly weathered basalt with a class R4 rock classification		m		20		
C12.1.8 Forming augered or bored pile holes through unidentified materials		Prov Sum		50 000	R1.00	R 50 000.00
C12.1.12 Installing permanent pile casing for piles of (900 mm diameter)		m		240		
C12.1.15 Steel reinforcement in cast in situ piles:						
C12.1.15.1 Mild-steel bars		t		2.1		
C12.1.15.2 High-yield-stress-steel bars (hot-rolled deformed bars, characteristic yield strength 450 MPa)		t		38.6		
C12.1.16 Cast in situ concrete in piles, underreams, bulbous bases and sockets (Class 25/30-20 concrete, formerly "class 30/19")		m³		178		
C12.1.17 Extra over item C12.1.16 for concrete cast underwater		m³		175		
C12.1.24 Stripping/cutting the pile heads (900 mm diameter cast in-situ concrete piles, class 25/30-20 concrete, formerly "class 30/19")		No		23		
C12.1 TOTAL CARRIED FORWARD						

SCHEDULE A: ROADWORKS

CHAPTER C12.1

THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION

ITEM NO	DESCRIPTION	UNIT		QUANTITY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD					
C12.1.27	Establishment on site for core drilling	Lump sum		1		
C12.1.28	Moving equipment to and assembling at each location where cores are to be drilled	No		23		
C12.1.29	Drilling the cores (NX (nominal 55 mm diameter)) in:					
C12.1.29.1	Concrete	m		44		
C12.1.29.2	Founding formation:					
	(a) Irrespective of hardness	m		106		
C12.1.30	Standing time for pile-installation frame	hr		16		
C12.1.31	Pile Integrity Testing on augered/bored piles					
C12.1.31.1	Providing and installing (89 mm nominal outside diameter x 3 mm nominal wall thickness) mild steel tubes for "Cross Hole Sonic Logging" in all designated piles. (4 No. perimeter ducts per pile installed to a depth of 500 mm above the bottom of the rock socket for CSL testing and subsequent core drilling for base integrity testing)	m		1 000		
C12.1.31.3	Cross-Hole Sonic Logging tests and interpreted results (per pile diameter)	m		250		
C12.1.31.4	Base integrity tests (per designated pile)	No		88		
C12.1	TOTAL CARRIED FORWARD TO SUMMARY (Page C55)					

SCHEDULE B: STRUCTURES						CHAPTER C13.1
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C13.1	FOUNDATIONS					
C13.1.2	Additional foundation investigations:					
C13.1.2.1	Provisional sum allowed for additional foundation investigations	Prov Sum		120 000	R1.00	R 120 000.00
C13.1.2.2	Handling costs and profit in respect of item C13.1.2.1	%		120 000		
C13.1.3	Excavation:					
C13.1.3.1	Excavating soft material situated within the following successive depth ranges:					
(a)	0 m up to 1,5 m	m ³		236		
(b)	> 1,5 m and < 3,0 m	m ³		142		
(c)	> 3,0 m and < 4,5 m	m ³		83		
(d)	> 4.5 m and < 6,0 m	m ³		50		
C13.1.3.2	Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³		25		
C5.1 / C12.10.1	Excavation in hard rock using controlled blasting techniques	m ³		25		
C13.1.3.3	Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³		7		
C13.1.3.4	Extra over subitem C13.1.3.1 for excavation by hand	m ³		5		
C13.1.6	Access and drainage:					
C13.1.6.2	Drainage	Lump Sum		1		
C13.1.7	Backfill to excavations utilising:					
C13.1.7.1	Material from excavation	m ³		25		
C13.1.7.2	Imported material (G9 quality material obtained from commercial sources)	m ³		35		
C13.1.9	Fill within a restricted area (extra over item C5.2.2)	m ³		17		
C13.1.14	Foundation fill consisting of:					
C13.1.14.5	Concrete blinding (75mm thick, Class 12/15-20 concrete, formerly "Class 15/19")	m ³		7		
C13.1.22	Foundation lining (250 micron polyethelene sheeting below approach slabs) using labour enhanced methods	m ²		45		
C13.1.23	Lateral support for excavations:					
C13.1.23.1	Excavation or fill at (indicate location)					
(c)	Special lateral earth support to the existing roadway embankment at the north abutment substructure	m ²		45		
C13.1	TOTAL CARRIED FORWARD TO SUMMARY (Page C55)					

SCHEDULE B: STRUCTURES				CHAPTER C13.2		
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C13.2	FALSEWORK, FORMWORK AND CONCRETE FINISH					
C13.2.2	Vertical formwork to provide surface finish to					
(a)	Class F1 surface finish to					
i)	Pier pile caps	m ²		27		
ii)	Abutment pile caps	m ²		53		
iii)	Abutment walls and curtain walls (concealed surfaces)	m ²		46		
iv)	Earwalls (concealed surfaces)	m ²		62		
v)	Approach slab edges	m ²		7		
vi)	Deck (internal concealed surfaces to the sides of the webs and diaphragms)	m ²		99		
vii)	Deck (external deck ends at the abutments)	m ²		31		
viii)	Deck (cantilever edges)	m ²		34		
(b)	Class F2 surface finish to					
i)	Pier walls	m ²		109		
ii)	Abutment walls, earwalls and curtain walls (exposed surfaces)	m ²		99		
iii)	Deck (external sides of the webs and abutment diaphragms)	m ²		133		
iv)	Sides of access manhole openings in deck bottom slab	m ²		1		
C13.2.3	Horizontal formwork to provide surface finish to					
(a)	Class F1 surface finish to					
i)	Deck (internal concealed surfaces to the top slab soffit and the bottom slab haunches)	m ²		614		
(b)	Class F2 surface finish to					
i)	Deck (external exposed surfaces to the bottom slab and cantilever soffits)	m ²		969		
C13.2.4	Inclined formwork to provide surface finish to					
(a)	Class F1 surface finish to:					
i)	Abutment walls (inclined portion on earth face of bearing seat)	m ²		19		
ii)	Earwall soffits	m ²		8		
C13.2 TOTAL CARRIED FORWARD						

SCHEDULE B: STRUCTURES **CHAPTER C13.2**
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE
CWAKA RIVER BRIDGE B3843 at km 10.94

ITEM NO	DESCRIPTION	UNIT		QUANTITY	RATE	AMOUNT
TOTAL BROUGHT FORWARD						
C13.2.5	Permanent formwork					
C13.2.5.1	To form voids of 1,00 m x 0,75 m manhole openings in the deck top slab, including for the provision and installation of the sacrificial soffit shutter and the concreting of the openings upon completion	No		3		
C13.2.6	Formwork to form open joints					
(a)	Joint between the deck end and the abutment curtain wall	m ²		18		
C13.2.10	Provision of designs and drawings of falsework and formwork by an ECSA registered Professional Engineer or Technologist (Nseleni River Bridge)	Lump Sum		1		
C13.2 TOTAL CARRIED FORWARD TO SUMMARY (Page C55)						

SCHEDULE B: STRUCTURES

CHAPTER C13.3

THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION

ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C13.3	STEEL REINFORCEMENT					
C13.3.1	Reinforcement for:					
C13.3.1.1	Pier 1:					
(a)	Mild-steel bars (250 MPa)	t	LI	0.10		
(b)	High-yield-stress-steel bars (450 MPa)	t	LI	3.70		
C13.3.1.2	Pier 2:					
(a)	Mild-steel bars (250 MPa)	t	LI	0.10		
(b)	High-yield-stress-steel bars (450 MPa)	t	LI	3.70		
C13.3.1.3	Deck:					
(a)	Mild-steel bars (250 MPa)	t	LI	0.10		
(b)	High-yield-stress-steel bars (450 MPa)	t	LI	71.00		
C13.3.1.4	Parapets and traffic barriers, including the end blocks:					
(a)	Mild-steel bars	t	LI	0.20		
(b)	High-yield-stress-steel bars	t	LI	3.00		
C13.3.1.5	Sidewalk upstand wall supporting the handrail posts along the cantilever edge, including the handrail end blocks:					
(a)	Mild-steel bars	t	LI	0.10		
(b)	High-yield-stress-steel bars	t	LI	1.70		
C13.3.4	Extra-over item C13.3.1 for galvanising of reinforcement (hot-dip galvanising to provide a duty zinc coating not less than 105 microns thickness)	t		5.50		
C13.3 TOTAL CARRIED FORWARD TO SUMMARY (Page C55)						

SCHEDULE B: STRUCTURES

CHAPTER C13.4

THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION

ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C13.4	CONCRETE					
C13.4.1	Cast in situ concrete:					
C13.4.1.1	Strength concrete (class C):					
(a)	Piers (class 25/30-20, formerly "Class 30/19")	m ³		69		
(b)	Abutments (class 25/30-20, formerly "Class 30/19")	m ³		176		
(c)	Approach slabs (class 25/30-20, formerly "Class 30/19")	m ³		13		
(d)	Deck (class 32/40-20, formerly "Class 40/19")	m ³		462		
C13.4.3	Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:					
C13.4.3.1	Strength concrete (class C):					
(a)	For items C13.4.1.1 (a) to (c) (class 25/30-20, formerly "Class 30/19")	m ³		258		
(b)	For items C13.4.1.1 (d) (class 32/40-20, formerly "Class 40/19")	m ³		462		
PS C13.4.15	Demolition and disposal of the existing steel bridge including guardrails on the bridge to a registered reclamation centre.	Lump sum		1		
C13.4	TOTAL CARRIED FORWARD TO SUMMARY (Page C55)					

SCHEDULE B: STRUCTURES

CHAPTER C13.5

THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION

ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C13.5	PRESTRESSING					
C13.5.1	Prestressing tendons:					
C13.5.1.1	Longitudinal tendons					
(a)	In walkthrough type deck	MN-m		2 584		
C13.5.2	Anchorage and couplers:					
C13.5.2.1	Anchorage at jacking end	MN		76.5		
C13.5	TOTAL CARRIED FORWARD TO SUMMARY (Page C55)					

SCHEDULE B: STRUCTURES

CHAPTER C13.6

THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION

ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C13.6 BEARINGS						
C13.6.4 Dowels or guides						
(a)	Stainless steel dowels (25 mm diameter x 550 mm long, grade 316) across the joints to the parapet and traffic barrier walls	No		42		
C13.6.5 Specialist proprietary bearings:						
C13.6.5.1	Prime cost sum allowed for purchasing and taking delivery of bearing	PC Sum		100 000	R1.00	R 100 000.00
C13.6.5.2	Percentage on prime cost sum for charges and profit	%		100 000		
C13.6.6 Installing the proprietary bearings						
(a)	Multi-directional pot bearings:					
i)	Vertical load = 2600 kN (HONEL KA 300/100/25 or equivalent subject to the approval of the engineer)	No		4		
C13.6 TOTAL CARRIED FORWARD TO SUMMARY (Page C55)						

SCHEDULE B: STRUCTURES

CHAPTER C13.7

THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION

ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C13.7 JOINTS						
C13.7.2 Filled joints:						
C13.7.2.1	Joints measured per square metre:					
	i) Joints between the approach slab edges and the abutment walls as per drawings 3380/8-10, 3380/12-15, 3380/25	m ²	LI	10		
C13.7.7 Cover plates (non-metallic) in barriers, parapets and sidewalks where specified on the drawings in:						
C13.7.7.1	Barriers and Parapets	No		10		
C13.7.9 Specialist proprietary expansion joints:						
C13.7.9.1	Prime cost sum allowed for purchasing and taking delivery of expansion joints	PC Sum		120 000	R1.00	R 120 000.00
C13.7.9.2	Percentage on prime cost sum for charges and profit	%		120 000		
C13.7.10 Installation of specialist proprietary expansion joints:						
C13.7.10.1	Joints measured per metre					
	(a) Joints to both abutments (HONEL E80C or equivalent subject to the approval of the engineer)	m		24		
C13.7	TOTAL CARRIED FORWARD TO SUMMARY (Page C55)					

SCHEDULE B: STRUCTURES					CHAPTER C13.8	
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C13.8	ANCILLARY STRUCTURAL ELEMENTS					
C13.8.1	Concrete barriers and parapets (refer to drawings)					
C13.8.1.2	Parapets (to have a light green pigment: typically 5% Bayferrox@920)					
(a)	F-shape parapet type A	m		68		
(b)	F-shape traffic barrier (850 mm high)	m		68		
(c)	Sidewalk upstand wall and handrail along the cantilever edge	m		68		
C13.8.2	End blocks (to have a light green pigment: typically 5% Bayferrox@920)					
(a)	End blocks for F-shape parapet type A (5,700 m long)	No		2		
(b)	End blocks for F-shape traffic barrier (5,700 m long, 850 mm high)	No		1		
(c)	End blocks for F-shape traffic barrier (3,500 m long, 850 mm high)	No		1		
(d)	End blocks for the sidewalk handrail and the upstand wall supporting the handrail posts along the cantilever edge	No		2		
C13.8.6	Service ducts in structures					
C13.8.6.1	110 mm diameter uPVC service ducts located along the bridge deck below the sidewalk	m		210		
C13.8.7	Numbers for structures: (refer to drawings)					
C13.8.7.3	Numbers formed in concrete	No		2		
C13.8.10	Drainage pipes and weep holes:					
C13.8.10.1	Drainage pipes:					
(b)	Measured by number					
i)	75 mm diameter x 525 mm long uPVC pipe with plain 75 mm diameter uPVC socket (to deck roadway scuppers)	No		23		
ii)	75 mm diameter x 1400 mm long uPVC pipe with plain 75 mm diameter uPVC socket (to deck roadway scuppers)	No		1		
iii)	75 mm diameter x 660 mm long uPVC pipe with plain 75 mm diameter uPVC socket (to deck sidewalk slab scuppers)	No		12		
iv)	50 mm diameter x 415 mm long uPVC pipe with plain 50 mm diameter uPVC socket (to deck sidewalk scuppers below the sidewalk bedding material)	No		11		
v)	200 mm diameter heavy duty uPVC pipe, including bends (at abutment bearing seats)	No		2		
C13.8	TOTAL CARRIED FORWARD					

SCHEDULE A: ROADWORKS				CHAPTER C13.8		
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT		QUANTITY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD					
vi)	50 mm diameter x 250 mm long uPVC pipe with plain 50 mm diameter uPVC socket (to deck bottom slab to drain the deck void)	No	LI	3		
C13.8.10.2	Weep holes:					
(a)	Measured per metre:					
i)	50 mm diameter uPVC pipe (through the abutment walls	m	LI	14		
C13.8.15	Drainage strips:					
(a)	300 mm wide (Kaytech WickDrain GPA 330 or equivalent subject to the approval of the engineer), including wrapping the strips in stitched grade 2 filter fabric sleeves	m	LI	58		
C13.8.16	Perforated drainage pipes:					
C13.8.16.1	Kaytech M65 geopipe or equivalent subject to the approval of the engineer, including wrapping the pipes in grade 2 filter fabric and constructing the 200 mm x 100 mm concrete bedding strips (class 12/15-20 cpncrete, formerly "class 15/19")	m		13		
PS C13.8.18	Manhole covers to bottom slab of deck	No		3		
PS C13.8.19	Perforated stainless steel plate (200 mm x 300 mm x 6 mm thick, grade 316, bent to L-shape) covered with grade 2 filter fabric (600 mm x 700 mm) to deck sidewalk scuppers below the sidewalk bedding material	No		11		
C13.8 / C2.2.4	Bedding for ducts compacted to 90 % of MDD (100 % for sand) using material:					
C2.2.4.5	From commercial sources					
(a)	Non-cohesive material (river sand)	m³	LI	17		
C13.8 TOTAL CARRIED FORWARD TO SUMMARY (Page C55)						

SCHEDULE B: STRUCTURES					CHAPTER C20.1	
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C20.1	TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP					
C20.1.1	Special tests on elastomeric bearings (150 % vertical load and 150 % shear distortion)	No		2		
C20.1.2	Special tests requested by the Engineer					
C20.1.2.2	Employer's contribution to other special tests					
(a)	Materials testing for Engineer's Acceptance Control	PC Sum		5 020 000	R1.00	R 5 020 000.00
(a.i)	Handling costs and profit in respect of item C20.1.2.2(a)	%		5 020 000		
C20.1.5	Financial contribution for an independent site/commercial laboratory	month		24		

THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION			
SCHEDULE B: STRUCTURES - SUMMARY			
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SCHEDULE F: EXPANDED PUBLIC WORKS PROGRAMME (EPWP) THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER E
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
E	EXPANDED PUBLIC WORKS PROGRAMME (EPWP)					
E6.01	Provision of training venue facility, including the cost of transport the learners to and from this facility	Lump Sum		1		
E6.02	Training of learners employed by the contractor or by the Targeted Enterprise subcontractors:					
(a)	Generic Skills:					
(a.i)	Training costs	Prov Sum		140 000	R1.00	R 140 000.00
(a.ii)	Handling costs and profit in respect of subitem E6.02(a)(i) above.	%		140 000		
(b)	Entrepreneurial skills:					
(b.i)	Training costs	Prov Sum		250 000	R1.00	R 250 000.00
(b.ii)	Handling costs and profit in respect of subitem E6.02(b)(i) above.	%		250 000		
(c)	Construction skills:					
(c.i)	Training costs	Prov Sum		450 000	R1.00	R 450 000.00
(c.ii)	Handling costs and profit in respect of subitem E6.02(c)(i) above.	%		450 000		
(d)	Transportation and accommodation costs of selected learners only, while receiving off-site training:					
(d.i)	Transportation and accommodation costs	Prov Sum		120 000	R1.00	R 120 000.00
(d.ii)	Handling costs and profit in respect of subitem E6.02(d)(i) above.	%		120 000		
E6.03	Payments associated with the NYS programme:					
(a)	Employment of NYS workers	Prov Sum		230 000	R1.00	R 230 000.00
(b)	Provision of tools and apparel for the NYS workers	Prov Sum		30 000	R1.00	R 30 000.00
(c)	Handling cost and profit in respect of subitem E6.03(a) and (b) above	%		260 000		
(d)	Training of NYS workers:					
(d.i)	Provision of training for NYS workers	Prov Sum		950 000	R1.00	R 950 000.00
(d.ii)	Handling costs and profit in respect of subitem subitem E6.03(d)(i) above	%		950 000		
(e)	Liaison with the Employer's project manager and the training service provider:					
(e.i)	Liaison conducted by the construction manager	hr		100		
(e.ii)	Liaison conducted by senior site foreman	hr		200		
(f)	EPWP Branding (refer to spec)					
(f.i)	Prime cost sum for EPWP branding	PC Sum		100 000	R1.00	R 100 000.00
(f.ii)	Handling costs and profit in respect of sub item F5.03(f)(i) above	%		100 000		
E	TOTAL CARRIED FORWARD TO SUMMARY (Page C57)					

THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION

SCHEDULE E: EXPANDED PUBLIC WORKS PROGRAMME (EPWP)

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SCHEDULE G: SMALL CONTRACTOR DEVELOPMENT THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER F
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
F	SMALL CONTRACTOR DEVELOPMENT					
F10.1	Procurement of Targeted Enterprises:					
(a)	Management and execution of Targeted Enterprise procurement process:					
(a.i)	Procurement process for the appointment of CIDB contractor grading designation 1 CE PE Targeted Enterprise subcontractors (3 x individual tenders prescribed, 100 copies of the tender document required for each individual tender)	No		3		
(a.ii)	Procurement process for the appointment of CIDB contractor grading designation 2 CE PE Targeted Enterprise subcontractors (2 x individual tender prescribed, 60 copies of the tender document required for each individual tender)	No		2		
(a.iii)	Procurement process for the appointment of CIDB contractor grading designation 3 CE PE Targeted Enterprise subcontractors (1 x individual tenders prescribed, 50 copies of the tender document required for each individual tender)	No		1		
(a.iv)	Procurement process for the appointment of CIDB contractor grading designation 4 CE PE Targeted Enterprise subcontractors (1 x individual tenders prescribed, 50 copies of the tender document required for each individual tender)	No		1		
(a.v)	Procurement process for the appointment of CIDB contractor grading designation 5 CE PE Targeted Enterprise subcontractors (1 x individual tenders prescribed, 50 copies of the tender document required for each individual tender)	No		1		
F10.2	Construction Works for Targeted Enterprise subcontractors:					
(a)	Payments associated with the construction Works carried out by Targeted Enterprise subcontractors	Prov Sum		13 605 562	R1.00	R 13 605 561.90
(b)	Handling costs and profit in respect of subitem F10.02(a)	%		13 605 562		
(c)	Supply of materials and small construction equipment to assist Targeted Enterprise subcontractors	Prov Sum		1 511 729	R1.00	R 1 511 729.10
(d)	Handling costs and profit in respect of subitem F10.02(c)	%		1 511 729		
(e)	Management of the Targeted Enterprise subcontractors	Month		24		
F	TOTAL CARRIED FORWARD					

SCHEDULE G: SMALL CONTRACTOR DEVELOPMENT						CHAPTER F
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT		QUANTITY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD					
F10.03	Training of Targeted Enterprise subcontractors:					
(a)	Generic Skills					
(a.i)	Training costs	Prov Sum		150 000	R1.00	R 150 000.00
(a.ii)	Handling costs and profit in respect of subitem F10.03(a)(i)	%		150 000		
(b)	Entrepreneurial skills:					
(b.i)	Training costs	Prov Sum		250 000	R1.00	R 250 000.00
(b.ii)	Handling costs and profit in respect of subitem F10.03(b)(i)	%		250 000		
(c)	Construction skills:					
(c.i)	Training costs	Prov Sum		350 000	R1.00	R 350 000.00
(c.ii)	Handling costs and profit in respect of subitem F10.03(c)(i)	%		350 000		
(d)	Transportation and accommodation costs of selected learners only, while receiving off-site training:					
(d.i)	Transportation and accommodation costs	Prov Sum		100 000	R1.00	R 100 000.00
(d.ii)	Handling costs and profit in respect of subitem F10.03(d)(i)	%		100 000		
F TOTAL CARRIED FORWARD TO SUMMARY (Page C60)						

THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION

SCHEDULE F: SMALL CONTRACTOR DEVELOPMENT

CHAPTER	DESCRIPTION	FROM PAGE	AMOUNT
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SCHEDULE G: CIDB CONTRACT SKILLS DEVELOPMENT GOAL (CSDG)						CHAPTER G
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
G	CIDB CONTRACT SKILLS DEVELOPMENT GOAL (CSDG)					
G7.01	Payments associated with the Contract Skills Development Goals:					
(c)	Employment of Learners employed under Method 3					
i)	Provision for stipends	PC Sum		211 200	R1.00	R 211 200.00
ii)	Provisions for mentorship (per candidate, per quarter)	Person-Quarter		8		
iii)	Provision for additional costs	PC Sum		39 600	R1.00	R 39 600.00
(e)	Liaison with the Employer's project manager and the training service provider					
i)	Liaison conducted by the Construction Manager	hr		40		
(f)	Handling costs associated with subitems G7.01 c(i)&(iii) above	%		250 800		
G	TOTAL CARRIED FORWARD TO SUMMARY (Page C60)					

THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION

SCHEDULE G: CIDB CONTRACT SKILLS DEVELOPMENT GOAL (CSDG)

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THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION		
C2.3 SUMMARY OF BILL OF QUANTITIES		
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SUBTOTAL 1		
CONTINGENCIES (10.0% of Subtotal 1)		
SUBTOTAL 2		
CONTRACT PRICE ADJUSTMENT AND RISE & FALL (10.0% of Subtotal 2)		
SUBTOTAL 3		
VAT (15% of Subtotal 3)		
TOTAL CARRIED FORWARD TO FORM OF OFFER		

Signed on behalf of the Tenderer: (Signature)

Date:

Tenderer's Name: (Company Name)

DISCLAIMER

Kindly note that the responsibility lies with Tenderer to check the tender document and the tender addenda (if issued) to verify that all the information is correct and all changes have been incorporated as no claims will be entertained in this regard afterwards. Accordingly, we confirm that the hard copies of the original tender document and the tender addenda are to be regarded to contain the correct items and quantities.

PART C3: SCOPE OF WORK

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C3.1: STANDARD SPECIFICATIONS

*The Standard Specifications on which this contract is based are the ‘**Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020**’.*

C3.2: PROJECT SPECIFICATIONS

The Project Specifications, consisting of two parts, form an integral part of the Contract and supplement 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 Standard Specifications and, if applicable, the Particular Specifications.

In the event of any discrepancy between a part or parts of the Standard or Particular Specifications and the Project Specifications, the Project Specifications 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 Employer’s Agent 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.

C3.2: PROJECT SPECIFICATIONS

PART A: GENERAL

1. DESCRIPTION OF THE WORKS

1.1 Employer's objectives

This Project on P425 is a road traffic safety improvement project initiated by the Province of KwaZulu-Natal Department of Transport.

The P425 is a strategic route since it provides a possible alternative route to the nearby national route N2, and thus capacity and user safety are critically important along this route.

The P425 provides access to communities between Empangeni and Nseleni, including the villages of Lubana and Mabhuveni, the Mpemvu Primary School and the Owen Sitole College of Agriculture.

This project serves to upgrade the section of P425 crossing the Nseleni River through the construction of a new prestressed concrete two-lane bridge, with traffic shoulders both sides and a sidewalk on one side, which will replace the existing single-lane steel truss bridge designed in 1931. The new bridge will provide increased traffic carrying capacity and increased traffic loading capacity, and will increase the safety of motorists, hauliers and pedestrians crossing the Nseleni river on P425.

The project is located in an area of KwaZulu-Natal that has limited access to transport infrastructure. In addition to improving a key arterial, this project seeks to improve the quality of transportation for residents in the area, and to provide socio-economic upliftment to the nearby communities. It is therefore mandatory that the Contractor shall interact with the community via proactive project liaison with and project participation by its leaders and constituted organisations and forums, as well as through the employment of its people, and these activities shall constitute essential facets of the project.

The Employer's objectives in delivering public infrastructure and services for this project include the provision of temporary work opportunities to the local community through the application of labour-intensive methods to the maximum extent feasible, in accordance with the Expanded Public Works Programme (EPWP) Guidelines.

The Contractor shall be required to attend meetings of the local Project Liaison Committee (PLC) from time to time. Requirements of the Expanded Public Works Programme (EPWP) are contained in Part F of section C3.3 Particular Specifications. These EPWP requirements also include provisions for the National Youth Service programme where applicable. Requirements in terms of Government's initiatives for broad-based black economic empowerment with respect to small contractor development are contained in Part G of section C3.3 Particular Specifications.

1.2 Location of the Works

Refer to the locality plan contained in section C4: Site Information.

The Project is located in the Province of KwaZulu-Natal, approximately 13 km north of Empangeni and 7 km west of Nseleni, and lies on the border of the uMhlathuze and uMfolozi Local Municipalities within the King Cetshwayo District Municipality.

The bridge to be constructed is located immediately adjacent to and upstream of the existing steel truss bridge crossing the Nseleni river

1.3 Overview of the Works

The project comprises the construction of the piled abutment and pier wall substructures, and the 66 m long continuous 3-span, single cell, post-tensioned concrete box girder superstructure, to the proposed new Nseleni river bridge No. 3380 across the Nseleni river, together with approximately 465 m of associated realigned approach roadworks required to finish off the fill, pavement layers, surfacing, drainage and ancillary works tying the bridge back to the existing P425.

1.4 Extent of the Works

The Works to be carried out include the following main activities:

- (a) Establishment on site, including the provision of office facilities for the Engineer.
- (b) Provision of traffic accommodation facilities at the points of access from the existing trafficked P425 to the bridge site.
- (c) Clearing and grubbing including the removal of trees.
- (d) Topsoil removal.
- (e) Provision of survey control, and setting out of the Works.
- (f) Arranging for the dismantling and relocation of overhead powerline infrastructure by the service owner.
- (g) Proving, exposing and relocation of buried services, where required, in conjunction with the service owners.
- (h) The provision of access for excavation and piling of the substructures (note that this may also require the provision of access across the Nseleni river channel, depending on whether the Contractor chooses to access the pier substructures from one or both banks of the river).
- (i) Excavations for the pier and abutment substructures, including for the design, installation and subsequent dismantling and removal of lateral earth support to the north abutment excavation to protect the adjacent existing steel truss bridge substructure and roadway.
- (j) The provision of temporary drainage facilities to the excavations where necessary.
- (k) Installation and testing of piles to the pier and abutment foundations.
- (l) Construction of the pile caps to the piers and abutments.
- (m) Erection and subsequent dismantling and removal of the temporary falsework and formwork supporting and providing access to the substructures and superstructure.
- (n) Construction of the new pier wall and abutment wall substructures up to beam seat level, and installation of drainage facilities along the earth faces of the abutment walls.
- (o) Backfilling of the substructures.
- (p) Installation of bridge bearings.
- (q) Construction of the 66 m long continuous 3-span, single cell, concrete box girder superstructure.
- (r) Post-tensioning and grouting of the 3-span superstructure from the two abutment ends.
- (s) Construction of the abutment curtain walls, parapet walls, traffic barriers, sidewalk upstand walls, handrails and sidewalks.
- (t) Dismantling and relocation of the existing game fence on the LHS of the road north of the existing steel truss bridge.
- (u) Construction of the mass earthworks (material shortfalls ex commercial sources) to complete the approach fills behind the abutments, including the compaction of fill within the restricted areas against the substructures.
- (v) Construction of the bridge approach slabs.
- (w) Construction of the lower and upper selected subgrade layers, the stabilised subbase, the crushed stone base and the road shoulders (all layerworks material ex commercial sources).
- (x) Priming to protect the base layer.
- (y) Construction of road prism surface drainage, including kerb and channel drainage and minor drainage structures.
- (z) Construction of mesh reinforced concrete sidewalks on the approach fills.
- (aa) Construction of erosion protection measures, including stone pitching and gabion mattresses.
- (bb) Tying in to the existing P425 at each end of the new realigned roadworks.
- (cc) Construction of the asphalt wearing course across the new bridge deck and its approaches.
- (dd) Installation of the expansion joints to the new bridge deck.
- (ee) Grass sodding and hydroseeding to protect the cut and fill slopes where required, and to reinstate the vegetation at spoil and stockpiling areas.
- (ff) Installation of guardrails, road signs and road markings.
- (gg) Finishing and cleaning up of the road and road reserve.
- (hh) Continuous quality control over materials and workmanship, and compliance with the Particular Specifications, with regard to environmental management and occupational health and safety, during all the above construction activities.
- (ii) Removal of all site establishment facilities and constructional plant on completion of the Works.
- (jj) Making good of any defects during the Defects Liability Period.

1.5 Detailed description of the Works

The following description is a broad outline of the works and does not limit the work to be executed by the Contractor in terms of the contract. The quantities of some of the major items indicated in this section are indicative, not absolute, and are provided to define in general terms the overall scope of the project.

Approximate quantities of each type of work to be carried out in accordance with the contract documents are listed in the Schedule of Quantities in Section C2.2.

The site shall not only comprise the proclaimed road reserve but shall be extended in the broader sense to take account of all areas occupied by the Contractor, be it deliberate or unintentional, in the execution of the contract. The site includes all the land within the proclaimed limits of the road reserve along the extent of the works, borrow pits and quarry sites, stockpile areas, locations set aside for construction and supervision accommodation and any other location required for the execution of the Works.

Incidental intrusion into private or tribal property outside the road reserve shall not be permitted without the owner's written authority. Any such agreement reached with a private or tribal landowner (occupier) shall include the proviso that any material or equipment on that site shall remain the exclusive property of the Employer in terms of the contract.

1.5.1 Access to the Site

Refer to the locality plan contained in section C4: Site Information.

The site can be accessed directly from P425 on both sides of the Nseleni river. P425 can be accessed via national route N2 from the town of Empangeni to the south or from the town of KwaMbonambi to the north.

1.5.2 Demolition work

The existing single-lane steel truss bridge will no longer serve as a river crossing once the new bridge has been opened to traffic. It will be demolished by the main contractor and removed to spoil. The method and location of spoil is to be approved by the environmental consultant and client's H&S agent.

1.5.3 Detailed description of the Nseleni river bridge No. 3380 and associated roadworks

1.5.3.1 Nseleni river bridge No. 3380

The new bridge structure is detailed on the drawings. A brief description of the main features and elements of the structure is given below.

(a) Bridge layout

The new bridge crosses the Nseleni river at km 11,074 on a revised alignment of P425, located upstream of the existing alignment and existing steel truss Nseleni river bridge crossing. The new and existing structures are closest to each other at the north abutments, with elements of the substructures approximately 5,9 metres apart, while at the south abutments elements of the substructures are approximately 13,3 metres apart.

The 66 m long bridge comprises three spans (20 m + 26 m + 20 m) and is located on a 465 m radius horizontal curve near the bottom of a vertical sag curve.

The bridge is set at a skew angle varying from approximately 11,0 degrees at the south abutment to approximately 2,9 degrees at the north abutment.

The bridge deck has a constant superelevation of 6%.

(b) Foundation investigations

The results of the foundation investigations undertaken at the bridge site are contained in the drilling investigation report provided in section C4: Site Information.

The borehole positions are shown on the drawings.

(c) Bridge substructures

(i) Excavation and piling:

Owing to the proximity of the adjacent existing steel truss bridge substructures and P425 roadway, lateral earth support of the substructure excavations may be required to protect the adjacent substructures and roadway.

The substructures are founded on piles.

The piling for all the pier and abutment substructures has been specified as vertical 1000 mm diameter bored holes (oscillator piles) for permanently cased 900 mm diameter cast in situ reinforced concrete piles.

Provision has been made for rock sockets 1,350 m long (class R4 rock) or 1,250 m long (class R5 rock).

Integrity testing is required on all the completed piles using Cross-hole Sonic Logging (CSL) testing methods.

(ii) Piers:

The two pier substructures are each to be founded on 4 x 900 mm diameter piles with a 1400 mm thick reinforced concrete pile cap.

The pier wall at each substructure is monolithic with the bridge deck and comprises a solid 800 mm thick reinforced concrete wall, with vertical sides and semi-circular ends to deflect the river flow.

(iii) Abutments:

The two abutment substructures are each to be founded on 7 x 900 mm diameter piles with a 1400 mm thick reinforced concrete pile cap.

The two reinforced concrete abutments are closed substructures, each comprising a front wall and two side walls with earwings, as well as an additional internal wall with earwing to support the traffic barrier. The front, side and internal walls are cantilevered off the pile cap.

Drainage systems are to be installed as shown on the drawings to drain the embankment fill behind the abutment walls.

Each abutment beam seat accommodates two bridge bearings.

Reinforced concrete approach slabs 300 mm thick are provided at each abutment.

(d) Bridge superstructure

The 12,525 m wide superstructure comprises a 3-span, continuous, single cell, post-tensioned concrete bridge deck, tensioned from the abutment ends of the deck only. Six longitudinal tendons are located in each of the two deck ribs.

The deck is constructed on a continuously variable vertical alignment, following the vertical sag curve of the road. The deck follows a 465 m radius circular curve horizontal alignment with constant superelevation of 6%.

The deck carries two 3,5 m wide traffic lanes with 1,5 m wide shoulders each side, and a 1,410 m wide sidewalk along the upstream edge only.

The deck is fixed at and monolithic with the pier walls. Two proprietary multi-directional pot bearings carry the deck at each abutment substructure.

Diaphragm walls 2,0 m thick and 1,250 m thick are provided to the deck at the piers and the abutments respectively. The bottom slab of the deck is thickened for 3,0 m either side of the pier diaphragms.

Access manhole openings of 700 mm diameter with 800 mm diameter aluminium covers are provided in the deck soffit.

Deck movements are accommodated by proprietary expansion joints at each abutment. Cover plates protect the joints in the parapet walls, traffic barriers, sidewalks and sidewalk upstand walls at the bridge deck expansion joints.

Cast in situ reinforced concrete parapet walls, containing a 110 mm diameter service duct with hot dip galvanised inspection eyes, are located along the downstream edge of the deck.

Cast in situ reinforced concrete traffic barriers are located along the upstream edge of the upstream road shoulder.

Hot-dip galvanised reinforcement is required to the concrete parapet walls, traffic barriers and associated end blocks, including the starter bars from the deck.

Stainless steel dowel bars are provided across the parapet wall and traffic barrier joints.

The approach and trailing guardrails are attached to the parapet wall and traffic barrier end blocks with galvanised adaptor plates.

Cast in situ reinforced concrete sidewalk upstand walls are located along the upstream edge of the deck, providing the base to which the precast handrail posts along the sidewalk are fixed.

A cast in situ mesh reinforced concrete sidewalk is located along the upstream edge of the deck. Service ducts are provided in the sand infill below the sidewalk.

(e) Erosion protection

Erosion protection to the embankment approach fills will be provided on the RHS river bank (facing upstream) by means of gabion mattresses.

The embankment approach fills will be grassed on completion.

1.5.3.2 Associated roadworks

Approximately 465 m of associated realigned roadworks is required to finish off the approach fill embankments, pavement layers, surfacing, drainage and ancillary works tying the bridge back to the existing P425.

The bulk of the work for the construction of the bridge and the approach roadworks can be carried out by applying strict traffic control at the Contractor's points of access to and from the site, without requiring half-width construction methods to be instituted on the adjacent existing P425. However, when the final tie-ins to the existing P425 are constructed at each end of the new realigned roadworks, the Contractor shall be required to accommodate the traffic on the existing roadway using half-width construction methods with STOP/GO traffic control (sunrise to sunset) or traffic signal traffic control (sunset to sunrise).

The bulk of the fill material and all the pavement layer materials will have to be imported from commercial sources.

The pavement layers for this portion of P425 included under section C5.3 shall consist of:

Layer	Specifications	Compaction
Wearing course	40 mm thick continuously graded (AC) medium grade asphalt using 35/50 penetration grade bitumen	
Base (stabilised)	150 mm thick base layer constructed from G5A crushed material obtained from commercial sources and stabilised to C3	98% of MDD
Subbase (stabilised)	200 mm thick subbase layer constructed from G5A crushed material obtained from commercial sources and stabilised to C4	96% of MDD
Upper selected subgrade	150 mm thick upper selected subgrade layer constructed from G7 quality material (nominal maximum size 63 mm) obtained from commercial sources	95% of MDD
Lower selected subgrade	150 mm thick lower selected subgrade layer constructed from G9 quality material (nominal maximum size 63 mm) obtained from commercial sources	93% of MDD
Shoulders	Shoulders compacted in layers of maximum thickness 150 mm, constructed from G7 quality material (nominal maximum size 63 mm) obtained from commercial sources	95% of MDD

The road prism surface drainage includes kerb and channel drainage and minor drainage structures.

Mesh reinforced concrete sidewalks are to be constructed along the upstream edge of the approach fills.

After priming the base, the bridge deck and the base are to be surfaced using continuously graded (medium grade) asphalt wearing course, after which guardrails, road signs and road markings are to be installed.

The required erosion protection measures include stone pitching and gabions. Grass sodding and hydroseeding are required to protect the cut and fill slopes, and to reinstate the vegetation at spoil and stockpiling areas.

1.5.3.3 Spoiling of surplus material

Surplus material shall be spoiled in designated areas approved by the Employer's Agent. The spoil material shall be disposed of in accordance with subclause A.4.2.7.1 (f) of the COTO Standard Specifications for Road and Bridge Works for State Road Authorities (Draft Standard (DS) October 2020).

1.5.4 Quantities

The approximate leading quantities for the permanent Works to be constructed are as follows:

Description	Source	Approximate quantity
Foundation excavation	In situ material	1020 m ³
Piling (1000 mm diameter bored holes (oscillator piles) for 900 mm diameter permanently cased piles)	Piling materials ex-commercial sources	240 m
Provision for R4 rock sockets	Piling materials ex-commercial sources	11 No
Provision for R5 rock sockets	Piling materials ex-commercial sources	11 No
Pile reinforcement	Commercial sources	29 tons
Pile concrete	Commercial sources	175 m ³
Formwork – vertical	Commercial sources	1099 m ²
Formwork – horizontal	Commercial sources	1285 m ²
Formwork – inclined	Commercial sources	56 m ²

Description	Source	Approximate quantity
Reinforcement	Commercial sources	143 tons
Concrete	Commercial sources	980 m ³
Prestressing tendons	Commercial sources	2584 MN-m
Anchorage at jacking end	Commercial sources	76 MN
Parapet walls (excluding end blocks)	Commercial sources	68 m
Traffic barriers (excluding end blocks)	Commercial sources	68 m
Precast handrail (excluding end blocks)	Commercial sources	68 m
Proprietary multi-directional pot bearings	Commercial sources	4 No
Proprietary expansion joints	Commercial sources	24 m
Fill (total bulk fill)	Necessary excavations with shortfalls ex commercial sources	5100 m ³
Fill	Materials ex commercial sources	4500 m ³
Fill within restricted area	Commercial sources	750 m ³
G9 selected layer	Commercial sources	820 m ³
G7 selected layer	Commercial sources	790 m ³
G7 shoulders	Commercial sources	610 m ³
G5A subbase layer (stabilised to C4 strength)	Commercial sources	1000 m ³
G5A base layer (stabilised to C3 strength)	Commercial sources	900 m ³
Surfacing to approach fills (40 mm thick) (continuously graded (medium grade))	Commercial sources	4800 m ²
Surfacing to bridge deck (continuously graded (medium grade))	Commercial sources	65 tonnes
Gabions	Commercial sources	100 m ³
Guardrail	Commercial sources	260 m

1.5.5 Material investigations

The materials information is contained in the drilling investigation report provided in section C4: Site Information.

1.5.6 Material sources, spoil and stockpile areas

Where suitable material is encountered during the bridge foundation excavations, such material shall be used as backfill to those excavations, and any excess shall be used for bulk earthworks to the embankment fill construction.

Should any pioneer fill material be required as a result of the removal of unstable material below the base of the embankment fills, such pioneer fill material shall be obtained from commercial sources.

Shortfalls in material available for use as bulk fill shall be obtained from commercial sources.

All sand and stone materials for use in subsoil drains, if required, shall be obtained from commercial sources.

All rock filling for gabions and stone for stone pitching shall be obtained from commercial sources.

Material for the construction of the lower and upper selected subgrade layers, the stabilised subbase, the crushed stone base and the road shoulders shall all be obtained from commercial sources.

Sand infill material below the concrete sidewalk along the bridge deck shall be obtained from commercial sources.

All concrete and surfacing materials shall be obtained from commercial sources.

Surplus material shall be disposed of in accordance with subclause A.4.2.7.1 (f) of the COTO Standard

Specifications for Road and Bridge Works for State Road Authorities (Draft Standard (DS) October 2020). Spoil areas and areas for the temporary stockpiling of construction materials shall be determined and agreed on site in conjunction with the Engineer, the PLC (where applicable) and the local communities (where applicable). The Contractor shall be permitted to use only these agreed spoil and stockpile areas, which shall be landscaped and vegetated on completion of the work.

1.5.7 Accommodation of traffic

The bridge site is located on a realigned section of P425 to be constructed under this contract, and the construction of the bridge itself can take place while public traffic continues to use the existing P425.

The accommodation of traffic will therefore mainly comprise the installation of advance warning signs and, between sunrise and sunset, the positioning of advance warning flagmen along the trafficked P425 at each point at which the Contractor accesses the bridge site from P425.

However, when the final tie-ins to the existing P425 are constructed at each end, the Contractor shall be required to accommodate the traffic on the existing roadway using half-width construction methods with STOP/GO or traffic signal traffic control.

Half-width traffic accommodation with STOP/GO traffic control shall be used between sunrise and sunset only.

The full road width shall always be open to traffic between sunset and sunrise, except for those periods when traffic signals are operational to control the half-width traffic accommodation.

Such traffic signals shall be used whenever it becomes necessary to implement half-width traffic accommodation on a 24-hour a day basis. This shall include the period from the start of the subbase stabilisation process in any half-width work zone until such time as the asphalt surfacing has been constructed above the base in that half-width work zone.

Refer also to clause 1.5.16 below, with regard to the requirement to keep open at all times the cross access to the sugar cane loading zone at km 10,845.

1.5.8 Accommodation of other contractors

Although no other contractors are expected to be working on the site during the course of the contract, the Employer and various service providers may have contractors carrying out routine or unscheduled maintenance work along existing roads leading to the site, whose construction activities may affect access from time to time.

In order to ensure the smooth running of all contracts, the Contractor shall be required to liaise with, cooperate with and accommodate all other contractors working in the site, particularly when such other contractors are working in the same area simultaneously.

1.5.9 Existing services

Existing Eskom overhead power lines cross the road and also run adjacent to the road at various locations, as indicated on the drawings. The Contractor will be required to liaise with the service owner with regard to relocating the power line infrastructure where necessary.

It is possible that unknown domestic services crossings requiring relocation or protection may be encountered along the route as the work proceeds. The Contractor shall make every effort to establish the location of these services in any area prior to excavations commencing in that area. Such efforts shall include diligent enquiry and discussions with adjacent landowners, visual surface inspection and exploratory trenching investigation as necessary.

1.5.10 Employer's Agent's site offices and laboratory

The Contractor shall be required to provide furnished site office facilities, laboratory facilities, ablution facilities, and carparks for the Employer's Agent at a site located in close proximity to the Contractor's office

establishment and to the Works. A possible area for such site establishment shall be indicated at the Site Clarification Meeting.

The Contractor shall take all reasonable precautions to prevent unauthorised entry to the Employer's Agent's facilities and to ensure the general security of these facilities.

1.5.11 Climate

P425 is located in a high summer rainfall region with a subtropical climate. Summers are hot and humid with warm winters.

The following climatic data is provided for Richards Bay:

Average annual precipitation:	1228 mm
Average daily maximum temperature:	26 °C (ranging from 23 °C to 29 °C over the 12 months of the year)
Average daily minimum temperature:	17 °C (ranging from 12 °C to 21 °C over the 12 months of the year)
Highest recorded temperature	43 °C
Lowest recorded temperature	4 °C

1.5.12 Environment

The Contractor's attention is called to clause A1.2.3.3 of Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020 and to the requirements of Part C: Environmental Management Specification contained in section C3.3 Particular Specifications.

1.5.13 Labour

A Project Liaison Committee has been established and is a vital means of communication between all parties involved with the project. The composition of the PLC comprises representatives of the Employer, the Employer's Agent and formal structures within the community.

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

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

Local labour is to be used and the employment of such labour is to be done in conjunction with the PLC. The PLC has formed a Labour Committee who shall assist the Contractor with the recruitment of local labourers to ensure an equal distribution of people employed between the various Amakhosi in the area.

1.5.14 Labour-intensive construction methods

Labour enhanced construction shall mean the economically efficient employment of as great a portion of local labour as is technically feasible to produce a standard of construction as demanded by the specifications with completion by the Due Completion Date, where local labour is the primary resource, supported by plant for activities that cannot be carried out feasibly by labour only.

Labour enhanced construction activities are to be planned as task-based work as a general rule. A task means a fixed quantity of work, to be performed to a clearly defined quality. Task-based work means work in which a worker is paid a fixed rate for performing a task, which is clearly defined in terms of quantity and quality. Typically, a particular task can be completed within a working day.

Appropriate portions of the Works included in the Contract shall be carried out using labour enhanced construction methods.

Except where the use of equipment is essential in order, in the opinion of the Employer's Agent, to meet the specified requirements by the Due Completion Date, or where the use of equipment is essential as a result of occupational health and safety considerations, the Contractor shall use only hand tools and equipment in the construction of those portions of the Works that are required in terms of these Project Specifications to be constructed using labour enhanced construction methods.

Such portions of the Works shall be constructed utilizing only the local labour of the Contractor and/or the local labour of subcontractors, supplemented by the Contractor's key personnel to the extent necessary and unavoidable, unless otherwise instructed by the Employer's Agent and in accordance with the further provisions of the relevant sections of Part B of the Project Specifications.

Subject to considerations of occupational health and safety, and subject to the nature of the in situ materials being such that they can be excavated efficiently by hand, the portions of the Works to be carried out under supervision using labour enhanced construction methods are listed under the labour enhanced item numbers as per COTO - Draft Standard (DS) October 2020 specifications in the bill of quantities, include, but are not limited to, the following:

- Erection of the contractor's and engineer's site establishment facilities;
- Provision of domestic services at the site establishment facilities;
- Provision of flagmen and labour for erecting traffic accommodation facilities;
- Clearing of the Site;
- Placing and installation of materials to subsoil drains;
- Excavation as scheduled "by hand" for minor drainage structures (this does not include the foundation excavation required for the bridge substructures) and open drains up to 1,5 m deep in soft material (where the depth of the water table permits such excavation to be carried out safely), and the subsequent backfilling thereof;
- Bedding, selected fill, backfilling and compaction of all trenches for prefabricated culverts irrespective of depth, but assisted by mechanical compaction equipment in order to achieve the specified densities;
- Transportation and spoiling of all trench materials, where the disposal site is located within 20 metres of the source;
- Mixing, placing and surface finishing of concrete for minor drainage structures and road furniture structures;
- Installation of prefabricated kerbs;
- Mixing, placing and surface finishing of concrete for the channel and backing to the prefabricated kerbs;
- Mixing, placing and surface finishing of concrete for the sidewalks;
- Construction of all brickwork required for drainage structures and manholes;
- Unskilled labour component required to assist under supervision with falsework and formwork erection and dismantling, reinforcement fixing, prestressing tendon handling, and concrete placing for the bridge construction work;
- Spreading of stabilising agent;
- Excavation for and construction of stone pitching, and subsequent backfilling;
- Excavation for and construction of gabion boxes and mattresses, and subsequent backfilling;
- Dismantling and relocation of the existing game fence;
- Excavation and subsequent backfilling for guardrail posts;
- Dismantling / erection of guardrail;
- Excavation and subsequent backfilling for road signs;
- Dismantling / erection of road signs;
- Spreading of topsoil;
- Application of fertiliser;
- Planting of grass sodding; and
- Cleaning and tidying up of the Site.

In respect of those portions of the Works which are not listed above, the construction methods adopted and the plant utilized shall be at the discretion of the Contractor, provided always that the construction methods adopted and the plant utilized by the Contractor are appropriate in respect of the nature of the Works to be executed and the standards to be achieved in terms of the Contract.

1.5.15 OHSA - warning regarding local fauna

The Contractor's attention is particularly drawn to the possibility that, in addition to venomous snakes, crocodiles and hippos could also be encountered while working on this site, and the Contractor's OHSA health and safety induction training shall specifically draw attention to these potential hazards.

1.5.16 Sugar cane farm access and loading zone

The sugar cane farm on either side of the road reserve south of the bridge is the Crystal Holdings farm belonging to Tongaat Hulett Properties.

The Contractor shall ensure that the construction of the Works and the Temporary Works do not at any time prevent use of the B3 cross access on the LHS and RHS of P425 at km 10,845. This cross access provides access from the sugar cane farm area on the RHS of the road to the existing sugar cane loading zone on the LHS which must be kept operational throughout the duration of the contract. The Contractor shall liaise closely with the landowner with regard to all matters relating to the cross access to the sugar cane loading zone, and shall provide temporary access where necessary to ensure that effective cross access and cane loading operations are not disrupted during the course of the contract.

1.5.17 Ingonyama Trust Board

The land on either side of the road reserve north of the bridge belongs to the Ingonyama Trust Board.

It is not the intention to borrow material from this land in terms of this contract.

However, in the event that any material is required from land in the ownership of the Ingonyama Trust Board, agreement shall be reached on the amount due and payment shall be made to the Ingonyama Trust Board directly in respect of such material to be quarried.

1.6 Temporary Works

The Temporary Works required under this Contract shall include the Contractor's establishment on site and the facilities established on site for the Employer's Agent, the traffic accommodation measures implemented, any deviations, detours, haul roads or access roads constructed, any stream diversion, dewatering and drainage control facilities, any lateral earth support facilities installed, the falsework and formwork erected for the construction of the bridge structure and the minor drainage structures, including for access ramps and platforms, and the provision of any scaffolding or temporary propping used during the erection of the road signs.

The bridge and culverts construction take place in natural drainage courses and the design of all temporary support works shall therefore take into account any partially saturated, fully saturated or submerged soil conditions prevailing, as well as the effects of the stream flow forces, scour, stream level fluctuations, and the channel obstruction caused by such temporary works. Continuous dewatering of the excavations may also be required. Temporary river diversions may also be required to facilitate the construction of the substructures.

The contractor shall provide a temporary detour road in order to access the site. This access will have to be removed and made good on completion of the works.

All Temporary Works shall be removed from the Site on completion of the Contract.

1.7 Maintenance of the Works during the construction period

The Contractor shall take note of the various requirements of the General Conditions of Contract 2015 and the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020 with respect to the care and protection of the Works.

The handing-over of the road reserve for this contract is described in clause A1.2.3.5 of Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.

The Contractor shall be responsible for maintaining this portion of the road from the date of hand-over until the issue of the Certificate of Practical Completion.

1.8 Testing of materials

A prime cost sum has been allowed in section 20.1 of the Schedule of Quantities for all acceptance control testing laboratory work to be carried out by the Employer's Agent using the laboratory facilities included in Chapter 1.4 Facilities for the Engineer and/or commercial laboratory facilities.

The Contractor shall carry out at his own cost the required process control testing as specified in terms of the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.

1.9 Power supply and other services

The Contractor shall make his own arrangements concerning the supply of electrical power and all other services. No direct payment 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.

1.10 Construction in confined areas

It may be necessary for the Contractor to work within confined areas. Except where provided for in the specifications, no additional payment shall be made for work done in restricted areas. In certain places the width of the fill material and pavement layers may decrease to zero and the working space may be confined. The method of construction in these confined areas largely depends on the Contractor's constructional plant. However, the Contractor shall note that, unless otherwise provided for in terms of the scheduled payment items in the **COTO Standard Specifications for Road and Bridge Works for State Road Authorities (Draft Standard (DS) October 2020)** 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.

1.11 Contractor's campsite (Project Specific)

Possible locations for a campsite shall be pointed out at the clarification meeting. (Project Specific Clarification meetings)

The Contractor shall make his own arrangements for the provision of his campsite and housing for construction personnel but the chosen site shall be subject to the approval of the Employer's Agent, the local authorities and, where applicable, the Project Liaison Committee (PLC) associated with the project.

The standard of the Contractor's camp, offices, accommodation, ablution, and other facilities must comply with the requirements of all local authority, environmental and industrial regulations concerned. In establishing and maintaining his campsite, due cognisance is to be taken of the requirements of clause A1.3.3 of the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.

The Contractor is to fully familiarise himself with all local by-laws and Government regulations for the employment, transport and accommodation of labour on site.

The Contractor shall particularly note that there is a high risk of theft, vandalism and damage to property in this area and strict security will be required for all plant, establishment, temporary works and partially completed works. The Contractor shall be responsible for providing security for all plant, establishment, temporary works and partially completed works. No separate payment shall be made for the provision of

such security since full compensation for these costs shall be deemed to be included in the amount tendered for item C1.3.1.3 (The contractor's general obligations: Time-related obligations).

1.12 Additional requirements for construction activities

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's tendered rates shall include full compensation for all costs which may arise from the construction and maintenance of deviations and construction under traffic. No claim for additional costs which may arise from these methods of traffic accommodation and no additional payment owing to inconvenience as a result of the Contractor's method of working shall be considered.

1.13 Construction programme

The Contractor shall submit a detailed time programme in accordance with clause 5.6.2 of the General Conditions of Contract 2015, clause A1.2.7 of the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.

In addition to any other restrictions accommodated by the Contractor in compiling the construction programme, the following constraints shall be taken into account in the preparation thereof:

- (a) The whole of the Works (and the portions of the Works if completion in portions is required) shall be completed within the time period(s) stated (refer to the Contract Data in section C1.2.2).
- (b) Working days lost due to abnormal rainfall shall be treated as set out in clause A1.2.3.4 (b)
- (c) Allowance shall be made for non-working days and special non-working days (refer to the Contract Data in section C1.2.2).
- (d) Construction activities must comply with all the specified environmental requirements including clause A1.2.3.3 of Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020 and the requirements of Part C: Environmental Management Specification contained in section C3.3 Particular Specifications.
- (e) Construction activities must comply with all the specified health and safety obligations including the requirements of Part E: OHSA 1993 Health and Safety Specification contained in section C3.3 Particular Specifications.
- (f) Strict control of access to and from local public roads shall be required when construction vehicles, plant or equipment leave or enter the site.
- (g) Throughout the contract period traffic must be accommodated through the site and all other contractors engaged on the construction of identified roads must be accommodated.
- (h) The Contractor's programme of work shall take due cognisance of risks by limiting the duration of the exposure of the various construction elements to natural phenomena
- (i) Construction activities shall take into account the necessary compliance to all promulgated Regulations pertaining to the COVID-19 pandemic.
- (j) The Contractor's obligations in terms of Part G: Small Contractor Development require that subcontract tender documents have to be compiled, the tender processes completed, and the subcontract agreements concluded for the appointment of targeted enterprise subcontractors, and these requirements will influence the programmed commencement of the affected portions of the work.

- (k) Portions of the Eskom overhead powerline infrastructure south of the new bridge must be relocated before the mass earthworks south of the new bridge can be completed. Stay wires to the Eskom overhead powerline infrastructure north of the new bridge must be relocated before the concrete sidewalk north of the new bridge can be completed.
- (l) The game fence north of the new bridge must be relocated before the mass earthworks north of the new bridge can be completed.
- (m) The bridge substructures are founded within a natural river drainage course and the water table will therefore be affected by the river level. Access must be provided for excavations, piling operations and substructure construction within the river bed and along the river banks. This will require the construction and maintenance of a temporary working platform for the piling operation, and the continuous shoring, drainage and dewatering of all excavations. Deep excavations may require lateral earth support, which are to be designed by a Professional Engineer.
- (n) Rainfall in the upstream catchment of the Nseleni river will cause the water level at the bridge site to rise, thereby posing a threat to all the temporary works and partially completed permanent works at the bridge site. Such works must therefore be adequately drained, shored and protected.
- (o) The bridge falsework and formwork design shall take due account of the need to minimise the resulting obstruction of the river channel.
- (p) The concrete mix designs and water quality test results must be submitted to the Employer's Agent for approval before concrete work for the structure commences. The Contractor shall therefore arrange the necessary laboratory testing immediately after commencing the contract so as not to delay the construction of the mass concrete foundation fill (if required), blinding and structural concrete. The Contractor shall note that the necessary permission must be obtained from the Department of Human Settlement, Water and Sanitation for the abstraction of water from streams and rivers.
- (q) The removal of the falsework and formwork from any structural element shall be in accordance with clause A13.2.7.3 of Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020 as modified by clause PS A13.2.7.3 of these project specifications.
- (r) Post-tensioning of the bridge deck shall be in accordance with clause A13.5.7.3 of Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020 as modified by clause PS A13.5.7.3 of these project specifications. The contractor shall take due cognisance of this requirement both in the preparation of the construction programme and in the preparation of the deck concrete mix design.
- (s) The parapet walls, traffic barriers and handrails shall be constructed only after full post-tensioning of the bridge deck has been completed, in accordance with clause A13.8.7.1 of Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.
- (t) The abutment curtain walls can be constructed only after full post-tensioning of the bridge deck has been completed since they interfere with the adjacent web end jacking area of the deck diaphragm beam.
- (u) The expansion joints can only be completed after the asphalt surfacing has been completed.
- (v) When the final tie-ins to the existing P425 are constructed at each end of the new realigned roadworks, the Contractor shall be required to accommodate the traffic on the existing roadway using half-width construction methods with STOP/GO traffic control (sunrise to sunset) or traffic signal traffic control (sunset to sunrise). Such traffic signals shall be used whenever it becomes necessary to implement half-width traffic accommodation on a 24-hour a day basis. This shall include the period from the start of the subbase stabilisation process in any half-width work zone until such time as the asphalt surfacing has been constructed above the base in that half-width work zone.

- (w) Constraints imposed by the requirement that certain work be carried out using labour-intensive construction methods, since such methods may be less efficient than would have been the case if plant was used instead.

For the guidance of Tenderers, a provisional preliminary construction programme is included below. This programme is given in good faith and no claims shall be entertained due to inaccuracies, discrepancies or omissions contained in the programme.

			Jul	Aug				Sep				Oct				Nov				Dec				Jan				Feb				Mar				Apr				May				Jun				Jul				Aug				Sep				Oct				Nov				Dec				Jan			
			29	31	33	35	37	39	41	43	45	47	49	51	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	1	3	5																																
1	Site establishment	30 days																																																																									
2	Accommodation of traffic	355 days																																																																									
3	Relocation of services	60 days																																																																									
4	Bridge construction	307 days																																																																									
5	Access and drainage	33 days																																																																									
6	Clear and grub	7 days																																																																									
7	Temporary access roads	5 days																																																																									
8	Temporary work platform in river bed	21 days																																																																									
9	Piling	88 days																																																																									
10	Right abutment	28 days																																																																									
11	Pier 2	16 days																																																																									
12	Pier 1	16 days																																																																									
13	Left abutment	28 days																																																																									
14	Substructures	219 days																																																																									
15	Right abutment	219 days																																																																									
16	Footing	14 days																																																																									
17	Walls	21 days																																																																									
18	Backfill	7 days																																																																									
19	Approach slab	5 days																																																																									
20	Curtain wall	7 days																																																																									
21	Pier 2	39 days																																																																									
22	Footing	14 days																																																																									
23	Wall	21 days																																																																									
24	Backfill	4 days																																																																									
25	Pier 1	39 days																																																																									
26	Footing	14 days																																																																									
27	Wall	21 days																																																																									
28	Backfill	4 days																																																																									
29	Left abutment	159 days																																																																									
30	Footing	14 days																																																																									
31	Walls	21 days																																																																									
32	Backfill	7 days																																																																									
33	Approach slab	5 days																																																																									
34	Curtain wall	7 days																																																																									
35	Superstructure	216 days																																																																									
36	Erecting falsework and formwork	60 days																																																																									
37	Reinforcement, tendons and concrete placing	90 days																																																																									
38	Post-tensioning	3 days																																																																									
39	Removal of falsework and formwork	15 days																																																																									
40	Parapets, barriers and sidewalk on bridge	40 days																																																																									
41	Installation of expansion joints	5 days																																																																									
42	Roadworks	279 days																																																																									
43	Relocation of game fence	30 days																																																																									
44	Clear and grub and mass earthworks	90 days																																																																									
45	Layerworks on approaches (including tie-ins)	120 days																																																																									
46	Kerb and channel	80 days																																																																									
47	Surfacing on approaches and bridge	10 days																																																																									
48	Sidewalk on approaches	60 days																																																																									
49	Road marking and road signs	20 days																																																																									
50	Finishing	58 days																																																																									
51	Removal of temporary work platform	30 days																																																																									
52	Landscaping and finishing	50 days																																																																									

2. DRAWINGS

The drawings that form part of the Tender documents are issued on a CD and shall be used for Tender purposes only.

The Contractor will be supplied with three complete sets of A0 paper print drawings, and one set of drawings on a CD. These A0 paper prints and CD are issued free of charge and the Contractor shall make any additional copies he may require at his own cost.

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

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

The levels given on the drawings are subject to confirmation on site, and the Contractor shall submit all levels to the Employer's Agent for confirmation before he commences any structural construction work. The Contractor shall also check all clearances given on the drawings and shall inform the Employer's Agent of any discrepancies.

The drawings for this contract comprise the following:

DESCRIPTION	DRAWING NO.
ROADWORKS DRAWINGS:	
Road Layout Plan	3380 / 01
Road Longitudinal Section	3380 / 02
Road Cross Sections Sheet 1	3380 / 03
Road Cross Sections Sheet 2	3380 / 04

DESCRIPTION	DRAWING NO.
STRUCTURAL DRAWINGS:	
Bridge General Arrangement	3380 / 05
Foundation Plan and Piling Layout	3380 / 06
Borehole Data	3380 / 07
Left Abutment - Concrete Details	3380 / 08
Left Abutment - Reinforcing Details Sheet 1	3380 / 09
Left Abutment - Reinforcing Details Sheet 2	3380 / 10
Pier Concrete & Reinforcing Details	3380 / 11
Right Abutment - Concrete Details	3380 / 12
Right Abutment - Reinforcing Details Sheet 1	3380 / 13
Right Abutment - Reinforcing Details Sheet 2	3380 / 14
Deck - Concrete Details	3380 / 15
Deck - Reinforcing Details Sheet 1	3380 / 16
Deck - Reinforcing Details Sheet 2	3380 / 17
Deck - Post-tensioning Details	3380 / 18

DESCRIPTION	DRAWING NO.
Traffic Barrier & End Block - Concrete Details	3380 / 19
Traffic Barrier & End Block - Reinforcing Details	3380 / 20
Handrail & End Block - Concrete Details	3380 / 21
Handrail & End Block - Reinforcing Details	3380 / 22
Parapet & End Block - Concrete Details	3380 / 23
Parapet & End Block - Reinforcing Details	3380 / 24
Miscellaneous Details	3380 / 25
Bending Schedule Sheet 1	3380 / 26
Bending Schedule Sheet 2	3380 / 27
Bending Schedule Sheet 3	3380 / 28
Bending Schedule Sheet 4	3380 / 29

DESCRIPTION	DRAWING NO.
STANDARD DETAILS:	KZN DEPT OF TRANSPORT STD DETAILS (2008)
CONCRETE PIPE CULVERT BEDDING	SD 0401/B
PIPE CULVERT HEADWALL (MASONRY)	SD 0406
SUBSOIL DRAINAGE ROAD EDGE SUBSOIL DRAINS	SD 0501/A
DRAINAGE IN CUTTING SIDE DRAINS	SD 0601/C
DRAINAGE IN CUTTINGS SIDE DRAIN AND GRID INLET	SD 0602/B
DRAINAGE IN CUTTINGS SIDE DRAIN OUTLETS	SD 0603/A
MITRE CHUTE	SD 0604/A
PIPE CHUTE, OPEN CUTE AND CATCHWATER BANK DETAILS	SD 0605/A
KERB AND CHANNEL DRAINS	SD0701/A
DROP INLET AND GRID INLET DETAILS	SD 0702/A
SIDE INLET DETAILS	SD 0703/A
GABION RETAINING WALLS	SD 0901/A
SERVICE LEGENDS AND SERVICE MARKERS	SD 1002/C
SERVICE MARKERS POSITIONING AND STRUCTURAL DETAILS	SD 1003/B
GUARDRAIL ERECTION	SD 1101/B
GUARDRAIL END TREATMENT	SD 1102/A
ERECTION OF METAL SIGNS ON CREOSOTED POLES	SD 1301/A
POSITIONING OF SIGNS	SD 1302/A
SIGNPOSTING FOR DETOURS AND LANE CLOSURES	SD 1303/B
SIGNPOSTING AT ROADWORKS	SD 1304/A
SIGNPOSTING FOR MOBILE MAINTENANCE OPERATIONS	SD 1305/A

CONSTRUCTION BOARD:

(See details in Section C4.2)

3. PROCUREMENT

The contractor shall procure goods and services under provisional sums and prime cost sums according to the Employer's standards.

4. CONSTRUCTION

4.1 Applicable SANS 2001 standards for construction work

All construction work must conform with the relevant SABS or SANS specifications referred to in the 'COTO Standard Specifications for Road and Bridge Works for State Road Authorities, Draft Standard (DS) October 2020', or in Section C3.2 Project Specifications, Part B: Amendments to the Standard Specifications, of this document.

4.2 Applicable national and international standards

All construction work must be undertaken in accordance with the 'COTO Standard Specifications for Road and Bridge Works for State Road Authorities, Draft Standard (DS) October 2020', as prepared by the South Africa Committee of Transport Officials (COTO) and as amended in Section C3.2 Project Specifications, Part B: Amendments to the Standard Specifications, of this document.

4.3 Particular / generic specifications

As well as the 'Amendments to the Standard Specifications' contained in Part B of Section C3.2 Project Specifications, of this document, the following Particular Specifications as contained in Section C3.3, are applicable to this Contract:

- Part C: Environmental Management Specification
- Part D: OHSA 1993 Health and Safety Specification
- Part E: Expanded Public Works Programme
- Part F: Small Contractor Development
- Part G: CIDB Contract Skills Development Goal (CSDG)

The 'General Conditions of Contract for Construction Works, Third Edition (2015)', published by the South African Institution of Civil Engineering which is applicable to this Contract.

4.4 Certification by recognized bodies

No certification of items included in the Works is required.

4.5 Plant and materials provided by the Employer

No plant and materials are to be provided by the Employer.

4.6 Services and facilities provided by the Employer

The Employer's Agent's site office and laboratory facilities will be paid for in terms of the Contract. No other services or facilities are to be provided by the Employer.

5. MANAGEMENT

5.1 Applicable SANS 1921 standards

The following parts of SANS 1921 and associated specification data are applicable:

5.1.1 SANS 1921-1 Part 1: General engineering and construction works

Specification data associated with SANS 1921-1	
Clause No.	Essential data
4.1.7	The drawings, information and calculations for which the Contractor is responsible are the proprietary bearings for the bridge deck and the post-tensioning drawings and the temporary manhole opening drawings in the deck top slab.
4.2.1	The responsibility strategy assigned to the Contractor for the works is 'A'.
4.3.1	The programme must conform to clause A1.2.7.1 (Scheme 2) 'Programme of Work' of the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020 and clause 5.6 'Programme' of the 'General Conditions of Contract 2015'.
4.3.3	The Contractor must give 24 hours' notice for inspection of work that is to be covered up.
4.7.3	Where applicable, the Contractor is afforded the opportunity of pricing an item to cover costs of unavoidable over-break.
4.12.2	The samples of materials, workmanship and finishes that the Contractor is to provide and deliver to the Employer/Employer's Agent are to be as described in clause A1.2.8 'Workmanship' of the 'Chapter 1 of the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.' and clause 7 'Quality and Related Matters' of the 'General Conditions of Contract 2015'.
4.12.2	The fabrication drawings that the Contractor is to provide to the Employer are the bridge bearing drawings and the expansion joint drawings.
4.14.5	The Contractor is to provide latrine and ablution facilities as described in Part C 'Environmental Management Plan' in Section C3.3 Particular Specifications of these Project Specifications.
4.14.6	The requirements for the provision and erection of signboards are as described in clause A1.2.3.10 'Notices, Signs and Advertisements' of the 'Standard Specifications', and as detailed in the 'Example of Contract Signboard Details' in Section C4: Site Information of these Project Specifications.
4.17.1	The requirements for the termination, diversion or maintenance of existing services are described in clause A1.2.7.3 and Chapter 1 of the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.
4.17.3	Services that are known to exist on the site are described in clause A1.2.7.3 and Chapter 2 of the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020
4.17.4	The requirements for detection apparatus for locating underground services are: none.
4.18	The additional health and safety requirements are described in Part E 'OHS 1993 Health and Safety Specification' in Section C3.3 Particular Specifications of these Project Specifications.

5.1.1.1 Additional clauses:

(a) Site meetings and procedures

Site meetings shall be convened as described in clause A1.2.3.16 'Monthly Site Meetings' of the 'Standard Specifications'. The Contractor shall keep on site a set of minutes of all site meetings, daily records of resources (people and equipment employed), a site memoranda book, a complete set of contract working drawings and a copy of the procurement document, and shall make these available at all reasonable times to all persons concerned with the contract.

(b) Water and electricity

The Contractor is to provide water and electricity as described in clauses A1.2.3.21 'Water' and A.1.4.7.3 'Services' of the 'Standard Specifications' for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.

5.1.2 SANS 1921-6 Part 6: HIV/AIDS awareness

Specification data associated with SANS 1921-6	
Clause No.	Essential data
4.2.1(a)	A qualified service provider is one that is an accredited or provisionally accredited training service provider in the HIV/AIDS field. A list of accredited service providers can be obtained from the Construction SETA (CETA) (tel. 011 265 5900), Health and Welfare SETA (HWSETA) (011 622 6852) or on the Health and Welfare SETA website: www.hwseta.org.za .
4.2.1(a)	The HIV/AIDS awareness programme is to be repeated at four monthly intervals throughout the duration of the contract.

5.1.2.1 Additional clauses:

(a) Workshops

The duration of each workshop shall not be less than 2½ hours.

5.2 Recording of weather

The Contractor shall erect a rain gauge and record the rainfall as described in clause A1.2.3.4 of the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020. This information together with other details of the prevailing weather conditions shall be recorded in the daily site diary.

5.3 Unauthorised persons

The Contractor shall keep unauthorised persons away from the Works at all times. Under no circumstances may the Contractor's personnel be accommodated on the site.

5.4 Management meetings

Management meetings are to be held weekly at a time convenient to all concerned, to discuss planning and health and safety amongst other things. Attendance by the Construction Manager and the Employer's Agent's Representatives on site is mandatory, and attendance by other interested parties will be by invitation.

5.5 Forms for contract administration

The Employer's Agent's Representative will provide standard forms for 'Site Diary', 'Site Memoranda', 'Requests for Inspection' and any others deemed to be necessary during the contract.

5.6 Electronic payments

Payments of approved payment claims will be made electronically upon submission of the Contractor's banking details.

5.7 Daily records

A site diary is to be compiled jointly by the Construction Manager and the Employer's Agent's Representatives on site and is to be agreed and signed by both parties. The original signed copy is to be retained by the Employer's Agent's Representative.

The Contractor is to keep daily records of people and equipment on site in a format to be agreed by the Employer's Agent's Representative, and is to provide copies to the Employer's Agent's Representative when requested.

5.8 Payment certificates

Details of measurements, proof of payment for items contained in provisional sums and prime cost sums, proof of ownership of Plant and materials on site and documentation pertaining to contract price adjustment and special materials, are required as substantiation of claims for payment.

5.9 Permits

No security/entrance permits are required by the Contractor's personnel to enter the site.

5.10 Proof of compliance with the law

There are no requirements for the Contractor to verify compliance with any legislation.

5.11 Submission of reports

The contractor shall submit monthly reports in accordance with the specifications in Part F: Expanded Public Works Programme and Part G: Small Contractor Development.

C3.2: PROJECT SPECIFICATIONS**PART B: AMENDMENTS TO THE STANDARD SPECIFICATIONS****PROJECT SPECIFICATIONS RELATING TO THE STANDARD SPECIFICATIONS AND OTHER ADDITIONAL SPECIFICATIONS**

In certain clauses in the COTO Standard Specifications for Road and Bridge Works for State Road Authorities (Draft Standard (DS) October 2020), allowance is made for a choice to be specified in the Project Specifications between alternative materials or methods of construction, and for additional requirements to be specified to suit a particular contract. Details of such alternatives or additional requirements applicable to this Contract are contained in this part of the Project Specifications. It also contains the necessary additional specifications required for this Contract.

The clauses and payment items dealt with in this part of the Project Specifications are numbered 'PS' with a number corresponding to the relevant clause or item number in the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.

New clauses and payment items not covered by clauses or items in the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020 have been included here and have also been designated with the prefix 'PS'. Such clauses and items have been given a new number following upon the last number used in the particular chapter referred to in the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.

CHAPTER 1: GENERAL

Some clauses in the Standard Specification require further clarification in the Contract Documentation. Some of these clarifications are made elsewhere in the Contract Documentation, while some are made in the standard deviations below:

CHAPTER C.1.2: GENERAL REQUIREMENTS AND PROVISIONS**PART A: SPECIFICATIONS****PS A1.2.3 GENERAL****PS A1.2.3.3 Environmental management**

Add the following additional new paragraph to the above section:

"Environmental Management: Requirements for the Contractor's environmental officer are clarified in C3.3: Particular Specifications."

PSA1.2.3.4 EXTENSION OF TIME FOR DELAYS BY RAINFALL

Add the following to the end of A1.2.3.4(b) Method 2 (Critical path method with consequential delays):

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

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

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

PS A1.2.3.5 Handing over of the Site of the Works

Add the following paragraph to the end of clause A1.2.3.5:

"The handing-over of the road reserve for this project shall be subject to the following restrictions:

- (a) Only that portion of the P425 road reserve from km 10+500 to km 11+500 shall be handed over to the contractor. The contractor shall be responsible for the maintenance along this portion of the road until completion of the contract.
- (b) The contractor shall be required to accommodate public traffic at those points where the contractor's access to the bridge structure site of works leads off the existing trafficked alignment of P425. The contractor shall also be required to accommodate public traffic along P425 when construction work takes place to tie in the new road alignment to the existing road alignment at each end.
- (c) The Contractor shall be required to accommodate service owners and other contractors working on the services relocation and maintenance in the execution of their duties."

PS A1.2.3.6 Health and safety

Add the following additional new paragraph to the section below:

“Additional requirements are provided in C3.3: Particular Specifications.”

PS A1.2.3.11 Ordering of daywork

Replace Clause A1.2.3.11 with the following:

“PS A1.2.3.11 Ordering of daywork

a. Scope

Rates for daywork shall be entered in the under item C1.2.8.1 in accordance with the following specifications.

b. Daywork Rates

According to Clause 6.5 of the General Conditions of Contract 2015, certain work may be carried out using rates tendered in the daywork schedule. A schedule of personnel, construction equipment and vehicles which may be required to perform work on a daywork basis is included in the Bill of Quantities. The quantities used in the Bill of Quantities are for tender evaluation purposes only and the use or not of these items shall not constitute a variation in terms of Clause 6.3 of the General Conditions of Contract 2015.

No work will be paid for as daywork without the written instruction or approval of the Employer's Agent.

c. Type of Work

The Employer's Agent may order daywork in certain cases where it is necessary to vary or to extend the works due to new or unforeseen circumstances to such an extent that the tendered rates for specific items of work are no longer applicable, or where no suitable combination of tendered rates can be used to pay for such work.

As a general rule, applicable rates for additional work items will be agreed between the Contractor and the Employer's Agent. Daywork will only be used in exceptional circumstances.

d. Materials

Materials for use in works carried out under daywork shall be purchased by the Contractor who shall also arrange for delivery to site, and shall be responsible for any other requirements associated with specific materials. A Provisional Sum has been allowed in C1.2.8 of the Bill of Quantities for daywork materials. The Contractor shall enter a tendered percentage in the Bill of Quantities to cover his handling costs and profit, as per other provisional and prime cost sums in this Contract.

Materials shall be paid for using the method described in C2.1, 'Pricing Assumptions'. No contract price adjustment will be applicable to materials.

The Contractor shall submit proof of ownership for any materials used in daywork with his daywork claim to the Employer's Agent. Further, if specific materials are required for daywork, quotations will be called for as per Clause 6.5.2 of the General Conditions of Contract 2015.

e. Construction Equipment

Where daywork is ordered, the tendered rates for construction equipment in C1.2.8 of the Bill of Quantities shall be used in calculating the payment due for any construction equipment required to execute the daywork. If no rate is included in the Bill of Quantities for a particular item of construction equipment, and where no other rate or combination of rates would provide suitable compensation, then the daywork method of payment described in Clause 6.5.1.3 of the General Conditions of Contract 2015 will be used.

The tendered rates for each item of construction equipment shall include for all operating costs associated with the said item of construction equipment. Such costs are deemed to include fuel, re-fuelling costs, lubrication and routine servicing / maintenance, breakdowns and spares, all overhead costs, site management costs and administration costs. The tendered rates shall also include the construction equipment operator and the general supervision of the construction equipment while it is engaged in the daywork.

f. Salaries and Wages of Workmen

The salaries and wages of workmen executing daywork shall be paid for using the tendered rates in the Bill of Quantities. The tendered rates shall include for all costs associated with the employment of personnel, including salaries, wages, allowances, workmen's compensation, medical aid and pension contributions, government levies and taxes, training costs and any costs associated with living on the site. The tendered rates shall also include for the transportation of the workmen to the site of the daywork.

All overhead costs, administration costs, site management costs and the Contractor's profit are deemed to be covered by the daywork rates and no additions or mark ups will be made to the tendered rates.

The tendered rates shall also include any hand tools normally associated with the workmen's job description e.g., picks, shovels, hammers, saws and spirit levels. The tendered rate for labourers shall also include for the casual supervision by a gang leader or foreman. Only when specifically called for by the Employer's Agent, will payment be made for the use of a gang leader or foreman supervising on a continuous basis.

g. Measurement and Payment

The following principles shall also apply to the measurement and payment of daywork.

The unit of measurement for construction equipment shall be the number of Vibroclock hours worked and each item of construction equipment shall be fitted with a Vibroclock, the cost of which shall be included in the rates. Excessive non-productive time when the engine is idling will not be paid for. Where there is ambiguity between the flywheel horsepower and mass of the machine, the flywheel horsepower shall govern the measurement category. Where width and mass are specified, mass shall govern the measurement category.

The Contractor's attention is drawn to the requirements of Clauses 6.5.3 and 6.5.4 of the General Conditions of Contract 2015 with regard to the submission of lists and statements of personnel, materials and construction equipment used for daywork.

The payment items under C1.2.8 in the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020 will be applicable."

PS A1.2.3.15 Routine maintenance

Add the following to Clause 1.2.3.15:

Where the Contractor has been appointed by the Employer as part of the contract to carry out routine maintenance activities over the newly constructed section of the road during the defect's liability period, the Contractor shall be required to identify all the maintenance activities required timely and shall submit this to the Employer for approval in writing before undertaking the work. This routine maintenance responsibility shall include only the maintenance of the newly constructed road, and shall include maintenance of road furniture, fixtures and the like and shall typically comprise of grass cutting, the clearing and maintenance of drainage systems, repair of guardrails, repair of signs, replacement of road studs and road marking.

This routine maintenance shall exclude any repairs of defects in the works. Repairs of defects in the

works shall remain the responsibility of the Contractor as per the contractual obligations.

C1.2 MEASUREMENT AND PAYMENT

Add the following new payment item.

Item	Description	Unit
PS C1.2.11	Maintenance of the new road during the defect liability period:	
PS C1.2.11.1	(i) Grass cutting	Prov sum
	(ii) Handling costs and profit in respect of item PS C1.2.11.1(i)	%
PS C1.2.11.2	(i) Drain cleaning	Prov sum
	(ii) Handling costs and profit in respect of item PS C1.2.11.2(i)	%
PS C1.2.11.3	(i) Cleaning out culverts	Prov sum
	(ii) Handling costs and profit in respect of item PS C1.2.11.2(i)	%
PS C1.2.11.4	(i) Repair of Guardrails	Prov sum
	(ii) Handling costs and profit in respect of item PS C1.2.11.2(i)	%
PS C1.2.11.5	(i) Replacement of Road Studs	Prov sum
	(ii) Handling costs and profit in respect of item PS C1.2.11.2(i)	%
PS C1.2.11.6	(i) Road Marking	Prov sum
	(ii) Handling costs and profit in respect of item PS C1.2.11.2(i)	%
PS C1.2.11.7	(i) Repair of Road Signs	Prov sum
	(ii) Handling costs and profit in respect of item PS C1.2.11.2(i)	%

Payment will only be made under items PS C1.2.11.1 to PS C1.2.11.7 when the relevant item of routine maintenance work has been submitted by the Contractor to the Employer for approval and the Employer has confirmed in writing the scope, quantity and/or frequency of work that is to be carried out.

The provisional sum allowed under item PS C1.2.11.1 shall provide for grass cutting. The contract rate shall include full compensation for tools, transport and labour required for cutting and removing grass in restricted and steep access areas with hand tools in addition to mowing and removing grass in more accessible areas.

The provisional sum allowed under item PS C1.2.11.2 shall provide for drain cleaning. The rate shall be based on the kilometre of side or median drain cleaned. Each drain shall be measured separately. The contract rate shall include full compensation for the removal of all silt, mud, gravel, rocks and any other obstructions in the drain as well as for loading and hauling the removed material to spoil regardless of the haul distance.

The provisional sum allowed under item PS C1.2.11.3 shall provide for cleaning of culverts. The contract rate shall include full compensation for the removal of all silt, mud, gravel, rocks and any other obstructions from inside the culvert or from the culvert entrance and exit as well as for loading and hauling the removed material to spoil regardless of the haul distance.

The provisional sum allowed under item PS C1.2.11.4 shall provide for the repair of guardrails. The

contract rate shall include maintenance and repairs to any part of the guardrail including the timber posts, end wings, bullnoses, end treatments, bridge adapters and reflectors. The tendered rates shall include full compensation for furnishing all materials and labour for erecting and galvanizing the guardrails, complete with posts, spacer blocks, bolts, nuts, washers and reinforcing plates, and excavating holes in all classes of material, concrete, backfilling and removing any surplus material. It shall also include full compensation for incidentals in respect of supplying and erecting guardrails, end treatments, and turned down sections. The rate shall also include reflective plates to guardrails and drilling and blasting of holes

The provisional sum allowed under item PS C1.2.11.5 shall provide for the replacement of road studs. The rate shall include full compensation for establishing specialist teams and equipment, and for procuring and furnishing all the necessary material, labour and equipment, and for fixing and maintenance as specified. The road studs to be installed shall match that of the specifications in under payment item C11.7.7.

The provisional sum allowed under item PS C1.2.11.6 shall provide for the reapplication of road marking.

The unit of measurement for applying the roadmaking material for the lettering, symbols, transverse lines, islands and arrestor bed markings shall be the square metre, and the quantity to be paid for shall be the actual surface area of the lettering, symbols, transverse lines, islands and arrestor bed markings, completed in accordance with the specifications and on instructions of the Engineer.

The rate for applying the road marking material shall include full compensation for establishing specialist teams and equipment, and for procuring and furnishing all material, including the retro-reflective beads and all necessary equipment, and for applying, protecting and maintenance as specified, including the setting out of lettering, symbols, transverse lines, islands and arrestor bed markings.

The provisional sum allowed under item PS C1.2.11.7 shall provide for the reinstatement or replacement of regulatory or warning road signs. The rate for item PS C1.2.11.7 shall include full compensation for procuring and furnishing all the materials, and for manufacturing and supplying the completed road signboard, including amongst others the supporting framework, reinforcement, cross bracing, struts, fixing brackets, angle-irons, channel profiles, galvanizing (if specified), painting, retro-reflective or semi-matt black lettering, symbols, numbers, arrows, emblems and borders, for attaching the road signboard to a road sign support structure and for all materials, equipment, labour, supervision, nuts, bolts, transport, handling, etc necessary for the manufacture, completion, delivery, installation of the road sign board complete as specified, the removal and disposal of all vegetation obstructing the motorists' view of the new or replaced sign board, and shall include payment for road sign supports.

All the provisional sum under items PS C1.2.11.1 TO PS C1.2.11.7 shall be in accordance with the General Conditions of Contract applicable to Provisional Sums.

The Handling Costs and Profits tendered percentage under subitem PS C1.2.11.1 to PS C 1.2.11.7 (ii) is a percentage of the total amount of expenditure approved by the Employer's Agent under the provisional sum subitems PS C1.2.11.1(i) to PS C 1.2.11.7 (i) and shall include full compensation for attendance by the Contractor, for the handling costs of the Contractor, and for the profit in connection with payments made by the Contractor with respect to the provision of each maintenance activity as indicated in the schedule.

PS A1.2.3.18 Stakeholder Liaison

Add the following new clauses at the end of clause A1.2.3.18:

“(a) Project Liaison Committee (PLC)”

The process of implementing infrastructure projects will be undertaken by means of structured engagement between those responsible for the delivery of the project and the community.

A Project Liaison Committee (PLC) is a vital means of communication between the parties involved with the project. A PLC may be formed if the project is such that a specific community can be identified.

The PLC comprises representatives of the employer, the engineer and formal structures within the community. The contractor shall make use of these communication channels, and shall appoint from amongst his site personnel a responsible person to participate in the affairs of the PLC, and this representative shall also attend the monthly PLC meetings when so requested.

The PLC shall meet at least once every month until such time as it is of the opinion that it could fulfil its tasks by meeting less frequently.

The PLC deals with local labour on the project, and is tasked with:

- assisting with community liaison and the resolution of community disputes;
- devising fair and transparent procedures that will assist the contractor in the engagement of labour;
- advising on and monitoring labour issues; and
- assisting in the resolution of labour disputes.

All labour recruitment, employment and associated risks shall remain the sole responsibility of the Contractor.

“(b) Project Liaison Officer (PLO)”

The contractor, after consultation with the Project Liaison Committee (PLC), shall appoint a competent local person as a Project Liaison Officer (PLO). The contractor shall appoint the PLO as part of his site personnel, and shall direct all his liaison efforts with the local community through the appointed PLO.

The period of employment and the remuneration of the PLO shall be determined jointly by the contractor, the engineer and the employer.

The PLO shall:

- (i) represent the community and assist the contractor, the engineer and the employer with communication between them and the community;
- (ii) work an 8-hour day with a total of 40 hours worked per week, and shall be present on site each day except when performing off-site community liaison activities;
- (iii) communicate daily with the contractor on labour related issues such as numbers and skill;
- (iv) assist in the identification and screening of local labour from the community in accordance with the contractor's requirements;
- (v) inform local labour of their conditions of employment, including their period of employment;
- (vi) attend disciplinary proceedings involving local labour, and ensure that hearings are fair and reasonable;
- (vii) attend all meetings at which the community and/or local labour are present or are required to be represented;
- (viii) attend monthly site meetings to report on community and local labour matters;
- (ix) keep a daily written record of interviews and community liaison;
- (x) submit monthly returns regarding community liaison; and
- (xi) carry out all such other duties as agreed upon between all parties concerned.

A new pay item is included in Chapter 1.2 of the schedule of quantities relating to the payment of the CLO on a provisional sum basis. Payment under this item shall be made only for the period for which the duties of the CLO are required, and not necessarily for the full duration of the contract.

PS A1.2.3.20 Road safety audits

PS A1.2.3.20 a) Work Zone Traffic Management Audit

Add the following additional paragraph to sub clause PS A1.2.3.20 a):

“The following road safety audits shall be required:

- Work Zone Traffic Management Audit prior to commencement of construction”

PS A1.2.3.20 b) Pre-opening stage safety audit

Add the following additional paragraph to sub clause PS A1.2.3.20 b):

“The following road safety audits shall be required:

- Pre-opening Stage Road Safety Audit when construction is almost complete.”

Add the following new Clause A1.2.3.24:

“PS A1.2.3.24 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 / she 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 Employer's Agent 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 Employer's Agent against any claims, damages and / or costs that may arise in this regard.”

PS A1.2.7 EXECUTION OF THE WORKS

PS A1.2.7.1 Programme of the works

Clarification:

The programme must be prepared as set out clause 1.2.7.1 c) Scheme 2

PS A1.2.7.1 c) Scheme 2

Include and add the following new bullets to the bullets in paragraph 4:

“

- The required software format shall be MS Project 2007 or later (or alternative software agreed with the Engineer)
- The programme shall include the procurement periods and subcontract periods for CPG subcontracts.”

PS A1.2.8 WORKMANSHIP

PS A1.2.8.1 Process Quality Control

Add the following additional paragraph to sub clause PS A1.2.8.1:

“The process quality control: period for which performance standard is to be met shall end with the termination of the latent defects period”.

CHAPTER 1.2: GENERAL REQUIREMENTS AND PROVISIONS**PART B: LABOUR ENHANCEMENT****PS B1.2.1 SCOPE**

Add new clause below:

PS B1.2.1.1 Environmental Management

Labour-Enhancement goals: These are clarified in C3.3: Particular Specifications.

PART C: MEASUREMENT AND PAYMENT**PS C1.2.2 Programming and reporting**

Amend the following payment item:

Item	Unit
PS C1.2.2.6 Preparation and submission of all information and reports specified in the Contract Documentation.....	month (month)

Delete the existing description and replace with the following:

“Preparation and submission of all information and reports specified in this chapter are clarified in C3.3: Particular Specifications and will be updated by the Engineer from time to time.”

C1.2.4 Stake holder liaison

Add the following new payment items:

Item	Unit
“PS C1.2.4.1 Provision of a Project Liaison Officer (PLO):	
(a) Wages, salary and allowances.....	prime cost sum (PC Sum)
(b) Handling costs and profit in respect of the above subitem.....	percentage (%)

Expenditure under this item shall be made in accordance with Clause 6.6 of the General Conditions of Contract 2015.

The provisional sum allowed under item PS C1.2.4.1(a) shall be used to pay the actual cost of remuneration and allowances for the PLO.

The percentage under item PS C1.2.4.1(b) is a percentage of the amount spent under item PS C1.2.4.1(a) which shall include full compensation for all handling costs, profit and all other charges in connection with the provision of a PLO.”

Item	Unit
“PS C1.2.4.2 Compensation for Project Liaison Committee (PLC):	
(a) Provision for project liaison committee.....	prime cost sum (PC Sum)
(b) Handling costs and profit in respect of the above subitem	percentage (%)

Expenditure under this item shall be made in accordance with clause 6.6 of the General Conditions of Contract 2015.

The percentage under item PS C1.2.4.2(b) is a percentage of the amount spent under item PS C1.2.4.2(a) which shall include full compensation for all handling costs, profit and all other charges in connection with compensation for Project Liaison Committee."

Item

Unit

"PS C1.2.5.3 Fixed obligations for completing and checking the Project Health & Safety file and handing it over to the Employer on completion of the Works: lump sum

The tendered rate shall include full compensation for the completion and checking of the Project Health and Safety File (including those of all subcontractors, where applicable) and handing it over to the Employer on completion of the Works (one hard copy and one scanned digital copy, including for all subcontractors, where applicable). The lump sum shall be payable in one instalment on acceptance of the file by the Employer."

Item

Unit

"PS C1.2.10 Construction of new survey beacons and protection of existing survey beacons:

- (a) Provision for new survey beacons to be constructed or for existing survey beacons to be protected during construction Prime Cost sum (PC Sum)
- (b) Handling costs and profit in respect of subitem PS C1.2.10(a) above..... percentage (%)

Expenditure under this item shall be made in accordance with clause 6.6 of the General Conditions of Contract 2015.

The tendered percentage is a percentage of the amount of expenditure approved by the Employer's Agent under subitem B12.02(a), and shall include full compensation for the handling costs of the Contractor and the profit in connection with the construction of new survey beacons or the protection of existing survey beacons."

C1.3 CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS**PART C: MEASUREMENT AND PAYMENT****PSC1.3.1.3 Time-related obligations**

Add the following at the end of clause C1.3.1, Under Item C1.3.1.3

"The amount payable to the contractor for time-related general obligations arising from extensions of time granted in accordance with Clause 5.12.1 and Clause 5.12.2 of the GCC 2015, shall be calculated as follows:

- (i) The Contractor shall apply for the extension of time in terms of the number of days delay incurred calculated in accordance with Clause 5.1 of the GCC 2015.
- (ii) The number of days extension of time calculated in accordance with Clause 5.1 of the GCC 2015, finally granted shall then be added to the due completion date of the contract by the Engineer, commencing on the first working day after the day of the original due completion date. Non-working days and special non-working days as defined in the contract data shall not be counted as working days in calculating the extended completion date.
- (iii) The number of calendar days extension of time granted from the original completion date to the extended completion date as calculated in (ii) above shall then be calculated, commencing on the first calendar day after the day of the original completion date.

The following formula shall then be used to calculate the number of months extension of time granted;

$$\begin{aligned} &\text{No. of months extension of time granted} \\ &= [(\text{No. of calendar days extension of time granted} / 365)] \times 12 \end{aligned}$$

- (iv) The number of months extension of time granted calculated as in (iii) above shall be the number of additional months measured for payment for time-related general obligations under item PSC1.3.1.3 and in accordance with Clause 5.12.3 of the GCC 2015 as a result of the extensions of time granted.

NOTE: The number of months extension of time granted calculated as in (iii) above shall also be included in the measurement of any other items scheduled under Sections C1.3, C1.4 and C1.5 or elsewhere in the schedule of quantities that involve the unit of measurement "month" and that were provided on site for the full duration of the extended period. Where such items were provided for a portion of the extended period only, a pro rata payment shall be made, based on the number of calendar days the item was provided on site after the original completion date divided by the number of calendar days as calculated in (iii) above for the extension of time granted."

CHAPTER 1.4 FACILITIES FOR THE ENGINEER**PART C: MEASURE AND PAYMENT**

Add the following new payment items.

Item	Unit
“PS C1.4.10 Provision of unskilled labour for use by the Engineer:	
(a) Wages, salaries and allowances	Prime Cost (PC) Sum
(b) Handling costs and profit in respect of subitem PS C1.4.10 (a) above	percentage (%)

Expenditure under this item shall be made in accordance with clause 6.6 of the General Conditions of Contract 2015.

Payment under item PS C1.4.10 shall be made monthly. The amount due to the contractor will be equal to the total of the actual amount paid to the engineer's unskilled labourers plus the direct cost of medical and pension benefits, Workmen's Compensation, sick leave and holiday pay incurred by the contractor in respect of the engineer's unskilled labourers. The contractor shall advise the engineer of the full monthly cost for each unskilled labourer engaged. No payment other than that provided above will be made in respect of the employment of unskilled labourers for the engineer.

The tendered percentage is a percentage of the amount actually spent under item PS C1.4.10 (a), which shall include full compensation for the handling costs of the contractor, and the profit in connection with paying the engineer's unskilled labourers”

CHAPTER 1.5 ACCOMODATION OF TRAFFIC**PART A: SPECIFICATIONS****PS A1.5.1 SCOPE**

Add the following to additional bullets after bullet no 7:

“

- Throughout the course of the contract the contractor shall ensure that the works do not prevent public traffic, service owners or the employer's other contractors from gaining access through the existing road network.
- The Contractor shall be required to accommodate traffic in the vicinity of the points at which he accesses the site from the existing road network. All movements of the Contractor's plant to and from the existing access road at these intersections shall be strictly controlled by means of appropriate signage, delineators, Stop / Go facilities and flagmen.
- It is a condition of this contract that traffic is accommodated taking into account the provisions of the latest edition of the South African Road Traffic Signs Manual (SARTSM). The latest version for use in the accommodation of traffic is Volume 2, Chapter 13 of the June 1999 edition.
- This section also covers the provision of additional information signs for motorists and the release of any notices to the media and public. All notices to the media and public shall be approved by the employer prior to publication.”

PS A1.5.7 EXECUTION OF THE WORKS**PS A1.5.7.7 Liaison with traffic authorities**

Add the following additional clause: after the last paragraph:

“The contractor shall keep the provincial traffic police, the municipal traffic department and the Employer's Agent fully informed of proposed changes to the normal traffic flow and shall obtain the written approval of the Employer's Agent before bringing such proposed changes into operation.”

PS A1.5.7.14 Lane closures

Add the following new clause:

“The contractor shall be prohibited from accommodating traffic by means of a lane closure during an embargo period due to peak traffic conditions as detailed in table PS A1.5.7.14 below:

Table PSA 1.5.7.14 LANE CLOSURE EMBARGO PERIOD

Description of work prohibited	Embargo period
Lane closure	(i) Day before Good Friday (ii) Annual year-end shutdown period

The contractor shall programme the works in order to ensure that there shall be no lane closures during an embargo period, and shall make provision for the embargo period as specified in clause PS A1.2.7.1 Programme of the works.”

PS A1.5.7. EXECUTION OF THE WORKS**PS A1.5.7.3 Accommodation of traffic where the road is constructed in half or partial widths**

Add the following new paragraph:

“The length of the half or partial width construction sections where the traffic can only pass in one direction at a time shall not exceed 2.0 km. The number of one-way sections under construction at any one time shall not exceed two (2). “

PS A1.5.7.11 Temporary traffic control facilities**a) General**

Replace the contents of clause 1,5.7.11(a):

“The Contractor shall provide, erect and maintain the necessary traffic-control devices, road signs, channelization devices, barricades, warning devices and road markings (hereinafter referred to as traffic-control facilities) in accordance with these project specifications and as shown on the drawings and in the latest edition of the South African Road Traffic Signs Manual (Volume 2, Chapter 13 of the June 1999 edition), and shall remove them when no longer required.

The Contractor shall replace at his own cost any traffic-control facilities that have been damaged, lost or stolen. The Contractor shall also remove all bituminous or other foreign material from the traffic-control facilities in order to keep them clean and visible at all times. Traffic-control facilities that can no longer be cleaned effectively shall be replaced with new ones at the cost of the Contractor.”

Replace the first sentence of the third paragraph of clause 1503 with the following:

“The type of construction, spacing and placement of traffic-control facilities shall be in accordance with the latest edition of the South African Road Traffic Signs Manual (Volume 2, Chapter 13 of the June 1999 edition), these project specifications and the drawings.

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

(a) Traffic-control devices

Add the following new paragraph after the end of the second paragraph of subclause 1503(a):

“The reduction of the road width to a single lane carrying one-way traffic and controlled by “Stop / Go” boards shall be allowed only during daylight hours in clear weather conditions when work is actively taking place on the road, and such reduction of the road width shall always be accompanied by sufficient on-going watering to keep the dust down at all times on any trafficked gravel surfaces in order to maintain good visibility along the deviation. At least two lanes carrying two-way traffic shall be provided at all other times.”

Add the following new paragraph at the end of subclause 1503(a):

“The following shall be provided at the traffic control point at each end of each half width construction area where traffic signals are used:

- (i) An all-weather shelter of at least three-square metres area capable of accommodating two operators, complete with a clear window, a stable door, two chairs, lighting and a portable chemical toilet that shall be regularly maintained.
- (ii) A two-phased traffic signal system mounted on 3 m high steel poles, complete with all electrical wiring.

- (iii) Six sets of 2 x 400-watt metal halide floodlights (or LED equivalent), complete with all necessary electrical wiring, in order to light up the traffic control points between sunset and sunrise. Each set shall be mounted onto a 9 m high winched pole (steel or fibreglass) bolted to a galvanized steel stem buried to a depth of at least 1,5 m below ground level. The distance between sets of floodlights shall be such that a length of 200 m from the control point is satisfactorily illuminated.
- (iv) A generator and a standby generator of adequate capacity to ensure the continuous supply of sufficient power to operate the traffic signals, the floodlights and the lighting to the all-weather shelter.
- (v) A 20-metre length of moveable barrier of approved construction (for example the plastic New Jersey type), installed as traffic protection to the all-weather shelter facilities.
- (vi) A 3-metre length of plastic moveable barrier, fitted with a STOP sign facing the traffic brought to a halt and either a keep left or a keep right sign, as appropriate, facing the oncoming traffic. This barrier shall be provided across the lane at the traffic signal as a physical barrier when the traffic signal is red, in order to discourage the stationary vehicles from trying to enter the lane carrying the oncoming single lane traffic. This barrier shall be moved out of the way to allow the stationary vehicles to proceed once the traffic signal facing them changes from red to green.
- (vii) Portable communication devices suitable for the control of one-way traffic when half the width of the roadway is closed for construction purposes. The devices shall be capable of providing clear voice communication at a range of at least 5 km and each shall have two rechargeable battery packs allowing batteries to be changed *in loco* with minimal disruption to effective communication. Should the devices contain integral batteries, which require the complete unit to be placed on charge, then the contractor shall provide onsite at his own cost one extra such device to accompany each single device paid for in terms of the schedule of quantities."

PS A1.5.7.11(b) Channelisation devices

Delete the following the words from paragraph two:

"Delineators shall be specified in the Contract Documentation".

And replace with the following wording:

"Delineator and or traffic cones spacing must be set out as per Table 13.4 in Chapter 13 of Volume 2 of the SATSM."

Add the following new clause:

"PS A1.5.9. FAILURE TO COMPLY WITH PROVISIONS

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

A fixed penalty of R 5 000,00 per occurrence shall be deducted for each and every occurrence of non-compliance with any of the requirements of chapter 1.5 of the standard specifications and chapter 1.5 of the project specifications.

In addition, a time-related penalty of R 500,00 per hour over and above the fixed penalty shall be deducted for non-compliance in the rectification of any defects in the accommodation of traffic within the allowable time after the Employer's Agent has given an instruction to this effect. The Employer's Agent's instruction shall state the allowable time, which shall be the time in hours for reinstatement of the defects. Should the Contractor fail to adhere to this instruction, the time-related penalty shall be applied from the time the instruction was given."

Add the following new clause after clause A1.5.7.13:

“PS A 1.5.7.14 Protective Barrier Works to Close off the Existing Bridge Approaches

The contractor will be required to construct temporary protective barrier works to close off the approaches to the existing single-lane steel truss bridge after the new structure has been completed and opened to traffic. Although details of such temporary protective measures will only be finalised during the course of the contract, it is anticipated that such measures will comprise a combination of moveable reinforced concrete New Jersey barriers, or similar approved, placed transversely across the existing road in near proximity to each of the existing abutments. A provisional sum has been included in the schedule of quantities for this work.”

PART C: MEASUREMENT AND PAYMENT

Add the following new payment items:

Item	Unit
------	------

“PS C1.5.13 Protective barrier works to close off the approaches to the existing bridge:

- (a) Protective barrier works ordered by the engineerprovisional sum (Prov Sum)

Expenditure under this item shall be made in accordance with clause 6.6 of the General Conditions of Contract 2015.”

Item	Unit
------	------

“PS C1.5.14The provision and maintenance of safety equipment for use by the engineer:

- (a) Rotating amber flashing lights magnetically attached to vehiclesnumber (No)
- (b) ‘Construction Vehicle’ stickers with 100 mm high lettering
magnetically attached to vehiclesnumber (No)
- (c) High visibility reflective safety vestsnumber (No)
- (d) Hard hats.....number (No)

The unit of measurement for subitem C1.5.14(a) shall be the number of rotating amber flashing lights provided. The unit of measurement for subitem C1.5.14(b) shall be the number of ‘Construction’ stickers provided. The unit of measurement for subitem C1.5.14(c) shall be the number of high visibility safety vests provided. The unit of measurement for subitem C1.5.14(d) shall be the number of hard hats provided.

The tendered rates shall include full compensation for the supply and maintenance of the magnetically attachable rotating amber flashing lights, the magnetically attachable ‘Construction’ stickers, the high visibility safety vests and the hard hats for use by the engineer for the duration of the contract.”

CHAPTER 1.7: LOADING AND HAULING

PART A: SPECIFICATIONS

PS A1.7.2 DEFINITIONS

Add the following new clause below:

“Hauling shall not be measured separately for payment for materials obtained from commercial sources, and the rates tendered for such materials shall be fully inclusive of all haul required.”

PS A1.7.7 EXECUTION OF THE WORKS

Add the following new clause below:

“The penalty for overloading shall be R1,00 per excess kg, irrespective of the distance hauled.”

PART C: MEASUREMENT AND PAYMENT

Nil

CHAPTER 3.2: CULVERTS

PART A: SPECIFICATIONS

PS A3.2.5 MATERIALS

PS A3.2.5.2 Culvert materials

a).Prefabricated concrete pipe culverts units

Insert the following paragraph below the second paragraph:

“All pipes shall be spigot and socket pipes with rubber rings to the manufacturer’s specification.”

PART C: MEASUREMENT AND PAYMENT

Nil

CHAPTER 3.3: CONCRETE KERBING AND CHANNELING, ASPHALT BERMS, CHUTES, DOWN PIPE AS WELL AS CONCRETE, STONE PITCHED AND GABION LININGS FOR OPEN DRAINS**PART A: SPECIFICATIONS****PS A3.3.1 SCOPE**

Add the following new clause to the end of clause A3.3.1

“This section also includes for the construction of the concrete paved sidewalks, including the length of sidewalk along the bridge deck.”

PS A3.3.5.2 MATERIALS**(e) Bedding material**

Replace the clauses under A3.3.5.2(e) with:

“For this project, all kerbs shall be bedded on a 300 mm wide x 75 mm thick foundation of class C12/15-37.5 (formerly Class 15/40) concrete in accordance with drawing SD 0701/A.”

PS A3.3.7 EXECUTION OF THE WORKS**PS A3.3.7.1 Drainage Structures****PS A3.3.7.1(b) Prefabricated concrete kerbing and channelling**

Add the following new clause below paragraph 5:

“This cast in situ concrete support behind the kerbs shall be provided in the form of a continuous backing fillet along the full length of the back of the kerb (as shown on drawing SD 0701/A, except that the backing shall be continuous and the height of the backing shall be 150 mm).”

PS A3.3.7.1.h) Concrete open lined drains

Add the following new clauses below paragraph 4:

“Unless shown otherwise on the drawings, cast in situ channels shall be provided with shrinkage joints spaced a maximum of 2m apart. Shrinkage joints shall be constructed so that shrinkage cracks are generated at the joints. Sections of channel which have cracked between shrinkage joints shall be removed and replaced by the contractor at his own cost.”

Add the following new subclauses to the end of clause A3.3.7

PS A3.3.7.3 Concrete sidewalks

“The sidewalks shall be constructed using C16/20-20 (formerly Class 20/19) concrete reinforced with welded steel mesh reinforcement (reference number 193).

The concrete to the sidewalk panels shall be placed in an alternating panel sequence with maximum panel length 4 m, the infill panels being placed at least 48 hours after the concreting of the initial panels.

A class U2 wood-floated broomed surface finish as described in subclause A13.2.7.2(b) shall be provided to the sidewalk surface.

Prior to placing the concrete to adjacent sidewalk panels, the cold joint between the panels shall be painted with a coat of approved bituminous emulsion containing 60% of pure bitumen by mass, as specified for concrete-lined V-drains on SD 0601/C.

Expansion joints 10 mm wide, sealed with a closed cell expanded polyethylene joint filler over the full panel

depth, shall be provided at 12 m intervals along the sidewalk, as specified for concrete-lined V-drains on SD 0601/C."

PART C: MEASUREMENT AND PAYMENT

C3.3.8 Cast in situ concrete and formwork:

Add the following payment items:

Item	Unit
"PS C3.3.8.4 Extra over subitems C3.3.8.1 (a) for concrete batched on site	cubic metre (m³)"

The unit of measurement for subitem PS C3.3.8.4 shall be the cubic metre of concrete batched on site. Payment under this item shall be made only in those instances where such batching on site has been specifically instructed by the Engineer.

The tendered rate for subitem PS C3.3.8.4 shall be additional to the respective rates tendered for items C3.3.8.1 (a), and shall include full compensation for all additional costs incurred as a result of batching the concrete on site, including for the preparation of mix designs and for all additional testing of materials and supervision required prior to and during the batching, transporting and placing processes in order to ensure that the concrete as placed is of the specified quality. The tendered rate shall also include full compensation for using labour-intensive construction methods to load all the constituent materials into the concrete mixer during the batching process."

Item	Unit
"PS C3.3.17 Inlet, outlet, transition and similar structures (typical designs):	
(a) Side inlet for concrete kerb-channelling combination, type S1 single splay, 2.55 m long, 1.22 m wide, 1.4 m height, C16/20-20 (formerly class 20/19) concrete, complete as shown on drawing no. SD 0703/A, excluding the downpipe and excluding the outlet structure at the bottom of the fill.....	Number (No)
(b) Outlet structure for 450 mm diameter downpipe, 230mm thick masonry walls on 200mm thick concrete slab, 1.15 m long, 1.2 m wide, 0.865 m height, C16/20-20 (formerly class 20/19) concrete, complete as shown on drawing no. SD 0406, including splitter block, excluding the downpipe and excluding stone pitching.	Number (No)
(c) Extra over subitems PS 3.3.17 (a) and (b) for concrete batched on site.....	Cubic metre (m ³)

The units of measurement of measurement for subitems (a) and (b) shall be the number of items as specified in the payment item description.

The tendered rate shall also include full compensation for procuring and furnishing all the materials, storing, handling and delivering the materials, for the erection, treatment, preparation and subsequent removal of any formwork necessary, for providing all plant and labour required, for mixing, transporting, placing, compacting and finishing the concrete as specified, and for installation and construction of the elements specified in the payment item description.

The tendered rate for subitem C3.3.17(c) shall be additional to the rates tendered for subitems C3.3.17(a) and (b), and shall include full compensation for all additional costs incurred as a result of batching the concrete on site, including for the preparation of mix designs and for all additional testing of materials and supervision required prior to and during the batching, transporting and placing processes in order to ensure that the concrete as placed is of the specified quality. The tendered rate shall also include full compensation for using labour-intensive construction methods to load all the constituent materials into the concrete mixer during the batching process."

Item**Unit****“PS C3.3.18 Trimming of excavations for concrete-lined open drains**

a) In soft material square.....metre (m²)

b) In hard material (irrespective of depth) square..... metre (m²)

The unit of measurement shall be the square metre of excavation trimmed to receive concrete lining.

The tendered rates shall include full compensation for all labour, plant, materials and other additional work and incidentals necessary for trimming the excavations for open drains to the standard of finish required for the construction of concrete linings.”

CHAPTER 4: EARTHWORKS AND PAVEMENT LAYERS: MATERIALS**CHAPTER 4.1: BORROW MATERIALS****PART A: SPECIFICATIONS****PS A4.1.7 EXECUTION OF THE WORKS****PS A4.1.7.2 Borrow pit and quarry operations****(b) Classes of excavation****(ii) Intermediate excavation**

Add the following to the end of subclause A4.1.7.2(b)(i):

“No distinction shall be made between soft and intermediate excavation, and all intermediate excavation shall be classified and measured and paid for as if it is soft excavation.”

(iii) Hard excavation

Delete both paragraphs of subclause 3303(a)(iii) and replace them with the following:

“Hard excavation shall be classified as that material remaining in cut and borrow which, after every reasonable endeavour has been made to remove it as intermediate material, can only be removed by drilling and blasting.”

(e) Removal and conservation of topsoil.

Delete the contents in the first paragraph and Insert the following paragraph:

“The topsoil to be stockpiled shall be placed between the road and the physical borrow pit area so as to provide a temporary visual screen in front of the borrow activities. The topsoil shall not be stockpiled for longer than 9 months, nor shall the stockpile be higher than 2,5 m.”

(g) Unproclaimed private access roads

Add the following sub-clause to A4.1.7.2:

“The Contractor is responsible for proper maintenance of haul roads in cases where the spoil material to borrow pit areas has to be transported over secondary, tertiary, private or access roads. At the completion of activities in borrow pits or spoil sites, haul roads shall be restored to their original state and to the satisfaction of the Engineer.

Expropriation of borrow pits on private property by the Employer, will include access roads to the borrow pits. However, the Contractor is fully responsible for negotiating details of the right of access to the borrow pits with the private owners as well as for the building, maintenance and later removal of all access roads.

No additional payment will be made for this work and full remuneration will be deemed to be included in the tendered rates for the various items where the material is to be used.”

CHAPTER 4.2: CUT MATERIALS**PART A: SPECIFICATIONS****PS A4.2.1 SCOPE**

Add the new paragraph to the second bullet:

“The Contractor shall note the restricted nature of the earthworks in general, and where the widening of existing cuts and fills are required in particular. No extra over rates for widening of cuts, widening of fills or for working in restricted areas shall be applicable to this Contract.”

PS A4.2.7 EXECUTION OF THE WORKS**PS A4.2.7.1 Excavation operations****(h) Excavation of material in cuttings**

Add the following:

“Cut and borrow to fill will be measured under Items C4.2.3 and C5.2.2. 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.”

(k) Selection and use of the cut material

Add the following new paragraphs to the end of subclause A4.2.7.1(k):

“The contractor shall make all reasonable endeavours to select diligently materials in the cuts suitable for deployment in the construction of the fills.

Any unsuitable material encountered shall be hauled to the designated spoil site.

The engineer reserves the right to alter the contractor's programme and method of operation to achieve this objective.”

PART C: MEASUREMENT AND PAYMENT**General directions**

No extra payment will be made due to the restricted nature of earthworks done under the Contract. Allowance for all such extra over costs arising from work executed in restricted areas (including but not limited to widening of cuts and excavations in existing fills and road layers) shall therefore instead be included in the rates tendered for the other items scheduled with reference to chapters 4, 5, 12.10 and 13.1 of the COTO Standard Specifications for Road and Bridge Works for State Road Authorities (Draft Standard (DS) October 2020).

Delete item C4.2.6 which shall not apply to this contract.

CHAPTER 5: EARTHWORKS AND PAVEMENT LAYERS: CONSTRUCTION

CHAPTER 5.2: FILL

PS A5.2 FILLS

PS A5.2.7.4 Widening of fills

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.”

CHAPTER 5.3: ROAD PAVEMENT LAYERS**PS A5.3.1 SCOPE**

Add to Clause A5.3.1 the following:

“The Contractor shall note the restricted nature of the earthworks in general, and where the widening of existing cuts and fills are required in particular. No extra over rates for widening of cuts, widening of fills or for working in restricted areas shall be applicable to this Contract.”

PS A4.1.5.6 Requirements for types G7 to G9 materials for the pavement layers

Add the following sentence at the end of this clause:

“The G7 and G9 material specified in this Contract shall confirm to the requirements of Table A4.1.5-3, except that the G7 and G9 materials shall comply with a nominal maximum size of 63 mm.”

PART C: MEASUREMENT AND PAYMENT

Amend the description for payment item C5.3.2.1 to read as follows:

Item	Unit
“PS C5.3.2.1 Construction of layers using conventional construction methods:	
(l) Upper subbase gravel layer (chemically stabilised) (200 mm thickness) compacted to 96% of MDD	cubic metre (m ³)
(n) Gravel base layer (chemically stabilised), (150 mm thickness) compacted to 98% of MDD	cubic metre (m ³)”

CHAPTER 5.4: STABILISATION

PART A: SPECIFICATIONS

PS A5.4.5 MATERIALS

Clarification on A5.4.5.3 Cementitious stabilising agents

PS A5.4.5.3 Cementitious stabilising agents

“On this contract, only the use of the following cements shall be permitted for purposes of cement stabilization, and shall be described as such in the relevant payment item:

CEM III/A 32,5 N

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

PS A5.4.8 WORKMANSHIP

PS A5.4.8 4 Tolerances

b) Uniformity of cementitious stabilisation

Add the following new paragraph:

“Specified limits for cementitious binder content

Ls (lower specification limit) = 70% of specified cementitious binder or as ordered.

Minimum sample size (n) per lot as per Table A20.1.7-9 is 10 irrespective of road category”.

CHAPTER 8: REPAIR EXISTING LAYERS

CHAPTER 8.1: PRIME COAT

Nil

CHAPTER 9: ASPHALT LAYERS

CHAPTER 9.1: ASPHALT LAYERS

A9.1.7 EXECUTION OF THE WORKS

A9.1.7.1 Production of the mixture

PS A9.1.7.4 Transporting of asphalt

Add the following paragraphs to the end of subclause A9.1.7.4:

“The contractor shall ensure that trucks used to haul the asphalt are not overloaded and that the legal axle loads are not exceeded. Before any asphalt can be transported, the contractor must provide the engineer with the certified carrying capacity of each truck intended for the purpose of transporting the mix. The contractor shall provide the engineer with a weighbridge ticket before discharging into the paver hopper.

Any truck that is overloaded shall not be allowed to discharge its load and shall return to the depot/batching plant for adjustment of the load. In addition, a penalty shall be applied for the overload.”

CHAPTER 11: ANCILLARY ROAD WORKS SURFACE TREATMENTS

CHAPTER 11.2: NON-STRUCTURAL GABIONS

PART A: SPECIFICATIONS

PS A11.2.5 MATERIALS

PS A11.2.5.2 Materials

PS A11.2.5.2 f) Geotextile behind and below the gabions

Add the following new paragraph:

"In the case of the filter fabric used to line the earth faces of gabion boxes or mattresses constructed under this contract, the following properties shall apply:

Penetration load (minimum)	3500 Newton
Puncture resistance (maximum)	15 mm
Water percolation (minimum)	20 litre / m ² / sec"

CHAPTER 11.6: ROAD SIGNS

PS A11.6.5 MATERIALS

PS A11.6.5.2 Materials

(g) Retro-reflective material

Add the following to the end of the third last paragraph of subclause A11.6.5(g):

“The contractor shall provide proof to the engineer that such proposed Class III retro-reflective commercial products have been used generally and successfully in South Africa during the previous three years. Class I and III retro-reflective materials shall be warranted against any abnormalities as described in SANS 1519-1 for 7 and 10 years respectively. The contractor will be required to produce lifespan guarantees as well as SANS approved certificates with regard to the retro-reflective material provided.”

PS A11.6.7.3 Road sign faces and painting

(e) Application of retro-reflective material

Add the following to the beginning of subclause A11.6.7.3(e):

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

PS A11.6.7.5 Erecting Road signs

(b) Excavation and backfilling

Add the following to the end of the second paragraph of subclause A11.6.7.5:

“Sign posts shall be fixed in concrete footings only in those instances specifically instructed by the engineer.”

CHAPTER 11.7: ROAD MARKINGS AND ROAD STUDS

PART A: SPECIFICATIONS

PS A11.7.7 EXECUTION OF WORKS

PS A11.7.7.3 Applying the markings.

Add the following paragraph:

“The machine shall always operate in the direction of the traffic when applying lane markings.”

PS A11.7.7.5 Installation of road studs

Add the following paragraph to the end of sub clause A11.7.7.5:

“On any particular day, any existing road studs on that portion of the road programmed for reconstruction on that day shall be removed immediately prior to commencement of the reconstruction operation.”

PS A11.7.7.6 Protection

Add the following paragraph to the end of sub clause A11.7.7.6:

“No additional payment shall be made for the provision of such protection and the rates tendered for the various road marking payment items shall be deemed to include full compensation for the provision of all protective measures required.”

CHAPTER 11.8: LANDSCAPPING AND PLANTING PLANTS

Nil

CHAPTER 12: GEOTECHNICAL APPLICATIONS**CHAPTER 12.1: PILING****PART A: SPECIFICATIONS****PS A12.1.7 EXECUTION OF THE WORKS****PS A12.1.7.7 Cast insitu concrete piles**

Add the following new subclause to the end of clause A12.7.7

“(k) Cross-hole Sonic Logging (CSL) testing and base integrity testing**(i) Calibration piles**

Before commencing the augering or boring of the pile shafts for the substructures, the contractor shall construct a 5,0 m long calibration pile of the same pile type, diameter, concrete mix design and concrete strength, similar reinforcing layout, and by the same proposed method of construction as for the permanent piles for the bridge. The location of the calibration pile shall be agreed with the engineer.

(ii) Pile integrity test methods

Integrity testing by means of Cross-hole Sonic Logging (CSL) shall be performed on all augered or bored piles.

This method is used to verify the integrity of the pile shaft, particularly in the case of larger diameter piles.

The purpose of the integrity testing is to prove that the construction techniques used in constructing the piles are satisfactory in terms of quality assurance by checking for necking of the concrete in the pile shafts, checking the concrete cover to the reinforcement, checking for honeycombing, grout loss, inclusions and segregation of aggregates, and checking for large cracks or voids.

By sending ultrasonic pulses through the pile concrete from one probe to another (the transmitter and receiver probes are located in parallel tubes within the pile), the CSL procedure checks the pile structural integrity and establishes the extent and location of defects, if any. At the receiver probe, pulse arrival-time and signal strength are both affected by the concrete. For equidistant tubes, uniform concrete yields consistent arrival times with reasonable pulse wave speed and signal strengths. Non-uniformities such as contamination, soft concrete, honeycombing, voids or inclusions exhibit delayed arrival times with reduced signal strength.

In addition, base integrity testing shall also be carried out on all augered or bored piles, in order to establish the quality of the contact interface between the pile base and the end bearing bedrock by carrying out core drilling via the CSL access tubes.

(iii) Prerequisites for pile cap construction

CSL testing of the calibration pile must be carried out either before or at the same time as the CSL testing on the first bridge substructure permanent pile is undertaken.

The results of the CSL and base integrity testing of the piles for each pile cap must be evaluated and submitted to the engineer for approval, and the engineer's approval thereof obtained, before any work on the pile cap may commence.

(iv) Qualifications of the CSL consultant

The CSL consultant shall have a Registered Person with the relevant CSL integrity testing competency supervising the testing and interpretation of results (the Registered Person shall be registered in the category “Professional” by the Engineering Council of South Africa (ECSA) in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000)). The CSL consultant shall be an independent testing agency with at least three years' experience in CSL testing. The consultant's qualifications and the specifications for the equipment to be used shall be submitted to the engineer for approval, and the engineer's approval thereof obtained, prior to commencing the augering or boring of the pile shafts.

(v) Equipment requirements for CSL testing

A Cross-hole Analyser (CHA) meeting the following minimum requirements shall be provided:

- (1) Computer based CSL data acquisition system for the display of signals during data acquisition, with a minimum 12-bit A/D converter with a sampling frequency of at least 500,000 Hz, and for the recording of all pulse signals for full analysis and individual inspection.

Note: Converting signals with low noise using high A/D resolution and sampling rates is important in order to obtain quality data and allow proper full data interpretation.

- (2) Ultrasonic transmitter and receiver probes capable of producing records at a minimum frequency of 50,000 Hz with good signal amplitude and energy through good quality concrete. The probes shall be less than 28 mm in diameter and shall freely descend through the full depth of properly installed access tubes in the piles.
- (3) Two depth sensors to independently determine transmitter and receiver probe depths.
- (4) Triggering of the recording system time base with the transmitted ultrasonic pulse.

(vi) CSL access tube preparation

The access tubes in each pile are indicated on the drawings. Every pile shall be equipped with access tubes to allow access for the CSL testing probes and the subsequent core drilling shafts for the base integrity testing.

Mild steel tubes of 89 mm nominal outside diameter x 3 mm nominal wall thickness are specified for each pile. Mild steel has been specified to ensure robustness of the tubes. Also, long wait times for the CSL testing process increase the probability of tube debonding in the case of PVC tubes, which is detrimental to the CSL test.

The tubes shall be of circular cross-section with a regular internal diameter, internally smooth and free of defects and obstructions, including at any tube joints, to permit the free, unobstructed passage of the probes and the subsequent core drilling shafts. The tubes shall be watertight and free from corrosion with clean internal and external faces to ensure a good bond between the concrete and the tubes. The tubes may be extended with watertight mechanical couplings. Duct tape or other wrapping material to seal the joints and butt welding of the joints are prohibited. The tubes shall be installed by the contractor such that the CSL probes and the subsequent core drilling shafts will pass through the entire length of the tube without binding. The contractor shall also ensure that the access tubes are plumb, and shall verify that unobstructed passage of the probes is achievable before the CSL consultant arrives to commence the CSL testing.

The contractor shall fit the tubes with a watertight shoe on the bottom and a removal cap on the top, and shall secure the tubes firmly to the interior of the reinforcement cage at regular intervals not exceeding 0,5 m in such a way as to ensure that they will not be displaced during the subsequent cage installation, the filling of the tubes with water, and the concrete placing operation.

The contractor shall install the tubes uniformly and equidistantly around the circumference of the interior of the reinforcement cage such that the full length of each tube is spaced parallel to and at the maximum distance possible from each adjacent tube. The tubes shall be spaced as far as possible away from the main axial reinforcing steel.

The bottom of each tube shall be located 500 mm above the bottom of the drilled shaft.

The top of each tube shall be located between 1,0 m and 1,3 m above the top of pile level or the level of the ground surface surrounding the drilled shaft, whichever is higher.

The contractor shall take particular care to ensure that the tubes are not damaged or displaced during the installation of the reinforcement cage.

Prior to commencing pile concrete placing, the contractor shall fill the pile access tubes with clean fresh water to test that they are indeed watertight, and shall take remedial action, where necessary, to ensure that this is the case.

The contractor shall ensure that the watertight tubes are all filled with water immediately before the pile concrete placing commences, and shall keep the tubes filled with water (to prevent debonding from the surrounding pile concrete due to differential temperatures) for the entire period until the core drilling through the tubes for the base integrity testing commences (such core drilling shall commence only after the pile has been accepted by the engineer on the basis of the CSL testing). The tops of the access tubes shall be capped to prevent debris from entering the tubes. When removing the caps from the tubes, the contractor shall not apply excessive torque, hammering or other stresses which could break the bond between the tube and the concrete.

(vii) CSL testing – restrictions on the commencement of the testing process

The contractor shall arrange for the testing of the pile to take place no sooner than 3 calendar days after placement of all concrete in any pile, but within 10 days after placement and prior to loading in the case of test piles, or within 45 days after placement in the case of the permanent piles for the substructures.

Note: Because concrete strength and quality generally increase as the concrete cures, longer wait times are usually desirable, particularly where minimum pulse wave speeds are specified, or where a reduction in result variability is sought either between different piles or at different depths within a single pile.

(viii) CSL test procedures

Prior to CSL testing, the contractor shall provide the engineer and the CSL consultant with a record of the installation date, the top and bottom elevations, and the length of each drilled shaft. The access tubes shall be clearly labelled for identification by the CSL consultant.

The CSL testing shall be performed with the transmitter and receiver probes in the same horizontal plane in parallel tubes unless test results indicate potential defects, in which case the questionable zone may be further evaluated with angled tests (source and receiver vertically offset in the tubes). Using the labelling system established for the tubes, the CSL testing shall be performed between all adjacent perimeter access tube pairs and across at least two major diagonal tube pairs within the pile. In the event that defects are detected in piles with more than four tubes, additional logs in other diagonal tube pairs may be required to estimate the extent of the defects.

The probes shall be lowered from the top, effectively measuring the access tube lengths. The probes shall then be pulled simultaneously, taking CSL measurements at intervals of 50 mm or less from the bottom to the top of the pile, effectively testing the full length of the access tubes. Defects indicated by late pulse arrival times and significantly lower amplitude / energy signals shall be reported to the engineer immediately. Additional tests such as offset elevation CSL testing may be required by the engineer in order to further evaluate the extent of such defects. If debonding between the access tube and the concrete is indicated by the CSL test results, an alternative test method will be required to determine the integrity of the concrete in the deboned region.

Note: In cases where defects are detected, additional tests or analysis options may include CSL tomography, Gamma-Gamma nuclear density logging, sonic echo or impact response tests, high strain dynamic pile testing, static load testing, or concrete coring. If the drilled shaft is cored, an accurate log of the cores shall be kept, including depth and core recovery, and the core and coring logs shall be properly identified and handed over to the engineer.

(ix) CSL test results

The results of the CSL testing and evaluation, including the interpreted findings, conclusions and recommendations of the CSL consultant, shall be presented to the engineer in a written report within five working days of completion of testing. The report shall include the presentation of the CSL logs for all tested tube pairs, including:

- (1) Presentation of the traditional signal peak diagram as a function of time plotted versus depth.

- (2) Computed initial pulse arrival time or pulse wave speed versus depth.
- (3) Computed relative pulse energy or amplitude versus depth.

A CSL log shall be presented for each tube pair. Defect zones, if any, shall be indicated on the logs and their extent and location discussed in the report text. Defect zones are normally defined by an increase in arrival time of more than 20% relative to the arrival time in a nearby zone of good concrete, indicating a slower pulse velocity.

Note: Because the tubes might not be perfectly straight or even parallel, a fixed absolute limit of a wave speed value cannot be used for evaluation. It should also be noted that if the referenced good concrete exceeds the specifications, then concrete with a local 20% wave speed reduction might still exceed the specifications.

The log for each tube pair shall be clearly identified and shall be oriented relative to the structure.

(x) Base integrity testing

In order to establish the quality of the contact interface between the pile base and the end bearing bedrock, base integrity testing shall be performed on all augered or bored piles.

Base integrity testing shall be carried out only after the pile has been accepted by the engineer on the basis of the CSL testing, since not only could the length of the access tube interior be damaged by the drill shafts during the core drilling process but, more importantly, the tube will no longer be watertight (to prevent debonding) after drilling through the end cap at the bottom of the tube.

Base integrity testing shall be accomplished in the following manner:

- (1) The nominal 89 mm outside diameter tubes for the Cross-hole Sonic Logging (CSL) testing shall be installed such that the bottom of each tube is located 500 mm above the bottom of the drilled shaft. The base of each tube shall be sealed square with a watertight seal.
- (2) NX (55 mm) diameter cores shall be drilled within the 89 mm diameter tubes through the remaining 500 mm of pile concrete and for a distance of 1200 mm into the bedrock below the base of the pile. Each core shall be carefully retrieved from the drill string lengths and the datum levels recorded. The cores retrieved shall be marked and carefully placed inside plastic sheaths such that the actual condition of the interface between pile and bedrock is not disturbed. The cores shall be logged by a suitably qualified person, who shall be appointed subject to the approval of the engineer. The core logging shall be done in general accordance with the "Guidelines for soil and rock logging" compiled by the Geotechnology Workshop and published by SAICE in 1990. The cores shall be stored in a core box for later inspection.

(xi) Evaluation of the CSL test results and the base integrity testing by the engineer

The contractor shall not perform any load testing and shall not proceed with any other construction work associated with the pile until the pile has been accepted by the engineer on the basis of the both the CSL testing and the subsequent base integrity testing.

The engineer shall have five working days after receipt of the CSL test results to evaluate the results and determine whether the pile construction is acceptable or not with respect to the CSL testing.

The engineer shall also have three working days after receipt of the drilled cores from the base integrity testing to evaluate the cores and determine whether the pile construction is acceptable or not with respect to the base integrity testing.

If the engineer determines that the pile is not acceptable, the pile must be cored, repaired or replaced by the contractor at the contractor's own expense and no extension of time for Practical Completion will be granted in such circumstances.

(xii) Grouting of the access tubes

After all, CSL testing and the subsequent base integrity testing has been completed, and after acceptance of the pile by the engineer, the contractor shall install grout tubes extending to the bottom of each hole cored via an access tube, and shall fill each such cored hole and access tube with non-shrink grout of at least 30 MPa strength, with the introduction of the grout commencing at the bottom of the hole then continuing in an upward direction to the top.”

CHAPTER 13: STRUCTURES**CHAPTER 13.1: FOUNDATIONS****PART A: SPECIFICATIONS****PS A13.1.7 EXECUTION OF THE WORKS****PS A13.1.7.2 Excavation****(g) The safety of excavations**

Add the following to the end of the first paragraph of subclause A13.1.7.2(g):

"The contractor shall note that the bridge and culverts substructures are founded within a natural river drainage course and the water table will therefore be affected by the river level. The necessary precautions taken by the contractor to safeguard the stability and safety of the excavations and adjacent structures shall therefore take particular account of any partially saturated, fully saturated or submerged soil conditions prevailing, and the effects of fluctuations in the stream level and velocity."

Add the following to the end of the final paragraph of subclause A13.1.7.2(g):

"The contractor's attention is also specifically drawn to the content of the Occupational Health and Safety Act and the corresponding Construction Regulations and all other safety codes and specifications referred to in the said Construction Regulations, and to Part E: OHSA 1993 Health and Safety Specification in section C3.3 Particular Specifications of these project specifications.

The contractor shall also note that the excavations for the new north abutment substructure may require that a lateral earth support system be installed to retain the existing bridge approach fill carrying the existing carriageway.

The design of the lateral earth support system shall be carried out by a Registered Person with the relevant competency in the design of lateral earth support systems (the Registered Person shall be registered in the category "Professional" by the Engineering Council of South Africa (ECSA) in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000)). The same Registered Person shall inspect and approve the lateral earth support system as installed.

The engineer may require the contractor to submit to him for review and comment the design criteria, calculations, specifications and detail drawings of the lateral earth support system. Such submitted design criteria, calculations, specifications and detail drawings of the lateral earth support system shall bear the signature of the aforementioned Registered Person, and shall be submitted by the contractor to the engineer at least 14 days before the engineer's review and comment is required.

Such review and comment by the engineer shall not be made available before the contractor has provided a satisfactory written response to any queries the engineer may have with respect to the design criteria, calculations, specifications and detail drawings for the lateral earth support system.

The lateral earth support system shall be installed in accordance with the drawings and specifications prepared and signed by the aforementioned Registered Person, incorporating such modifications as may result from the engineer's review and comment.

Provision has been made in terms of item C13.1.23 of the schedule of quantities for the contractor to procure such design of a special lateral earth support system, and for the inspection and approval by the Registered Person of the system as installed."

PS A13.1.7.6 Foundation Fill

Add the following at the end of the sixth paragraph of clause A13.1.7.6:

"Concrete blinding shall extend 100 mm beyond the horizontal dimensions of all formed bridge substructure

pile caps, in order to facilitate the placing of the formwork, unless otherwise directed by the engineer. The concrete blinding shall be constructed accurately to the final levels of the underside of each such foundation.”

CHAPTER 13.2: FALSEWORK, FORMWORK AND CONCRETE FINISH**PART A: SPECIFICATIONS****PS13.2.5 MATERIALS****PS A13.2.5.1 General**

Delete the second paragraph of sub clause A13.2.5.1 and replace with the following new paragraph:

“Only rigid materials made from steel or sturdy timber planks shall be used to support and form the deck diaphragm soffits above the abutment beam seats. Under no circumstances shall either unstabilised or stabilised soil be used for this purpose. The contractor shall submit details to the engineer of his proposed diaphragm soffit falsework and formwork above the abutment beam seats, which shall also clearly indicate the proposed method of extracting the formwork on completion from the relatively narrow confines between the beam seat and the diaphragm soffit.”

PS A13.2.3 GENERAL

In the first line at the start of the first paragraph of clause A13.2.3, delete the words:

“Notwithstanding approval given by the engineer for the design and drawings prepared by the contractor for the falsework and formwork”

and replace them with the following:

“Notwithstanding any review and comments given by the engineer with respect to the design criteria, calculations, specifications and drawings prepared by the contractor for the falsework and formwork”.

Add the following to the end of the first paragraph of clause A13.2.3:

“The contractor’s attention is also specifically drawn to the content of the Occupational Health and Safety Act and the corresponding Construction Regulations and all other safety codes and specifications referred to in the said Construction Regulations, and to Part E: OHS 1993 Health and Safety Specification in section C3.3 Particular Specifications of these project specifications.”

PS A13.2.4 DESIGN BY CONTRACTOR / PERFORMANCE BASED SYSTEMS**PS A13.2.4.1 General**

Add the following to the end of the second paragraph of subclause A13.2.4.1:

“Such review and comment by the engineer shall not be made available before the contractor has provided a satisfactory written response to any queries the engineer may have with respect to the design criteria, calculations, specifications and detail drawings for the falsework and formwork.

The contractor shall note that the substructure foundations are founded close to or below the water table within a natural drainage course. The design of all falsework and formwork shall therefore take particular account of any partially saturated, fully saturated or submerged soil conditions prevailing, the effects of fluctuations in the river level and velocity, and the effects of the obstruction to the river channel caused by such falsework and formwork.”

PS A13.2.4.2 Falsework

Add the following paragraphs to the end of subclause A13.2.4.2:

“The contractor shall also make provision in the design of the bridge deck falsework for the temporary support of the bridge deck across the Nseleni river channel.

The contractor shall also, should he so require, make provision in the design of the bridge deck falsework for traffic windows to allow access through the falsework for plant, vehicles and personnel."

PS A13.2.7 EXECUTION OF THE WORKS

PS A13.2.7.1 Falsework

Add the following new paragraph to the end of subclause A13.2.7.1:

"Before any loading is applied to the falsework (other than the self-weight of the falsework and the necessary loads applied during the erection thereof), all the falsework, including any access falsework, shall be inspected by the Registered Person referred to in subclause A13.2.4, who shall sign off the falsework erection, confirming in writing that it has been erected in accordance with the prepared signed drawings and specifications and that it is capable of safely resisting the loads that will be imposed during the construction of the Permanent Works. Where the construction of the bridge substructures and superstructure takes place in stages, this process shall be carried out with respect to the falsework erected for each such stage."

PS A13.2.7.3 Removing the Falsework and Formwork

(a) Considerations for falsework and formwork removal

Add the following new paragraph at the start of clause A13.2.7.3(a):

"The contractor shall provide the engineer with at least 48 hours written notice of his intention to remove falsework or formwork from any structural element."

PS A13.2.7.4 Remedial Treatment and Formed Surfaces

(b) Repairs to surface defects

Add the following new paragraph at the start of subclause A13.2.7.4(b):

"Irrespective of the depth of removal of defective concrete for the purpose of carrying out surface repairs, such defective concrete shall be removed in such a way that feather edges do not form along the perimeter of the area to be repaired, and the contractor shall cut back the concrete further in order to remove any feather edges that do form."

Add the following before "etc" in the second paragraph of subclause A13.2.7.4(b):

"Proprietary patching products applied in accordance with the manufacturer's specifications,"

CHAPTER 13.3: STEEL REINFORCEMENT**PART A: SPECIFICATIONS****PS A13.3.7 EXECUTION OF THE WORKS****PS A13.3.7.1 Storing the materials**

Add the following to the end of clause A13.3.7.1:

“The contractor shall prepare well-drained areas cleared of vegetation for storing the reinforcing steel, which shall be kept at least 300 mm above ground level at all times. Such areas shall be maintained in a well-drained state and kept clear of vegetation for as long as they are used to store the reinforcing steel.”

PS A13.3.7.4 Cover and supports

Add the following new paragraph at the end of sub clause A13.3.7.4:

“Concrete cover block support shall be provided at all corners and along all edge reinforcement of a structural element at even spacing intervals not exceeding those specified below. Between edges, concrete cover block support shall be provided to the sides and soffits of structural elements so as to form an evenly spaced orthogonal grid at spacing intervals not exceeding those specified below. Where smaller bars effectively support larger bars between support points, the maximum spacing interval between support points shall be determined by the diameter of the smaller bar.

Nominal diameter of bar supported (mm)	Maximum spacing interval (mm)	
	<u>High tensile steel</u>	<u>Mild steel</u>
8	500	400
10 and 12	600	500
16 and 20	1200	1000
25 and 32	1800	1500

Notwithstanding the maximum spacing intervals specified above, these spacing intervals shall be reduced where necessary to ensure that the tolerances specified in subclause A13.3.8.4 are met, or where particular circumstances require a closer cover block spacing to be used.”

PS A13.3.8 WORKMANSHIP**PS A13.3.8.1 Surface condition**

Add the following new paragraph to the end of clause A13.3.8.1:

“Within 24 hours after placing concrete, the contractor shall have cleaned off all concrete spatter from the protruding starter bars and clips and any other affected reinforcement, and shall present the resulting product to the engineer for approval before he will be permitted to commence fixing the shuttering and reinforcement to the next section. The contractor’s attention is drawn to the fact that, for the concrete mixes used on this contract, this spatter is extremely hard to remove if not done within 24 hours of placing the concrete.”

CHAPTER 13.4: CONCRETE**PART A: SPECIFICATIONS****PS A13.4.5 MATERIALS****PS A13.4.5.1 Cementitious binder****(a) Cement**

Add the following after the second paragraph of subclause A13.4.5.1(a):

“The type of cement to be used in any concrete element shall take into account the environmental conditions and durability requirements at the location of the site of the Works, and shall be selected according to Table A13.4.5.1 below, subject to the approval of the engineer.

In the case of the bridge structure to be constructed in terms of this contract, the applicable condition of exposure in Table A13.4.5.1 for the selection of the type of cement shall be “2. SEVERE”, except that the effective final composition of the cement as used in the manufacture of the concrete shall not fall within the CEM I category.

Table A13.4.5.1

SELECTION OF CEMENT TYPE

Condition of Exposure	Placing Temperature of Concrete	Type of Cement***
1. MODERATE Concrete surfaces above ground level and protected against alternately wet and dry conditions caused by water, rain and sea-water spray	< 20°C	CEM I CEM II A – S CEM II B – S
	20°C - 30°C	CEM I CEM II A – S CEM II B – S CEM II A – V (or W) CEM II B – V (or W) CEM III A
2. SEVERE Concrete surfaces exposed to hard rain and alternatively wet and dry conditions	< 20°C	CEM I CEM II A – S CEM II B – S
	20°C - 30°C	CEM I CEM II A – S CEM II B – S CEM II A – V (or W) CEM II B – V (or W) CEM III A
3. VERY SEVERE Concrete surfaces exposed to aggressive water, sea-water spray or a saline atmosphere	< 20°C	CEM II B – S CEM II B – V CEM III A
	20°C - 30°C	CEM II B – S CEM II B – V CEM III A
4. EXTREME Concrete surfaces exposed to the abrasive action of sea water or very aggressive water	< 20°C	CEM II B – S CEM III A
	20°C - 30°C	CEM II B – S CEM III A

*** Notes to Table A13.4.5.1:

1. Where the effective final composition of the cement as used in the manufacture of the concrete falls within the CEM I category, such concrete shall be used only in environments where the concrete is not prone to chloride attack, i.e., in inland drier environments. In the case of the bridge structure to be constructed in terms of this contract, the effective final composition of the cement as used in the manufacture of the concrete shall not fall within the CEM I category.
2. Where a strength class of 42,5 or greater is required, and the placing temperature of concrete is between 20°C and 30°C, a set and hydration retarding admixture shall be used where required so as not to exacerbate bleeding.

With the exception of the standard SABS approved cement blends supplied by the primary cement producers, the blending of CEM I and extenders shall not be permitted unless specifically approved by the engineer on the basis of an acceptable quality assurance procedure. Under no circumstances, however, shall the blending of cements on the site be permitted.

Furthermore, the blending of cements shall be permitted only if the proportion of extender in each of the original unblended cements is known and the final blended cement product conforms to the requirements of SANS 50197-1 for the proportion of extender used."

PS A13.4.5.2 Aggregates

(b) Fine aggregates

Add the following new paragraphs to the end of clause 13.4.5.2:

- "
- (iv) The maximum chloride content of the fine aggregate for concrete, and the test method used to measure the chloride content, shall be as specified in Table 1 of SANS 1083, except that where the concrete is situated in a chloride environment the value for 'normal reinforced concrete' shall be reduced from 0,03% to 0,01% by mass of aggregate.

In the case of the reinforced concrete for the bridge structure to be constructed under this contract, the maximum chloride content of the fine aggregate for concrete shall be 0,01% by mass of aggregate."

PS A13.4.5.3 Water

Add the following new paragraphs to the end of clause 13.4.5.3:

"Water for curing concrete shall not contain impurities that will result in discolouration or etching of the surface of the concrete.

Water shall not be added on site to ready-mixed concrete in order to improve the workability of the concrete prior to placing. All concrete delivered to or batched on the site shall be checked for workability using the slump cone test, and slump measured outside of the limit set from the design mix shall be rejected."

PS A13.4.5.4 Admixtures

Add the following to new paragraphs to subclause 13.4.5.4:

"Only admixtures of the type that do not increase the water content of the mix will be considered by the engineer. In addition, admixtures shall not be added on site to ready-mixed concrete to improve the workability of the concrete prior to placing.

Admixtures, if their use is allowed, shall comply with the following requirements:

- (i) Admixtures which have a retarding effect on the rate of hydration of the cement shall not be used when the concrete temperature is below 20°C.

- (ii) A retarding admixture shall be used if the temperature of a concrete mix using cement of strength class 42,5 or higher is between 20°C and 30°C, or where the ambient temperature is between 20°C and 30°C."

PS A13.4.7 EXECUTION OF THE WORKS

PS A13.4.7.12 Placing and Compaction

(b) General

Add the following new paragraphs to the end of clause 13.4.7.12:

"The contractor's attention is also specifically drawn to the content of the Occupational Health and Safety Act and the corresponding Construction Regulations and all other safety codes and specifications referred to in the said Construction Regulations, and to Part E: OHSA 1993 Health and Safety Specification in section C3.3 Particular Specifications of these project specifications.

The concreting operations for all bridge structure elements shall require careful planning, and sufficient concrete product and concreting resources such as labour, tools, equipment and plant shall be made available on each day of concreting to ensure that the concrete construction planned for that day is successfully achieved.

One month before the programmed date for the first element of bridge structure concreting, the contractor shall be required to submit to the engineer for his approval a detailed method statement fully covering the proposed concreting operations required to construct the bridge structure. The method statement shall, inter alia, include details of labour and supervision, tools and equipment (wheel barrows, spades, poker vibrators, hoists, baffled chutes, downpipes, flexible drop chutes, etc.), plant (batching plant, concrete dumpers, cranes, pumps, etc.), production rates, ready-mixed concrete supplier details and proposed schedule of concrete delivery times (if ready-mixed concrete is to be used), sequence of construction, curing method to be used, contingency plans and health and safety obligations. Bridge structure concrete shall only be placed once the engineer is satisfied that every reasonable effort has been made by the contractor to ensure the success of the concrete placing operation. The approved method statement shall then apply to all other bridge structure concreting operations, and any amendments required to the approved method statement shall also be approved by the engineer prior to implementation."

PART C: MEASUREMENT AND PAYMENT

Add the following new payment item:

Item	Unit
"PS C13.4.15 Demolition and disposal of the existing steel bridge including guardrails on the bridge to a registered reclamation centre.....	Lump Sum

The unit of measurement shall be the lump sum.

The tendered lump sum shall include full compensation for the demolition and dismantling of the existing steel bridge, which shall be deemed to be of no value to the Employer, including all temporary works which may be necessary and shall include all costs associated with the transport over an unlimited haul distance, including abnormal loads if applicable, and the disposal of steel members to a registered reclamation centre or landfill site. The method and location of spoil is to be approved by the environmental consultant and client's H&S agent. The tendered rate shall also include full compensation for compliance with the Occupational Health and Safety Act and the 2014 Regulations, and shall also include any necessary measures to ensure no debris falls into rivers and for any debris that has fallen into rivers to be recovered."

CHAPTER 13.5: PRESTRESSING

PART A: SPECIFICATIONS

PS A13.5.7 EXECUTION OF THE WORKS

PS A13.5.7.3 post-tensioning

PS A13.5.7.3(b) Fabrication

Add the following to the end of the sixth paragraph of subclause A13.5.7.3 b):

“Vent pipes shall also be installed at all low points of the prestressing ducts to facilitate grouting.”

PS A13.5.7.3(e) Tensioning

PS A13.5.7.3 (e) (iii) Assembling the equipment, and safety precautions

Add the following paragraph at the end of subclause A 13.5.7.3 (e) (iii)

“The contractor shall also comply with his obligations for ensuring safety during the bridge deck post-tensioning operations in terms of Part E: OHSA 1993 Health and Safety Specification in section C3.3 Particular Specifications.”

CHAPTER 13.6: BEARINGS

PART A: SPECIFICATIONS

PSA 13.6.5 MATERIALS

PSA 13.6.5.1 Bearings in structures

(g) Proprietary Mortars Materials

Replace the entire subclause A13.6.5.1 with the following:

“Only a high strength epoxy resin grout proprietary mortar shall be used for the mortar bedding to the bridge bearings. The compressive strength of the proprietary mortar shall meet the following minimum requirements:

7-day cube strength	40 Mpa
28-day cube strength	60 Mpa

Products such as Sikadur -42 ZA high strength fluid epoxy resin grout, Pro-Struct 501 five-star epoxy grout, Pro-Struct 638 pourable epoxy grout, and ABE Epidermix 324 flowable epoxy grout, or similarly approved, may be used as mortar bedding.”

CHAPTER 13.7: JOINTS

PART A: SPECIFICATIONS

PS A13.7.7 EXECUTION OF THE WORKS

PS A13.7.7.3 Sealing the joints

Add the following new sub subclause at the end of subclause A13.7.7.3:

“(e) Bituthene 3000 waterproofing membrane

Hot or cold applied Bituthene 3000 waterproofing membrane (or equivalent subject to the approval of the engineer) shall be applied to any joints detailed on the drawings to receive such treatment.

It shall also be used to seal the entirety of the top perimeter of the construction joint resulting when the infill concrete is placed to any temporary access opening formed by the contractor in the top slab of the deck.

The membrane shall be cross laminated. The contractor shall submit the data sheets of the proposed product for review and approval by the engineer. The installation shall be carried out as per the manufacturer's specifications.”

CHAPTER 13.8: ANCILLARY STRUCTURAL ELEMENTS**PART C: MEASUREMENT AND PAYMENT**

Add the following new payment items:

Item	Unit
“PS C13.8.18 Manhole covers to bottom slab of deck number (No)	

The unit of measurement shall be the number of aluminium manhole covers installed in the bottom slab of the deck.

The tendered rate shall include full compensation for supplying all the materials including the non-corrodible fine gauze covering, manufacturing the aluminium manhole covers, transporting, handling and storing, and all labour, equipment and incidentals required for attaching the non-corrodible fine gauze covering and installing the aluminium manhole covers complete as detailed on the drawings.”

Item	Unit
“PS C13.8.19 Perforated stainless-steel plate (200 mm x 300 mm x 6 mm thick, grade 316, bent to L-shape) covered with grade 2 filter fabric (600 mm x 700 mm) to deck sidewalk scuppers below the sidewalk bedding material number (No)	

The unit of measurement shall be the number of perforated stainless-steel plates installed to the deck sidewalk scuppers below the sidewalk bedding material.

The tendered rate shall include full compensation for supplying all the materials including the filter fabric, manufacturing the perforated stainless-steel plates, transporting, handling and storing, and all labour, equipment and incidentals required for installing the perforated stainless-steel plates covered with the grade 2 filter fabric complete as detailed on the drawings.”

CHAPTER 13.9: STRUCTURAL STEELWORK FOR MINOR STRUCTURES**PART A: SPECIFICATIONS****PS A13.9.7 EXECUTION OF THE WORKS****PS A13.9.7.1 Fabrication and assembly****(m) Corrosion prevention****(iii) Galvanising**

Delete and replace contents of subclause A13.9.7.1(m)(iii) and replace with the following:

“All manufactured articles which are to be hot-dip galvanised shall be fabricated for galvanising in accordance with the guidelines given in the following specifications, as applicable:

SANS 14713-1 (ISO 14713-1)	Zinc coatings - Guidelines and recommendations for the protection against corrosion of iron and steel in structures Part 1: General principles of design and corrosion resistance
SANS 14713-2 (ISO 14713-2)	Zinc coatings - Guidelines and recommendations for the protection against corrosion of iron and steel in structures Part 2: Hot dip galvanising
SANS 14713-3 (ISO 14713-3)	Zinc coatings - Guidelines and recommendations for the protection against corrosion of iron and steel in structures Part 3: Sheradising
SANS 32 (EN 10240)	Internal and / or external protective coatings for steel tubes – Specification for hot dip galvanised coatings applied in automatic plants

The manufactured articles shall be hot-dip galvanised in accordance with the following specification:

SANS 121 (ISO 1461)	Hot dip galvanised coatings on fabricated iron and steel articles –Specifications and test methods
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The coating thickness for these articles shall comply with Table 3 of the SANS 121 (ISO 1461) specification.”

All nuts, bolts, screws and threaded articles shall be hot-dip galvanised in accordance with the SANS 121 (ISO 1461) specification, and the coating thickness shall comply with Table 4 of the SANS 121 (ISO 1461) specification.

No zinc drips or webbing of the zinc coating will be permitted on any hot-dip galvanised articles.”

CHAPTER 20: QUALITY ASSURANCE

CHAPTER 20.1: TESTING MATERIAL AND JUDGEMENT OF WORKMANSHIP

PART A: SPECIFICATIONS

PSA 20.1. 7 ACCEPTANCE CONTROL BY STATISTICAL JUDGEMENT PRINCIPLES

PSC12.1.7.5.1 ii) Judgement B

Add the following:

“The abovementioned Judgement Plan shall be applicable to this contract.”

C3.3: PARTICULAR SPECIFICATIONS

In addition to the Standard Specifications and the Project Specifications, the following Particular Specifications shall apply to this contract and are bound in hereafter:

PART C: ENVIRONMENTAL MANAGEMENT SPECIFICATION	C142
PART D: OHSA 1993 HEALTH AND SAFETY SPECIFICATION	C148
PART E: EXPANDED PUBLIC WORKS PROGRAMME.....	C191
PART F: SMALL CONTRACTOR DEVELOPMENT	C226
PART G: CONTRACT SKILLS DEVELOPMENT GOAL.....	C281

3.3 PARTICULAR SPECIFICATIONS

PART C: ENVIRONMENTAL MANAGEMENT SPECIFICATION

PART C: ENVIRONMENTAL MANAGEMENT SPECIFICATION**C1. SCOPE**

The Employer recognises environmental management as a key component of road infrastructure development and as part of its environmental policy has developed this environmental management specification as a tool for continual improvement in environmental performance.

This environmental management specification prescribes the methods by which proper environmental controls are to be implemented by the Contractor. The duration over which the Contractor's controls shall be in place cover the construction period of the project as well as the limited time after contract completion defined by the General Conditions of Contract 2015 as the Defects Notification Period (maintenance period).

C2. ENVIRONMENTAL MANAGEMENT PLAN

In order to ensure that the construction work is carried out in an environmentally sensitive manner, strict compliance with 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.

C3. ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS

The Contractor is responsible for the implementation of this EMP to ensure sound environmental management during the construction phase of a project.

The Contractor shall receive and implement any instruction issued by the Employer's Agent relating to compliance with the EMP including the removal of personnel or equipment.

Compliance with the provisions contained herein or any condition imposed by the environmental approvals, shall become the responsibility of the Contractor through an approved Environmental Officer (EO). The Contractor shall nominate a person from among his site personnel to fulfil this function and submit to the Employer's Agent for his approval the curriculum vitae of the proposed EO. This request for approval shall be given, in writing, at least fourteen days before the commencement of any construction activity clearly setting out reasons for the nomination, and with sufficient detail to enable the Employer's Agent to make a decision.

Once a nominated representative of the Contractor has been approved as the EO, the EO shall be the responsible person for ensuring that the provisions of this EMP are complied with for the duration of the contract. The EO shall submit monthly written reports of compliance with the EMP to the Employer's Agent.

In addition to the compliance duties relating to this EMP, the EO shall also provide full cooperation whenever the Contractor is subjected to regular environmental audits.

C4. 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 subcontractors and local labour). The EMP shall be part of the terms of reference for all contractors, subcontractors and suppliers.

C5. 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 Construction Manager, who will respond.

The following information must be recorded:

- Time, date and nature of the complaint,
- Type of communication (telephone, letter or email),
- 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.

C6. SITE CLEANLINESS AND NEATNESS

- Location of a construction camp is to be approved by the Employer's Agent 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.

C7. 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.

C8. BORROW PITS

- Mining authorisations (permits) for borrow pits must be obtained from the Department of Mineral Resources (DMR) in consultation with the Department of Water and Sanitation (DWS).
- 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 DMR and DWS.

C9. 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 condition 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.

C10. FAUNA

- Contractors' and subcontractors' staff and workers may not chase, catch or kill animals encountered during construction.

C11. 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 owners' lands.

C12. GRAVE SITES

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

C13. MATERIALS HANDLING AND SPILLS MANAGEMENT

- Any hazardous materials to be used during construction (e.g., lime, fuel and paint) are to be stored in a designated area at the campsite.
- The storage containers/facilities (including any diesel or 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 and turpentine).
- 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.

C14. NOISE

- Noise generating activities must be restricted to between 07:00 and 17:00 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.

C15. 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.

C16. RIVERS AND STREAMS

- During construction of bridge structures, there must be no obstruction of the water flow of 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.

C17. 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.

C18. SOIL MANAGEMENT

- Storm water 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 storm water.
- Spoil from cuts may be used in existing erosion gullies.
- 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 to aid in cleaning up the spill. The contaminated soil should be disposed of in an appropriate container, depending on its classification.
- Servicing and refuelling of vehicles must only be carried out at the construction camp.

C19. 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.

C20. 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.

C21. 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.

C22. 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, and contaminated wash water) 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 Employer's Agent.
- Each working area must be cleared of litter and building waste (e.g., rubble, wood and concrete packets) on completion of the day's work.
- Any spill around the container(s) should be treated as per clause C13 and C18.

C23. MEASUREMENT AND PAYMENT

The contractor shall make provision in the various rates and prices for all costs related to the environmental management specification and measures required in terms of legislation. Provision is made in item B13.02 of the Bill of Quantities for the contractor's general obligations, risks and liabilities in accordance with the environmental management specification.

The Environmental Management Specification for this contract includes the following documents which are bound after this page:

- (a) Letter from the Department of Water Affairs, Reference 16/2/7/W122/A1 dated 20 March 2014, notifying the Department of Transport that they may proceed with the replacement of the Nseleni River Bridge on P425 in accordance with the terms and conditions set out in the Department of Water Affairs' General Authorisations (Government Notice No. 32805 of 18 December 2009) (total of 8 pages);
- (b) Letter from the Province of KwaZulu-Natal: Department of Agriculture and Environmental Affairs, Reference DC28/0013/2013 dated 18 October 2013, containing the Environmental Authorisation for the replacement of the Nseleni River Bridge on P425 (total of 15 pages);
- (c) Letter from the Province of KwaZulu-Natal: Department of Economic Development, Tourism and Environmental Affairs, Reference DC28/0013/2013-amend 2018 dated 25 July 2018, containing the extension for Environmental Authorisation for the replacement of the Nseleni River Bridge on P425 (total of 5 pages);
- (d) The project specific Environmental Management Programme prepared by Triplo 4 Sustainable Solutions (dated 26 July 2013), which contains a total of 60 pages comprising:
 - Front cover page (one page only, not numbered)
 - DOCUMENT DESCRIPTION (page II)
 - TABLE OF CONTENTS (pages III and IV)
 - GLOSSARY OF TERMS (pages V to VII)
 - TERMS AND ABBREVIATIONS (page VIII)
 1. INTRODUCTION (pages 1 to 6)
 2. ENVIRONMENTAL MANAGEMENT PLAN (pages 6 to 8)
 3. ENVIRONMENTAL MANAGEMENT COMPLIANCE, MONITORING AND REPORTING (page 9)

4. ACTIVITIES, ASPECTS AND IMPACTS AND THE MANAGEMENT THEREOF
(pages 10 to 24, page 0 and pages 1 to 23)
 5. ENVIRONMENTAL CODE OF CONDUCT (page 24)
- Appendix A: Sensitivity Map (page 25)
 - Appendix B: Rehabilitation Measures (pages 26 to 27)

C3.3 PARTICULAR SPECIFICATIONS

PART D: OHSA 1993 HEALTH AND SAFETY SPECIFICATION

PART D: OHSA 1993 HEALTH AND SAFETY SPECIFICATION**D1. SCOPE**

This part covers the health and safety requirements to be met by the Contractor to ensure a continued safe and healthy working environment for all employees, subcontractors, the Employer, the Employer's Agent, inspectors and all other persons entering the site of works.

This specification shall be read in conjunction with the Occupational Health and Safety Act, 1993 (Act No 85 of 1993 and amendment Act No 181 of 1993) and the corresponding Construction Regulations 2014, and all other safety codes and specifications referred to in the said Act and Construction Regulations.

In terms of the OHSA Agreement in Section C1.4 of the Contract document, the status of the Contractor as mandatory to the Employer (client) is that of an employer in his own right, responsible for compliance with all provisions of OHSA 1993 and the Construction Regulations 2014.

This specification and the Contractor's own Health and Safety Plan as well as the Construction Regulations 2014, shall be displayed on site or made available for inspection by inspectors, the Employer, the Employer's Agent, the Construction Health and Safety Agent, subcontractors, employees, representatives of trade unions and any other persons entering the site of works.

D2. DEFINITIONS

For the purpose of this contract the following shall apply:

D2.1 **"Construction Health and Safety Agent"** (CHSA) means any competent person who acts as a representative for the Employer in managing health and safety on a construction project for the Employer and who has satisfied the registration criteria of the SACPCMP to perform the required functions.

D2.2 **"Contractor"** where used in the contract documents and in this specification, means the Contractor as defined in the General Conditions of Contract 2015, and it shall have the exact same meaning as **"principal contractor"** as defined in the Construction Regulations 2014. **"Contractor"** and **"principal contractor"** are therefore interchangeable and shall be read in the context of the relevant document.

In this specification the terms **"principal contractor"** and **"contractor"** are replaced with **"Contractor"** and **"subcontractor"** respectively.

For the purpose of this contract the Contractor will, in terms of OHSA 1993, be the mandatory, without derogating from his status as an employer in his own right.

D2.3 **"Employer"** where used in the contract documents and in this specification, means the Employer as defined in the General Conditions of Contract 2015 and it shall have the exact same meaning as **"client"** as defined in the Construction Regulations 2014. **"Employer"** and **"client"** are therefore interchangeable and shall be read in the context of the relevant document.

D2.4 **"Employer's Agent"** where used in this specification, means the Employer's Agent as defined in the General Conditions of Contract 2015.

D3. EMPLOYER'S BASELINE RISK ASSESSMENT**D3.1 Risk information**

The information presented in this clause is based on the Employer's baseline risk assessment prepared specifically for this contract.

This information describes the type of work required in terms of this contract that will be accompanied by dangers, hazards and risks which the Contractor shall be required to identify, analyse, manage, monitor and review in terms of the Health and Safety Plan and risk assessments.

This information is neither prescriptive nor exhaustive, and is provided as a guideline to Tenderers in preparing their tender submissions, and to the successful Contractor as a basis for the preparation of the site-specific risk assessments to be performed by the Contractor in terms of Construction Regulation 9.

Tenderers shall make their own assessment of the dangers, hazards and risks that can be expected during the course of this contract, which may include dangers, hazards and risks not identified in the baseline risk assessment, including those that may arise from specific methods of construction employed by the Contractor, and shall make due allowance in their tendered rates and prices for all costs related to complying with the provisions of the Act and Construction Regulations.

This information is given in good faith for the guidance of Tenderers, and no additional payment shall be made as a result of any inaccuracies, discrepancies or omissions contained therein.

D3.2 Baseline risk assessment

The following is a list of risks identified which forms the Baseline Risk Assessment for the project prepared by the Employer in terms of Construction Regulation 5(1)(a).

This information describes the type of work required in terms of this contract that will be accompanied by dangers, hazards and risks which the Contractor shall be required to identify, analyse, manage, monitor and review in terms of the Health and Safety Plan and risk assessments.

This information is neither prescriptive nor exhaustive, and is provided as a guideline to Tenderers in preparing their tender submissions, and to the successful Contractor as a basis for the preparation of the site-specific risk assessments to be performed by the Contractor in terms of Construction Regulation 9.

Tenderers shall make their own assessment of the dangers, hazards and risks that can be expected during the course of this contract, which may include dangers, hazards and risks not identified in the baseline risk assessment, including those that may arise from specific methods of construction employed by the Contractor, and shall make due allowance in their tendered rates and prices for all costs related to complying with the provisions of the Act and Construction Regulations and promulgated Regulations pertaining to the COVID-19 pandemic.

This information is given in good faith for the guidance of Tenderers, and no additional payment shall be made as a result of any inaccuracies, discrepancies or omissions contained therein.

- Establishment on site, and subsequent removal on completion, of facilities for both the Contractor and the Engineer. This shall include the establishment of office facilities, kitchen facilities, laboratory facilities, ablution facilities, car ports, security lighting and fencing, and such other facilities as may be required by the Contractor for the storage of materials, construction vehicles, mobile plant and equipment, and for the maintenance and refuelling of construction vehicles and mobile plant. The establishment of such facilities shall also include for the provision and installation of services for water, sewerage, and electricity, for the provision of LP gas (if required by the Contractor), and for the collection and removal of waste.
- Handling of furnishings, equipment and fittings for the various site establishment facilities.
- Operation and maintenance of the facilities established on site.
- Risks such as electrical shock, fire and burns associated with the installation, maintenance and subsequent removal of the electrical services, and the use of electricity at the site establishment facilities (e.g., use of lights, air conditioners, geysers, kettles, fridges, ovens, hot plates, microwave ovens, photocopiers, printers, computers, extractor fans, electrical machines in the laboratory and workshops, etc.).
- Fall risk arising from the potential exposure of employees to falling (e.g., falling from ladders or structures, falling into trenches or excavations) during the construction of the site establishment facilities and the subsequent maintenance and removal thereof.
- Operation and maintenance on the site of heavy civil engineering construction vehicles and mobile plant such as piling plant, core drilling plant, excavators, bulldozers, front end loaders, tippers, flatbed trucks, TLBs, graders, tractors, ploughs, compaction plant including small hand-operated compaction plant and equipment, water trucks, prime and binder distributors, surfacing plant, hydroseeding plant, water pumps, concrete mixers, ready-mixed concrete trucks, bulk mixing plant, cranes, concrete

pumps (should the Contractor choose to use such plant), prestressing jacks, generators, compressors and pneumatic tools.

- Use on the site of portable power tools such as drills, angle grinders, circular saws, brush cutters and chainsaws.
- Welding operations as possibly required by the Contractor during the erection and maintenance of the site establishment facilities, for construction vehicle and mobile plant maintenance, and during construction of the Temporary Works, including arc welding, gas welding, flame cutting and the use of LP gas torches and appliances.
- Use on the site of large hand tools such as picks, pick mattocks, large mallets, crowbars, spades, shovels, pitchforks, hoes, rakes, machetes, slashers and axes.
- Use on the site of small hand tools such as hammers, small mallets, screw drivers, chisels, pliers, saws, cutting knives and shears, clamps, trowels, spanners and wrenches.
- Use on site of ladders and scaffolding.
- Use on site of tools and equipment associated with construction vehicle and mobile plant repair, maintenance and modification.
- Use on the site of hand sprayers for bitumen.
- Handling of materials such as prefabricated concrete pipes, uPVC / HDPE pipes, scaffolding, formwork, timber planks, steel wire, nails, screws, bolts and nuts, gang-nail plates, steel reinforcement, permanent steel pile casings, piling reinforcement cages, steel ducts for the piles, prestressing sheaths, tendons and anchorages, grout, cement bags, concrete materials, prefabricated concrete posts and handrails, bridge bearings, bridge expansion joints, bricks, fencing wire including razor wire, gabion boxes and mattresses, hand stone, prefabricated kerbs, polyethylene sheeting, geotextile products, guardrails, treated timber posts and poles, road signs, road studs, grass sods, grass seeds and anti-erosion compound (if required).
- Handling of cement for stabilising purposes.
- Handling of subgrade materials, topsoil, pavement layer materials, sands and aggregates.
- Handling of bituminous and heated bituminous materials such as bitumen emulsion, prime, binders and asphalt.
- Storage and handling of flammable materials such as fuels, oils, LP gas, bitumen, adhesives, painting products including bituminous paint and road marking paint, and cleaning products.
- Handling and operation of laboratory equipment such as nuclear gauges for compaction measurement, and, should the Contractor erect his own laboratory on site, ovens, heating plates, LP gas cylinders, gas heating equipment, and compression testing machines.
- Handling of laboratory chemicals and handling of laboratory samples such as concrete test cubes and soil specimens collected in the field.
- Conducting of laboratory fieldwork in the work areas under construction, including testing and sample collection.
- Handling of specialist CSL testing equipment for testing the piles.
- Handling of chemical fertilizers.
- Storage and handling of herbicides and ant poisons (if required).
- Presence of open excavations for the substructure foundations and for subsoil drains (if required), open drains, drainage structures such as manholes, stormwater pipes and inlet and outlet structures, road sign supports and guardrail posts. Fall risk arising from the potential exposure of persons to falling into such open excavations.
- Construction of excavations that may require accompanying lateral earth support provision to resulting vertical earth faces in close proximity to the adjacent existing bridge substructures and P425 roadway.
- Drainage of excavations in order to assist with ensuring the stability of the excavations, and also to prevent water from pooling in the excavations and exposing employees and the public to the risk of drowning.
- Placing and installing materials in excavations and trenches, including lifting and lowering of the materials from above and working in restricted conditions.
- Backfilling and compacting excavations and trenches, including working in restricted conditions.
- Erection, maintenance and use of bulk mixing plant for concrete batched on site, and the subsequent removal thereof on completion.
- Working adjacent to and within the main channel of a flowing river at the bridge site, which may be subject to flooding during the construction period.
- Excavations below water level at the bridge site in soils possibly requiring shoring or flattening of slopes.
- Provision of access for piling within the Nseleni river channel.

- Working below water level to construct elements of the bridge piling, including test core drilling, and pile caps.
- Piling operations for the substructures, including pile shaft drilling, installation of permanent pile casings, installation of pile reinforcement cages, pile concreting, pile core drilling, pile testing, grouting of the test ducts, and stripping/cutting the pile heads.
- Fall risk arising during piling operations as a result of the potential exposure of persons to falling into the open drilled shafts, which will therefore need to be adequately protected, guarded, fenced or barricaded.
- Construction and subsequent loading of access falsework to ramps, landings and working platforms at the bridge structure, and the dismantling thereof on completion.
- Construction and subsequent loading of falsework and formwork for the construction of the bridge structure, and the dismantling thereof on completion.
- Carrying out work above ground level at the bridge structure in a restricted environment with limited access and working platforms, all of which will require fall protection.
- Lifting and lowering of materials and equipment from the ground to the bridge structure, and vice versa. Exposure during these operations to possible cross-winds, construction traffic and traffic on the adjacent existing road.
- Working at the bridge structure in the bottom of foundation excavations or below access ramps, landings, working platforms, falsework and formwork, exposed to the possibility of persons, tools, materials, plant, etc. falling from above.
- Deck prestressing operations.
- Possible need for boatswain's chairs and / or suspended platforms for accessing the substructure walls, the deck, the parapet walls and the handrails, for purposes of finishing off or repairing defects after the falsework and formwork has been removed.
- Installing, maintaining, relocating and removing traffic control facilities under traffic. Fall risk arising from the potential exposure of employees to falling during the road sign erection process.
- Continual maintenance of the traffic accommodation facilities to help ensure traffic safety, including the cleaning of delineators and temporary road signs to ensure good visibility at all times, the immediate replacement of missing or damaged delineators and temporary road signs, and the immediate reinstatement of delineators and temporary road signs that have fallen over or been moved to an unauthorised position.
- Working adjacent to traffic on the existing road.
- Maintaining the existing trafficked section of P425 directly adjacent to the Site between sunrise and sunset whenever necessary using half-width traffic accommodation methods with STOP/GO traffic control and two-way communication devices.
- Controlling the traffic using half-width traffic accommodation methods with STOP/GO traffic control and two-way communication devices between sunrise and sunset during the period that the tie-ins to the existing P425 at the ends of the new realigned section of road are constructed.
- Controlling the traffic using traffic signal control facilities and two-way communication devices where half-width lane closures remain in place between sunset and sunrise during the period that the tie-ins to the existing P425 at the ends of the new realigned section of road are constructed.
- Working with restricted access across the length of the site resulting in congested construction activities.
- Working in terrain with potentially restricted sight distance and overtaking opportunities, including an existing single lane river bridge crossing.
- Accessing of the work areas by construction vehicles, mobile plant and personnel from existing roads, using traffic accommodation control measures.
- General movement and manoeuvring of construction vehicles and mobile plant on site, including forward, turning and reversing movements, movements to exit and re-enter the trafficked lane from the work areas, loading and off-loading movements, lifting and lowering movements, towing movements, and movements taking place under conditions of restricted sight distance.
- Pedestrian activity along the full length of the road. The strict control of pedestrian movements will be required during all construction activities, in order to prevent pedestrians from randomly crossing the work area or passing too close to the work area. It is noted that numerous construction vehicles and mobile plant units will be active simultaneously along the length of the work area in congested conditions throughout the construction period.
- Presence of livestock along P425 within the road reserve, including along the carriageway and shoulders.
- Removal and erection of guardrails directly adjacent to the trafficked road.

- Erection and dismantling of temporary and permanent road signs, which may require the use of ladders, scaffolding and temporary propping directly adjacent to the trafficked road. Fall risk arising from the potential exposure of employees to falling during these processes.
- Road marking operations should they be carried out under traffic.
- Presence of overhead power lines above or directly adjacent to the Works.
- Lifting loads by means of cranes or other methods in relatively close proximity to existing overhead services such as power lines.
- Risks associated with the demolition of the existing bridge deck, steel structure and concrete substructures.
- Risks associated with the use of mobile cranes for lifting loads, taking crane tables and foundation conditions into account to prevent the crane from falling over.
- Potential exposure to noise caused by construction vehicles, mobile plant, and construction tools and equipment.
- Potential exposure to vibration caused by construction vehicles, mobile plant, and construction tools and equipment.
- Potential exposure to dust inhalation, including dust from cement (concreting, stabilisation), due to natural wind action, the action of construction vehicles and mobile plant and equipment, and due to the action of the various construction processes.
- Potential exposure to fire, including veld and bush fires in the areas surrounding P425.
- Potential exposure to local fauna (e.g., crocodiles, hippos, snakes, monkeys, dogs, feral cats, rodents) and flora (e.g., thorns, nettles) and insects (e.g., bees, wasps, spiders, ticks, mosquitoes).
- Potential exposure to rabies and tick bite fever.
- Exposure to natural phenomena (heat, cold, rain, wind, hail, lightning) and accompanying potential health risks such as headaches, nausea, dehydration, heat exhaustion, fainting, hypothermia, cuts and bruises, concussion, and electrical shock and burns. Increased fall risk associated with the aforementioned.
- Potential exposure to infectious diseases that affect South African communities, such as the common cold, influenza, diarrhoea, gastroenteritis, cholera, pneumonia, meningitis, hepatitis, tuberculosis, HIV/AIDS, and COVID-19.
- Risks associated with failure to equip employees with protective apparel appropriate to the work they are carrying out, and failure to ensure that employees wear the appropriate protective apparel issued. Such protective apparel includes but is not restricted to reflective safety jackets, hard hats and other forms of safety headwear, safety boots, safety gloves, overalls, safety eyewear such as spectacles, goggles and face shields, safety earplugs and earmuffs, safety respiratory masks, welding gloves, masks and aprons, kidney belts, safety harnesses, and disposable safety apparel, as applicable.
- Risks associated with failure to treat injuries suffered on site in a timely manner.
- Risks related to general safety and security on site.

Additional risks may arise from specific methods of construction selected by the Contractor which are not necessarily covered in the above. The site-specific baseline risk assessment is included below.

RISK ASSESSMENT MATRIX

RISK LEVEL (R) Likelihood (L) x Severity (S)		SEVERITY OF HAZARD (S)				
		Negligible 1	Slight 2	Moderate 3	High 4	Very high 5
LIKELIHOOD OF OCCURRENCE OF HAZARD (L)	Very unlikely 1	LOW 1	LOW 2	LOW 3	LOW 4	MEDIUM 5
	Unlikely 2	LOW 2	LOW 4	LOW 6	MEDIUM 8	MEDIUM 10
	Possible 3	LOW 3	LOW 6	MEDIUM 9	MEDIUM 12	HIGH 15
	Likely 4	LOW 4	MEDIUM 8	MEDIUM 12	HIGH 16	HIGH 20
	Very likely 5	MEDIUM 5	MEDIUM 10	HIGH 15	HIGH 20	HIGH 25

The Risk Assessment Matrix above provides guidance in determining the risk level, based on the product of the likelihood and severity of the hazard associated with the task.

For example:

Unlikely x slight	= 2 x 2	= 4	= LOW
Possible x moderate	= 3 x 3	= 9	= MEDIUM
Likely x high	= 4 x 4	= 16	= HIGH

RISK LEVEL – ACTION REQUIRED

LOW	<p>The task may proceed without any further action being required other than basic induction and, where necessary, specific training.</p> <p>The task should be reviewed, however, in order to establish whether the risk level can be further reduced.</p>
MEDIUM	<p>The task may proceed only after appropriate consultation with specialist personnel and the safety team.</p> <p>Where possible, the task should be further refined and/or further control measures should be implemented in order to reduce the risk level prior to the task commencing.</p>
HIGH	<p>The task must not proceed.</p> <p>The task must be further refined and/or further control measures must be implemented in order to reduce the risk. Such further refinements and control measures must be re-assessed for adequacy prior to the task commencing.</p>

RISK EVALUATION

Likelihood of occurrence (L):	<p>How often is the hazard likely to occur?</p> <p>Consider the task frequency, duration and hours of work, the method of work, the training and competence of the employees involved, and the number of employees involved.</p>
Severity of hazard (S):	<p>How serious would the effects of the hazard be should it occur?</p> <p>Consider the physical, chemical, biological and ergonomic effects on persons should the hazard occur.</p>
Risk level (R):	<p>The risk level associated with the task is the numerical value obtained by calculating the product of the likelihood and severity of the hazard associated with the task:</p> <p>$\text{Risk level (R)} = \text{Likelihood (L)} \times \text{Severity (S)}$</p>
Residual risk:	<p>This is the risk level of the portion of the risk that still remains after risk mitigation actions have been implemented.</p>

SITE SPECIFIC BASELINE RISK ASSESSMENT (P425: Nseleni river bridge No. 3380 - Contract No. ZNB 02214/00000/00/HOD/INF/23/T)											
SITE SPECIFIC RISKS				QUALITATIVE RISK ASSESSMENT			RISK STRATEGIES		RESIDUAL RISK		
RISK CLUSTER	RISK No.	ACTIVITY	HAZARD / RISK	L	S	R	MITIGATION ACTIONS	TIME LINE	L	S	R
Site establishment	1	Establishment on site of facilities for both the Contractor and the Engineer, operation and maintenance of the facilities during the contract period, and removal of the facilities on completion - adherence to regulations.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Adhere to all promulgated regulations, including but not limited to the General Safety Regulations, Environmental Regulations for Workplaces, Electrical Installation Regulations, Electrical Machinery Regulations, Facilities Regulations, National Building Regulations, General Machinery Regulations and Driven Machinery Regulations.	Implement prior to start of construction activities then review continually.	2	3	6
							Use only appropriately qualified competent personnel for the installation, commissioning, maintenance and removal of all electrical, LP gas, water and sewerage services, for the erection of structures and for the mechanical and electrical maintenance of plant, machinery and power tools on site.				

Site establishment	2	Establishment on site of facilities for both the Contractor and the Engineer, operation and maintenance of the facilities during the contract period, and removal of the facilities on completion - construction activities.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.				Implement a fall protection plan, and implement procedures to be followed with respect to ladder work, scaffolding work, and work from fall risk positions generally. Supervise all loading and offloading operations. Supervise all excavation operations and all lifting and lowering operations at excavations, provide adequate shoring, bracing, safeguarding and drainage to all excavations, provide adequate safe access to and from excavations for personnel, conduct inspections of excavations in accordance with the stipulated requirements, supervise all construction activities within and adjacent to excavations. Supervise all erection operations for structures and facilities.	Implement prior to start of construction activities then review continually.			
				3	4	12			2	3	6

Site establishment	3	Establishment on site of facilities for both the Contractor and the Engineer, operation and maintenance of the facilities during the contract period, and removal of the facilities on completion - use of plant and vehicles, power tools, hand tools, welding equipment and other equipment.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Maintain plant and vehicles, power tools, hand tools, welding equipment and other equipment in good working order. Use only trained, competent, medically fit drivers, operators, mechanics, electricians, welders and other personnel. Provide adequate clear working space and protective apparel.	Implement prior to start of construction activities then review continually.	2	3	6
Site establishment	4	Establishment on site of facilities for both the Contractor and the Engineer, operation and maintenance of the facilities during the contract period, and removal of the facilities on completion - use of facilities and equipment, and supervision of facilities.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	3	9	Induct personnel with regard to the use of the facilities and equipment provided, and the procedures to be followed in the event of maintenance work being required to such facilities and equipment. Appoint only trained, competent, medically fit personnel as supervisors for areas such as workshops, general storage areas, and fuel and hazardous material storage areas.	Implement prior to start of construction activities then review continually.	2	2	4

SITE SPECIFIC BASELINE RISK ASSESSMENT (P425: Nseleni river bridge No. 3380 - Contract No ZNB 02214/00000/00/HOD/INF/23/T)											
SITE SPECIFIC RISKS				QUALITATIVE RISK ASSESSMENT			RISK STRATEGIES		RESIDUAL RISK		
RISK CLUSTER	RISK No.	ACTIVITY	HAZARD / RISK	L	S	R	MITIGATION ACTIONS	TIME LINE	L	S	R
Traffic accommodation	1	Public vehicular and pedestrian traffic travelling on P425 during the construction of the Works.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Plan then implement appropriate traffic accommodation measures.	Implement prior to start of construction activities then review continually.	2	3	6
Traffic accommodation	2	Construction vehicular and pedestrian traffic travelling on P425 during the construction of the Works.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Plan then implement appropriate traffic accommodation measures. Implement appropriate road safety rules for drivers, plant operators and all other construction personnel.	Implement prior to start of construction activities then review continually.	2	3	6
Traffic accommodation	3	Construction activities taking place adjacent to the trafficked road.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Plan then implement appropriate traffic accommodation measures. Confine the construction activities of construction vehicles, plant and personnel to the delineated work areas outside of the trafficked road.	Implement prior to start of construction activities then review continually.	2	3	6

Traffic accommodation	4	Construction vehicular traffic entering or leaving the Works at public or private access roads.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Plan then implement appropriate traffic accommodation measures. Implement appropriate road safety rules for drivers and plant operators.	Implement prior to start of construction activities then review continually.	2	3	6
Traffic accommodation	5	Construction traffic entering or leaving half-width construction zones.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Plan then implement appropriate traffic accommodation measures. Implement appropriate road safety rules for drivers and plant operators.	Implement prior to start of construction activities then review continually.	2	3	6
Traffic accommodation	6	Half-width construction zones operating under STOP/GO traffic control between sunrise and sunset during the period when the tie-ins to the existing P425 at the ends of the new realigned section of road are constructed.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Plan then implement appropriate traffic accommodation measures. Train all traffic control personnel and flagmen.	Implement prior to start of construction activities then review continually.	2	3	6

Traffic accommodation	7	Half-width construction road closure zones operating under traffic signal traffic control between sunset and sunrise during the period when the tie-ins to the existing P425 at the ends of the new realigned section of road are constructed.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Plan then implement appropriate traffic accommodation measures. Provide floodlighting on the approaches to the road closure zones. Train all traffic control personnel and flagmen.	Implement prior to start of construction activities then review continually.	2	3	6
Traffic accommodation	8	Construction activities taking place in terrain with potentially restricted sight distance and limited overtaking opportunities, including an existing single lane river bridge crossing.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Plan then implement appropriate traffic accommodation measures. Ensure that adequate advance warning is provided at the approaches to all half-width construction road closures and to all other areas where construction activities are taking place requiring advance warning.	Implement prior to start of construction activities then review continually.	2	3	6

Traffic accommodation	9	Presence of livestock along P425 within the road reserve, including along the carriageway and shoulders.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Plan then implement appropriate traffic accommodation measures. Traffic accommodation plan shall specifically include appropriate measures to be implemented in order to remove any livestock found within the road reserve.	Implement prior to start of construction activities then review continually.	2	3	6

SITE SPECIFIC BASELINE RISK ASSESSMENT (P425: Nseleni river bridge No. 3380 - Contract No ZNB 02214/00000/00/HOD/INF/23/T)											
SITE SPECIFIC RISKS				QUALITATIVE RISK ASSESSMENT			RISK STRATEGIES		RESIDUAL RISK		
RISK CLUSTER	RISK No.	ACTIVITY	HAZARD / RISK	L	S	R	MITIGATION ACTIONS	TIME LINE	L	S	R
Roadworks and structures	1	Construction activities taking place directly adjacent to the existing P425 trafficked road (or on the P425 at the new road alignment tie-ins), such as clearing and grubbing, foundation excavation and backfilling, provision of access, bridge construction including piling, core drilling and prestressing, gabion construction, fill, layerworks, surface drainage and minor drainage structure construction, surfacing and road marking, guardrail and road sign erection, and grassing.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Plan then implement appropriate traffic accommodation measures. Confine the construction activities of construction vehicles, plant and personnel to the delineated work areas outside of the trafficked road.	Implement prior to start of construction activities then review continually.	2	3	6

Roadworks and structures	2	Operation on site of heavy civil engineering plant and vehicles.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Maintain plant and vehicles in good working order. Use only trained, competent, medically fit drivers and operators. Provide adequate clear working space and protective apparel.	Implement prior to start of construction activities then review continually.	2	3	6
Roadworks and structures	3	Operation on site of small plant, power tools and equipment such as prestressing equipment, self-propelled, hand-operated compaction equipment, power saws, drills, brush cutters, pumps and other power tools, hand sprayers for bitumen, welding equipment, and nuclear gauges for laboratory compaction measurement.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Maintain such small plant, power tools, prestressing equipment, hand sprayers, welding equipment and nuclear gauges in good working order. Use only trained, competent, medically fit operators and welders. Provide adequate clear working space and protective apparel. Adhere to all regulations governing the use of nuclear gauges.	Implement prior to start of construction activities then review continually.	2	3	6
Roadworks and structures	4	Operation on site of pneumatic drilling and breaking tools and compressed air cleaning equipment.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Maintain such tools and equipment in good working order. Use only trained, competent, medically fit operators. Provide adequate clear working space and	Implement prior to start of construction activities then review continually.	2	3	6

							protective apparel.				
Roadworks and structures	5	Use of unpowered hand tools such as picks, spades, shovels, pitchforks, mallets, hoes, axes, machetes, slashers, chisels, hammers, saws and shears.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	3	9	Maintain such equipment in good working order. Use only trained, competent, medically fit personnel. Provide adequate clear working space and protective apparel.	Implement prior to start of construction activities then review continually.	2	2	4
Roadworks and structures	6	Working with hot applied surfacing materials.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	3	9	Maintain all related plant and equipment in good working order. Use only trained, competent, medically fit personnel. Provide adequate clear working space and protective apparel.	Implement prior to start of construction activities then review continually.	2	2	4
Roadworks and structures	7	Working with flammable materials/ hazardous materials such as fuels, oils, LP gas and bitumen products, adhesives, road marking paints, bitumen paints, cleaning products, herbicides and ant poison (if required).	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Maintain all related equipment and storage facilities in good working order. Use only trained, competent, medically fit personnel. Provide adequate clear working space and protective apparel.	Implement prior to start of construction activities then review continually.	2	3	6

Roadworks and structures	8	Handling of materials generally, including cement, aggregates, gabion handstone, concrete pipes, timber planks, creosoted poles, bitumen products, and steel products such as scaffolding, formwork, reinforcement, permanent steel pile casings, piling reinforcement cages, steel pile ducts, prestressing sheaths, tendons and anchorages, bridge bearings, bridge expansion joints, fencing wire including razor wire, gabion baskets, road signs and guardrails.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	3	9	Supervise all loading and offloading operations and provide appropriate protective apparel for persons handling materials.	Implement prior to start of construction activities then review continually.	2	2	4

Roadworks and structures	9	Excavations, including foundation excavations, some of which are adjacent to the existing bridge structure and may require lateral earth support, cut excavations, stockpile excavations, trench excavations for pipe culverts, downchutes, subsoil drains and open drains, and excavations for minor drainage structures.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Induct all personnel with respect to safety issues at excavations and the fall protection plan. Supervise all excavation operations and provide appropriate protective apparel for persons working at or within excavations. Provide adequate shoring, bracing, safeguarding and drainage to all excavations. Provide adequate safe access to and from excavations for personnel. Conduct inspections of excavations in accordance with the stipulated requirements. Supervise all lifting and lowering operations at excavations. Supervise all construction activities within and adjacent to the excavations.	Implement prior to start of construction activities then review continually.	2	3	6

Roadworks and structures	10	Bulk mixing plant.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Maintain all related plant and equipment in good working order. Use only trained, competent, medically fit personnel. Prevent unauthorised persons from entering the areas where the bulk mixing operations are taking place. Provide adequate clear working space and protective apparel. Adhere to all regulations governing the use of bulk mixing plant.	Implement prior to start of construction activities then review continually.	2	3	6
	11	Fall protection during activities such as traffic control floodlight erection, maintenance, and dismantling, road sign erection and dismantling, and gabion construction.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Implement fall protection plan. Use only trained, competent, medically fit personnel. Provide adequate protective apparel. Provide adequate fall prevention or fall arrest equipment.	Implement prior to start of construction activities then review continually.	2	3	6

Roadworks and structures	12	Relocation of services.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Induct all personnel with respect to the location of and safety issues pertaining to the various affected services. All affected services to be identified, located and clearly marked in conjunction with the service owners. All assistance with services relocation work to be limited to agreed elements of the civils work only, and to be rendered only under the close supervision of the service owners. Service owners to remain responsible at all times for all occupations of live electrical, telecommunications and bulk water supply services, and for all technical aspects related to the relocation work required.	Implement prior to start of construction activities then review continually.	2	3	6

Roadworks and structures	13	Working below overhead power lines.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Provide strict supervision for all activities taking place near or under the power lines, particularly work involving excavators, tipper truck loading and discharging operations, cranes, and pressure spraying activities such as binder spraying, hydroseeding, and water jetting (if required).	Implement prior to start of construction activities then review continually.	2	3	6
Roadworks and structures	14	Laboratory sampling and testing.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	3	9	Plan then implement appropriate traffic accommodation measures. Use only trained, competent, medically fit personnel for sample collection and field testing, and for carrying out the testing work using the laboratory compression machines, ovens, burners, etc.	Implement prior to start of construction activities then review continually.	2	2	4

Roadworks and structures	15	Working in terrain with restricted sight distance.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Plan then implement appropriate traffic accommodation measures. Maintain plant and vehicles in good working order. Use only trained, competent, medically fit drivers and operators. Regularly emphasise aspects of driver and operator training related to the required daily checks on vehicle roadworthiness, the transportation of heavy loads, and good driving practice in conditions with generally restricted sight distance and overtaking opportunities, and in misty conditions.	Implement prior to start of construction activities then review continually.	2	3	6
	16	Structures – excavation.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Refer to item 9 above.	Implement prior to start of construction activities then review continually.	2	3	6

Roadworks and structures	17	Structures – piling operations.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Maintain all related plant and equipment in good working order. Use only trained, competent, medically fit personnel. Provide adequate access, including working platforms, to allow the piling plant to access the substructure piling positions and install the piles safely. Prevent unauthorised persons from entering the areas where the piling operations are taking place. Provide adequate clear working space and protective apparel. Supervise all piling operations, including pile shaft drilling, installation of permanent pile casings, installation of pile reinforcement cages, pile concreting, pile core drilling, pile testing, grouting of the test ducts, and stripping/cutting the pile heads. Adhere to all regulations governing the use of piling plant.	Implement prior to start of construction activities then review continually.	2	3	6

Roadworks and structures	18	Structures – prestressing operations.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Maintain all related plant and equipment in good working order. Use only trained, competent, medically fit personnel. Prevent unauthorized persons from entering the areas where the prestressing operations are taking place, including the designated safety zones surrounding the prestressing jacks. Provide adequate clear working space and protective apparel. Supervise all prestressing operations, including sheath, tendon and anchorage installation, prestressing equipment installation and subsequent dismantling, the tensioning process, strand cutting and injection grouting. Adhere to all regulations governing the use of prestressing equipment.	Implement prior to start of construction activities then review continually.	2	3	6
	19	Structures - fall protection.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/	3	4	12	Prepare then implement a fall protection plan for each structure. Use only trained, competent, medically fit	Implement prior to start of construction activities then review	2	3	6

			death.				<p>personnel for work carried out from a fall risk position.</p> <p>Provide adequate guarding, fencing, barricading and safety railing on temporary access structures, landings and working platforms, and at unprotected openings.</p> <p>Provide adequate immediate protection and guarding, fencing or barricading to the openings to the drilled shafts resulting from the piling operations.</p> <p>Where ladder work is required, ensure that personnel are trained in the use and loading of the ladder, in setting up the ladder on stable founding and in the vertical plane, and in securing the ladder.</p>	continually.			
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Roadworks and structures	20	Structures - temporary works.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.				Ensure that the design of the entire falsework and formwork infrastructure used to access and temporarily support each structure has been carried out by a Registered Person, as specified. Ensure that the same Registered Person inspects and signs off the temporary works as erected, before any load is applied. Ensure that all temporary works operations are supervised by a competent person. Use only trained, competent, medically fit personnel to erect, move or dismantle temporary works structures. Ensure that the temporary works are inspected by a competent person immediately before, during and after any imposed load is applied. Remove the temporary works only after written authorization is received from the competent person.	Implement prior to start of construction activities then review continually.			
				3	4	12			2	3	6

Roadworks and structures	21	Structures - explosive actuated fastening device.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Use only trained, competent, medically fit personnel to operate such devices. Provide adequate clear working space and protective apparel.	Implement prior to start of construction activities then review continually.	2	3	6
Roadworks and structures	22	Structures - mobile cranes.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Maintain plant in good working order. Use only trained, competent, medically fit operators. Ensure that supervisors and operators have been informed of the range of loading limits. Provide a stable, level platform to support the crane during operations. Provide adequate clear working space and protective apparel. Supervise all lifting, lowering and rotating operations.	Implement prior to start of construction activities then review continually.	2	3	6

Roadworks and structures	23	Structures - water environments.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Provide adequate drainage, dewatering and stream diversions, and adequate safe access ramps, landings and working platforms to ensure that personnel are not in danger of falling into water. Avoid working on a structure if the prevailing water level is considered hazardous, for example, due to the possibility of persons being washed off the works directly, or due to the stability of the works being under threat.	Implement prior to start of construction activities then review continually.	2	3	6
	24	Structures - general safeguarding.	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Implement access control measures to prevent unauthorized persons and vehicles from entering the construction site at each structure. Ensure that controlled access points are provided at each structure for construction vehicles and personnel. Provide adequate overhead protection where necessary to ensure that persons are not struck by falling objects.	Implement prior to start of construction activities then review continually.	2	3	6

Roadworks and structures	25	Structures – demolition existing steel bridge and concrete deck and concrete substructures	Construction activities/ conditions leading to an accident. Risk of personal injury/ permanent disability/ death.	3	4	12	Implement access control measures to prevent unauthorized persons and vehicles from entering the construction site at each structure. Ensure that controlled access points are provided at each structure for construction vehicles and personnel. Provide adequate protection where necessary to ensure that persons are not falling off the existing bridge deck, abutments or embankments during or after demolition	Implement prior to start of construction activities then review continually.	2	3	6

SITE SPECIFIC BASELINE RISK ASSESSMENT (P425: Nseleni river bridge No. 3380 - Contract No ZNB 02214/00000/00/HOD/INF/23/T)											
SITE SPECIFIC RISKS				QUALITATIVE RISK ASSESSMENT			RISK STRATEGIES		RESIDUAL RISK		
RISK CLUSTER	RISK No.	ACTIVITY	HAZARD / RISK	L	S	R	MITIGATION ACTIONS	TIME LINE	L	S	R
General	1	General activities on site.	Hazards related to local fauna and flora and insects (crocodiles, hippos, snakes, monkeys, dogs, feral cats, rodents, thorns, nettles, bees, wasps, spiders, ticks, mosquitoes, etcetera). Risk of personal injury/ permanent disability/ death.	3	3	9	Induct employees with regard to such potential dangers, particularly prior to activities such as bush clearing and handling of stockpiled materials. Induct employees with regard to the danger of related common diseases (e.g., rabies, tick bite fever, etcetera). Keep contact details for emergency services prominently displayed in the site office.	Implement prior to start of construction activities then review continually.	2	2	4
General	2	General activities on site.	Hazards related to fire, including veld fires, bush fires and sugar cane fires in the areas surrounding P425. Risk of personal injury/ permanent disability/ death.	3	4	12	Induct employees with regard to potential fire dangers and the procedures to be followed in the event of a fire. Keep contact details for emergency services prominently displayed in the site office.	Implement prior to start of construction activities then review continually.	2	3	6

General	3	General activities on site.	Hazards related to exposure to natural phenomena such as heat, cold, rain, wind, hail and lightning. Risk of personal injury/ permanent disability/ death.	3	3	9	Induct employees with regard to the potential health risks such as headaches, nausea, dehydration, heat exhaustion, fainting, hypothermia, concussion, electrical shock and burns, and associated increased fall risk. Keep contact details for emergency services prominently displayed in the site office.	Implement prior to start of construction activities then review continually.	2	2	4
General	4	General activities on site.	Hazards related to employees not wearing the required protective apparel. Risk of personal injury/ permanent disability/ death.	3	3	9	Ensure that employees have been issued with the appropriate protective apparel required, and replace such apparel if damaged. Train supervisors to ensure that the required protective apparel is indeed being worn by employees when the task is executed. Induct employees with regard to the potential dangers associated with not wearing the required protective apparel. Institute disciplinary action against employees who fail to wear the protective apparel issued.	Implement prior to start of construction activities then review continually.	2	2	4

General	5	General sanitation and hygiene on site, and disease prevention.	Hazards resulting from diseases related to poor sanitation and hygiene, and other diseases. Risk of personal injury/ permanent disability/ death.	3	4	12	Induct employees with regard to sanitation and hygiene issues, and related diseases. Induct employees with regard to the necessity to seek immediate medical treatment with respect to any injuries sustained on site, however minor. Provide adequate serviced facilities on site such as washing and ablution facilities and clean potable water. Hold HIV/AIDS awareness workshops. Plan and implement COVID-19 contamination mitigation measures Keep contact details for emergency services prominently displayed in the site office.	Implement prior to start of construction activities then review continually.	2	3	6
	6	General security on site.	Hazards related to security on site (burglary, robbery, armed robbery, assault, etcetera). Risk of personal injury/ permanent disability/ death.	3	4	12	Provide adequate security on site. Keep contact details for emergency services prominently displayed in the site office.	Implement prior to start of construction activities then review continually.	2	3	6

General	7	Emergency evacuation of injured personnel in the case of life-threatening injuries.	Hazards related to delays in providing appropriate medical attention. Risk of personal injury/permanent disability/death.	3	4	12	Plan then implement appropriate emergency evacuation procedures to be followed in such instances when there may not be time to await the arrival of the emergency services. Induct employees with regard to the procedures to be followed in such instances. Keep contact details for emergency services prominently displayed in the site office. Contact the staff at the relevant institution to forewarn them of the status quo of the casualty en route, so that they can prepare for their arrival and possibly even have paramedics intercept the casualty en route.	Implement prior to start of construction activities then review continually.	2	3	6

D3.3 Guidelines for construction and maintenance projects under Covid-19 Lockdown

The Employer has prepared guidelines which set out the key principles and minimum requirements that define responsible, healthy and safe operations for road construction operations under COVID-19 Lockdown conditions, for the Contractor to comply with. In addition, the Contractor shall comply with any new COVID-19 Regulations issued by Government.

The guidelines have been included as Annexure A at the end of this Project Document.

D4. APPLICATION FOR CONSTRUCTION WORK PERMIT

Where the contract meets the requirements of Construction Regulation 3, the Employer must at least 30 days before commencement of the work and in accordance with the requirements of Construction Regulation 3, apply to the Provincial Director of the Department of Labour in writing for a construction work permit to perform construction work. The Employer's application must be done in a form similar to Annexure 1 of the Construction Regulations, and submitted with the required documentation, some of which the Contractor shall provide as stated in the Contract Data.

A copy of the construction work permit must be kept on site in the occupational health and safety file, available for inspection by inspectors, the Employer, the Employer's Agent, the Construction Health and Safety Agent, subcontractors, employees, representative trade unions and any other persons on the site. The Provincial Director will assign a site-specific number for each construction site, which must be conspicuously displayed at the main entrance to the site.

D5. NOTIFICATION OF CONSTRUCTION WORK

Where the contract meets the requirements of Construction Regulation 4, the Contractor shall, before commencement of the work and in accordance with the requirements of Construction Regulation 4, notify the Provincial Director of the Department of Labour of the intention to carry out the construction work, using the pro forma form included as Annexure 2 to this Health and Safety Specification.

A copy of the notification form must be kept on site, available for inspection by inspectors, the Employer, the Employer's Agent, the Construction Health and Safety Agent, subcontractors, employees, representative trade unions and any other persons on the site. A copy of the notification form shall also be kept on the health and safety file, and a further copy shall be forwarded to the Employer for his records.

D6. HEALTH AND SAFETY PLAN

Before commencement of any construction work, the Contractor shall prepare a project specific Health and Safety Plan complying with the requirements of Construction Regulation 7(1)(a) and this Health and Safety Specification.

The Health and Safety Plan must include a risk assessment performed and recorded in writing by a competent person as required in terms of Construction Regulation 9. The risk assessment shall identify and evaluate the risks and hazards that may be expected during the execution of the work under the contract, and it shall include a documented plan and applicable safe work procedures to mitigate, reduce or control the risks and hazards identified.

The Health and Safety Plan shall be available on site for inspection by inspectors, the Employer, the Employer's Agent, subcontractors, employees, representative trade unions, and health and safety representatives and committee members, and must be monitored and reviewed periodically by the Contractor.

D7. APPOINTMENT OF EMPLOYEES AND SUBCONTRACTORS**D7.1 Appointments**

The Contractor shall appoint in writing all employees.

The Contractor shall appoint in writing all subcontractors, and such appointments shall be in compliance with the requirements of Construction Regulation 7.

D7.2 Health and safety induction training

No person shall be allowed or permitted to enter the site of the works unless such person has undergone health and safety induction training pertaining to the hazards prevalent on the site.

The Contractor shall ensure that all employees under his control, including subcontractors and their employees, undergo health and safety induction training by a competent person before commencement of construction work in compliance with Construction Regulations 7(5) and 9(3) and (4).

The Contractor shall ensure that all visitors to the construction site undergo health and safety induction and are provided with the necessary personal protective equipment in compliance with Construction Regulation 7(6).

D7.3 Medical certificate of fitness

The Contractor shall ensure that every employee, including subcontractors and their employees, has a valid medical certificate of fitness issued in compliance with Construction Regulation 7(1)(g) or 7(8) as applicable.

D8. APPOINTMENT OF SAFETY PERSONNEL**D8.1 Construction manager**

Refer to Construction Regulation 8(1), (2), (3) and (4).

The Contractor shall appoint a full-time **Construction Manager** with the duty of managing all the construction work on the site, including the duty of ensuring occupational health and safety compliance.

The Contractor may also have to appoint one or more **assistant construction managers** to assist the Construction Manager where justified by the scope and complexity of the works.

D8.2 Construction health and safety officer

Refer to Construction Regulation 8(5) and (6).

Taking into consideration the size of the project and the dangers, hazards or risks that can be expected, the Contractor shall appoint in writing a full-time or part-time **construction health and safety officer** to assist in the control of all health and safety related aspects on the site. The construction health and safety officer shall be registered as required by the Chief Inspector of the Department of Labour and shall have the necessary competencies and resources to assist the Contractor.

D8.3 Construction supervisor

Refer to Construction Regulation 8(7), (8), (9) and (10).

The Contractor shall appoint a **construction supervisor** responsible for construction activities and ensuring occupational health and safety compliance on the construction site.

The Contractor may also have to appoint one or more competent employees to assist the construction supervisor where justified by the scope and complexity of the works.

D8.4 Health and safety representatives

In terms of Sections 17 and 18 of the Act (OHSA 1993) the Contractor, being the employer in terms of the Act for the execution of the contract, shall appoint a **health and safety representative** whenever he has more than 20 employees in his employment on the site of the works. The health and safety representative must be selected from employees who are employed in a full-time capacity at a specific workplace.

The number of health and safety representatives for a workplace shall be at least one for every 50 employees.

The function of health and safety representative(s) will be to review the effectiveness of health and safety measures, to identify potential hazards and major incidents, to examine causes of incidents (in collaboration with his employer, the Contractor), to investigate complaints by employees relating to health and safety at work, to make representations to the employer (Contractor) or inspector on general matters affecting the health and safety of employees, to inspect the workplace, plant, machinery, etc. on a regular basis, to participate in consultations with inspectors and to attend meetings of the health and safety committee.

D8.5 Health and safety committee

In terms of Section 19 of the Act (OHSA 1993), the Contractor (as employer) shall establish one or more **health and safety committees** where there are two or more health and safety representatives at a workplace. The persons selected by the Contractor to serve on the committee shall be designated in writing.

The function of the health and safety committee shall be to hold meetings at regular intervals but at least once every three months, to review the health and safety measures on the contract, to discuss incidents related to health and safety with the Contractor and the inspector, to make recommendations regarding health and safety to the Contractor and to keep record of recommendations and reports made by the committee.

E8.6 Competent persons

The Contractor shall appoint in writing designated competent employees and/or other competent persons as required by the Act and Regulations. Such appointments shall be in accordance with the relevant applicable sections of the Act and Regulations as determined by the requirements of the contract.

A competent person may be appointed for more than one part of the construction work with the understanding that the person must be suitably qualified and able to supervise at the same time the construction work in all the work situations for which he has been appointed.

The appointment of competent persons to supervise parts of the construction work does not relieve the Contractor from any of his responsibilities for compliance with **all** requirements of the Construction Regulations.

D9. RECORDS AND REGISTERS

The Contractor shall keep records and registers related to health and safety on site as required by the relevant applicable sections of the Act and Regulations as determined by the requirements of the contract. Such records and registers shall be available for periodic inspection by inspectors, the Employer, the Employer's Agent, the Construction Health and Safety Agent, subcontractors, employees and representatives of trade unions.

D10. CONTRACTOR'S RESPONSIBILITIES

For this contract the Contractor will be the mandatary of the Employer (Client), as defined in the Act (OHSA 1993), which means that the Contractor has the status of employer in his own right in respect of the contract. The Contractor is therefore responsible for all the duties and obligations of an employer as set out in the Act (OHSA 1993) and the Construction Regulations 2014.

Before commencement of work under the contract, the Contractor shall enter into an agreement with the Employer (Client) in terms of C1.4 'Agreement in terms of Section 37(2) of the Occupational Health and Safety Act No. 85 of 1993', to confirm his status as mandatary (employer) for the contract under consideration.

The Contractor is advised in his own interest to make a careful study of the Act and the Construction Regulations, as ignorance of the Act and the Regulations will not be accepted in any proceedings related to non-conformance to the Act and the Regulations.

D11. MEASUREMENT AND PAYMENT

It is a condition of this contract that contractors who submit tenders for this contract shall make provision in their various tendered rates and prices for all costs related to the health and safety measures required in terms of the Act and Regulations during the construction process.

(a) Health and safety plan

The Contractor shall assess the risks associated with the Works when preparing the health and safety plan. In addition, the Contractor shall implement the health and safety plan, including the provision of a dedicated, full time health and safety officer, carrying out all the required site health and safety training and briefings, staff medical evaluations, monitoring and administering the health and safety plan and for supplying all transport, personal protection safety items, other health and safety equipment, safety notices and any other health and safety related items that are required on site. Provision is made for the costs of preparing and implementing the health and safety plan in item B13.03 of the Bill of Quantities.

(b) Safety appointments

No separate additional payment will be made to cover the costs related to persons appointed as required in terms of the Act and Regulations to fulfil the various health and safety functions. Such persons include the Construction Manager, any assistant construction managers, the construction health and safety officer, the construction supervisor, any assistant construction supervisors, health and safety representatives, health and safety committee members and competent persons, all as referred to in subclauses E8.1 to E8.6 above. The Contractor shall therefore make provision in the various tendered rates and prices for all costs related to such persons, and for which no separate additional payment will be made except to the extent provided in item B13.03 of the Bill of Quantities.

(c) Records and registers

The keeping of records and registers related to health and safety on site as described in clause E9 above shall be regarded as a normal duty of the Contractor for which payment shall be deemed to be included in the Contractor's various tendered rates and prices, and for which no separate additional payment will be made except to the extent provided in item B13.03 of the Bill of Quantities.

(d) Medical certificates

No separate additional payment will be made to cover the costs related to obtaining the medical certificates of fitness required for every employee, including subcontractors and their employees, issued in compliance with Construction Regulation 7(1)(g) or 7(8) as applicable. The Contractor shall therefore make provision in the various tendered rates and prices for all costs related to such medical certificates, and for which no separate additional payment will be made except to the extent provided in item B13.03 of the Bill of Quantities.

ANNEXURE 2

**OCCUPATIONAL HEALTH AND SAFETY ACT, 1993
(Regulation 4 of the Construction Regulations, 2014)**

NOTIFICATION OF CONSTRUCTION WORK

1. (a) Name and postal address of principal contractor:

.....

.....

- (b) Name and telephone number of principal contractor's contact person:

.....

2. Principal contractor's compensation registration number:

3. (a) Name and postal address of client:

.....

.....

- (b) Name and telephone number of client's contact person or agent:

.....

4. (a) Name and postal address of designer(s) for the project:

.....

.....

- (b) Name and telephone number of designer's(s') contact person(s):

.....

.....

5. Name and telephone number of principal contractor's construction manager on site appointed

in terms of regulation 8(1):

.....

6. Name(s) of principal contractor's assistant construction manager(s) on site appointed in terms of regulation 8(2):

ANNEXURE 2 - Continued

7. Exact physical address of the construction site or site office:

8. Nature of the construction work:

.....

.....

9. Expected commencement date:

10. Expected completion date:

.....

11. Estimated maximum number of persons on the construction site:

Total: Male: Female:

.....

12. Planned number of contractors on the construction site accountable to principal contractor:

.....

13. Name(s) of contractors already selected:

.....

.....

.....

.....
Principal Contractor **Date**

.....
Client's Agent (where applicable) **Date**

.....
Client **Date**

- THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR **PRIOR TO COMMENCEMENT** OF WORK ON SITE.

C3.3 PARTICULAR SPECIFICATIONS

PART E: EXPANDED PUBLIC WORKS PROGRAMME

PART F: EXPANDED PUBLIC WORKS PROGRAMME

E1. SCOPE

This part provides the specifications with regard to the following:

- (a) The Expanded Public Works Programme (EPWP); and
- (b) The National Youth Service (NYS) programme, which is a government programme implemented by the National Department of Public Works forming part of the Expanded Public Works Programme (EPWP).

The Contractor shall be required to participate in job creation (employment of local labour) by executing various portions of the Works using local labour (unskilled or semi-skilled), recruited from the local community, who are South African Citizens or foreigners in possession of a work visa issued by the Department of Home Affairs (only one such foreigner may be employed on any project). Such local labour shall be the targeted participants in the EPWP and NYS programmes.

Furthermore, in order to avoid duplication of training facilities, the provision of training facilities for all structured training, including for the structured training described in Part G: Small Contractor Development (in those instances where Part G is included in the contract), shall be measured and paid for in terms of the pay items provided in this Part F.

E2. EXPANDED PUBLIC WORKS PROGRAMME (EPWP)

E2.1 Labour-intensive construction, supervision and management for the Expanded Public Works Programme (EPWP)

The Expanded Public Works Programme (EPWP) is a multi-sectoral government initiative to create jobs. In the case of the infrastructure sector, existing government expenditure is realigned using labour-intensive technologies to create job opportunities. This involves the use of both labour and construction equipment, where labour is preferred and construction equipment is used appropriately.

All work undertaken in terms of the Expanded Public Works Programme (EPWP) shall be implemented using labour-intensive construction methods to the extent economically feasible, in accordance with the "Guidelines for the Implementation of Labour-Intensive Infrastructure Projects under the Expanded Public Works Programme (EPWP) Third Edition 2015".

The aforementioned guidelines can be downloaded from the EPWP website of the Department of Public Works (<http://www.epwp.gov.za/>).

Items scheduled for labour-intensive construction are marked with the letters "LI" in the bill of quantities in the manner described in C2.1 Pricing Assumptions.

Contractors shall note that they shall employ in labour-intensive works only the following supervisory and management staff that have completed the required Skills Programme in terms of Appendix C of the aforementioned guidelines:

- (a) Foremen / Supervisors at NQF level 4 "National Certificate: Supervision of Civil Engineering Construction Processes";
- (b) Site Agent / Construction Manager at NQF level 5 "Manage Labour-Intensive Construction Processes" or equivalent Quality Council for Trades and Occupations (QCTO) qualifications at NQF level 5 or 7.

In addition to their normal supervisory and management functions, the aforementioned supervisory and management staff shall also be responsible for setting the workers' daily tasks in accordance with labour-intensive construction principles, and for ensuring that the EPWP job creation reporting data is accurately recorded on a daily basis and compiled and submitted to the Employer each month in accordance with clause F4 of this Part F.

E2.2 Labour laws applicable to the Expanded Public Works Programme (EPWP)

The work to be undertaken on this contract by unskilled or semi-skilled workers under the Expanded Public Works Programme (EPWP) shall be implemented in accordance with:

- (a) the Code of Good Practice for Employment and Conditions of Work for Expanded Public Works Programmes (EPWP), issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No. 129 of 18 February 2011 (Government Gazette No. 34032 of 18 February 2011); and
- (b) Ministerial Determination 4: Expanded Public Works Programmes, issued in terms of the Basic Conditions of Employment Act of 1997 by the Minister of Labour in Government Notice No. R347 of 4 May 2012.

The aforementioned Government Notice No. R347 contains the standard terms and conditions for workers employed in elementary occupations on an Expanded Public Works Programme (EPWP). These terms and conditions do not apply to persons employed in the supervision and management of an Expanded Public Works Programme (EPWP).

The above documents can be downloaded from the EPWP website of the Department of Public Works (<http://www.epwp.gov.za/>).

E2.3 Persons to be employed under the Expanded Public Works Programme (EPWP)

All local labour required for the execution of labour-intensive works shall be engaged strictly in accordance with prevailing legislation.

The Contractor shall, through the Project Liaison Committee (PLC) and with the assistance of the Project Liaison Officer (PLO), inform the local community of the labour-intensive works proposed and the employment opportunities thereby presented.

The Contractor shall determine the minimum education level / skills required to undertake the works specified. In consultation with the PLC and the War Room convener for each relevant ward, selection of the local labour shall be made from households on the Operation Sukuma Sakhe (OSS) database profiled through the War Room for each ward. The list obtained from the OSS database must be accompanied by a letter from the War Room convener confirming that all the information provided was sourced from the War Room and that all listed incumbents reside within the relevant ward. The Contractor must maintain records of household profiles as part of the portfolio of evidence for selection. Selection shall be based on the minimum education level / skills required and the most-needy households, as determined by the household profiling. Preference shall be given for at least one person from each household in the community to be employed before further persons are considered for selection.

The Contractor shall endeavour to ensure that the number of temporary jobs using local labour (unskilled or semi-skilled), recruited from the local community, who are South African Citizens or foreigners in possession of a work visa issued by the Department of Home Affairs (only one such foreigner may be employed on any project), shall include for a minimum allocation of:

- (a) 60% women;
- (b) 55% youth who are between the ages of 18 and 35; and
- (c) 2% persons with disabilities.

All labour recruitment, employment and associated risks shall remain the sole responsibility of the contractor.

The contractor shall comply with the minimum supervisor to worker ratio stated below, required to ensure the effective supervision of the labour-intensive works for all LI activities undertaken on this project:

Minimum supervisor to worker ratio = 1:10

E2.4 Contract of employment with persons employed under the Expanded Public Works Programme (EPWP)

The Contractor shall enter into a formal contract of employment with each person employed under the Expanded Public Works Programme (EPWP), using the pro forma contract of employment attached at the end of this Part F of section 3.3 Particular Specifications.

The Contractor shall note that all such formal contracts of employment entered into with persons employed under the Expanded Public Works Programme (EPWP) shall expire on 31 March each year, and the Contractor shall therefore be required to enter into new contracts with such persons as of 1 April each year.

E2.5 Employment of targeted labour under the Expanded Public Works Programme (EPWP)

The Contractor shall be contractually obliged to:

- (a) brief EPWP workers on the conditions of employment;
- (b) enter into a formal contract of employment with each EPWP worker, which contract will form part of the Employment Agreement;
- (c) keep personnel files for all EPWP workers and make copies available to the Employer if and when requested; and
- (d) ensure that payments to EPWP workers are made in accordance with Government Notice No. R347.

The rate of pay for persons employed under the Expanded Public Works Programme (EPWP) shall be the gazetted rate:

- (i) per task (for task-rated workers); or
- (ii) per day (for time-rated workers).

During those periods when an EPWP worker is engaged in formal classroom training (other than in-service training), the rate of pay shall be equal to the minimum wage rate as set on an annual basis in the Ministerial Determination for the Expanded Public Works Programme.

Tasks set by the Contractor shall be such that:

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

The Contractor shall revise the time taken to complete a task whenever it is established that the time taken per week to complete the tasks set does not fall within the limits indicated in (a) and (b) above.

E2.6 Training of persons employed under the Expanded Public Works Programme (EPWP)

The training of persons employed under the Expanded Public Works Programme (EPWP) is described in clause F4 below.

E2.7 Contractor's obligations towards persons employed under the Expanded Public Works Programme (EPWP)

Over and above implementing in accordance with Government Notice Nos. 129 and R347 the EPWP work to be undertaken on this contract, it shall be the responsibility of the Contractor to carry out the following functions with respect to the EPWP workers:

- (a) ensure that all participants are covered by the Compensation for Occupational Injuries and Diseases Act, 1993, for as long as they are contracted to the Contractor, and pay in full to the Compensation Commissioner such amounts as are due in terms of the Act;
- (b) pay in full to the Unemployment Insurance Fund for all participants such UIF contribution amounts as are due in terms of the Unemployment Insurance Act, 2001, as amended, and the Unemployment

- Insurance Contributions Act, 2002, as amended, and provide proof of such UIF payments upon request;
- (c) ensure that all participants are paid their wages on time through the pre-agreed payment method as stipulated in the participant contract of employment;
 - (d) implement health and safety procedures with respect to the participants, ensuring that the health and safety regulations are adhered to;
 - (e) ensure that all participants receive induction on site safety prior to commencing with work on site;
 - (f) provide all participants with the necessary protective clothing and equipment as required by law for the specific tasks in which the participants are involved, in addition to the branded overalls stipulated for EPWP workers;
 - (g) provide safe on-site storage facilities for apparel and tools issued to the participants;
 - (h) assist in the assessment of participants with regard to their competencies;
 - (i) provide overall supervision and day-to-day management of participants; and
 - (j) implement strict quality control to ensure that the work carried out by the participants is of the required standard, and, where necessary, to train and mentor the participants to assist them in achieving the standards required.

E2.8 Apparel and tools for persons employed under the Expanded Public Works Programme (EPWP)

The Contractor shall provide Personal Protective Equipment (PPE) to all EPWP workers in accordance with the requirements arising from Part E: OHSA 1993 Health and Safety Specification and the Contractor's site-specific health and safety plan and accompanying risk assessments.

Where indicated below, certain items of the PPE issued by the Contractor to the EPWP workers shall include branded EPWP markings in accordance with the attached branding requirements.

PPE shall comprise the following:

- (a) Compulsory PPE issued to all EPWP workers for use during general work activities:
 - (i) Protective overalls (two sets), green in colour, with EPWP branding;
 - (ii) Lime green reflective safety vest with EPWP branding;
 - (iii) Protective footwear; and
 - (iv) Protective gloves.
- (b) PPE issued to EPWP workers for specific activities where required in terms of the Contractor's site-specific health and safety plan and accompanying risk assessments, such as:
 - (i) Protective headwear, green in colour, with EPWP branding;
 - (ii) Protective eyewear such as spectacles and goggles;
 - (iii) Protective face shields;
 - (iv) Protective earplugs and earmuffs;
 - (v) Respiratory masks;
 - (vi) Disposable safety apparel;
 - (vii) Kidney belts;
 - (viii) Safety harnesses; and
 - (ix) Any other protective equipment identified.

The Contractor shall replace any item of issued PPE that becomes unserviceable.

The Contractor shall not charge any fee to the EPWP workers for the prescribed PPE issued except under the following circumstances:

- (i) where the employee requests the issue of additional PPE in excess of what is prescribed;
- (ii) where the employee has patently abused or neglected the issued PPE leading to early failure; or
- (iii) where the employee has lost the issued PPE.

The Contractor shall instruct and train the EPWP workers in the use of all PPE issued, and shall ensure that

they use the prescribed equipment.

EPWP workers shall not have the right to refuse to use or wear the equipment prescribed by the Contractor. If it is not possible for an EPWP worker, through health or any other reason, to use or wear the prescribed PPE issued, such employee shall not be allowed to continue working under the hazardous conditions for which the equipment was prescribed. Under such circumstances an alternative solution shall be found, and this may include relocating or discharging the employee.

The Contractor shall provide each EPWP worker with hand tools of adequate quality and of the type required to carry out the assigned tasks safely and efficiently.

The Contractor shall instruct and train the EPWP workers in the safe and efficient use of all hand tools issued.

The Contractor shall maintain the issued tools in a serviceable and safe working condition.

The EPWP workers shall be responsible for the safe on-site storage of all PPE and tools issued to them, using the storage facilities provided on site by the Contractor.

No separate payment shall be made for providing the EPWP workers with PPE, or for providing relevant items of PPE in the specified colours with branded EPWP markings. Furthermore, no separate payment shall be made for providing the EPWP workers with hand tools or for providing them with safe storage facilities on site for PPE and tools. The Contractor shall therefore make provision for all costs related to providing the PPE, tools and safe storage facilities in the tendered rates and prices for the various items of work scheduled throughout the bill of quantities.

E2.9 EPWP contract signboard

The Contractor will be required to erect a contract signboard displaying the EPWP logo, indicating that this project is part of the Expanded Public Works Programme (EPWP). Provision for the costs related to the provision, erection and subsequent removal of the contract signboard is made in pay item provided in section 1300 of the bill of quantities for this purpose.

E2.10 Payment matters relating to the EPWP work

E2.10.1 General

No separate pay items shall be provided in terms of Part F of the bill of quantities for the construction work activities carried out by EPWP participants. Payment for such work activities shall be made only indirectly, in terms of the pay items scheduled for the work activities in which such persons are engaged.

Furthermore, no direct payment will be made to cover the Contractor's costs associated with implementing the on-site work programme for the EPWP participants, for planning, organising, directing, controlling and administering their day to day activities, including the setting of daily tasks, record keeping and any on-site liaison, training and mentoring required, and for the associated job creation reporting, and such costs shall therefore be built into the rates tendered for the various items of work scheduled throughout the bill of quantities.

E2.10.2 Payment for labour-intensive components of the work

Payment will be made for items which are designated for labour-intensive construction in the bill of quantities only in those instances where such items are constructed using labour-intensive methods.

Any unauthorised use of construction equipment to carry out work which was scheduled to be carried out using labour-intensive methods will not be condoned and any Works so constructed will not be certified for payment. Any non-payment for such Works shall not relieve the Contractor in any way from his obligations either in contract or in delict.

During the course of construction, as a result of unforeseen site conditions or operating conditions encountered, it may happen that an item designated for labour-intensive construction can no longer be carried out in a safe and economically feasible manner, either in full or in part, using labour-intensive methods. In

such instances the Employer's Agent shall, where necessary, order a variation in terms of clause 6.3 of the of the General Conditions of Contract 2015 with respect to that portion of the item quantity that cannot be carried out using labour-intensive methods.

E2.11 Penalty applicable to any shortfall in the local labour content achieved

The amount spent on wages for local labour (excluding VAT) for this project, as certified by the Employer's Agent, shall equal or exceed the specified minimum percentage of the contract amount which is the Contract Price (adjusted to exclude penalties and value added tax).

The Contractor is obliged to commit to or exceed the specified minimum percentage of local labour content stated in section C1.2.2 Data Provided by the Employer.

In the event that the Contractor fails to substantiate that any failure to achieve the minimum required local labour content for this project is due to quantitative underruns, the elimination of items contracted to local labour, or any other reason beyond the Contractor's control which may be acceptable to the Employer, the Contractor shall be liable for a financial penalty as prescribed in clause SCC 4.1.1 of section C1.2.1.2 Special Conditions of Contract. The financial penalty shall be calculated as follows:

$$P = 0,05 \times [(E - E_o)/100] \times C_A$$

where:

E is the specified minimum percentage for local labour content

E_o is the local labour content percentage which the Employer's Agent certifies as being achieved upon completion of the contract

C_A is the contract amount which is the Contract Price (adjusted to exclude penalties and value added tax)

P is the monetary value of penalty payable

The penalty shall not apply to shortfalls in the allocations to the individual target groups (i.e., Women/Youth/Disabled as per clause F1.3 above), only to shortfalls in the total local labour content achieved.

The evaluation of the Contractor's achievement of the local labour content percentage shall be undertaken monthly by the Employer's Agent, based on the accumulative achievements in comparison to the programmed utilisation of local labour, as a means of monitoring the Contractor's performance in achieving the Contract Participation Goal.

Failure by the Contractor to achieve the Contract Participation Goal target by the time of Practical Completion, shall result in the financial penalty being applied as prescribed in this clause. The Employer's Agent shall make a final determination of the Contractor's achievement of the Contract Participation Goal based on the value of the Final Payment Certificate.

E3. NATIONAL YOUTH SERVICE (NYS)

The Employer requires the implementation of National Youth Service (NYS) programmes on this project.

E3.1 The National Youth Service (NYS) programme

The National Youth Service (NYS) programme aims to train young people and provide them with practical work experience. The young people will be allocated tasks by the Contractor that will assist the Contractor with the execution of the contract.

E3.2 Applicable labour laws

The work to be undertaken on this contract by unskilled or semi-skilled workers under the National Youth Service (NYS) programme shall be implemented in accordance with the same Code of Good Practice and Ministerial Determination as described in clause F2.2 above for work to be undertaken under the Expanded Public Works Programme (EPWP).

E3.3 Employer's project manager

The Contractor shall be required to liaise closely with the Employer's project manager who is responsible for the recruitment and training of the NYS workers.

E3.4 Persons to be employed under the NYS programme

For purposes of this contract, the Contractor shall be required to employ 10 youths aged between 18 and 35 for a period of 6 months each under the NYS programme.

The Employer's project manager shall provide the Contractor with a list of the 10 youths to be employed and the training that each of these 10 youths have received to date, and only these 10 youths shall be employed by the Contractor under the NYS programme.

E3.5 Contract of employment with persons employed under the NYS programme

The Contractor shall enter into a formal contract of employment with each youth employed under the NYS programme, using the pro forma contract of employment attached at the end of this Part F of section 3.3 Particular Specifications.

E3.6 Employment of NYS workers

The Contractor will be contractually obliged to:

- (a) employ all participants on the list provided by the Employer's project manager;
- (b) brief NYS workers on the conditions of employment;
- (c) enter into a formal contract of employment with each NYS worker, which contract will form part of the Employment Agreement;
- (d) keep personnel files for all NYS workers and make copies available to the Employer's project manager if and when requested; and
- (e) ensure that payments to NYS workers are made in accordance with Government Notice No. R347.

During the period when they are engaged in formal classroom training (other than in-service training), the youths employed under the NYS programme shall be paid the minimum wage rate as set by the Department of Labour on an annual basis in the Ministerial Determination for the Expanded Public Works Programme, and should there be an upward adjustment in the rate the Contractor will be compensated accordingly. During the period when they are engaged in productive work activities required for elements of the Works, they shall be paid in terms of the wage rates stated in clause F2.5 above.

E3.7 Training of youth workers

All NYS workers will be placed on an extensive training programme that will include:

- (a) an induction into NYS and EPWP;
- (b) life skills training;
- (c) technical training focusing on a vocational skill to be used on the project (e.g., painting or carpentry); and
- (d) entrepreneurship and business skills training.

All training will be arranged by the Employer's project manager, with whom the Contractor will be required to work closely to schedule the training sessions so that the timing of the training is aligned with the Contractor's work schedule and his demand for workers with specific skills. The Employer's project manager will make full details of the training programme available to the Contractor.

A compulsory 10-day life skills training must be provided before commencement of classroom training on NYS. This type of training must be provided by a NYDA accredited service provider as per the National Youth Service Framework from the National Department of Public Works.

The Contractor shall maintain comprehensive records of the training received by each NYS worker throughout

the course of the contract, and shall submit to the Employer at each monthly site meeting a summary of the accumulated training received by each NYS worker.

The training of the NYS workers shall take place using the same training facility provided for the training of all other EPWP participants (refer to clause F5 below).

E3.8 Contractor's obligations towards persons employed under the NYS programme

Over and above implementing in accordance with Government Notice Nos. 129 and R347 the NYS programme work to be undertaken on this contract, it shall be the responsibility of the Contractor to carry out the following functions with respect to the NYS programme workers:

- (a) ensure that all participants are covered by the Compensation for Occupational Injuries and Diseases Act, 1993, for as long as they are contracted to the Contractor, and pay in full to the Compensation Commissioner such amounts as are due in terms of the Act;
- (b) pay in full to the Unemployment Insurance Fund for all participants such UIF contribution amounts as are due in terms of the Unemployment Insurance Act, 2001, as amended, and the Unemployment Insurance Contributions Act, 2002, as amended, and provide proof of such UIF payments upon request;
- (c) ensure that all participants are paid their wages on time through the pre-agreed payment method as stipulated in the participant contract;
- (d) implement health and safety procedures with respect to the participants, ensuring that the health and safety regulations are adhered to;
- (e) ensure that all participants receive induction on site safety prior to commencing with work on site;
- (f) provide all participants with the necessary protective clothing and equipment as required by law for the specific trades in which the participants are involved, in addition to the branded overalls stipulated for NYS workers;
- (g) provide safe on-site storage facilities for apparel and tools issued to the participants;
- (h) assist in the assessment of participants with regard to their competencies in their respective trades;
- (i) provide overall supervision and day-to-day management of participants; and
- (j) implement strict quality control to ensure that the work carried out by the participants is of the required standard, and, where necessary, to train and mentor the participants to assist them in achieving the standards required.

E3.9 Apparel and tools for NYS workers

The content of clause F2.8 above with regard to apparel and tools for EPWP workers shall apply equally to NYS workers, except that:

- (a) apparel and tools to be issued to NYS workers shall be determined in conjunction with the Employer's project manager;
- (b) the required branding of apparel to be issued to NYS workers shall be determined in conjunction with the Employer's project manager, and shall also include the NYS logo;
- (c) additional PPE may be required depending on the NYS worker's specific trade;
- (d) certain specified apparel and tools issued to the NYS workers will become the property of the NYS workers after the completion of their cycle of work on the project, in order to enable them to continue to practise their trade on future projects. Such apparel and tools shall be specified and authorised by the Employer's Agent; and
- (e) separate payment items have been provided in Part F of the bill of quantities to cover all costs associated with the provision of the necessary tools and apparel, including safety apparel, for the NYS workers, and the facilities for the safe storage thereof, all as authorised by the Employer's Agent.

E3.10 EPWP-NYS contract signboard

Where work takes place under the National Youth Service (NYS) programme, the NYS logo shall also be displayed on the EPWP contract signboard referred to in clause F2.9 above, indicating that this project is part of both the Expanded Public Works Programme (EPWP) and the NYS programme. Provision for the costs

related to the provision, erection and subsequent removal of the contract signboard in the pay item provided in section 1300 of the bill of quantities for this purpose.

E3.11 Payment matters relating to the NYS work

No direct payment will be made to cover the Contractor's costs associated with implementing the on-site work programme for the NYS workers, for planning, organising, directing, controlling and administering their day to day activities, including the setting of daily tasks, record keeping and any on-site liaison, training and mentoring required, and for the associated job creation reporting, and such costs shall therefore be built into the rates tendered for the various items of work scheduled throughout the bill of quantities.

E4. JOB CREATION REPORTING FOR EPWP

In order to assist the Employer in complying with the goal of creating EPWP job opportunities, the Contractor must provide the information specified in clause F4.1 below for reporting purposes.

In addition, the Contractor's payment certificates shall be accompanied by the information specified in clause F4.2 below.

E4.1 Type of project data required per project

Every EPWP project shall collect and keep specific project data for the purpose of EPWP progress reporting on a monthly basis, using the EPWP Data Collection Tool template (this will be made available to the Contractor in Microsoft Excel format - refer to the pro forma spreadsheets at the end of this Part F of the Particular Specifications).

The data that is required to be kept, maintained and reported on a monthly basis for each project includes:

E4.1.1 Participant (local labour) data

A participant list of the local labour employed must be maintained for every EPWP project. The data required in this participant list is indicated below. This data shall be recorded, checked and signed off by the Contractor, and shall be submitted to the Employer at each monthly site meeting. The participant list shall contain the following data and shall be kept and maintained on site for audit purposes:

- (a) Participant identity – name, surname, initials, date of birth and identity number (or other unique identifier) plus certified copy of ID book.
- (b) Participant profiles – nationality, gender, age, education level and disability status.
- (c) Work data for participants – daily wage to be received, number of calendar days training attended and number of calendar days worked.
- (d) Records of training – as required in terms of the EPWP Data Collection Tool template.

In addition, the signed contracts of employment between the Contractor and each EPWP participant shall be kept and maintained on site for audit purposes.

E4.1.2 Project work data

The project work data generally seeks to confirm the number of people at work daily on the project. This data shall be recorded, checked and signed off by the Contractor, and shall be submitted to the Employer at each monthly site meeting. The data shall be maintained on site by the Contractor, in order that it can be provided by the Employer to the National Department of Public Works upon request when the latter is undertaking sample auditing. These records shall be kept by the Contractor for a period of three years after contract completion should they be required for audit purposes.

The data shall include:

- (a) Daily attendance register – register for each day showing all the workers that were registered as being at work on that day. Attendance registers shall be completed on site on a daily basis and signed off

by the Contractor on a weekly basis. Refer to pro forma attendance register attached at the end of this Part F of section 3.3.

- (b) Summary of monthly attendance.

E4.1.3 Project payment data

The project payment data generally seeks to confirm what was paid, for how much work and to whom. This data shall be recorded, checked and signed off by the Contractor, and shall be submitted to the Employer at each monthly site meeting.

It is required that the Contractor adopt one of the following methods as standard procedure for recording and maintaining this information:

- (a) Payment register – this is a list of the workers showing the wages paid to each worker, and signed off by each worker as proof of receipt and acceptance of payment. Information on this register must include the name of the worker, either an identity number or other unique identifier, the number of calendar days that the pay period covers, the wage rate and the total wages paid; or
- (b) Bank records showing the transfers to each worker account, signed off by the Contractor as proof of payment – these bank records must specifically show the name of the worker, either an identity number or other unique identifier, the period which the pay covers and the total wages paid.

The project payment data, as recorded and maintained by the Contractor in terms of either (a) or (b) above, must be available and applicable for the entire period for which the Employer claims an incentive reward for person-days of work created in terms of the project.

E4.1.4 Employment output data

The Contractor shall submit to the Employer at each monthly site meeting a progress report detailing production output compared to the programme of works, together with the data necessary to enable the Employer to calculate the following employment output data in accordance with the EPWP Data Collection Tool template:

- (a) Number of work opportunities created (where one work opportunity = paid work created for one individual on an EPWP project, for any period of time).
- (b) Number of person-days of work created (where one person-day = one day of work carried out by one individual). The total number of person-days of work created on a particular EPWP project shall be obtained by summing the total number of person-days worked by each individual employed during the course of that EPWP project.
- (c) Number of Full Time Equivalents (FTE) created (= total number of person-days of work created on the EPWP project divided by 230 working days). In terms of EPWP policy, one year of work created for one individual is assumed to comprise a total of 230 days of paid work carried out by that individual.
- (d) Average duration of work opportunities created (= total number of person-days of work created on the EPWP project divided by the number of work opportunities created on that EPWP project).
- (e) Average daily wage rates paid (= accumulated total of the wages paid to all individuals employed on an EPWP project divided by the total number of person-days of work created on that EPWP project).
- (f) Training information.

E4.2 Project data to be submitted with the Contractor's payment certificates

The Contractor's payment certificates shall be accompanied by labour returns providing the labour information for the corresponding period in a format specified by the Employer.

Should the Contractor choose to delay submitting payment certificates, the labour returns shall nevertheless still be submitted as per the frequency and timeframes stipulated by the Employer. The Contractor's payment certificates shall not be paid by the Employer until all pending labour information has been submitted.

The following information shall be maintained on site and submitted with each payment certificate in the format

specified by the Employer:

- (a) Copies of the signed contracts between the Contractor and any new EPWP participants (the Contractor shall note that all such formal contracts of employment entered into with persons employed under the Expanded Public Works Programme (EPWP) shall expire on 31 March each year, and the Contractor shall therefore be required to enter into new contracts with such persons as of 1 April each year, and shall be required to submit copies of all such new contracts with the first payment certificate thereafter);
- (b) Certified ID copies of all local labour employed as EPWP participants;
- (c) Attendance registers for the EPWP participants;
- (d) Proof of payment of EPWP participants; and
- (e) Information as required in terms of the EPWP Data Collection Tool template.

E5. PROVISION OF STRUCTURED TRAINING

E5.1 Scope of structured training

In order to avoid duplication of training facilities, the training described in Part G: Small Contractor Development (in those instances where Part G is included in the contract), shall be provided utilising the training facility measured and paid for in accordance with the requirements of this Part F: Expanded Public Works Programme (EPWP).

The Employer's objectives include the training of local labour and Targeted Enterprises within a structured programme, in order to equip them with skills that will assist them in gaining future employment, and to facilitate targeted EPWP participants in gaining competencies and unit standard credits towards future full learnership qualifications.

Such training shall contain both theoretical and practical components and shall be conducted in accordance with the various laws and regulations contained in the South African Qualifications Authority (SAQA) statutes.

The following aspects of the structured training to be provided are noted:

- (a) The Employer has no service agreement or memorandum of understanding with any Education and Training Quality Assurance (ETQA) body, and therefore does not function as the employer as defined under any three-party learnership agreement between the learner, the training provider and the employer.
- (b) The structured training programmes implemented on this contract, although comprising several unit standards, are unlikely to total to sufficient credits for a full learnership qualification. Nevertheless, the competencies and credits achieved should contribute to a full learnership through the later acquisition by the learner of the remaining unit standards required for the full learnership.

The Contractor shall be required to provide a training facility on the Site, or in close proximity thereto, and to provide over the duration of the contract the following structured training for EPWP participants:

- (a) Generic skills training;
- (b) Entrepreneurial skills training;
- (c) Construction skills training; and
- (d) In-service training.

Generic skills training and in-service training shall be provided to all EPWP participants.

Entrepreneurial and construction skills training shall be provided to targeted EPWP participants only.

E5.2 Training provider and trainers

The Contractor shall be required to procure the services of a training provider accredited by the Construction Education and Training Authority (CETA).

The training provider shall have in its employ trainers who are registered as assessors with the Construction Education and Training Authority (CETA), and who shall deliver the training.

Proof of the accreditation of the service provider and the registration of the trainers by the CETA shall be submitted to the Employer's Agent. Such accreditation and registration shall be current and valid, and the proof submitted shall include the NQF levels and unit standards for which each trainer is accredited.

E5.3 Skills analysis and selection of targeted EPWP participants

Studying for any learnership requires minimum literacy and numeracy competencies as defined by SAQA. The actual literacy and numeracy levels of the persons employed on the Site shall provide a basis to guide the Contractor and the training provider on how to conduct the selection process.

The Contractor shall therefore conduct a skills analysis of the local labour and Targeted Enterprises employed, in order to determine the formal education qualifications of each employee.

The Contractor, in conjunction with the training provider, shall then identify those persons that display the potential to benefit from such structured entrepreneurial and construction skills training as may be provided for in the contract, and shall make recommendations in this regard to the Employer's Agent.

The final candidates selected for such training shall be decided between the Contractor and the Employer's Agent (or by the Project Management Team (PMT) in the case of training for Targeted Enterprises in terms of Part G: Small Contractor Development, where applicable).

E5.4 Structured training programmes

The Contractor, supported by the training provider, shall plan then implement structured training programmes for generic, entrepreneurial and construction skills training.

Training courses shall commence within Four months of the Contractor taking possession of the Site, and shall be completed before the Due Completion Date.

All training shall take place within normal working hours, or as otherwise agreed with the learners.

The training provider shall design, compile and deliver the structured training programmes, based on the information obtained from the skills analysis.

E5.4.1 Generic skills training

The structured training programmes designed by the training provider for the generic skills training shall comprise relevant general courses such as basic hygiene and HIV/AIDS awareness, first aid, road safety, managing personal finance, and other courses that would be useful to workers in the road construction industry or as life skills generally.

E5.4.2 Entrepreneurial skills training

The structured training programmes designed by the training provider for the entrepreneurial skills training shall comprise unit standards that contribute towards one or more of the following full learnership qualifications, as appropriate taking into consideration the skills analysis information for the selected candidates (details of the learnership qualifications and the applicable unit standards may be found on the website www.saqa.org.za):

ENTREPRENEURIAL SKILLS TRAINING				
Qualification title	SAQA qualification ID	NQF level	Minimum credits	Purpose of qualification

National Certificate: Supervision of Construction Processes	49053	Level 4	176	Learners found competent against this qualification will be able to execute the supervision of construction processes, with specialisation in a specific context
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E5.4.3 Construction skills training

The structured training programmes designed by the training provider for the construction skills training shall comprise unit standards that contribute towards one or more of the following full learnership qualifications, as appropriate taking into consideration the skills analysis information for the selected candidates (details of the learnership qualifications and the applicable unit standards may be found on the website www.saga.org.za):

CONSTRUCTION SKILLS TRAINING				
Qualification title	SAQA qualification ID	NQF level	Minimum credits	Purpose of qualification
National Certificate: Supervision of Construction Processes	49053	Level 4	176	Learners found competent against this qualification will be able to execute the supervision of construction processes, with specialisation in a specific context
National Certificate: Construction: Roadworks	24173	Level 3	155	This qualification is for persons who work or intend to work within a construction context on a site, and who seek recognition for essential skills in construction operations in roadworks.
National Certificate: Construction: Roadworks	24133	Level 2	120	This qualification is for persons who work or intend to work within a construction context on a site, and who seek recognition for essential skills in construction operations in roadworks.
National Certificate: Occupational Health, Safety and Environment	74269	Level 2	120	This qualification is to equip learners working in any type of workplace with a broad understanding and knowledge of Occupational Health, Safety and Environmental (HSE) concepts and practices with sufficient detail to enable them to function in a safe and healthy way and to deal with health and safety problems and issues.

E5.4.4 Training programme

The Contractor's proposed training programmes shall be subject to the approval of the Employer's Agent (or the approval of the Project Management Team (PMT) in the case of training for Targeted Enterprises in terms of Part G: Small Contractor Development, where applicable), and the Contractor shall, if so, instructed by the Employer's Agent or the PMT, alter or amend the programmes and the course content to meet any additional needs identified.

The Contractor shall be responsible for everything necessary for the delivery of the training programmes, including:

- (a) the provision of the trainers;
- (b) the provision of a suitable secure venue, complete with adequate furniture, lighting, air conditioning, power and ablution facilities;
- (c) the provision of all necessary stationery, consumables and study materials;
- (d) the transportation of the learners to and from the training facility;
- (e) the payment of wages to all learners during the classroom training at a rate equal to the minimum wage rate as set on an annual basis in the Ministerial Determination for the Expanded Public Works Programme;
- (f) the provision of any relevant Personal Protective Equipment (PPE) required for the training; and
- (g) additional supervision of the learners during the practical learning stage of the training carried out by constructing relevant elements of the Works (wages for the learners during this stage of the training will be paid through the rates tendered for the relevant scheduled work items for those elements).

At the successful completion of each course, the Contractor's training provider shall, as proof of attendance and completion, issue each learner with a certificate indicating the course content.

The training provider shall also ensure that each unit standard contributing towards a full learnership qualification and successfully completed by the learner is entered onto the national database.

The Contractor shall keep comprehensive records of the training given to each learner and the certificates issued, and shall provide copies of such records to the Employer's Agent when required.

The Contractor shall also complete and submit to the Employer's Agent each month, in a format acceptable to the Employer (using the EPWP Data Collection Tool template), a return detailing the training provided, both for the month and cumulatively for the contract.

E5.5 In-service training

The Contractor shall, from the commencement of the contract, implement an in-service training programme in which the various skills required for the execution and completion of the Works are imparted to the EPWP participants engaged thereon.

Throughout the duration of the contract, the EPWP participants shall be trained progressively through the various stages of each particular type of work in which they are engaged, and their work shall be supervised and monitored and their methods corrected where necessary.

The in-service training programme shall be submitted with the initial Works programme. The Contractor shall record the progress in relation to this programme on a monthly basis, and this progress report shall be incorporated in the monthly site meeting minutes and the payment certificate.

The Contractor shall provide sufficient skilled and competent trainers to train all EPWP participants engaged on the contract in the various skills required to enable them to carry out the required construction activities.

The in-service training of EPWP participants shall take place before commencement of the relevant construction activity, and the Contractor shall take into account in his programme the lead time required for such training. All in-service training shall be deemed to be an element of the relevant construction activity.

All formal in-service training shall be documented in terms of the EPWP Data Collection Tool template, and shall be accompanied by an attendance register of the EPWP participants on the applicable days.

All EPWP participants shall be remunerated at their agreed wage rate in respect of the time spent undergoing in-service training. The cost of the Contractor's in-service training obligations shall be deemed to be covered by the sums and rates tendered for items B13.01(a), (b) and (c) in the bill of quantities.

On termination of their employment, the Contractor shall provide each EPWP participant engaged on the contract with a certificate of service on which the following information shall be recorded:

- (i) name of the Contractor;
- (ii) name of the project / contract;
- (iii) name of the employee;
- (iv) nature of the work satisfactorily executed by the EPWP participant and the time spent thereon;
- (v) nature and extent of training provided to the EPWP participant; and
- (vi) dates of service.

E5.6 Training venue facility

The training venue facility to be provided by the Contractor shall be constructed, furnished and fully serviced for the duration of the contract in accordance with chapter C1.4 of the COTO Standard Specifications for Road and Bridge Works for State Road Authorities (Draft Standard (DS) October 2020).

In order to minimise the cost of transporting the learners for training, the facility shall be located in secure premises on the Site, or in close proximity thereto.

This facility shall be used to deliver all training, irrespective of whether it is delivered in terms of Part F or Part G of the Particular Specifications.

The facility shall accommodate a class of up to 25 learners, taking social/ physical distancing in terms of the promulgated COVID-19 pandemic Regulations into account, and shall comprise the following:

(a)	Lecture room (interior area)	=	48 m ²
(b)	Ablutions (male)	=	6 m ²
(c)	Ablutions (female)	=	6 m ²
(d)	Chairs for learners (individual chairs, with backs)	=	25 off
(e)	Desk area for 25 learners (500 mm width)	=	12,5 m ²
(f)	Chairs for trainers and management (individual chairs, with backs)	=	5 off
(g)	Table area for trainers and management	=	3 m ²
(h)	220/250-volt power points	=	6 off
(i)	Double 80-watt fluorescent light fittings complete with ballast and tubes	=	6 off
(j)	Single incandescent light fittings complete with 100-watt globes	=	4 off
(k)	Wash hand basins complete with taps and drains	=	4 off
(l)	Fire extinguishers, 9,0 kg, all-purpose dry powder type, complete, mounted on wall with brackets	=	2 off
(m)	Air conditioning units with 2,2 kW minimum capacity, mounted and with own power connection	=	4 off
(n)	Voltage stabilizers	=	2 off
(o)	Floodlights complete with poles and 500-watt minimum globes and controlled by photocells	=	2 off
(p)	White boards (3 m x 1,5 m)	=	1 off
(q)	Venetian blinds	=	12 m ²

E6. MEASUREMENT AND PAYMENT

Item		Unit
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E6.01	Provision of the training venue facility, including the cost of transporting the learners to and from this facility	lump sum (Sum)
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The tendered lump sum for subitem F6.01 shall include full compensation for the provision of the training venue facility complete and serviced as specified, including for the provision of power, water, sewerage and cleaning services for the duration of the contract, for lighting, power points and voltage stabilizers, for air conditioning, blinds, fire extinguishers, floodlights, furniture and whiteboards, for the provision of security at the facility, for all other costs necessary to maintain the facility for the duration of the contract, and for the removal of the facility on completion of the contract.

The tendered lump sum shall also include full compensation for transporting the learners on each day of

training from their place of work to this training venue facility, and back again after the training for the day has been delivered by the accredited trainers.

Payment of the lump sum shall be made in three instalments as follows:

The first instalment, 50% of the lump sum, shall be paid after the Contractor has met all his obligations regarding the provision of the training venue facility, complete and serviced as specified, and the facility has been successfully commissioned for use.

The second instalment, 35% of the lump sum, shall be paid when 75% of the training courses proposed in accordance with the Contractor's approved structured training programme have been delivered to the learners by the accredited trainers.

The third and final instalment, 15% of the lump sum, shall be paid when all training has been concluded and the facility has been dismantled and removed from the site.

Item	Unit
E6.02 Training of learners employed by the contractor or by the Targeted Enterprise subcontractors:	
(a) Generic skills:	
(i) Training costs	provisional sum (Prov sum)
(ii) Handling costs and profit in respect of subitem F6.02(a)(i)	percentage (%)
(b) Entrepreneurial skills:	
(i) Training costs	provisional sum (Prov sum)
(ii) Handling costs and profit in respect of subitem F6.02(b)(i)	percentage (%)
(c) Construction skills:	
(i) Training costs	provisional sum (Prov sum)
(ii) Handling costs and profit in respect of subitem F6.02(c)(i)	percentage (%)
(d) Transportation and accommodation costs of selected learners only, while receiving off-site training:	
(i) Transportation and accommodation costs	provisional sum (Prov sum)
(ii) Handling costs and profit in respect of subitem F6.02(d)(i)	percentage (%)

Expenditure under subitems F6.02(a)(i), (b)(i), (c)(i) and (d)(i) shall be in accordance with clause 6.6 of the General Conditions of Contract 2015.

The provisional sum for each of subitems F6.02(a)(i), (b)(i) and (c)(i) is provided to cover the total costs of the required training in generic, entrepreneurial and construction skills respectively, including for the procurement of the services of the accredited trainers and their delivery of the training courses to the learners, the provision of all training materials including all stationery and study materials, the wages of the learners for the duration of the courses including the associated COIDA and UIF payments, and the provision of any tools and PPE that may be required during those courses incorporating practical training modules. The payment of wages to learners in terms of subitems F6.02(a)(i), (b)(i) and (c)(i) will only be made to those learners who attend and successfully complete each course of the approved training programme. Payment shall not be made to learners who, once selected, do not attend or only partially complete structured training courses.

The tendered percentage for each of subitems F6.02(a)(ii), (b)(ii) and (c)(ii) is the percentage of the amount

actually spent under each of subitems F6.02(a)(i), (b)(i) and (c)(i) respectively, and shall include full compensation for the handling costs of the Contractor and the profit in connection with the provision of the training in generic, entrepreneurial and construction skills respectively, including for the costs of record keeping and reporting with respect to the training received by each learner.

The provisional sum for subitem F6.02(d)(i) is provided to cover all costs related to the transportation and accommodation costs of selected learners only, while receiving off-site training, where such learners have been specifically selected to receive such off-site training and where such training cannot be delivered using the training venue facility provided by the Contractor in terms of subitem F6.01.

The tendered percentage for subitem F6.02(d)(ii) is the percentage of the amount actually spent under subitem F6.02(d)(i), and shall include full compensation for the handling costs of the Contractor and the profit in connection with the transportation and accommodation costs of selected learners only, while receiving off-site training.

Item	Unit
E6.03 Payments associated with the NYS programme:	
(a) Employment of NYS workers	provisional sum (Prov sum)
(b) Provision of tools and apparel for the NYS workers	provisional sum (Prov sum)
(c) Handling costs and profit in respect of subitems F6.03(a) and (b)	percentage (%)
(d) Training of NYS workers:	
(i) Provision of training for NYS workers	provisional sum (Prov sum)
(ii) Handling costs and profit in respect of subitem F6.03(d)(i)	percentage (%)
(e) Liaison with the Employer's project manager and the training service provider:	
(i) Liaison conducted by the Construction Manager	hour (h)
(ii) Liaison conducted by the senior site foreman.....	hour (h)
(f) EPWP branding	
(i) Provision for EPWP branding	Prime Cost sum (PC sum)
(ii) Handling costs and profit in respect of subitems F6.03(f)(i)	percentage (%)

The provisional sums provided under subitems F6.03(a) and (b) shall be expended in accordance with clause 6.6 of the General Conditions of Contract 2015.

The provisional sum under subitem F6.03(a) shall be used to cover the cost of employment payments made by the Contractor to the NYS workers, including the associated COIDA and UIF payments, all as authorised by the Employer's Agent.

The provisional sum under subitem F6.03(b) shall be used to cover all costs associated with the provision of the necessary tools and apparel, including safety apparel, for the NYS workers, and the facilities for the safe storage thereof, all as authorised by the Employer's Agent.

The tendered percentage under subitem F6.03(c) is a percentage of the total amount of expenditure approved by the Employer's Agent under the provisional sum subitems F6.03(a) and (b), and shall include full compensation for attendance by the Contractor, for the handling costs of the Contractor, and for the profit in connection with payments made by the Contractor with respect to the NYS programme implementation.

The provisional sum provided under subitem F6.03(d)(i) shall be expended in accordance with clause 6.6 of the General Conditions of Contract 2015.

The provisional sum under subitem F6.03(d)(i) shall be used to cover all costs associated with the provision of training for the NYS workers, including the cost of procuring the services of the accredited trainers and their delivery of the training courses to the NYS workers, and the provision of all training materials including all stationery and study materials.

The tendered percentage under subitem F6.03(d)(ii) is a percentage of the total amount of expenditure approved by the Employer's Agent under the provisional sum subitem F6.03(d)(i), and shall include full compensation for attendance by the Contractor, for the handling costs of the Contractor, and for the profit in connection with payments made by the Contractor with respect to the provision of training for the NYS workers, including for the costs of record keeping and reporting with respect to the training received by each NYS worker.

The unit of measurement for subitems F6.03(e)(i) and (ii) shall be the hour. The tendered rates shall include full compensation for all costs related to the Construction Manager and the senior site foreman respectively for time spent at formal liaison meetings authorised and convened by the Employer's Agent for the specific purpose of liaising with the Employer's project manager and / or the training service provider. The payment shall be made only for the time spent in the formal meeting itself. No payment shall be made for time spent during any other on-site liaison, telephonic liaison, e-mail or written correspondence liaison between these parties, or for liaison conducted with the Employer's project manager and / or the training service provider by any other member of the Contractor's site staff or head office personnel, the cost of all of which shall be deemed to be included in the Contractor's time-related obligations under subitem C1.3.1.3.

The prime cost sum provided under subitems F6.03(f)(i) shall be expended in accordance with clause 6.6 of the General Conditions of Contract 2015.

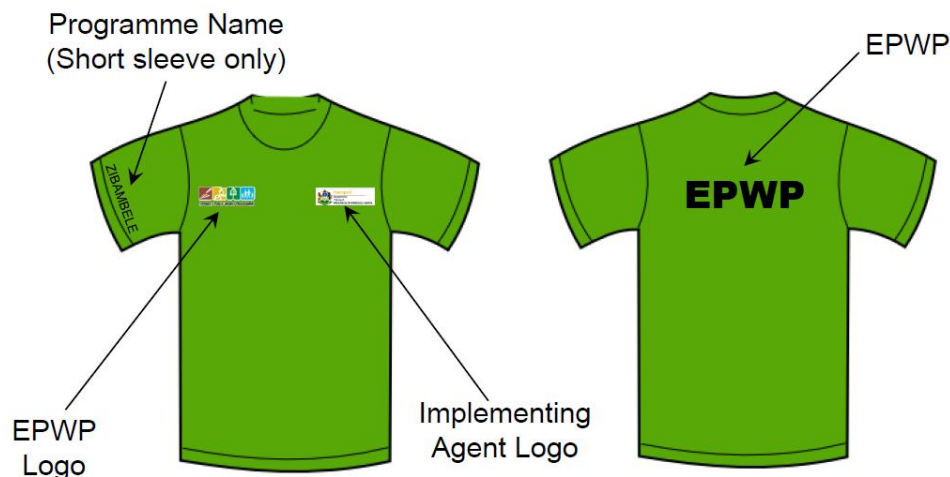
The prime cost sum under subitem F6.03(f)(i) shall be used to cover the cost of payments made for EPWP branding, as specified.

The tendered percentage under subitem F6.03(f)(ii) is a percentage of the total amount of expenditure approved by the Employer's Agent under the prime cost sum subitem F6.03(f)(i), and shall include full compensation for attendance by the Contractor, for the handling costs of the Contractor, and for the profit in connection with payments made by the Contractor with respect to the provision of EPWP branding as specified.

Expanded Public Works Programme: PPE BRANDING For EPWP Projects

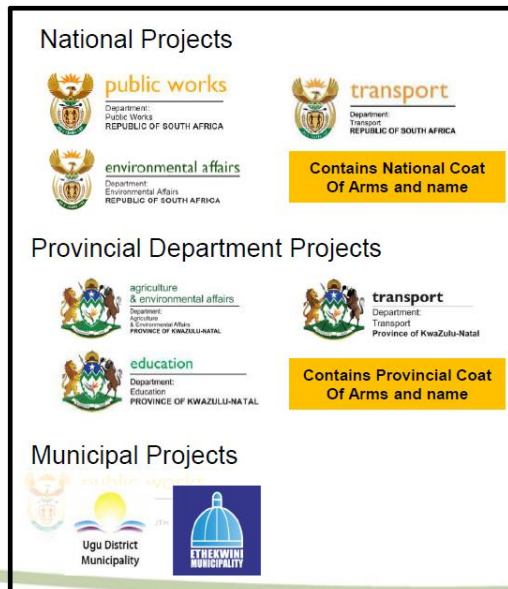


T-Shirt/Overall/Safety Vest Branding



Logo Options

Implementing Agent Examples



PLEASE VERIFY WHICH LOGO NEEDS TO USED

EPWP LOGO



Printing on PPE

PPE (Overalls) shall be Pantone Green with/without reflective tape and shall be branded as follows:

- Implementer's Logo (printed or embroidered) on the left front pocket location ie over the heart position. (full colour)
- EPWP logo on the right front pocket (printed or embroidered) location (full colour)
- The letters EPWP on the back of the PPE in BLACK
- The program name eg Vuk'uphile is to be printed on the right sleeve of short sleeved apparel and need not be placed on long sleeved apparel.
- Where required, lime green safety vests are to be branded with similar specification above. In this instance the Overalls may not necessarily be branded provided that the use of high visibility vests is mandatory.
- All artwork and PPE samples shall be approved and signed off by the consultant prior to printing/embroidering.

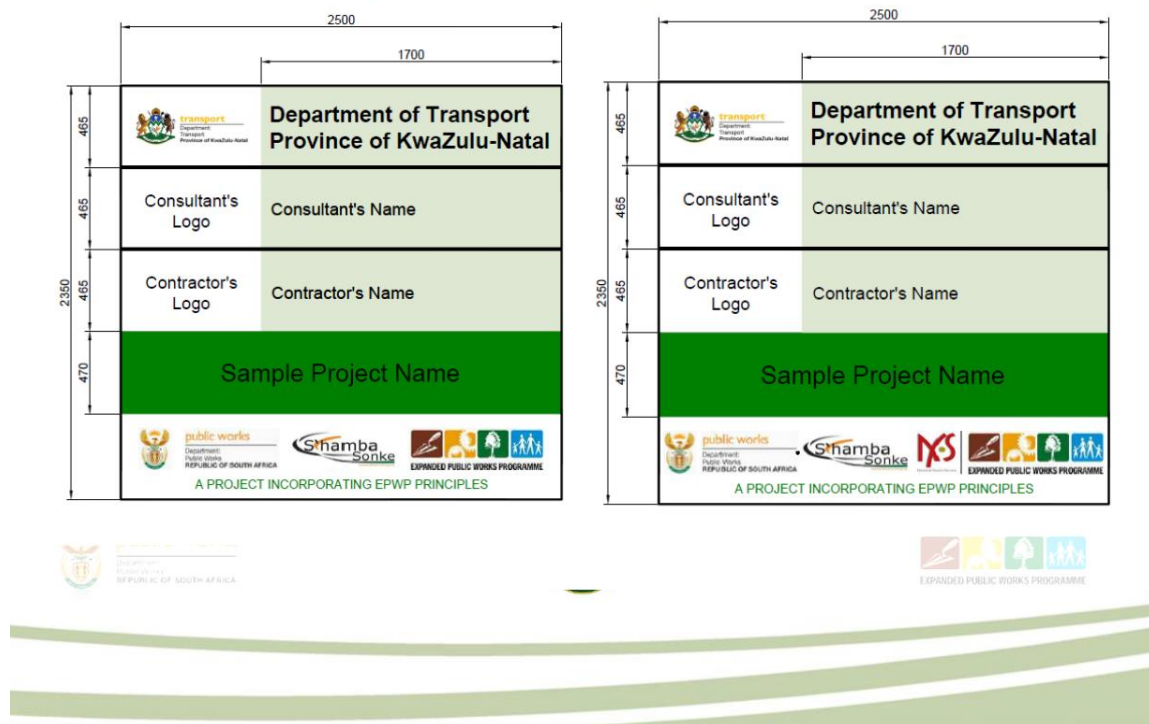


REPUBLIC OF SOUTH AFRICA



EXPANDED PUBLIC WORKS PROGRAMME

Project Signboard



For further information contact:

Petronella Sithebe

Petronella.Sithebe@Kzntransport.gov.za

033-355-8023

PRO FORMA EPWP CONTRACT OF EMPLOYMENT

Contractor's
Logo



EXPANDED PUBLIC WORKS PROGRAMME

This contract must be read in conjunction with the standard terms and conditions of employment on EPWP attached herein.

EPWP CONTRACT OF EMPLOYMENT between

Employer Details

Name	Click or tap here to enter text.	Address	Click or tap here to enter text.
Telephone	Click or tap here to enter text.		
Email	Click or tap here to enter text.		
Contact	Click or tap here to enter text.		

And

Employee Details

Name	Click or tap here to enter text.	Surname	Click or tap here to enter text.
ID:	Click or tap here to enter text.	Cell	Click or tap here to enter text.
Sex (M/F)	Male <input type="checkbox"/> Female <input type="checkbox"/>	Disability	Yes <input type="checkbox"/> No <input type="checkbox"/>
Primary Language	Click or tap here to enter text.	Physical Address	Click or tap here to enter text.
Other Languages	Click or tap here to enter text.		
Highest Education Level Achieved	Click or tap here to enter text.	Local Municipality	Click or tap here to enter text.
Other qualifications	Click or tap here to enter text.	Ward	Click or tap here to enter text.
Grant Received (Y/N)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Grant type:	

Employment Details

Name of project:	Click or tap here to enter text.		
Job Title:	Click or tap here to enter text.		
Duties:	Click or tap here to enter text.		
Contract Start Date	Click or tap here to enter text.	Contract Finish Date	Click or tap here to enter text.
The wage per task/day is:	R Click or tap here to enter text. / Hour/Day/task (Specifier to select correct rate)		

Special Conditions

<p>You must be aware that this employment contract is a limited term contract and not a permanent job. This employment contract may be terminated for any one of the following reasons:</p> <ol style="list-style-type: none"> The contractor does not get additional contracts from the EPWP. Funding for the programme in your area comes to an end. Underperformance: first offence – final written warning. Second offence – dismissal. 	<p>Payment</p> <ol style="list-style-type: none"> You will be paid a fixed amount stipulated above for completing a fixed amount of work. The amount of work required for the agreed rate of pay will vary from task to task. You will be informed at the beginning of each task or group of tasks how much work you are expected to complete per day. You will only be paid for work completed. Payment during classroom training shall be R /day
<p>Personal Protective Clothing will be supplied to the employee by the employer depending on the work to be performed, and will remain the property of the employee provided that the employee has worked for at least 3 months.</p>	

Acceptance

Employer Name:	Employer Signature:	Employee Name:	Employee Signature:
Witness 1 Name:	Witness 1 Signature:	Witness 2 Name:	Witness 2 Signature:

APPENDIX E – Conditions of Service

1. Introduction

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

1.2. In this document –

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

2. Terms of Work

- 2.1. Workers on an EPWP are employed on a temporary basis.
- 2.2. A worker may NOT be employed for longer than 24 months in any five-year cycle on an EPWP.
- 2.3. Employment on an EPWP does not qualify as employment as a contributor for the purposes of the Unemployment Insurance Act 30 of 1966.

3. Normal Hours of Work

- 3.1. An employer may not set tasks or hours of work that require a worker to work –
 - a) more than forty hours in any week
 - i. on more than five days in any week; and
 - ii. for more than eight hours on any day.
- 3.2. An employer and worker may agree that a worker will work four days per week. The worker may then work up to ten hours per day.
- 3.3. A task-rated worker may not work more than a total of 55 hours in any week to complete the tasks allocated (based on a 40-hour week) to that worker.

4. Meal Breaks

- 4.1. A worker may not work for more than five hours without taking a meal break of at least thirty minutes duration.
- 4.2. An employer and worker may agree on longer meal breaks.
- 4.3. A worker may not work during a meal break. However, an employer may require a worker to perform duties during a meal break if those duties cannot be left unattended and cannot be performed by another worker. An employer must take reasonable steps to ensure that a worker is relieved of his or her duties during the meal break.
- 4.4. A worker is not entitled to payment for the period of a meal break. However, a worker who is paid on the basis of time worked must be paid if the worker is required to work or to be available for work during the meal break.

5. Special Conditions for Security Guards

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

6. Daily Rest Period

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

7. Weekly Rest Period

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

8. Work on Sundays and Public Holidays

- 8.1. A worker may only work on a Sunday or public holiday to perform emergency or security work.
- 8.2. Work on Sundays is paid at the ordinary rate of pay.
- 8.3. A task-rated worker who works on a public holiday must be paid –
 - a) the worker’s daily task rate, if the worker works for less than four hours;
 - b) double the worker’s daily task rate, if the worker works for more than four hours.
- 8.4. A time-rated worker who works on a public holiday must be paid –
 - a) the worker’s daily rate of pay, if the worker works for less than four hours on the public holiday;
 - b) double the worker’s daily rate of pay, if the worker works for more than four hours on the public holiday.

9. Sick Leave

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

Employer	Employee
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10. Maternity Leave

- 10.1. A worker may take up to four consecutive months' unpaid maternity leave.
- 10.2. A worker is not entitled to any payment or employment-related benefits during maternity leave.
- 10.3. A worker must give her employer reasonable notice of when she will start maternity leave and when she will return to work.
- 10.4. A worker is not required to take the full period of maternity leave. However, a worker may not work for four weeks before the expected date of birth of her child or for six weeks after the birth of her child, unless a medical practitioner, midwife or qualified nurse certifies that she is fit to do so.
- 10.5. A worker may begin maternity leave –
 - a) four weeks before the expected date of birth; or
 - b) on an earlier date –
 - i. if a medical practitioner, midwife or certified nurse certifies that it is necessary for the health of the worker or that of her unborn child; or
 - ii. if agreed to between employer and worker; or
 - iii. on a later date, if a medical practitioner, midwife or certified nurse has certified that the worker is able to continue to work without endangering her health.
- 10.6. A worker who has a miscarriage during the third trimester of pregnancy or bears a stillborn child may take maternity leave for up to six weeks after the miscarriage or stillbirth.
- 10.7. A worker who returns to work after maternity leave, has the right to start a new cycle of twenty-four months employment, unless the EPWP on which she was employed has ended.

11. Family responsibility leave

- 11.1. Workers, who work for at least four days per week, are entitled to three days paid family responsibility leave each year in the following circumstances –
 - a) when the employee's child is born;
 - b) when the employee's child is sick;
 - c) in the event of a death of –
 - i. the employee's spouse or life partner;
 - ii. the employee's parent, adoptive parent, grandparent, child, adopted child, grandchild or sibling.

12. Statement of Conditions

- 12.1. An employer must give a worker a statement containing the following details at the start of employment –
 - a) the employer's name and address and the name of the EPWP;
 - b) the tasks or job that the worker is to perform; and
 - c) the period for which the worker is hired or, if this is not certain, the expected duration of the contract;
 - d) the worker's rate of pay and how this is to be calculated;
 - e) the training that the worker will receive during the EPWP.
- 12.2. An employer must ensure that these terms are explained in a suitable language to any employee who is unable to read the statement.
- 12.3. An employer must supply each worker with a copy of these conditions of employment.

13. Keeping Records

- 13.1. Every employer must keep a written record of at least the following –
 - a) the worker's name and position;
 - b) in the case of a task-rated worker, the number of tasks completed by the worker;
 - c) in the case of a time-rated worker, the time worked by the worker;
 - d) payments made to each worker.
- 13.2. The employer must keep this record for a period of at least three years after the completion of the EPWP.

14. Payment

- 14.1. An employer must pay all wages at least monthly in cash or by cheque or into a bank account.
- 14.2. A task-rated worker will only be paid for tasks that have been completed.
- 14.3. An employer must pay a task-rated worker within five weeks of the work being completed and the work having been approved by the manager or the contractor having submitted an invoice to the employer.
- 14.4. A time-rated worker will be paid at the end of each month.
- 14.5. Payment must be made in cash, by cheque or by direct deposit into a bank account designated by the worker.
- 14.6. Payment in cash or by cheque must take place –
 - a) at the workplace or at a place agreed to by the worker;
 - b) during the worker's working hours or within fifteen minutes of the start or finish of work;
 - c) in a sealed envelope which becomes the property of the worker.
- 14.7. An employer must give a worker the following information in writing –
 - a) the period for which payment is made;
 - b) the numbers of tasks completed or hours worked;
 - c) the worker's earnings;
 - d) any money deducted from the payment;
 - e) the actual amount paid to the worker.
- 14.8. If the worker is paid in cash or by cheque, this information must be recorded on the envelope and the worker must acknowledge receipt of payment by signing for it.
- 14.9. If a worker's employment is terminated, the employer must pay all monies owing to that worker within one month of the termination of employment.

15. Deductions

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

16. Health and Safety

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

17. Compensation for Injuries and Diseases

Employer	Employee
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- 17.1. It is the responsibility of the employers (other than a contractor) to arrange for all persons employed on an EPWP to be covered in terms of the Compensation for Occupational Injuries and Diseases Act, 130 of 1993.
- 17.2. A worker must report any work-related injury or occupational disease to their employer or manager.
- 17.3. The employer must report the accident or disease to the Compensation Commissioner.
- 17.4. An employer must pay a worker who is unable to work because of an injury caused by an accident at work 75% of their earnings for up to three months. The employer will be refunded this amount by the Compensation Commissioner. This does NOT apply to injuries caused by accidents outside the workplace such as road accidents or accidents at home.
- 18. Termination**
 - 18.1. The employer may terminate the employment of a worker for good cause after following a fair procedure.
 - 18.2. A worker will not receive severance pay on termination.
 - 18.3. A worker is not required to give notice to terminate employment. However, a worker who wishes to resign should advise the employer in advance to allow the employer to find a replacement.
 - 18.4. A worker who is absent for more than three consecutive days without informing the employer of an intention to return to work will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.
 - 18.5. A worker who does not attend required training events, without good reason, will have terminated the contract. However, the worker may be re-engaged if a position becomes available for the balance of the 24-month period.
- 19. Certificate of Service**
 - 19.1. On termination of employment, a worker is entitled to a certificate stating –
 - a) the worker's full name;
 - b) the name and address of the employer;
 - c) the EPWP on which the worker worked;
 - d) the work performed by the worker;
 - e) any training received by the worker as part of the EPWP;
 - f) the period for which the worker worked on the EPWP;
 - g) any other information agreed on by the employer and worker.Either party can terminate this agreement with four weeks written notice. In the case where an employee is illiterate notice may be given by that employee verbally.

Employer	Employee
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**EPWP DATA COLLECTION TOOL TEMPLATE
(PRO FORMAS OF MICROSOFT EXCEL SPREADSHEETS)**

EPWP REGISTRATION FORM		
Field requested	Description if needed	Please complete the sections in white
Project Details		
Profile ID	<i>Generated by the system</i>	
Project Name	<i>The name of the project</i>	
Project Reference Number	<i>Contract number</i>	
Project description	<i>Full description of what is happening in the project (as per the appointment letter) and the community benefiting from the project</i>	
Duration		
Project Start Date	<i>Planned Start date of the particular contract</i>	
Project End Date	<i>Planned End date of the particular contract</i>	
Estimated Budget	<i>Overall Contract budget (excluding professional fees) for Current Financial Year</i>	
Project Location		
Province	<i>In which province is the project implemented?</i>	KZN
District Municipality	<i>Under which District Municipality does this project falls?</i>	
Local Municipality	<i>Under which Local Municipality does this project falls?</i>	
Latitude (in decimal format)	<i>Is generated by the system</i>	
Longitude (in decimal format)	<i>Is generated by the system</i>	
Project Location per site		
Locality name	<i>Where exactly is the project implemented? (Ward name)</i>	
Subplace	<i>Town / Village</i>	
Ward	<i>The project site is located in which ward?</i>	
Government facility	<i>Landmark near the project (Post office/school/clinic/library)</i>	
Spatial Data Type	<i>Geopoint (structure)/ Line (road)/ Polygon(area)</i>	
Site physical address	<i>Physical address of the site office</i>	
Public Body Details		
Public body sphere	<i>In which sphere is the project implemented? (National, Provincial or Municipal)</i>	Provincial
Reporting public body that is the project owner (and will report on the project)	<i>Which Institution or Department that owns / approved this project (Education, Health, City of Tshwane Metro etc.)</i>	KZN Department of Transport
Department in the Public body that is responsible for the project	<i>Which department /unit is responsible for this project? (e.g., Roads & storm water, Education, Community safety etc.)</i>	KZN Department of Transport
Implementing public body type	<i>In which sphere is this project implemented? (Metro,Distr,Mun, National or Provincial Dept.)</i>	Provincial
Public body that will implement the project	<i>Which institution that implements the project?</i>	KZN Department of Transport
Project Implementation		
Is this the project on the municipal IDP	<i>Yes / No</i>	N/A
IDP reference number allocated to the project	<i>The number reflected in your Municipal IDP document</i>	N/A
EPWP Details		
EPWP Sector	<i>The project is implemented in which sector? (Infrastructure, Environment & culture, Non-state or Social)</i>	Infrastructure
EPWP Programme	<i>The project is implemented under which programme?</i>	
EPWP Sub Programme	<i>The project is implemented under which sub-programme?</i>	

EPWP BUSINESS FORM		
Field requested	Description if needed	Please complete the sections in white
Project Details		
Profile ID	Generated by the system	
Project Name	The name of the project	
Project Reference Number	Contract number	
Project description	Full description of what is happening in the project (as per the appointment letter) and the community benefiting from the project	
Duration		
Project Start Date		
Project End Date		
Estimated Budget	Project Budget	
Project Location		
Province		KZN
District Municipality	Under which District Municipality does this project falls	
Local Municipality	Under which Local Municipality does this project falls	
Latitude (in decimal format)	GPS coordinates	
Longitude (in decimal format)		
Public Body Details		
Public body sphere	Such as Municipal or Provincial	Provincial
Reporting public body that is the project owner (and will report on the project)	Which Department approved the project in (education, Health etc.)	KZN Department of Transport
Department / Unit in the Public body that is responsible for the project	Which Department budgeted for the project e.g., Education, Health Directorate	KZN Department of Transport
Implementing public body type	Example (Local Municipality, Distr. Mun or Provincial Dept.	Provincial
Public body that will implement the project	Infrastructure, Environment or Social	KZN Department of Transport
Is this project on the Municipal IDP	Municipal projects	N/A
IDP reference number allocated to the project		N/A

EPWP Details		
EPWP Sector	<i>The project is implemented in which sector? (Infrastructure, Environment & culture, Non-state or Social)</i>	Infrastructure
EPWP programme	<i>The project is implemented under which programme?</i>	
EPWP Sub Programme	<i>The project is implemented under which sub-programme?</i>	
Budget Amount- (Allocations for the project duration)		
Funding Body	<i>Which Dept. is funding the project</i>	KZN Department of Transport
Funding Year	<i>Financial year/s for the project</i>	
Total Budget Amount	<i>(Exclude Professional Fees)</i>	
Incentive Grant (e.g., Landcare / EPWP grant)	<i>Grant funding received</i>	
Total wages paid for the duration of the projects	<i>What amount will be spent on wages during the duration of the project</i>	
Wage Rate	<i>Daily Wage rate to be paid during productive work</i>	
Stipend Rate	<i>Daily wage rate to be paid during training</i>	
UIF	<i>The amount being paid to UIF (if applicable)</i>	
COIDA	<i>The amount being paid to COIDA (if applicable)</i>	
Training	<i>What amount will be spent on training</i>	
Administration	<i>The Administration costs</i>	
Equipment and materials	<i>Budget for Materials and Equipment</i>	
Other	<i>If other where chosen describe the other Such as Professional fees)</i>	
Describe other		
Project Outputs and Training		
Planned Primary Output	<i>e.g., walkways, gabions, kerb * channel, km of road constructed</i>	
Description of Planned Primary Output	<i>Describe the project output (end product and not the milestone) (e.g., kms of tar road constructed) Start with the unit of measure such as number of, kms, ha, sqms etc</i>	
Unit of measure of primary output	<i>Eg. m, m², m³, km, no, ha etc</i>	
Planned primary output quantity	<i>Specify the quantity of output planned</i>	
Number of persons to be trained	<i>How many persons are targeted for on job training</i>	

Contact person		
Title	Person responsible for the Project in the Public Body (Project Manager)	
Initials		
First Name		
Surname		
Email		
Tel (Office)		
Fax Number		
Cell Number		
Physical Address 1		
Physical Address 2		
Physical Address 3		
Physical Address 4		
Postal Address 1		
Postal Address 2		
Postal Address 3		
Postal Address 4		
Position of person		

C221

C222

EPWP Monthly Progress Form		
Field requested	Description if needed	Please complete the sections in white
Project Details		
Profile ID	full description of what is happening in the project (as per the appointment letter) and the community benefiting from the project	
Project Name	The name of the project	
Project Reference Number	Contract number	
Project description	Full description of what is happening in the project (as per the appointment letter) and the community benefiting from the project	
Month		
Reporting Month		April
Budget Expenditure		
Cumulative Expenditure Amount	What is the Overall amount spent on this project?	
Current Expenditure Amount	What is the amount spend including all grants for this month?	
Wages	How much paid on wages for this month only?	
UIF	How much paid on UIF for this month only?	
COIDA	How much paid on COIDA for this month only?	
Stipends for training	Amount paid to participants whilst on training (this month only)	
Amount spent on service providers for training	How much paid to service providers for training for this month only?	
Training	Total Cost of training for this month? (number captured on ERS)	
Administration	How much paid on administration for this month only?	
Equipment and materials	How much paid on equipment and materials for this month only?	
Other	How much paid on other?	
Describe other	Be specific e.g., Consulting fees, Transport etc.	
Project output description	Describe the project output (end product and not the milestone) (e.g. kms of tar road constructed) Start with the unit of measure such as number of, kms, ha, sqms etc	
Unit of measure of primary output	Eg. m, m ² , m ³ , km, no, ha etc	
Cumulative primary output achieved	Since the onset of the project	
Quantity Achieved	enter numeric output for this month only	
Percentage achieved	How much work done / achieved in percentages?	
EPWP Branding		
Branding compliant	Yes / No	
Date that the branding was provided	When was the project branded?	
Has a photo of project branding been provided?	Yes / No	
First name of Official Who Branded Project	Official Name	
Surname of Official Who Branded Project	Official Surname	
Phone number of official who erected branding for the project	Official contact number	
Give the public body reference and name, and organisational details of the person that provided branding.	Public body details (reference & name)	

First Name	Initials	Surname	ID number	Date Of Birth	Wage Rate	Total Paid Days	Amount Paid	Work Days	Training Days Paid	Training Days Non-Paid	Total Training Days	Training Course ID	Project Profile ID	Month	Year	Beneficiary Code



The Attendance Register for on-site Workers

Reporting month: _____

Mobile No: _____

Project Name: _____

Contract no: _____

Surname: _____

First Name: _____

IDENTITY NUMBER:

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Day	Date	Time In	Signature	Time Out	Signature	Report On Any Formal Training Provided In The Reporting Month
WEEK 1						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 2						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 3						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 4						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
WEEK 5						
MONDAY						
TUESDAY						
WEDNESDAY						
THURSDAY						
FRIDAY						
Total Days worked						

C3.3 PARTICULAR SPECIFICATIONS

PART F: SMALL CONTRACTOR DEVELOPMENT

PART F: SMALL CONTRACTOR DEVELOPMENT

F1. SCOPE

This part provides the procedures that relate to the Contractor implementing the CIDB B.U.I.L.D Standard for Indirect Targeting for Enterprise Development through construction Works Contracts, the Employer's policies and initiatives, enabling the Employer to realise its social and development objectives through the participation of Targeted Enterprises and Labour in the construction of the Works. The approach adopted enables the delivery of a wide range of social and economic deliverables, including the employment of local resources, employment opportunities for labour enhanced works, business opportunities, enterprise support and development programmes, and skills development.

The participation of Targeted Enterprises and Labour, measured in monetary terms, is specified as a contract participation goal by the Employer, for the Contractor to achieve.

The Contractor shall:

- Subcontract a minimum of 30% of the scope of works to targeted enterprises;
- Perform needs analysis on the targeted enterprise to identify developmental goals;
- Provide internal mentorship support to improve the targeted enterprise/s performance;
- Develop a project specific enterprise development plan to improve the targeted enterprise/s performance in the identified developmental areas to the CIDB Competence Standard for Contractors Gazette No. 41237, 10 November 2017
- Monitor and report the progress of the agreed development areas with the targeted enterprise/s
- Submit a project completion report to the Employer's representative for each targeted enterprise.

F2. DEFINITIONS

Unless inconsistent with the context, in these specifications the following terms, words or expressions shall have the meanings hereby assigned to them:

F2.1 **"Black People"** has the meaning assigned to it in section 1 of the Broad-Based Black Economic Empowerment Act, 2003 (Act No 53 of 2003), and the Broad-Based Black Economic Empowerment Amended Act, 2013 (Act No 46 of 2013).

F2.2 **"Contract Participation"** means a process whereby the Employer sets a target to achieve its social and development objectives through the participation of Targeted Enterprises and Labour in the construction of the Works.

F2.3 **"Contract Participation Goal (CPG)"** means the value of goods, services and works for which the Contractor contracts Targeted Enterprises and Labour exclusive of any value added tax which the law requires the Employer to pay to the Contractor, expressed as a percentage of the Contract Price (adjusted to exclude penalties and value added tax).

F2.4 **"EME"** means an exempted micro enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No 53 of 2003).

F2.5 **"Military Veteran"** has the meaning assigned to it in section 1 of the Military Veterans Act, 2011 (Act No 18 of 2011).

F2.6 **"people with disabilities"** has the meaning assigned to it in section 1 of the Employment Equity Act, 1998 (Act No 55 of 1998).

F2.7 **"Project Management Team (PMT)"** means a team established at the commencement of the contract, comprising a representative from each of the Employer, the Employer's Agent and the Contractor, that will be responsible for various functions related to the implementation of the Contract Participation process.

F2.8 **"QSE"** means a qualifying small enterprise in terms of a code of good practice on black

economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No 53 of 2003).

F2.9 **“Target Area”** means the geographic area stated in the Contract Data.

F2.10 **“Targeted Enterprise”** means an entity to which the Contractor subcontracts a percentage of the contract value as a condition of contract and which is:

- (i) an EME or QSE which is at least 51% owned by black people;
- (ii) an EME or QSE which is at least 51% owned by black people who are youth;
- (iii) an EME or QSE which is at least 51% owned by black people who are women;
- (iv) an EME or QSE which is at least 51% owned by black people with disabilities; or
- (v) an EME or QSE which is at least 51% owned by black people who are military veterans.

F2.11 **“Targeted Labour”** means individuals, employed by the Contractor and subcontractors in the performance of the contract, who permanently reside in the target area or who are recognised as being residents of the target area on the basis of identification and association with and recognition by the residents of the target area, and excludes any labour employed by suppliers and manufacturers.

F2.12 **“Youth”** means persons between the ages of 18 and 35.

F3. CONTRACT PARTICIPATION

F3.1 Objective

In order for the Employer to realise its social and development objectives, the Contractor is required to provide business and labour opportunities through the participation of Targeted Enterprises and Labour in the construction of the Works. The participation of Targeted Enterprises and Labour, measured in monetary terms, is specified by the Employer as a contract participation goal, for the Contractor to achieve.

F3.2 Contract Participation process

The Contractor shall engage Targeted Enterprises and Labour in the performance of the contract to the extent that the total monetary value of such engagements exclusive of any value added tax, expressed as a percentage of the Contract Price (adjusted to exclude penalties and value added tax), is not less than the Contract Participation Goal specified in the contract.

F3.2.1 Contract Participation plan

The Contractor shall submit to the Employer's Agent details of his plan to achieve the Contract Participation Goal with his initial programme in terms of which he will carry out the Works. The Contract Participation plan shall be submitted with all subsequent adjusted programmes. The tender process for the procurement of Targeted Enterprise subcontractors shall be indicated on the programme.

The Contract Participation plan shall indicate the expected delivery dates of goods provided by Targeted Enterprises, and the commencement and completion dates of work and services to be performed by all the Targeted Enterprises and Labour engaged on the contract for the purpose of securing credits towards the Contract Participation Goal.

The information contained in the Contract Participation plan facilitates, in the first instance, the monitoring by the Employer's Agent of the performance of the Contractor in terms of his Contract Participation Goal obligations and, in the second instance, the making of any adjustments by the Contractor to compensate for quantitative underruns, the elimination of items contracted to Targeted Enterprises or Labour, or any other reason beyond the Contractor's control which may be acceptable to the Employer

F3.2.2 Targeted Enterprises

The Contractor shall engage Targeted Enterprises comprising subcontractors and suppliers directly or indirectly in the performance of the contract. Prior to such Targeted Enterprises being engaged, the Contractor shall submit to the Employer's Agent documentation in a form approved by the Employer's Agent, to confirm that the enterprise satisfies the eligibility criteria for recognition as a targeted enterprise.

The Contractor shall enter into written contractual agreements with all the Targeted Enterprises, in a form approved by the Employer's Agent. Copies of such agreements and the written acceptance thereof shall be submitted to the Employer's Agent.

In the case of Targeted Enterprise subcontractors, only those subcontractors procured through a tender process as specified in clause G6 Tender Process for Targeted Enterprise Subcontractor Procurement, shall qualify to have their contribution count towards the Contract Participation Goal.

The Contractor may not subcontract more than 25% of the Contract Price to Targeted Enterprises whose B-BBEE status level of contributor is lower than the Contractor's.

F3.2.3 Targeted Labour

The Contractor shall engage Targeted Labour directly or indirectly in the performance of the contract. It is a requirement of the contract that such Targeted Labour be engaged by means of a written contract, in a form approved by the Employer's Agent.

The requirements for the engagement of such Targeted Labour are contained in PART E: Expanded Public Works Programme.

F3.3 Contract Participation Goal

The Contract Participation Goal comprises two targets, namely subcontracting of the Works to Targeted Enterprises, and employment of Targeted Labour. The Contract Participation Goal targets are stated as a percentage unit of measure in the Contract Data, for the Contractor to achieve to the extent that the total monetary value of such subcontracting and employment engagements exclusive of any value added tax, expressed as a percentage of the Contract Price (adjusted to exclude penalties and value added tax), are each not less than the respective Contract Participation Goal target stated in the contract.

F3.3.1 Monthly submission of supporting documentation

The Contractor shall prepare and submit on a monthly basis to the Employer's Agent in a form approved by the Employer's Agent, the following:

- (i) a brief report which describes the commercially useful functions performed by the Targeted Enterprises and Labour in the performance of the contract, both during the interim period and on a cumulative basis;
- (ii) a schedule reflecting the estimated total value of the contracts, the cumulative value of the contracts, and the value of goods provided, and work and services performed over the period for which payment is claimed with respect to each and every Targeted Enterprise; and
- (iii) a schedule which lists the names, identity numbers, gender, trade/occupation, period of employment, employment number and the like, as directed by the Employer's Agent, together with the respective wage rates payable in respect of Targeted Labour, including the monetary value of wages paid both on a cumulative basis and over the period for which payment is claimed.

- (iv) Project interim reports in the specified format (ED105P) detailing interim value of the CPG that was achieved. Such a report shall also contain a monthly progress report, compiled by the employer's representative and the contractor, detailing an assessment of the enterprise development support provided.
- (v) Project completion report, in the specified format (ED101P), to the Employer's Representative for acceptance within 15 days of achieving practical completion. The report shall include the value of the CPG that was certified in accordance with the contract, cidb registration numbers of each and every targeted enterprise and the value of the subcontracted works or the participation parameter of the joint venture entered into; and
- (vi) Enterprise development declaration (ED104P).

Should random inspections conducted by the Employer's Agent on Targeted Enterprise and Labour activities indicate that such Targeted Enterprises and Labour are not performing in accordance with the requirements of the contract, the Contractor shall provide, in addition to the monthly reporting requirements, separate weekly resource returns and any other relevant information with respect to such Targeted Enterprises and Labour in a form approved by the Employer's Agent.

F3.3.2 Contract Participation Goal credits

F3.3.2.1 Granting of credits

The Employer's Agent shall certify the value of the credits counted towards the Contract Participation Goal whenever a claim for payment is issued to the Employer, and shall notify the Contractor of the amount. The value of the credits counted shall not include any expenditure on Goods and Labour which forms part of the monetary value of the contributions made by Targeted Enterprise subcontractors.

Credits towards the Contract Participation Goal shall be granted by converting the value of the following (including contract price adjustment and rise/fall on special materials, but excluding value added tax) to a percentage of the Contract Price (adjusted to exclude penalties and value added tax), as relevant:

- (i) subcontracting CPG:
 - the total monetary value of the contributions made by Targeted Enterprise subcontractors in fulfilling contractual obligations; and
 - expenditure on Goods required for the contract, which are obtained from Targeted Enterprise suppliers.
- (ii) employment CPG:
 - the total monetary value of wages paid to Targeted Labour.

F3.3.2.2 Denial of credits

No credits shall be granted should the Contractor make a direct payment to a supplier or manufacturer on behalf of a Targeted Enterprise when such payment is recovered by making deductions from payments to the Targeted Enterprise in connection with the contract; or should the Contractor fail to enter into a written agreement with the relevant Targeted Enterprise.

In addition, credits claimed towards the Contract Participation Goal shall be denied where written contractual agreements contain any of the following:

- (i) a right to set off in favour of the employing Contractor not provided for by law;
- (ii) authoritarian rights given to the employing Contractor or his agent, with no recourse to independent adjudication in the event of a dispute arising;

- (iii) payment procedures based on a pay-when-paid system;
- (iv) a dispute resolution process which does not include inexpensive alternative dispute resolution procedures, such as mediation or adjudication, but which only makes use of formal proceedings such as arbitration or litigation; or
- (v) conditions which are more onerous than those which exist in the main contract.

Credits shall be denied should Targeted Enterprises not adhere to statutory labour practices or fail to perform commercially useful functions.

F3.3.3 Contract Participation Goal evaluation

The Contractor shall, upon completion of each individual Targeted Enterprise's contract, issue a completion certificate and certify the amount paid to such Targeted Enterprises. The Contractor shall submit the certificates, counter-certified by the relevant Targeted Enterprises, to the Employer's Agent for record-keeping purposes. The Contractor shall furnish justification to the Employer's Agent whenever it is not possible to obtain such counter-certification.

The Contractor shall, upon termination of the services of the individuals classed as Targeted Labour engaged in activities relating to the performance of the contract, certify the amount paid to such individuals and submit the certificate, counter-certified by the relevant individual, to the Employer's Agent for record-keeping purposes. The Contractor shall furnish justification to the Employer's Agent whenever it is not possible to obtain such counter-certification.

On completion of the contract, the Employer's Agent shall determine the final credits to be granted towards the Contract Participation Goal targets, by converting the value of credits (including contract price adjustment and rise/fall on special materials, but excluding value added tax) to a percentage of the Contract Price (adjusted to exclude penalties and value added tax)

F3.3.4 Sanctions

In the event that the Contractor fails to substantiate that any failure to achieve any of the Contract Participation Goal targets, is due to quantitative underruns, the elimination of items contracted to Targeted Enterprises, or any other reason beyond the Contractor's control which may be acceptable to the Employer, the Contractor shall be liable for a financial penalty as prescribed in clause SCC 4.1.1 of section C1.2.1.2 Special Conditions of Contract. The subcontracting financial penalty shall be calculated as follows:

$$P = 0,05 \times [(D - D_0)/100] \times C_A$$

where

- D is the Contract Participation Goal percentage
- D₀ is the Contract Participation Goal percentage which the Employer's Agent certifies, based on the credits passed, as being achieved upon completion of the contract
- C_A contract amount which is the Contract Price (adjusted to exclude penalties and value added tax)
- P is the monetary value of penalty payable

The evaluation of the Contractor's achievement of the Contract Participation Goal for the subcontracting of the Works to Targeted Enterprises, shall be undertaken monthly by the Employer's Agent based on the accumulative achievements in comparison to the programmed utilisation of Targeted Enterprises, as a means of monitoring the Contractor's performance in achieving the Contract Participation Goal.

Failure by the Contractor to achieve the Contract Participation Goal target by the time of Practical Completion, shall result in the financial penalty being applied as prescribed in this clause. The Employer's Agent shall make a final determination of the Contractor's achievement of the Contract Participation Goals based on the value of the Final Payment Certificate.

F4. DUTIES OF THE EMPLOYER AND ENGINEER

The Employer, Engineer, and the Contractor, or their representatives, are parties to the Project Liaison Committee and are co-responsible for successful project Stakeholder and Community liaison. The Employer and the Engineer also play a supporting role in the successful implementation of the Employer's Targeted Labour and Targeted Enterprise utilisation and development goals.

To implement the Employer's Targeted Labour and Targeted Enterprise goals, the Employer and the Engineer shall provide support to the Contractor by executing the following duties:

- (i) Make recommendations to the Contractor in the identification and structuring of the work packages to be subcontracted to Targeted Enterprises, and agree to the scope and extent of the work packages.
- (ii) Verify that the Targeted Enterprise Database(s), have been updated prior to the letting of every new set of subcontracts.
- (iii) Endorse all Databases, and approve tender procedures, tender documents, tender submission requirements and adjudication processes for the subcontracting of Targeted Enterprises.
- (iv) Review all tender adjudication reports and monitor that the criteria and procedures applied by the Contractor to subcontract work to Targeted Enterprises are executed in a fair and transparent manner, and are in accordance with the Employer's standards.
- (v) Endorse subcontract agreements and ensure that the conditions of subcontracting with Targeted Enterprises are fair and transparent and within the prescripts of the Contract requirements.
- (vi) Monitor the management of Targeted Enterprise subcontracts and ensure that conditions such as the application of penalties and the termination of contracts, are applied in a fair and transparent manner and within the prescripts of the agreement.
- (vii) Verify that the Labour Database(s) from which Targeted Labour will be employed is updated prior to every new Labour intake.
- (viii) Monitor that the criteria and procedures applied by the Contractor to employ Targeted Labour are executed in a fair and transparent manner, and is within the Contract requirements.
- (ix) Monitor that the conditions of employment of Targeted Labour are applied in a fair and transparent manner and within the prescripts of the current and relevant Labour legislation.
- (x) Make recommendations to the Contractor in the identification of the training requirements of Targeted Enterprises and Targeted Labour and approve the proposed training programmes.
- (xi) Monitor that training programmes and support programmes, which the Contractor committed to, are implemented and executed as intended.

F5. SPECIFIC WORK TO BE CARRIED OUT BY TARGETED ENTERPRISE SUBCONTRACTORS

F5.1 Subcontract scope of work

It is a requirement of the contract that only those Targeted Enterprise subcontractors procured through a tender process by the Contractor, shall qualify to have their contribution count towards the Contract Participation Goal.

For this particular contract, the following listed work has been identified in terms of this Particular Specification, PART F, as suitable for execution by Targeted Enterprise subcontractors in order to assist the Contractor in achieving the Contract Participation Goal:

- (i) Traffic Accommodation
- (ii) Clearing and grubbing.
- (iii) Prefabricated culverts including inlet and outlet structures.
- (iv) Kerb & channel and concrete sidewalks.
- (v) Earthworks and pavement layers, including stabilised subbase.
- (vi) Prime coat, tack coat and surfacing.
- (vii) Road marking and placing of road studs
- (viii) Gabions.
- (ix) Guardrails.
- (x) Road signs.
- (xi) Landscaping and grassing.
- (xii) Finishing the road and road reserve.
- (xiii) Removal of the redundant section of existing P425 after the new bridge has been opened to traffic: removal of surfacing, pavement layers and underlying fill and cart to spoil.
- (xiv) Construction of some parts of the new concrete bridge.
- (xv) Other work identified by the Employer to be executed in the community area.

The work to be carried out by Targeted Enterprise subcontractors is not limited to the work listed above, and the Contractor may need to engage Targeted Enterprises and Labour on other aspects of the Works in order to achieve the Contract Participation Goal.

F5.2 Subcontract work packages

The work activities shall be grouped into varying sizes of work packages according to the CIDB contractor grading designation and class of construction works. The typical scope of work may include the following class of construction works and specialist works:

- (i) Class of construction works – Civil Engineering (CE); and
- (ii) Specialist Works:
 - Asphalt works (SB);
 - Demolition and blasting (SE);
 - Piling (SJ);
 - Road marking and signage (SK); and
 - Structural steelwork fabrication and erection (SL).

For this contract the minimum number of prescribed work packages for execution by Targeted Enterprise subcontractors is indicated in table G1/1 according to the CIDB contractor grading designation and the scope of work according to the chapters of the COTO Standard Specifications for Road and Bridge Works for State Road Authorities (Draft Standard (DS) October 2020).

Provision is made for each of the work packages to include Chapters C1.2 and C1.3 Contractor's Establishment on Site and General Obligations to cover the costs of the Targeted Enterprise subcontractors' own establishment and general obligations.

TABLE F1/1: PRESCRIBED MINIMUM NUMBER OF WORK PACKAGES ACCORDING TO CIDB CONTRACTOR GRADING DESIGNATION							
SECTION	DESCRIPTION	TARGETED ENTERPRISE SUBCONTRACTOR CIDB CONTRACTOR GRADING DESIGNATION					
		1CE PE Max: R0,50 m	2CE PE Max: R1,00 m	3CE PE Max: R3,00 m	4CE PE Max: R6,00 m	5CE PE Max: R10,0 m	6CE PE Max: R20,0 m
1.2	GERERAL REQUIREMENTS AND PAYMENT	X*	X*	-	X*	X*	
1.3	CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS	X*	X*	-	X*	X*	
C1.6	CLEARING AND GRUBBING	X					
C3.2	PREFABRICATED CULVERTS						
C11.2	NON-STRUCTURAL GABIONS						
C3.3	CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES, AND CONCRETE LININGS FOR OPEN DRAINS		X				
C4.4	COMMERCIAL MATERIALS					X	
C5.1	ROADBED						
C5.2	FILL						
C5.3	ROAD PAVEMENT LAYERS						
C5.4	STABILISATION						
C8.1	PRIME COAT						
C9.1	ASPHALT BASE AND SURFACING						
C11.4	ROAD RESTRAINT SYSTEMS	X					
C11.6	ROAD SIGNS						
C4.3	EXISTING ROAD MATERIALS				X		
C13.1	FOUNDATIONS						
C13.2	FALSEWORK, FORMWORK AND CONCRETE FINISH						
C13.3	STEEL REINFORCEMENT						
C13.4	CONCRETE						
C13.8	ANCILLARY STRUCTURAL ELEMENTS						
C11.7	ROAD MARKINGS AND ROAD STUDS						
C11.8	LANDSCAPING AND PLANTING PLANTS						
C11.9	FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS						
	MINIMUM TOTAL NUMBER OF TARGETED ENTERPRISE SUBCONTRACTORS PRESCRIBED FOR EACH CIDB CONTRACTOR GRADING DESIGNATION	2	1	-	1	1	-

NOTE:

All work packages must include Chapter 1.3

X(1) denotes “one” prescribed subcontract work package according to the respective CIDB contractor grading designation and the scope of work according to the Chapter of the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.

NOTE:

All work packages must include Chapter 1.3

X(1) denotes “one” prescribed subcontract work package according to the respective CIDB contractor grading designation and the scope of work according to the Chapter of the Standard Specifications for Road and Bridge Works for South African Road Authorities (COTO), Draft Standard (DS), October 2020.

For subcontractors with a higher CIDB contractor grading designation, it may be possible for the work package to comprise more than one chapter which is shown as “X” in the above table. The minimum total number of targeted enterprise subcontractors prescribed for each CIDB contractor grading designation is listed in the above table.

F5.3 Subcontract bill of quantities

The items of work identified for execution by Targeted Enterprise subcontractors is shown in the bill of quantities at the end of Part F: Small Contractor Development. The quantities of work shown for each item of work, is the anticipated work to be subcontracted, and the Contractor is not required to tender rates and prices for these items of work.

Payment of the works executed by Targeted Enterprise subcontractors will be made under the provisional sum allowed for in clause F10 Measurement and Payment and included in Schedule F: Small Contractor Development in Section C2.2 Bill of Quantities.

F6. TENDER PROCESS FOR TARGETED ENTERPRISE SUBCONTRACTOR PROCUREMENT

F6.1 Subcontract scope of work

The Contractor shall refer to Table F1/1 for the work packages identified to be subcontracted, the bill of quantities contained in these Particular Specifications, and to any other construction activities required to execute the Works in terms of the contract, to determine how he intends to unbundle or package specific subcontracts for execution by Targeted Enterprise subcontractors, and shall present his proposal to the Employer and Employer's Agent for approval.

F6.2 Compilation of subcontract tenders

The Contractor shall be responsible for compiling the tender documents that will enable him to engage the Targeted Enterprise subcontractors for the various work packages, according to the contractor grading designation and class of construction works or specialist works. The Contractor shall compile each subcontract tender document in such a manner that it shall facilitate the achievement of all objectives and principles pertaining to the development of the Targeted Enterprise subcontractors.

The tender documentation shall comply with the Employer's standards, including its standard conditions of tender. The following returnable schedules shall form part of the tender document for submission by tenderers:

- (i) certificate of registration of the tenderer in the required CIDB contractor grading designation, confirming the tenderer's registration Status as "Active" at the closing date of tender submission;
- (ii) tax compliance status report;
- (iii) B-BBEE verification certificate or sworn affidavit;
- (iv) proof of registration on the Central Supplier Database; and
- (v) compliance with the COID Act.

The tender documents shall also contain the proposed subcontract agreement in accordance with clause F8.1.

The draft tender documents shall be subject to approval by the Employer and Employer's Agent. The Contractor may then proceed with the preparation of tender documents for the work packages.

F6.3 Tender process

The Contractor shall be responsible for advertising the tenders for the work packages, and inviting tenders from Targeted Enterprise subcontractors in consultation with the Employer and Employer's Agent and the local PLC.

The Employer shall identify the number of work packages which are to be executed by Targeted Enterprise subcontractors from specific designated groups.

The Contractor shall conduct a compulsory briefing session for tenderers, attended by the Employer and Employer's Agent, to explain the Works required and the tender process to the Targeted Enterprise subcontractors.

Tenders for the subcontracted works must close at a stipulated time and date. Tenders shall be placed in a suitable formal Tender Box, located at the Contractor's site office. The tender opening shall be conducted by the Project Management Team.

F6.4 Tender evaluation

The Project Management Team shall evaluate the tenders according to the Employer's standards. The Contractor shall prepare the tender adjudication report for each subcontract, and submit it to the Project Management Team for review prior to award of each subcontract.

F6.5 Allocation of subcontract work packages

The Project Management Team shall identify responsive tenders received for the various work packages from Targeted Enterprises in the following designated groups:

- (i) an EME or QSE which is at least 51% owned by black people;
- (ii) an EME or QSE which is at least 51% owned by black people who are youth;
- (iii) an EME or QSE which is at least 51% owned by black people who are women;
- (iv) an EME or QSE which is at least 51% owned by black people with disabilities; or
- (v) an EME or QSE which is at least 51% owned by black people who are military veterans.

The selection of subcontract work packages shall then be made, in consultation with the Employer in accordance with the provisions of clause 4.4.4 of the General Conditions of Contract 2015, in order to comply with the Employer's targeted procurement objectives.

F6.6 Award of subcontract work packages

Following the selection of the Targeted Enterprise subcontractors for the various work packages in consultation with the Employer in accordance with clause 4.4.4 of the General Conditions of Contract 2015, the Employer's Agent shall provide written confirmation of the Targeted Enterprise subcontractor selected for each work package, to the Contractor. The Contractor shall award each work package to the respective Targeted Enterprise subcontractor.

F7. GENERAL RESPONSIBILITIES OF THE CONTRACTOR TOWARDS TARGETED ENTERPRISES

F7.1 Obligations

The Contractor shall ensure that he complies with the following obligations:

- (i) institute a quality assurance system;
- (ii) provide adequate training, coaching, guidance, mentoring and assistance to Targeted Enterprises;
- (iii) provide financial support and other assistance to ensure that Targeted Enterprises are able to meet their obligations and commitments with respect to their subcontracts, including acquisition of labour, construction equipment and materials;
- (iv) ensure that the contract participation goals and objectives are achieved; and
- (v) make provision for Targeted Enterprises to be established within the Contractor's own camp facilities, and be responsible for the provision of site offices, common camp

facilities, medical, security, safety, electricity, water, sewage services, waste disposal and all other camp services.

- (vi) be responsible for developing subcontractors in accordance with the cidb Standard for Indirect Targeting for Enterprise Development.
- (vii) be responsible for the appointment of the Enterprise Development Coordinator.

F7.2 Subcontracts

In the subcontracts arranged by the Contractor involving Targeted Enterprises, the following shall apply:

- (i) the appointment of Targeted Enterprises by the Contractor shall be made in accordance with the provisions of clause 4.4 of the General Conditions of Contract 2015; and
- (ii) no provision or requirements set out in the specifications shall be deemed to relieve the Contractor of any liability or obligation under the contract, and in accordance with the provisions of clause 4.4.3 of the General Conditions of Contract 2015, the Contractor shall be liable for the acts, defaults and negligence of any Targeted Enterprise, his agents or employees as fully as if they were the acts, defaults or negligence of the Contractor.

F8. MANAGEMENT OF TARGETED ENTERPRISE SUBCONTRACTS

The Contractor shall conclude the subcontract agreements and provide the necessary management support to the Targeted Enterprises. Failure by a Targeted Enterprise to comply with the terms and conditions of the subcontract agreement shall result in penalties being applied or the subcontract terminated.

F8.1 Compilation of subcontract conclusion agreement

- (a) The Contractor in liaison with the Employer and Employer's Agent shall be responsible for the conclusion of each subcontract agreement. The agreement shall be in accordance with the provisions of clause 4.4 of the General Conditions of Contract 2015 and shall be consistent with the terms and conditions in this contract. The agreement shall be subject to approval by the Employer and Employer's Agent.
- (b) The terms and conditions of the subcontract agreement shall also specify the following:
 - (i) an entitlement of the Targeted Enterprise to receive such training as is contemplated in this contract;
 - (ii) an obligation on the Targeted Enterprise to participate and co-operate in such training as is provided for in this contract;
 - (iii) the allowable sources from which workers may be drawn in terms of the contract;
 - (iv) the terms and conditions relating to the recruitment, employment and remuneration of workers engaged on the contract;
 - (v) the training to be provided to the workers; and
 - (vi) the terms and conditions relating to payment of the Targeted Enterprise. Such terms and conditions shall also include a clause stipulating that payment to a Targeted Enterprise for work done shall be made within 30 days of submission of the invoice by the Targeted Enterprise to the Contractor. In the event of failure by the Contractor to make the payment by the due date, he shall pay to the Targeted Enterprise interest, at the prime overdraft rate charged by the Targeted Enterprise's bank, compounded monthly, on all overdue payments from the date on which the same should have been paid to the date when payment is effected, without prejudice to the Targeted Enterprise's other rights under the contract or by law.

F8.2 Quality of work and performance of the Targeted Enterprise

- (a) The Contractor shall closely monitor and supervise all Targeted Enterprises and shall train, mentor, guide and assist each Targeted Enterprise in all aspects of management, execution and completion of his subcontract. This shall typically include assistance with planning of the works, sourcing and ordering of materials, labour relations, monthly measurements and invoicing procedures. The extent and level of such training, mentoring, guidance and assistance to be provided by the Contractor shall be commensurate with the basic level of subcontract applicable and shall be directed at enabling the Targeted Enterprise to achieve the successful execution and completion of their subcontract.
- (b) The Contractor shall closely monitor and supervise all Targeted Enterprises and shall give reasonable warning to the Targeted Enterprise when any contravention of the terms and conditions of the subcontract has occurred or appears likely to occur. The Contractor shall, whenever feasible, give the Targeted Enterprise reasonable opportunity to make good any such contravention, or to avoid such contravention, and shall render all reasonable assistance to the Targeted Enterprise in this regard.

F8.3 Dispute avoidance and resolution procedures

- (a) When taking any disciplinary action or imposing a penalty as provided for in the subcontract, the Contractor shall explain fully to the Targeted Enterprise that such actions are provided for in the subcontract. If such action is contemplated this shall be discussed with the Employer's Agent before any action is taken.
- (b) If the Targeted Enterprise, in the opinion of the Employer's Agent, fails to comply with any of the criteria listed below, the Employer's Agent shall issue a written warning to the Contractor, stating all the areas of non-compliance. A copy of the letter of warning shall be forwarded to the Employer. The criteria are as follows:
 - (i) acceptable standard of work as set out in the specifications;
 - (ii) progress in accordance with the time constraints in the Targeted Enterprise's contract;
 - (iii) punctual and full payment of the workforce and suppliers;
 - (iv) site safety; and
 - (v) accommodation of traffic.
- (c) The Targeted Enterprise shall have 21 days from the date of receipt of the letter of warning by the Contractor to address and rectify the issues raised by the Employer's Agent, with the exception of the above subclauses (b)(iv) and (v) for which the reaction time shall be in accordance with the relevant specifications for those aspects of the Works but shall not be longer than 24 hours. Failure by the Targeted Enterprise to comply with the deadline set, will be sufficient grounds for the Contractor to apply a penalty, or terminate the subcontract provided that the Employer's Agent is satisfied that the Contractor has made every effort to correct the performance of the Targeted Enterprise.
- (d) The Targeted Enterprise shall have the right to dispute any ruling given or deemed to have been given by the Contractor, Employer's Agent or Employer. Provided that, unless the Targeted Enterprise shall, within 21 days after his receipt of a ruling or after a ruling shall have been deemed to have been given, give written notice (hereinafter referred to as a Dispute Notice) to the Contractor, referring to this clause, disputing the validity or correctness of the whole or a specified part of the ruling, he shall have no further right to dispute that ruling or the part thereof not disputed in the said notice.

F9. TRAINING, COACHING, GUIDANCE AND MENTORING

F9.1 Obligations

This section provides details of the Contractor's obligations of implementing the National Skills Development Strategy. This strategy sets priorities for the skills development of workers. The Sector

Education and Training Authorities (SETA) and provincial offices of the Department of Labour will play key roles in transforming the vision of the strategy into reality.

Supervision is included as part of the contractor's general obligations for the administration and management of the Targeted Enterprises. However, training, coaching, guidance and mentoring are not included as part of the Contractor's general obligations unless specific provision to that effect has been made in the project specifications.

The Contractor shall, from the commencement of the contract, provide a structured development programme designed to improve the entrepreneurial and basic business management skills of identified Targeted Enterprises and hired labour, as well as to improve their specific task skills (construction skills) commensurate with the applicable levels of subcontract that will enable the Targeted Enterprises to achieve the successful execution and completion of their subcontracts. The ultimate objective of training, coaching, guidance and mentoring is to develop the Targeted Enterprises as far as their potential allows.

F9.2 Definitions

F9.2.1 Training

Training refers to the process of teaching a learner – usually in a classroom or simulated work environment situation. Training usually takes place with one teacher/trainer and several learners. Principles and theory are taught. Demonstrations are given. Assignments are then set to ensure that the learner is able to apply what has been taught. Training is done by a specialist in the subject, who is also qualified to train.

Example: Use of a dumpy level

Training would involve the theory of how a dumpy level works and how to calculate levels. A demonstration of how to set up and read a level could be given.

F9.2.2 Coaching

Coaching refers to hands-on training and is mostly on a one-on-one basis of tangible and measurable skills. It is typically on-site training, or learning-on-the-job. Coaching is training by the process of “watch-do-correct-practice”. The coach does the task while the learner watches and asks questions. Then the learner does the same task while the coach watches. The learner is corrected until the coach feels that he has the gained competence in the function. The learner is then left to practise the task or skill, which the coach oversees. Coaching is imparting a skill – usually manual or physical. A coach is usually a person doing the same type of work on a higher or more competent level, or a person who has a mastery of the skill/task. While training gives the theory or shows/explains the principles, coaching helps the learner become competent and master a skill. A coach is often in the direct reporting line, i.e., someone in authority. Coaching could be part of the management function and would make the job run more smoothly.

Example: Use of a dumpy level

Coaching would involve taking the learner onto site, setting up a dumpy level, reading levels. Then the coach would get the learner to do the job, while the coach checked the setting up and reading. Once the learner understands and can do the tasks, the coach checks periodically to ensure the learner is still doing the job properly.

The desired outcome of coaching is for the learner to “fit-the-mould”, and to do things the same way and to the same standard as the coach.

F9.2.3 Guidance

Guidance is anticipating where one might go wrong, or where one is doing a task in a complicated, inefficient or ineffective way, and giving advice as to how to achieve a better result. Guidance is mostly

given by a person in the direct reporting line, but can be given by anyone. Guidance is not imparting skills, but suggesting ways to improve performance.

Example: Use of a dumpy level

A person who knows how to use a dumpy level would be given guidance as to where he would next set up the level to limit the number of set-ups. Guidance could be an extension of coaching.

F9.2.4 Mentoring

Mentoring is developing a person on a long-term career path. It is mostly about imparting skills that are often intangible and non-measurable. A mentor is seldom anyone in the direct reporting line – although he could be a person several levels higher in that reporting line. Mentoring is more about developing a relationship and taking a personal interest in an individual. A mentor looks out for that individual and gives him advice that cannot be found in a book or in the normal course of business. The sort of issues a mentor discusses with the protégé include company politics, how to pick up work before others get wind of it, how to position one's company to get a better competitive advantage, how to tender such that the tender is lowest but the profit is as good as or better than the next person, how to determine and assess risk. Mentoring helps the protégé think strategically, sharpen entrepreneurial skills and grow – both personally and in terms of the company. A mentor helps the protégé to develop insight and shrewdness. It is more about business skills to survive long-term than the technical, tactical or day-to-day activities of doing business.

The desired outcome of mentoring is for the protégé to develop his own style, i.e., to shape his own "mould".

F9.2.5 Supervision

Supervision is instruction regarding the work to be performed, and ensuring it is carried out to specification and to the satisfaction of the supervisor. It is not instruction on how the work is to be performed, but rather on what work has to be performed, and usually has specific time frames.

F9.3 Assessment of Targeted Enterprise potential

It is the responsibility of the Contractor to determine the level of development required by each Targeted Enterprise. This will require that the Contractor determine the level at which the Targeted Enterprise can operate competently and determine the skills already acquired by the Targeted Enterprise in terms of training and on-the-job experience. In some circumstances Adult Basic Education Training (ABET) will need to be started before any formal training can commence. The assessment of each appointed Targeted Enterprise is to be produced by the Contractor for discussion with the Employer and Employer's Agent at a meeting following the appointment of the Targeted Enterprise.

F9.4 Development Plan

Within a month of the meeting with the Employer and Employer's Agent on the Targeted Enterprise assessments, the Contractor is to present a development plan, specific to each Targeted Enterprise. The development plan is to be reviewed by the Employer and Employer's Agent for appropriateness before being implemented.

The development plan is to include the following:

- (i) specify the development needs of each Targeted Enterprise contracting entity – the systems the entity lacks;
- (ii) specify the development needs of the individuals comprising the entity – the skills the individuals within the entity lack;
- (iii) the level to which that activity will be developed within the period of the contract;
- (iv) whether training, coaching, guidance and/or mentoring is to be given in each activity; and
- (v) the person/s responsible for each activity.

F9.5 Identification and general training of potential Targeted Enterprises

- (a) The progression of training, coaching and mentorship may need to start with the identification and general training of identified Targeted Enterprises and hired labour, and should end with their acquisition of sufficient management skills that will equip them to compete confidently for subcontract work beyond the duration of this contract. In addition, generic skills shall be taught where the need for these has been identified as being necessary amongst Targeted Enterprise workforces and hired labour.
- (b) Before commencing with any structured training, the Contractor shall submit his intended programme to the Employer and Employer's Agent for approval of its subject content and proposed trainers, and the Contractor shall, if so, instructed by the Employer and Employer's Agent, alter or amend the programme and/or course content.

The Contractor shall be responsible for the provision of everything necessary for the delivery of the various training workshops and modules including:

- (i) provision of a suitable fully serviced training venue facility;
- (ii) procurement of suitable accredited trainers;
- (iii) provision, in conjunction with the accredited trainers, of all the necessary training materials, including stationery and study materials; and
- (iv) transportation of the learners to and from the training venue facility (it is therefore in the Contractor's interest that the training venue facility be provided on the site in order to reduce these transportation costs).

Payment to the Contractor for carrying out the training function shall be effected through the pay items provided in this PART F, using the training facility provided under PART E: Expanded Public Works Programme.

F9.6 Activities

The tasks for each of the activities making up the development plan include material, equipment and general tasks, for training on technical, contractual, financial, human resources, legislative and general administrative functions.

The Construction Manager, site clerk and HR Manager will train/coach or mentor the above listed functions as part of on-site training.

F9.7 Portfolio of Evidence

The Contractor is to develop and/or maintain a portfolio of evidence for each Targeted Enterprise. The Portfolio of Evidence is a collection of proof of the training, coaching, guidance and mentoring inputs provided to the Targeted Enterprise and is similar to a log book used by technical students completing experiential training. It is a living document which records the development progress of the Targeted Enterprise and will need to be updated continually throughout the duration of the contract. It remains the property of the Targeted Enterprise who must take it to their next contract.

The Portfolio of Evidence should include the following documentation:

- (i) the development path designed for each Targeted Enterprise;
- (ii) the training courses completed by the Targeted Enterprise;
- (iii) the hours of guidance, coaching and mentoring received for each activity listed in the development plan;
- (iv) a list of outcomes achieved at each level for each activity;
- (v) six-monthly progress reports on the development provided (inputs) versus the actual progress made (output) by the Targeted Enterprise; and
- (vi) a list of competencies.

F9.8 Training Requirements

Only qualified trainers employed by training agencies that are accredited by the relevant Sector Education and Training Authorities (SETA), or other institutions recognised by the Department of Labour shall deliver any training. "Accredited training" refers to both the trainers as well as to the training material. Certificates affirming the successful participation in the various courses shall be presented to each attendant.

The Contractor shall facilitate in the delivery of training by instructing and motivating the hired labour and relevant Targeted Enterprises regarding attendance and participation. All training shall take place within normal working hours, or as agreed with the trainees.

F9.9 Development training

The Contractor will arrange training to support the development of the Targeted Enterprise. This training must be provided by training providers accredited with the relevant SETA pertaining to the course material being presented. The training will take place at hours agreed with the trainees, possibly on a part time basis after hours.

The following training courses are recommended to support the development programme detailed in the contract document:

- (i) NQF Level 2: Construction Contractor - Business owner and administration officer;
- (ii) Tender training NQF Level 3 – Business owner / Technical expert;
- (iii) Computer literacy training - Business owner and admin officer – Microsoft Windows, email, Microsoft Word and Microsoft Excel;
- (iv) General bookkeeping relevant to construction - Business owner and admin officer;
- (v) Tendering NQF Level 4 and 5 – Business owner / Technical expert; and
- (vi) Construction supervision (Roadworks) NQF Level 4 – Business owner / Technical expert.

F9.10 Safety Training

The Targeted Enterprise's safety representative is to be fully trained in all aspects of safety and his duties in this regard. The owner of the Targeted Enterprise is to be trained on his responsibilities regarding safety regulations.

F9.11 Construction skills training

The focus of training provided on the contract should be to support the development of the Targeted Enterprise subcontractor. Construction skills training will only be approved by the Employer's Agent when appropriate.

The Targeted Enterprise, their workforce and hired labour that are selected will be entitled to receive structured training that will improve on-task skills necessary for the execution and successful completion of the works. The Contractor, in conjunction with the Employer's Agent, shall monitor the progress of the hired labour and each Targeted Enterprise closely and shall identify those who, in their collective opinion, will benefit from structured construction skills training as may be provided for in the contract, and where required by the Employer's Agent shall make recommendations in this regard. The final list of candidates shall be decided between the Contractor and the Employer's Agent, and those selected shall receive formal construction skills training in a programmed and progressive manner throughout the duration of the contract.

The training programme shall offer complete courses that could comprise some or all of the following modules:

- (i) Use and maintenance of hand tools;

- (ii) Operation of equipment;
- (iii) Manufacture and installation of minor precast concrete units;
- (iv) Erect, dismantle and maintain formwork;
- (v) Basic concrete skills;
- (vi) Excavation, backfill and compaction;
- (vii) Bricklaying; and
- (viii) Erosion protection using stone pitching, gabions or renos.

F9.12 Training venue facility

The training venue facility to be provided by the Contractor is described in clause E5.6 of PART E. This facility shall be used to deliver all training, irrespective of whether it is delivered in terms of PART E or PART F of the Particular Specifications.

F9.13 Enterprise Development Co-Ordinator

The contractor shall appoint an Enterprise Development Co-Ordinator who shall:

- a) develop a project specific Enterprise Development plan to improve the targeted enterprise's performance in the identified developmental areas and shall allocate resources to monitor progress in relation to improved performance; and
- b) shall, submit to the employer's representative a monthly enterprise development report (Performa – ED105P) which documents all mentoring activities that have taken place during that month and the progress made in improving the targeted enterprise's performance in the agreed developmental areas, countersigned by the targeted enterprise.

Competence Criteria for an Enterprise Development Co-ordinator

The enterprise development co-ordinator shall have the following competencies:

- 1.1 Minimum experience of 5 years in the construction industry at Managerial level as a Site Agent, Contracts Manager, Site Manager, Construction Manager, Business Development Manager or Enterprise Development Manager.
- 1.2 Minimum experience of 2 years in training and development in Building or Construction; and
- 1.3 National Diploma or B Degree in the Built Environment or Business Management

F10. MEASUREMENT AND PAYMENT

Note:

In order to avoid duplication of training facilities, the training facility required for the training described in this PART F: Small Contractor Development, shall be measured and paid for in terms of the pay items provided for training in PART E: Expanded Public Works Programme.

Item	Unit
F10.01 Procurement of Targeted Enterprises:	
(a) Management and execution of Targeted Enterprise procurement process:	
(i) Procurement process for the appointment of CIDB contractor grading designation 1 Targeted Enterprise subcontractor (100 copies of the tender document required for each individual tender) number (No)	
(ii) Procurement process for the appointment of CIDB contractor grading designation 2 Targeted Enterprise subcontractor (80 copies of the tender document required for each individual tender) number (No)	
(iv) Procurement process for the appointment of CIDB contractor grading designation 4 Targeted Enterprise subcontractor (50 copies of the tender document required for each individual tender) number (No)	
(v) Procurement process for the appointment of CIDB contractor grading designation 5 Targeted Enterprise subcontractor (40 copies of the tender document required for each individual tender) number (No)	

The unit of measurement shall be the number of individual subcontract agreements concluded with Targeted Enterprise subcontractors according to the CIDB contractor grading designation for all classes of construction works, in accordance with the procurement process described in this PART F.

Each tendered rate shall be in full compensation for the management and execution of the Targeted Enterprise procurement process in the relevant CIDB contractor grading designation scheduled, including for the compilation, printing, binding and issue of the tender documents for each tender, for the advertising of each tender, for the provision of the venue and the conducting of each compulsory briefing session for tenderers, for the conducting of each tender opening process, for the adjudication of the tenders received for each tender, for the preparation of each tender adjudication report and the review thereof in conjunction with the Employer and Employer's Agent, for the award of each tender and for the conclusion of the subcontract agreement with each successful Targeted Enterprise subcontractor tenderer.

Item	Unit
F10.02 Construction Works for Targeted Enterprise subcontractors:	
(a) Payments associated with the construction Works carried out by Targeted Enterprise subcontractors provisional sum (Prov sum)	
(b) Handling costs and profit in respect of subitem F10.02(a)percentage (%)	
(c) Supply of materials and small construction equipment to assist Targeted Enterprise subcontractors..... provisional sum (Prov sum)	
(d) Handling costs and profit in respect of subitem F10.02(c)percentage (%)	

- (e) Management of the Targeted Enterprise subcontractors
- (i) Needs Analysis and Enterprise Development Plan per Targeted EnterpriseNumber (No)
 - (ii) Monitoring and Interim reporting per Targeted EnterprisePer Quarter
 - (iii) Project Completion report per Targeted EnterpriseNumber (No)
 - (iv) Skills Development Co-Ordinator
(No/month)

Expenditure under subitems F10.02(a) and (c) shall be in accordance with clause 6.6 of the General Conditions of Contract 2015.

The provisional sum for subitem F10.02(a) is provided to cover the total cost of the construction Works carried out by the Targeted Enterprises subcontractors based on proof of payment made by the Contractor, as certified by the Employer's Agent, in separate payments for each Targeted Enterprise subcontractor in accordance with PART F of the Particular Specifications.

The tendered percentage for subitem F10.02(b) is the percentage of the amount actually spent under subitem F10.02(a), and shall include full compensation for the handling costs of the Contractor and the profit in connection with the construction Works carried out by the Targeted Enterprise subcontractors.

The provisional sum for subitem F10.02(c) is provided to cover the total cost of the materials and small construction equipment supplied by the Contractor to assist the Targeted Enterprise subcontractors based on proof of payment made by the Contractor, as certified by the Employer's Agent, in separate payments for each Targeted Enterprise subcontractor in accordance with PART F of the Particular Specifications.

The tendered percentage for subitem F10.02(d) is the percentage of the amount actually spent under subitem F10.02(c), and shall include full compensation for the handling costs of the Contractor and the profit in connection with the supply of materials and small construction equipment by the Contractor to assist the Targeted Enterprise subcontractors.

The unit of measure for subitem F10.02(e)(i) shall be the Number of Needs analysis and enterprise development plan per Targeted Enterprise. Only one (1) plan will be developed per Targeted Enterprise. The rate shall include full compensation for the development of the Needs Analysis Plan to the satisfaction of the Employer, meeting all the CIDB requirements and shall including any consultations undertaken by the contractor in the development of the plans.

The unit of measure for subitem F10.02(e)(ii) shall be Per Quarter of Monitoring and Interim Reporting per Targeted Enterprise. Payment shall only be made for the period the appointed Targeted Enterprise subcontractors are on site in the execution of the works. The tendered rate shall include full compensation for the conclusion of all the subcontract agreements and the management of all Targeted Enterprise subcontractors, including for the provision of the necessary management support, coaching, guidance and mentoring to the Targeted Enterprise subcontractors.

The unit of measure for subitem F10.02(e)(iii) shall be the Number of Project Completion Reports Completed per Targeted Enterprise. Only one (1) report will be developed per Targeted Enterprise. The rate shall include full compensation for the development of the Completion Report to the satisfaction of the Employer, meeting all the CIDB requirements and shall including any consultations undertaken by the contractor in the development of the report.

The Skills Development Co-Ordinator under subitem F10.02(e)(iv) shall be compensated as per the Number (No) of Targeted Sub Contractors currently employed and actively working on site only for the month. The rate shall include full compensation for all costs associated with developing a project specific Enterprise Development plan and submitting to the employer's representative a monthly

enterprise development report (Performa – ED105P) all as per the provisions of F9.13. This rate shall also include any travelling, incidentals, communication costs and any other costs deemed as a requirement for the Skills Development Co-Ordinator to execute their duties. No other claims may be made anywhere else which shall be associated with the Skills Development Co-Ordinator.

Item	Unit
F10.03 Training of Targeted Enterprise subcontractors:	
(a) Generic skills:	
(i) Training costs provisional sum (Prov sum)	
(ii) Handling costs and profit in respect of subitem F10.03(a)(i)percentage (%)	
(b) Entrepreneurial skills:	
(i) Training costs provisional sum (Prov sum)	
(ii) Handling costs and profit in respect of subitem F10.03(b)(i)percentage (%)	
(c) Construction skills:	
(i) Training costs provisional sum (Prov sum)	
(ii) Handling costs and profit in respect of subitem F10.03(c)(i)percentage (%)	
(d) Transportation and accommodation costs of selected learners only, while receiving off-site training:	
(i) Transportation and accommodation costsprovisional sum (Prov sum)	
(ii) Handling costs and profit in respect of subitem F10.03(d)(i)percentage (%)	

Expenditure under subitems F10.03(a)(i), (b)(i), (c)(i) and (d)(i) shall be in accordance with clause 6.6 of the General Conditions of Contract 2015.

The provisional sum for each of subitems F10.03(a)(i), (b)(i) and (c)(i) is provided to cover the total costs of the required training in generic skills, entrepreneurial skills and construction skills respectively, including for the procurement of the services of the accredited trainers and their delivery of the training courses to the learners employed by Targeted Enterprise subcontractors, the provision of all training materials including all stationery and study materials, and the wages of the learners for the duration of the courses. The payment of wages to learners in terms of subitems F10.03(a)(i), (b)(i) and (c)(i) will only be made to those learners who attend and successfully complete each course of the approved training programme. Payment shall not be made to learners who, once selected, do not attend or only partially complete structured training courses.

The Contractor's own personnel shall be permitted to attend the training courses provided for the learners employed by the Targeted Enterprise subcontractors only to the extent that the venue and its facilities can efficiently and comfortably accommodate the additional number of learners. All additional costs relating to such attendance by the Contractor's own personnel shall be carried by the Contractor and shall not be considered for payment in terms of item F10.03, including for any additional costs

related to the accredited trainers and their delivery of the training courses, the provision of additional training materials, and the wages of the learners from the Contractor's own personnel for the duration of the courses.

The tendered percentage for each of subitems F10.03(a)(ii), (b)(ii) and (c)(ii) is the percentage of the amount actually spent under each of subitems F10.03(a)(i), (b)(i) and (c)(i) respectively, and shall include full compensation for the handling costs of the Contractor, and the profit in connection with the provision of the training in generic skills, entrepreneurial skills and construction skills respectively, including for the costs of record keeping and reporting with respect to the training received by each learner, and the costs of the compilation of the portfolio of evidence with respect to each Targeted Enterprise subcontractor.

The provisional sum for subitem F10.03(d)(i) is provided to cover all costs related to the transportation and accommodation costs of selected learners only, while receiving off-site training, where such learners have been specifically selected in conjunction with the Employer's Agent to receive such off-site training and where such training cannot be delivered using the training venue facility provided by the Contractor.

The tendered percentage for subitem F10.03(d)(ii) is the percentage of the amount actually spent under subitem F10.03(d)(i), and shall include full compensation for the handling costs of the Contractor, and the profit in connection with the transportation and accommodation costs of selected learners only, while receiving off-site training.

BILL OF QUANTITIES

PART F: SMALL CONTRACTOR DEVELOPMENT

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C1.2
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
CPG SUBCONTRACT (2X): CLEARING AND GRUBBING, PREFABRACTED CULVERT						
C1.2	GENERAL REQUIREMENTS AND PAYMENT					
C1.2.1	Environmental Management					
C1.2.1.1	Monitoring of compliance with and reporting on the EMP	month		5		
C1.2.2	Programming and Reporting					
C1.2.2.1	Submission of a Scheme 1 Programme	Lump Sum		2		
C1.2.2.2	Reviewing and updating a Scheme 1 Programme every month	month		5		
C1.2.2.6	Preparation and submission of all information and reports specified in the Contract Documentation	month		5		
C1.2.5	Safety					
C1.2.5.1	Health and safety plan	Lump Sum		2		
C1.2.5.2	Implementation of health and safety plan	month		5		
C1.2.8	Dayworks					
C1.2.8.1	Personnel					
(a)	Unskilled labourer	hour	LI	20		
(b)	Semi-skilled labourer	hour		20		
(c)	Skilled labourer	hour		20		
C1.2.8.2	Construction Equipment					
(b)	Vibratory roller					
i)	Up to 1,0m wide & mass 0.5t	hour		20		
(e)	Tractor loader backhoe	hour		20		
(h)	Other equipment					
ii)	Rammer compactor	hour		20		
C1.2.8.3	Vehicles					
(a)	Light delivery vehicle (min 1600cc)	km		400		
C1.2.8.4	Materials					
(a)	Procurement of materials	Prov Sum		6 000		
(b)	Contractor's handling costs, profit and all other charges in respect of item C1.2.8.4(a)	%		6 000		
C1.2	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C1.3
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C1.3	CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS					
C1.3.1	The Contractor's general obligations					
C1.3.1.1	Fixed obligations	Lump Sum		1		
C1.3.1.3	Time-related obligations	month		5		
C1.3	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C1.6
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C1.6	CLEARING AND GRUBBING					
C1.6.1	Clearing					
C1.6.1.1	Clearing with machines and some hand labour where necessary	ha		0.5		
C1.6.1.2	Clearing with hand labour only when labour enhanced work is specified	ha	LI	1.0		
C1.6.2	Grubbing					
C1.6.2.1	Grubbing with machines and some hand labour where necessary	ha		0.5		
C1.6.2.2	Grubbing with hand labour when labour enhancement work is specified or it is not practical to use a machine	ha	LI	1.0		
C1.6.3	Removal and grubbing of large trees and tree stumps:					
C1.6.3.1	Girth equal to or exceeding 1,0 m up to and including 2,0 m	No	LI	10		
C1.6.3.2	Girth exceeding 2,0 m up to and including 3,0 m	No		3		
C1.6.3.3	Girth exceeding 3,0 m	No		4		
C1.6	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C3.2
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C3.2	CULVERTS					
C3.2.1	Excavation for culvert structures:					
C3.2.1.1	Excavating in all material situated within the following depth ranges below the surface level:					
(a)	0m to 1.5m	m ³		2		
C3.2.1.2	Excavating soft material 0 m to 1,5 m below the surface level using labour enhanced construction methods, or instructed by hand under Clause A3.2.7.2d):	m ³	LI	2		
C3.2.2	Backfilling:					
C3.2.2.1	Using the excavated material	m ³	LI	4		
C3.2.2.2	Using imported selected material:					
(a)	From commercial sources (G6 quality)	m ³	LI	4		
(b)	From sources on site (Site excavations or borrow pits)	m ³	LI	4		
C3.2.4	Metal and U-PVC culverts					
C3.2.4.1	450mm nominal diameter Weholite structured wall HDPE pipe or similar approved from drop inlet or side inlet for concrete kerb-channelling combination to the outlet structure at the bottom of the fill	m	LI	40.00		
C3.2.5	Rectangular culverts with prefabricated elements					
C3.2.5.3	Prefabricated roof slabs (450 mm x 600 mm concrete)	m		10		
C3.2.6	Extra over items C3.2.3, C3.2.4 and C3.2.5 for constructing inclined culverts	m		10.00		
C3.2.7	Cast in situ concrete and formwork:					
C3.2.7.2	In complete in situ floor slabs for rectangular culverts, manholes and catchpits including formwork, joints and Class U2 surface finish (class 16/20-20 concrete, formerly "class 20/19")	m ³	LI	5		
C3.2.7.5	In inlet and outlet structures including kerbs, chutes and downpipes, skewed ends, catchpits, manholes, thrust and anchor blocks, excluding formwork but including Class U2 surfacing finish (class 16/20-20 concrete, formerly "class 20/19")	m ³	LI	2		
C3.2.7.6	Formwork of concrete under items C3.2.7.3 to 5 above					
(a)	Vertical, class F1 surface finish	m ²	LI	3		
(b)	Vertical, class F2 surface finish	m ²	LI	3		
C3.2.10	Reinforcement:					
C3.2.10.3	Welded steel fabric	kg	LI	15		
C3.2	TOTAL CARRIED FORWARD					

SCHEDULE A: ROADWORKS						CHAPTER C3.2
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT		QUANTITY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD					
C3.2.12	Demolition of concrete members or elements:					
C3.2.12.2	Partial member or element					
(a)	Plain concrete (using jackhammer)	m ³		2		
(b)	Reinforced concrete	m ³		2		
C3.2.16	Brickwork (Engineering bricks):					
C3.2.16.2	230 mm thick	m ²		10		
C3.2.17	Plaster	m ²		10		
C3.2 / C2.1.2.5	Using hand excavation to locate,expose and verify services	m ³		4		
C3.2 / C1.7.2.2	Hauling material to spoil and off-loading it at a designated spoil or stockpile are:					
(b)	Soil and gravel material	m ³ - km		100		
(c)	Boulders, hard material and concrete	m ³ - km		100		
C3.2	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS						
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION					CHAPTER C11.2	
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C11.2	NON-STRUCTURAL GABIONS					
C11.2.1	Foundation trench excavation:					
C11.2.1.1	Excavating all material situated within the following depth ranges below the surface level					
(a)	0 m to 1,5 m	m³	LI	13		
C11.2.2	Surface preparation for bedding the gabion boxes and mattresses	m²	LI	50		
C11.2.3	Gabion boxes and mattresses:					
C11.2.3.3	Galvanized gabion mattresses					
(a)	6,0 m long x 2,0 m wide x 0,3 m deep, diaphragm spacing 1,0 m, galvanising and mesh wire, selvedge wire and lacing and binding wire as specified in subclauses PS A11.2.5.2 (b), (d) and (e)	m³	LI	14.4		
C11.2.4	Geotextile (Filter fabric non-woven, geotextile properties as specified in subclause PS A11.2.5.2(f))	m²	LI	50		
C11.2 TOTAL CARRIED FORWARD TO SUMMARY						

SCHEDULE A: ROADWORKS					CHAPTER C1.2	
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
CPG SUBCONTRACT (1X): CONCRETE KERBING AND CHANNELLING (GRADE 2 CE)						
C1.2	GENERAL REQUIREMENTS AND PAYMENT					
C1.2.1	Environmental Management					
C1.2.1.1	Monitoring of compliance with and reporting on the EMP	month		6		
C1.2.2	Programming and Reporting					
C1.2.2.1	Submission of a Scheme 1 Programme	Lump Sum		1		
C1.2.2.2	Reviewing and updating a Scheme 1 Programme every month	month		6		
C1.2.2.6	Preparation and submission of all information and reports specified in the Contract Documentation	month		6		
C1.2.5	Safety					
C1.2.5.1	Health and safety plan	Lump Sum		1		
C1.2.5.2	Implementation of health and safety plan	month		6		
C1.2.8	Dayworks					
C1.2.8.1	Personnel					
(a)	Unskilled labourer	hour	LI	32		
(b)	Semi-skilled labourer	hour		32		
(c)	Skilled labourer	hour		32		
C1.2.8.2	Construction Equipment					
(b)	Vibratory roller					
i)	Up to 1,0m wide & mass 0.5t	hour		32		
(e)	Tractor loader backhoe	hour		32		
(h)	Other equipment					
i)	Rammer compactor	hour		32		
ii)	Concrete mixer up to 0.6 m³ dry capacity	hour		32		
C1.2.8.3	Vehicles					
(a)	Light delivery vehicle (min 1600cc)	km		400		
C1.2.8.4	Materials					
(a)	Procurement of materials	Prov Sum		10 000		
(b)	Contractor's handling costs, profit and all other charges in respect of item C1.2.8.4(a)	%		10 000		
C1.2	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C1.3
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C1.3	CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS					
C1.3.1	The Contractor's general obligations					
C1.3.1.1	Fixed obligations	Lump Sum		1		
C1.3.1.3	Time-related obligations	month		6		
C1.3	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS						CHAPTER C3.3
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C3.3	CONCRETE KERBING AND CHANNELING, ASPHALT BERMS, CHUTES, DOWNPIPES, AS WELL AS CONCRETE, STONE PITCHED AND GABION LININGS FOR OPEN DRAINS					
C3.3.2	Concrete kerbing-channeling combination:					
C3.3.2.1	Prefabricated kerbing-channeling					
(a)	500 mm wide kerb and channel using prefabricated battered kerb, radius greater than 20 m, SABS 927 figure 6, with cast in situ class 12/15-20 (formerly class 15/19) concrete channel, as shown on drawing no. SD 0701/A	m	LI	260		
C3.3.3	Extra over items C3.3.1 and C3.3.2 for concrete kerbing or concrete kerbing and channeling on curves					
C3.3.3.1	On curves of radii more than or equal to 5,0 m but less than 20 m	m		40		
C3.3.8	Linings for open drains:					
C3.3.8.1	Cast in situ concrete lining (Class 16/20-20 concrete, formerly "class 20/19")					
(a)	Sidewalks	m³	LI	40		
C3.3.8.2	ClassU2 surface finish to cast in situ concrete					
(a)	Sidewalks	m²		700		
PS C3.3.8.4	Extra over subsubitems C3.3.8.1 (a) for concrete batched on site	m³	LI	70		
C3.3.9	Formwork to cast in situ concrete lining for open drains and sidewalks (Class F2 surface finish):					
C3.3.9.2	To sides with formwork on the internal face only	m²	LI	50		
C3.3.9.3	To ends of slabs	m²	LI	20		
C3.3.10	Sealed joints in concrete and stone pitched linings of open drains and sidewalks (sealed with a closed cell expanded polyethylene joint filler over the full panel depth, as per Note 3 on drawing no. SD 0601/C)					
(a)	100mm x 10mm Expansion joints	m	LI	60		
C3.3.12	Reinforcement:					
C3.3.12.3	Ref 193 Welded Steel Fabric	kg	LI	1 350		
C3.3.13	Polymer film sheeting (Polyethylene 0.15 mm thick) for concrete-lined open drains and sidewalks	m²	LI	800		
C3.3	TOTAL CARRIED FORWARD					

SCHEDULE A: ROADWORKS					CHAPTER C3.3	
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT		QUANTITY	RATE	AMOUNT
	TOTAL BROUGHT FORWARD					
PS C3.3.17	Inlet, outlet, transition and similar structures (typical designs):					
(a)	Side inlet for concrete kerb-channelling combination, type S1 single splay, 2.55 m long, 1.22 m wide, 1.4 m height, C16/20-20 (formerly class 20/19) concrete, complete as shown on drawing no. SD 0703/A, excluding the downpipe and excluding the outlet structure at the bottom of the fill.	No		4		
(b)	Outlet structure for 450 mm diameter downpipe, 230mm thick masonry walls on 200mm thick concrete slab, 1.15 m long, 1.2 m wide, 0.865 m height, C16/20-20 (formerly class 20/19) concrete, complete as shown on drawing no. SD 0406, including splitter block, excluding the downpipe and excluding stone pitching.	No		4		
(d)	Extra over subitems PS 3.3.17 (a) and (b) for concrete batched on site	m³		10		
PS C3.3.18	Trimming of excavations for concrete-lined open drains					
(a)	In soft material	m²		2 000		
(b)	In hard material (irrespective of depth)	m²		500		
C3.3 / C3.1.18	Backfilling of drains and sidewalks with selected material compacted to 93 % of MDD prior to construction of concrete lining and/or stone pitched lining (G7 quality material, 150mm thick, obtained from commercial sources)	m³		50		
C3.3 / C11.1.6	Concrete edge beams (300 mm x 300 mm cast in-situ class 25/30-19 concrete, formerly class 30/19)	m³		2		
C3.3	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS					CHAPTER C1.2	
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
CPG SUBCONTRACT (1X): EARTHWORKS, PAVEMENT LAYERS, SURFACING (GRADE 5 CE)						
C1.2	GENERAL REQUIREMENTS AND PAYMENT					
C1.2.1	Environmental Management					
C1.2.1.1	Monitoring of compliance with and reporting on the EMP	month		20		
C1.2.2	Programming and Reporting					
C1.2.2.1	Submission of a Scheme 1 Programme	Lump Sum		1		
C1.2.2.2	Reviewing and updating a Scheme 1 Programme every month	month		20		
C1.2.2.6	Preparation and submission of all information and reports specified in the Contract Documentation	month		20		
C1.2.5	Safety					
C1.2.5.1	Health and safety plan	Lump Sum		1		
C1.2.5.2	Implementation of health and safety plan	month		20		
C1.2.8	Dayworks					
C1.2.8.1	Personnel					
(a)	Unskilled labourer	hour	LI	48		
(b)	Semi-skilled labourer	hour		48		
(c)	Skilled labourer	hour		48		
C1.2.8.2	Construction Equipment					
(a)	Motor grader (Cat 14H or similar)	hour		48		
(b)	Vibratory roller					
i)	Up to 1,0m wide & mass 0.5t	hour		48		
ii)	More than 80kW and mass 12t	hour		48		
(e)	Tractor loader backhoe	hour		48		
(f)	Excavator (on tracks up to 100kW and mass of 25t)	hour		48		
(h)	Other equipment					
i)	Water tanker and spraybar (up to 10000l)	hour		48		
ii)	Rammer compactor	hour		48		
C1.2.8.3	Vehicles					
(a)	Light delivery vehicle (min 1600cc)	km		1 000		
(d)	Tipper Truck (> 8m³ capacity)	km		1 000		
C1.2.8.4	Materials					
(a)	Procurement of materials	Prov Sum		20 000		
(b)	Contractor's handling costs, profit and all other charges in respect of item C1.2.8.4(a)	%		20 000		
C1.2	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C1.3
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C1.3	CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS					
C1.3.1	The Contractor's general obligations					
C1.3.1.1	Fixed obligations	Lump Sum		1		
C1.3.1.3	Time-related obligations	month		20		
C1.3	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS						
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION					CHAPTER C4.4	
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C4.4	COMMERCIAL MATERIALS					
C4.4.2	Commercial materials identified by the Contractor from commercial, private or other non-commercial suppliers					
C4.4.2.1	Pavement layer material:					
(f)	Type G5A material	m ³		1 900		
(j)	Type G7 material	m ³		1 400		
(l)	Type G9 material	m ³		820		
C4.4.2.5	Fill material in the earthworks:					
(a)	Normal or coarse fill	m ³		4 100		
(c)	Sand	m ³		600		
C4.4.2.6	Pioneer material	m ³		50		
C4.4.4	Cementitious stabilising agents					
C4.4.4.1	Cement (CEM III/A 32.5 N)	t		167		
C4.4.4.2	Road lime (slaked)	t		Rate Only		
C4.4	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C5.1
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C5.1	ROADBED					
C5.1.1	Roadbed construction and compaction					
C5.1.1.2	Compaction of in-situ material to 93% of MDD	m ³		1 100		
C5.1.2	Excavate material to spoil sites designated by the Employer					
C5.1.2.1	Excavate material to spoil from roadbed construction, material obtained from:					
(a)	Soft excavation	m ³		500		
C5.1.4	Removal of unsuitable material to spoil					
C5.1.4.2	In layer thicknesses exceeding 200mm					
(a)	Stable material	m ³		100		
C5.1.5	In-situ treatment of roadbed in hard material					
C5.1.5.1	In-situ treatment by ripping	m ³		200		
C5.1.5.2	In-situ treatment by ripping and blasting	m ³		100		
C5.1 / C12.10.1	Excavation in hard rock using controlled blasting techniques	m ³		100		
C5.1.11	Construction of roadbed comprising a pioneer layer	m ³		200		
C5.1.6	Roller-pass compaction					
C5.1.6.2	Pad foot vibratory rollers	m ²		6 000		
C5.1 / C1.7.2.2	Hauling material to spoil and off-loading it at a designated spoil or stockpile area:					
(b)	Soil and gravel material	m ³ - km		2 000		
C5.1	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C5.2
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C5.2	FILL					
C5.2.2	Fill construction					
C5.2.2.1	Normal fill material in compacted layer thicknesses of 200 mm and less:					
(a)	Compacted to 90% MDD	m ³		2 200		
(b)	Compacted to 93% MDD	m ³		1 700		
C5.2.2.3	Sand fill material in compacted layer thicknesses of 400 mm and less, compacted to 100% of MDD					
(a)	Non-plastic sand with up to 20% passing through the 0,075 mm sieve, compacted to 100% of modified AASHTO density	m ³		300		
(b)	Non-plastic sand with more than 20% passing through the 0,075 mm sieve, compacted to 95% of modified AASHTO density	m ³		300		
C5.2.11	Finishing off fill slopes, medians and interchange areas					
C5.2.11.1	Fill slopes	m ²		2 000		
C5.2 / C4.2.12	Finishing the side slopes					
C4.2.12.1	Cuttings:					
(a)	In soft material	m2		750		
(c)	In hard material	m2		375		
(d)	In soft material using labour enhanced methods of construction	m2		375		
C5.2 / C1.7.2.1	Hauling material for use in the Works and off-loading it on the site of the Works:					
(a)	Soil, gravel, crushed stone and pavement layer material	m ³ - km		8 000		
C5.2	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C5.3
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C5.3	ROAD PAVEMENT LAYERS					
C5.3.2	Construction of pavement layers					
PS C5.3.2.1	Construction of layers using conventional construction methods:					
(a)	Lower selected subgrade layer (150 mm thickness) compacted to 93% of MDD	m ³		820		
(c)	Upper selected subgrade layer (150 mm thickness) compacted to 95% of MDD	m ³		790		
(h)	Gravel shoulder layer (150 mm thickness) compacted to 95% of MDD	m ³		610		
(l)	Upper subbase gravel layer (chemically stabilised) (200 mm thickness) compacted to 96% of MDD	m ³		1 000		
(n)	Gravel base layer (chemically stabilised), (150 mm thickness) compacted to 98% of MDD	m ³		900		
C5.3	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C5.4
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C5.4	STABILISATION					
C5.4.2	Chemical stabilisation					
C5.4.2.1	Chemical stabilisation of pavement layers					
(a)	Compacted layer thickness 200 mm, G5A subbase layer stabilized to C4 strength	m ³		1 000		
(b)	Compacted layer thickness 150 mm, G5A subbase layer stabilized to C3 strength	m ³		900		
C5.4.5	Cementitious stabilisation agents for pavement layers					
C5.4.5.2	Addition of cementitious stabilisation agents for pavement layers and spreading the agent using bags and labour enhancement methods.					
(a)	Cement (for pavement layer)	t	LI	167		
(b)	Road lime (for pavement layer)	t		Rate Only		
C5.4.10	Provision and application of water for curing	kℓ		100		
C5.4.11	Curing by covering with subsequent layer	m ²		5 000		
C5.4.14	Trial section for a chemically stabilised layer	m ³		400		
C5.4	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C8.1
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C8.1	PRIME COAT					
C8.1.1	Prime coat:					
C8.1.1.2	MC - 30 cut-back bitumen	ℓ		1 700		
C8.1.1.3	Inverted bitumen emulsion	ℓ		1 700		
C8.1.2	Aggregate for blinding					
C8.1.2.1	Natural sand	m ³		200		
C8.1.3	Extra over item C8.1.1 for applying the prime coat accessible only to hand-held or light equipment	ℓ		150		
C8.1 TOTAL CARRIED FORWARD TO SUMMARY						

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C9.1
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C9.1	ASPHALT LAYERS					
C9.1.2	Construction of trial sections					
C9.1.2.1	Asphalt layers (40mm nominal thickness, continuously graded (medium grade), using 50/70 penetration grade bitumen binder, placed by means of a asphalt paving machine)	m ²		300		
C9.1.3	Application of bond coat					
C9.1.3.1	Stable grade 30% net bitumen emulsion as specified. Applied with a calibrated distributor	ℓ		3 500		
C9.1.3.3	Applied by hand using brushes on all exposed transverse and longitudinal construction joints	ℓ		50		
C9.1.5	Asphalt surfacing					
C9.1.5.1	New construction					
	(a) Stone skeletal mix - continuously graded as defined (Asphalt surfacing, 40 mm thickness, continuously graded (medium grade), using 50/70 penetration grade bitumen binder placed by means of a asphalt paving machine)	m ²		5 000		
C9.1.8	Surfacing of bridge decks					
C9.1.8.2	Surfacing (asphalt surfacing 40mm nominal thickness, using 50/70 penetration grade bitumin binder, continuously graded (medium grade)) (state layer thickness, mix type (stone or sand skeletal), binder type and nominal maximum particle size and placing technique (hand/paver))	t		65		
C9.1.10	Variation rates					
C9.1.10.1	Bitumen (50/70 penetration grade bitumin binder)	t		2		
C9.1.10.2	Aggregate	t		2		
C9.1.10.3	Active filler (lime unless stated in Contract Documentation, or determined with mix design)					
	(a) Cement	t		2		
	(b) Lime	t		2		
C9.1.13	Coring of asphalt layers					
C9.1.13.1	100 mm diameter	No		30		
C9.1	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS						CHAPTER C1.2
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
CPG SUBCONTRACT (1X): GUARDRAILS AND ROAD SIGNS (GRADE 2 CE)						
C1.2	GENERAL REQUIREMENTS AND PAYMENT					
C1.2.1	Environmental Management					
C1.2.1.1	Monitoring of compliance with and reporting on the EMP	month		4		
C1.2.2	Programming and Reporting					
C1.2.2.1	Submission of a Scheme 1 Programme	Lump Sum		1		
C1.2.2.2	Reviewing and updating a Scheme 1 Programme every month	month		4		
C1.2.2.6	Preparation and submission of all information and reports specified in the Contract Documentation	month		4		
C1.2.5	Safety					
C1.2.5.1	Health and safety plan	Lump Sum		1		
C1.2.5.2	Implementation of health and safety plan	month		4		
C1.2.8	Dayworks					
C1.2.8.1	Personnel					
	(a) Unskilled labourer	hour	LI	20		
	(b) Semi-skilled labourer	hour		20		
	(c) Skilled labourer	hour		20		
C1.2.8.2	Construction Equipment					
	(b) Vibratory roller					
	i) Up to 1,0m wide & mass 0.5t	hour		20		
	(e) Tractor loader backhoe	hour		20		
	(h) Other equipment					
	ii) Rammer compactor	hour		20		
C1.2.8.3	Vehicles					
	(a) Light delivery vehicle (min 1600cc)	km		400		
C1.2.8.4	Materials					
	(a) Procurement of materials	Prov Sum		10 000		
	(b) Contractor's handling costs, profit and all other charges in respect of item C1.2.8.4(a)	%		10 000		
C1.2	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C1.3
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C1.3	CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS					
C1.3.1	The Contractor's general obligations					
C1.3.1.1	Fixed obligations	Lump Sum		1		
C1.3.1.3	Time-related obligations	month		4		
C1.3	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS						
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION					CHAPTER C11.4	
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C11.4	ROAD RESTRAINT SYSTEMS					
C11.4.1	Erecting of guardrails at 3,81 m spacing					
C11.4.1.1	Complete galvanized system compliant to SANS 1350:					
(a)	On timber posts (Drawing reference)	m	LI	260		
C11.4.1.2	Terminal sections for 3,81 guardrails comprising of:					
(a)	End wings to SANS 1350	No	LI	4		
(f)	Bridge adaptors (including extra rails and posts) (Drawing SD 1102/A)	No	LI	4		
C11.4.5	Additional guardrail posts for 3,81 m systems:					
C11.4.5.1	Timber	No	LI	40		
C11.4.6	Reflective plates					
C11.4.6.1	Steel plates	No		100		
C11.4.7	Removing existing guardrails:	m	LI	150		
C11.4.14	Nailing of gang nail plates on top of timber guardrail posts	No	LI	110		
C11.4 / C13.4.2	Labour enhanced cast in situ concrete class 12/15-20, formerly class 15/19, for footings to sign boards	m ³	LI	25		
C11.4 / C11.6.5	Excavation and backfilling for road sign supports (not applicable to kilometre posts)					
C11.6.5.4	Extra over item C11.4.1.1 (a) and C11.4.5.1 for hard material excavation	m ³	LI	5		
C11.4	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS						
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION					CHAPTER C11.6	
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C11.6	ROAD SIGNS					
C11.6.1	Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi-matt black or in Class I retro-reflective material, where the sign board is constructed from:					
C11.6.1.3	Prepainted galvanised steel plate:					
(b)	Area exceeding 0,5 m2 but not 2,0 m²	m²	LI	10		
C11.6.2	Extra over on item C11.6.1 for using:					
C11.6.2.1	Background of retro-reflective material:					
(a)	Class I (engineering grade)	m²		10		
C11.6.2.2	Lettering, symbols, numbers, arrows, emblems and borders of retro-reflective material:					
(a)	Class III (high intensity grade)	m²		20		
C11.6.3	Road sign supports (overhead road sign structures excluded):					
C11.6.3.2	Timber					
(a)	125mm diameter	m	LI	12		
C11.6.5	Excavation and backfilling for road sign supports (not applicable to kilometre posts)					
C11.6.5.2	Excavating soft or intermediate material and backfilling using labour enhanced construction methods	m³	LI	3		
C11.6.5.3	Extra over item C11.6.5.1 and 2 for cement-treated soil backfill	m³	LI	3		
C11.6.8	Danger plates at culverts/structures					
C11.6.8.2	Size 200 x 800 mm (W401)	No		4		
C11.6	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS						CHAPTER C1.2
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
CPG SUBCONTRACT (1X): BREAKING UP PAVEMENT LAYERS, CONCRETE FOR FOUNDATIONS, FALSEWORK, FORMWORK AND CONCRETE FINISH, REINFORCEMENT AND CONCRETE FOR STRUCTURES (GRADE 4 CE)						
C1.2	GENERAL REQUIREMENTS AND PAYMENT					
C1.2.1	Environmental Management					
C1.2.1.1	Monitoring of compliance with and reporting on the EMP	month		7		
C1.2.2	Programming and Reporting					
C1.2.2.1	Submission of a Scheme 1 Programme	Lump Sum		1		
C1.2.2.2	Reviewing and updating a Scheme 1 Programme every month	month		7		
C1.2.2.6	Preparation and submission of all information and reports specified in the Contract Documentation	month		7		
C1.2.5	Safety					
C1.2.5.1	Health and safety plan	Lump Sum		1		
C1.2.5.2	Implementation of health and safety plan	month		7		
C1.2.8	Dayworks					
C1.2.8.1	Personnel					
(a)	Unskilled labourer	hour	LI	48		
(b)	Semi-skilled labourer	hour		48		
(c)	Skilled labourer	hour		48		
C1.2.8.2	Construction Equipment					
(b)	Vibratory roller					
i)	Up to 1,0m wide & mass 0.5t	hour		48		
(e)	Tractor loader backhoe	hour		48		
(h)	Other equipment					
i)	Rammer compactor	hour		48		
ii)	Concrete mixer up to 0.6 m³ dry capacity	hour		48		
C1.2.8.3	Vehicles					
(a)	Light delivery vehicle (min 1600cc)	km		500		
C1.2.8.4	Materials					
(a)	Procurement of materials	Prov Sum		10 000		
(b)	Contractor's handling costs, profit and all other charges in respect of item C1.2.8.4(a)	%		10 000		
C1.2	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						CHAPTER C1.3
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C1.3	CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS					
C1.3.1	The Contractor's general obligations					
C1.3.1.1	Fixed obligations	Lump Sum		1		
C1.3.1.3	Time-related obligations	month		7		
C1.3	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS						CHAPTER C4.3
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C4.3	EXISTING ROAD MATERIALS					
C4.3.4	Saw-cutting existing materials within the following average depth ranges					
C4.3.4.1	Asphalt material:					
(a)	Up to 50 mm	m		400		
C4.3.4.3	Cemented material:					
(a)	Up to 100 mm	m		400		
(b)	Exceeding 100 mm and up to 200 mm	m		400		
C4.3.7	Milling and removal of existing asphalt layers with an average milling depth (Employer takes ownership)					
C4.3.7.1	Not exceeding 50 mm	m ³		420		
C4.3.17	Excavate non-compliant or excess pavement layer material to spoil in sites designated by the employer, material consisting of					
C4.3.17.2	Crushed stone, macadam, gravel and sand material	m ³		4 000		
C4.3.17.3	Cemented material	m ³		1 500		
C4.3 / C1.7.2	Hauling					
C1.7.2.2	Hauling material to spoil and off-loading it at a designated spoil or stockpile are:					
(b)	Soil and gravel material	m ³ - km		20 000		
(c)	Boulders, hard material and concrete	m ³ - km		7 500		
C4.3	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS					CHAPTER C13.1	
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C13.1	FOUNDATIONS					
C13.1.3	Excavation:					
C13.1.3.1	Excavating soft material situated within the following successive depth ranges:					
(a)	0 m up to 1,5 m	m ³		236		
(b)	> 1,5 m and < 3,0 m	m ³		142		
(c)	> 3,0 m and < 4,5 m	m ³		83		
(d)	> 4.5 m and < 6,0 m	m ³		50		
C13.1.3.2	Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m ³		25		
C5.1 / C12.10.1	Excavation in hard rock using controlled blasting techniques	m ³		25		
C13.1.3.3	Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m ³		8		
C13.1.3.4	Extra over subitem C13.1.3.1 for excavation by hand	m3		5		
C13.1.6	Access and drainage:					
C13.1.6.2	Drainage	Lump Sum		1		
C13.1.7	Backfill to excavations utilising:					
C13.1.7.1	Material from excavation	m ³		25		
C13.1.7.2	Imported material (G9 quality material obtained from commercial sources)	m ³		35		
C13.1.9	Fill within a restricted area (extra over item C5.2.2)	m ³		18		
C13.1.14	Foundation fill consisting of:					
C13.1.14.5	Concrete blinding (75mm thick, Class 12/15-20 concrete, formerly "class 15/19")	m ³	LI	8		
C13.1.22	Foundation lining (250 micron polyethelene sheeting below approach slabs) using labour enhanced methods	m2	LI	45		
C13.1.23	Lateral support for excavations:					
C13.1.23.1	Excavation or fill at (indicate location)					
(c)	Special lateral earth support to the existing roadway embankment at the north abutment substructure	m2		45		
C13.1	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS						CHAPTER C13.2
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C13.2	FALSEWORK, FORMWORK AND CONCRETE FINISH					
C13.2.2	Vertical formwork to provide surface finish to					
(a)	Class F1 surface finish to					
i)	Pier pile caps	m ²	LI	27		
ii)	Abutment pile caps	m ²	LI	54		
iii)	Abutment walls and curtain walls (concealed surfaces)	m ²	LI	46		
iv)	Earwalls (concealed surfaces)	m ²	LI	63		
(b)	Class F2 surface finish to					
i)	Pier walls	m ²	LI	109		
ii)	Abutment walls, earwalls and curtain walls (exposed surfaces)	m ²	LI	99		
C13.2.4	Inclined formwork to provide surface finish to					
(a)	Class F1 surface finish to:					
i)	Abutment walls (inclined portion on earth face of bearing seat)	m ²	LI	20		
ii)	Earwall soffits	m ²	LI	9		
C13.2.6	Formwork to form open joints					
(a)	Joint between the deck end and the abutment curtain wall	m ²	LI	18		
C13.2 TOTAL CARRIED FORWARD TO SUMMARY						

SCHEDULE A: ROADWORKS					CHAPTER C13.3	
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C13.3	STEEL REINFORCEMENT					
C13.3.1	Reinforcement for:					
C13.3.1.1	Left abutment (including approach slab):					
(a)	Mild-steel bars (250 MPa)	t	LI	0.5		
(b)	High-yield-stress-steel bars (450 MPa)	t	LI	23.5		
C13.3.1.2	Right abutment (including approach slab):					
(a)	Mild-steel bars (250 MPa)	t	LI	0.5		
(b)	High-yield-stress-steel bars (450 MPa)	t	LI	23.5		
C13.3.1.3	Pier 1:					
(a)	Mild-steel bars (250 MPa)	t	LI	0.1		
(b)	High-yield-stress-steel bars (450 MPa)	t	LI	3.8		
C13.3.1.4	Pier 2:					
(a)	Mild-steel bars (250 MPa)	t	LI	0.1		
(b)	High-yield-stress-steel bars (450 MPa)	t	LI	3.8		
C13.3.1.5	Parapets and traffic barriers, including the end blocks:					
(a)	Mild-steel bars	t	LI	0.30		
(b)	High-yield-stress-steel bars	t	LI	3.00		
C13.3.4	Extra-over item C13.3.1 for galvanising of reinforcement (hot-dip galvanising to provide a duty zinc coating not less than 105 microns thickness)	t		3.60		
C13.3 TOTAL CARRIED FORWARD TO SUMMARY						

SCHEDULE A: ROADWORKS						CHAPTER C13.4
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C13.4	CONCRETE					
C13.4.1	Cast in situ concrete (Class of concrete and use or position in structure stated):					
C13.4.1.1	Strength concrete (class C):					
(a)	Piers (class 25/30-20, formerly "Class 30/19")	m ³		70		
(b)	Abutments (class 25/30-20, formerly "Class 30/19")	m ³		176		
(c)	Approach slabs (class 25/30-20, formerly "Class 30/19")	m ³		14		
C13.4.13	Complete demolition and disposal of existing structural concrete elements or parts existing structures:					
C13.4.13.1	Plain concrete in abutment walls	m ³		30		
C13.4.13.2	Reinforced concrete in abutment walls	m ³		30		
C13.4.13.3	Reinforced concrete in bridge deck	m ³		54		
C13.4.3	Extra over item C13.4.1 for the protection of concrete from adverse environmental conditions, if required:					
C13.4.3.1	Strength concrete (class C):					
(a)	For items C13.4.1.1 (a) to (c) (class 25/30-20, formerly "Class 30/19")	m ³		260		
C13.4	TOTAL CARRIED FORWARD TO SUMMARY					

SCHEDULE A: ROADWORKS						CHAPTER C13.8
THE CONSTRUCTION OF THE NSELENI RIVER BRIDGE REPLACEMENT No. 3380 ON MAIN ROAD P425 AT KM 11,1 IN THE EMPANGENI REGION						
ITEM NO	DESCRIPTION	UNIT	LI	QUANTITY	RATE	AMOUNT
C13.8	ANCILLARY STRUCTURAL ELEMENTS					
C13.8.15	Drainage strips					
(a)	Drainage strips 300 mm wide (Kaytech WickDrain GPA 330 or equivalent subject to the approval of the engineer), including wrapping the strips in stitched grade 2 filter fabric sleeves	m	LI	59		
C13.8.16	Perforated drainage pipes:					
C13.8.16.1	Perforated drainage pipes (Kaytech M65 geopipe or equivalent subject to the approval of the engineer), including wrapping the pipes in grade 2 filter fabric and constructing the 200 mm x 100 mm concrete bedding strips (class 15/19 concrete)	m	LI	13		
C13.8	TOTAL CARRIED FORWARD TO SUMMARY					

C3.3 PARTICULAR SPECIFICATIONS

PART G: CIDB CONTRACT SKILLS DEVELOPMENT GOAL (CSDG)

PART G: CIDB CONTRACT SKILLS DEVELOPMENT GOAL (CSDG)

G1. SCOPE

This part provides the specifications with regard to the following:

- (a) The Contract Skills Development Goals as per the Standard for developing skills through infrastructure contracts, 2020 as gazetted in the Government Gazette No. 43495, 3 July 2020.

The below specifications are intended as a guide and are to be read in conjunction with the above-mentioned standards for the implementation of the programme.

G2. STANDARD FOR DEVELOPING SKILLS THROUGH INFRASTRUCTURE CONTRACTS

The South African government requires that its considerable expenditure on the delivery, maintenance and operation of infrastructure (fixed assets that are constructed or result from construction operations) contribute to an increase in the number of people who have part or full occupational qualifications registered on the NQF or professional designations awarded by professional bodies or statutory councils.

The CIDB B.U.I.L.D Standard for developing skills through infrastructure contracts has been prepared to leverage contributions towards the increase of the pool of qualified skilled people, and where required professionally registered, through training on professional services, services, design and build or engineering and construction works contracts associated with such expenditure. This standard establishes a minimum contract skills development goal which is to be achieved in the performance of a contract in relation to the provision of different types of workplace opportunities linked to work associated with a contract which culminate in or lead to:

- a) a part or full occupational qualification registered on the National Qualification Framework;
- b) a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012);
- c) a national diploma registered on the National Qualification Framework; and
- d) registration in a professional category by one of the professional bodies listed in Table 1 below.

Table 1: Categories of registration

PROFESSION	CATEGORY OF REGISTRATION	ACT
Construction project management	Construction Project Manager	Project and Construction Management Professions Act of 2000 (Act No. 48 of 2000)
Engineering	Engineer, Engineering Technologist, Engineering Technician or Certificated Engineer	Engineering Profession Act of 2000 (Act No. 46 of 2000)

The Contractor shall be responsible for achieving the contract skills development goal and are provided with a number of methods for measuring their achievements. They may, if need be, devolve their obligations onto subcontractors.

G3. REQUIREMENTS

G3.1 CONTRACT SKILLS DEVELOPMENT GOAL (CSDG)

G3.1.1 The contractor shall attain or exceed the contract skills development goal OF 0.25% in the performance of the contract or the execution of an order.

G3.1.2 Where required in terms of the contract, a specified proportion of the learners and candidates

shall be selected from persons in the employ of the state who meet the relevant eligibility criteria for the relevant programme.

G3.1.3 Where required in terms of the contract or order, the employer shall advise the contractor of the types of training to be undertaken by the learners and candidates based on the needs and requirements of the candidate's qualifications.

G3.2 ACHIEVING THE CONTRACT SKILLS DEVELOPMENT GOAL (CSDG)

G3.2.1 The contractor shall achieve the measurable contract skills development goal by providing opportunities to learners requiring structured workplace learning using one or a combination of any of the following in relation to work directly related to the contract

Method 1: structured workplace learning opportunities for learners towards the attainment of a part or a full occupational qualification;

Method 2: structured workplace learning opportunities for apprentices or other artisan learners towards the attainment of a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012) subject to at least 60% of the artisan learners being holders of public TVET college qualifications;

Method 3: work integrated learning opportunities for University of Technology or Comprehensive University students completing their national diplomas;

Method 4: structured workplace learning opportunities for candidates towards registration in a professional category by a statutory council listed in Table 1 above.

G3.2.2 Employed learners may not account for more than 33 percent of the contract skills development goal.

G3.2.3 Not more than one method may be applied to any individual concurrently in the calculation of the contract skills development goal.

G3.3 CONTRACT SKILLS DEVELOPMENT GOAL CREDITS

G3.3.1 Contract skills development credits will not be awarded for learners enrolled as beneficiaries of other funded or subsidised programmes.

G3.3.2 In the case of engineering and construction works, design and build and services contracts:

- a) The contract skills development goals shall be granted by multiplying the number of people employed by the contractors and placed for continuous training opportunities in a three-month period by the notional values contained in Table 3 as published in the Standard for developing skills through infrastructure contracts, 2020 as gazetted in the Government Gazette No. 43495, 3 July 2020, or as revised in a Gazette notice.
- b) The contractor may source beneficiaries of the contract skills development goal from the cidb Skills Development Agency (SDA).
- c) All beneficiaries of the Standard must be registered with the cidb SDA.

G3.4 DENIAL OF CREDITS

Credits towards the contract skills development goal shall be denied should:

- a) the opportunities not be provided on site or the opportunities cannot be directly linked to the contract;
- b) Failure to register all beneficiaries of the Standard be with the cidb SDA;
- c) Failure to submit a copy of the final contract compliance training report within 15 days of practical completion;

- d) the following not be provided:
 - 1) the required contract compliance baseline plan, an interim contract compliance report or a final contract compliance report;
 - 2) the required mentorship plan for a candidate not be provided;
 - 3) the required training plan for learners not be provided;
 - 4) the training reports covering a period not be provided;
 - 5) the required records, specified documents and signatures not be provided;
 - 6) the structured mentorship is found not to be in accordance with the requirements of the applicable professional body, statutory council or qualifying authority;
 - 7) the structured workplace learning is found not to be in accordance with the curriculum requirements of the part qualification or occupational qualification or prescription for professional registration for which the learner is registered;
- e) conditions of employment and rates of allowances for learners not be in accordance with legislative provisions; and
- f) the contractor does not maintain the required training records, or an audit reveals that there is insufficient information to substantiate claims for credits.
- g) the contractor claims credits for learners enrolled as beneficiaries on programmes that are funded or subsidised from another source.
- h) the contractor fails to provide sufficient evidence of disciplinary actions taken against a learner who fails to present their interim reports or credentials for assessment when they have had sufficient structured work experience or structured mentorship to do so.

G4 COMPLIANCE WITH REQUIREMENTS

G 4.1 GENERAL

G 4.1.1 The contractor shall submit to the employer's representative:

- a) within 30 days of the contract coming into effect or the issuing of an order, a contract compliance baseline training plan taking into account the skills mix and type of workers that are to be engaged;
- interim contract compliance training reports at intervals which do not exceed 3 months; and
- b) a final contract compliance training report within 15 days of reaching practical completion of the construction works.

G4.1.2 The information contained in the final contract compliance training report shall include the contract skills development goal achieved (in Rands or in hours) in the performance of the contract and a breakdown of the goal achieved in respect of the following:

- a) the name and contact details of the SDA,
- b) the skills mix and skills types achieved on the contract; and
- c) the names, ID numbers and period of employment of each learner and
- d) candidate.

G4.1.3 The contractor shall keep records of the hours worked and registration particulars towards compliance with this standard. The contractor shall allow the employer's representative to inspect or audit such training records at any time.

G4.1.4 The employer's representative shall undertake suitable random audits on records to confirm compliance with requirements.

G4.1.5 The learners shall be directly employed by the contractor or SDA. The contractor shall enter into a contract agreement with the cidb SDAs, training provider or skills development facilitator of their choice participating in the implementation of this standard to:

- a) prepare training plans for registered learners, including details of the scope of experiential

- work to be covered and expected outcomes;
- b) register learners with the appropriate Sector Education and Training Authority established in terms of the Skills Development Act of 2008 (Act 37 of 2008);
- c) manage learner registration with appropriate trade testing authorities as well as preparation for the trade test;
- d) liaise with the supervisor to monitor onsite training progress of learners;
- e) liaise with the supervisor to arrange for summative assessments at appropriate stages of the training; and
- f) liaise with the supervisor to prepare reports for the employer or employer's representative.

G4.2 STRUCTURED WORKPLACE LEARNING OPPORTUNITIES FOR LEARNERS

G4.2.1 Structured workplace learning opportunities shall be aligned to the curriculum requirements set for the particular part or full occupational qualification or professional designation for which the learner is registered.

G4.2.2 A responsible supervisor will be appointed to allocate learning tasks, under the guidance of a competent person, to learners in line with their training plans.

G4.2.3 Mentoring associated with structured workplace learning for artisan learners shall be Undertaken by an artisan in the applicable trade with a minimum of 3 years of trade specific experience. The number of artisan learners mentored by a single mentor shall, unless otherwise permitted by the National Artisan Moderation Body, not exceed 4 at any one time.

G4.2.4 Supervision associated with structured workplace learning for learners leading to a part or full occupational qualification other than artisan learners shall be undertaken by a person qualified in the applicable discipline with a minimum of 3 years of post-qualification experience.

G4.2.5 The contractor shall submit to the employer's representative, in respect of each learner:

- a) within one month of commencing work directly related to the contract or order, a workplace training plan together with name of the learner's mentor and supervisor;
- b) within one month of commencing work directly related to the contract or order:
 - 1) proof of registration as a learner with the relevant SETA where applicable; and
 - 2) a copy of the mentorship agreement entered into with the learner or the company mentorship agreement entered into with the relevant qualified agency;
- c) within two weeks of updating a workplace training plan, the revised workplace training plan;
- d) a quarterly progress report and a final report at the end of the structured mentorship period including a log of exposure and interactions with the mentor in sufficient detail to demonstrate compliance with requirements, signed off by the mentor, the supervisor and the learner.

G4.2.6 Learners shall be required by the mentor to complete training reports required by the relevant qualifying authority whenever a substantial activity or training period has been completed.

G4.2.7 The mentor and supervisor shall sign off all reports and logbooks to allow the learner to move to other projects or employment and continue the path towards a qualification.

G4.3 STRUCTURED WORKPLACE LEARNING FOR CANDIDATES

G4.3.1 Mentoring associated with structured workplace learning for candidates shall be In accordance with the prescripts of the relevant professional body or statutory council.

G4.3.2 The contractor shall:

- a) appoint a supervisor who is actively engaged in work directly associated with the contract to issue tasks, oversee their implementation and provide input to the candidate on an on-going basis;

- b) identify a suitable mentor for the candidate. If the contractor does not have an inhouse mentor, the contractor shall enter into a mentoring agreement with the candidate and an external company as required by the professional body or statutory council; and
- c) issue each candidate with a portfolio of evidence file which is to be kept up to date with all the documentation issued or prepared including the workplace training plan and all revisions thereof as well as copies of the logbook entries and training experience reports.

G4.3.3 The mentor shall from time to time provide an updated workplace training plan for a candidate outlining the activities in which the candidate will be involved, including activities required by the relevant professional body or statutory council. The mentor shall require candidates to maintain a logbook issued by the relevant professional body or statutory council. The mentor shall sign off such logbook at quarterly presentations and progress review meetings.

NOTE: The mentor should ensure where the duration of the contract or order exceeds the minimum time to register in a professional category of registration that candidates are exposed to the full range of activities and work towards assuming the full level of responsibility recommended by the relevant professional body or statutory council. This may require rotations and secondments.

G4.3.4 The contractor shall submit to the employer's representative, in respect of each candidate:

- a) within one month of commencing work directly related to the contract or order:
 - 1) a workplace training plan together with name of the candidates' mentor and supervisor;
 - 2) proof of registration as a candidate with the relevant professional body or statutory council; and
 - 3) register all beneficiaries of the Standard with the cidb SDA
- b) within one month of commencing work directly related to the contract or order a copy of the mentorship agreement entered into with the candidate or the company mentorship agreement entered into with a professional body or statutory council;
- c) within two weeks of updating a workplace training plan, the revised workplace training plan;
- d) quarterly progress reports and a final report at the end of the structured mentorship period including a log of exposure and interactions with the mentor in sufficient detail to demonstrate compliance with requirements, signed off by the mentor, the supervisor and the candidate.

G4.3.5 Candidates shall be required by the mentor to complete training reports required by the relevant professional body or statutory council whenever a substantial activity or training period has been completed.

G4.3.6 The mentor and supervisor shall sign off all reports and logbooks to allow the candidate to move to other projects or employment and continue on the path towards registration where the work related to the contract ends for whatever reason prior to the candidate gaining sufficient experience for registration.

G5 RECORDS

G5.1 The contractor shall submit all the documentation required in terms of clause 4 in a timely manner and according to a prescribed format where applicable. The contractor shall submit to the Employer's Representative the following proformas:

- Form A2 Baseline Training Plan
- Form A3 Project Interim Report
- Form A5 Project Completion Report

G5.2 The employer's representative shall certify the value of the credits counted towards the contract skills development goal, if any, whenever a claim for payment is issued to the employer and shall notify the contractor of this amount.

G5.3 The contractor shall, upon termination of the opportunities provided in order to satisfy the contract skills development goal, certify the quantum and nature of the opportunity

and submit the certificate, counter-certified by the relevant individual, to the employer's representative for record-keeping purposes.

G5.4 PRO-FORMA DOCUMENTS

The following Annexures are contained at the end of Part G Specifications and shall be used by the contractor in relation to all the reporting requirements.

Annexure 1 - Form A1 List of Recognised Skills Development Agencies
Annexure 2 - Form A2 Baseline Training Plan
Annexure 3 - Form A3 Project Interim Report
Annexure 4 - Form A4 Supervisor Agreement
Annexure 5 - Form A5 Project Completion Report

G6 SANCTIONS

- G6.1** In the event that the contractor fails to substantiate that any failure to achieve the contract skills development goal was due to reasons beyond the contractor's control which may be acceptable to the employer, the sanctions provided for in the contract shall apply.

G7 MEASUREMENT AND PAYMENT

Item	Unit
G7.01 Payments associated with the Contract Skills Development Goals:	
(c) Employment of Learners employed under Method 3	
(i) Provision for stipends.....	Number (No.)
(ii) Provisions for mentorship	Number (No.)
(iii) Provision for additional Costs	Number (No.)
(e) Liaison with the Employer's project manager and the training service provider:	
(i) Liaison conducted by the Construction Manager.....	hour (h)
(e) Handling costs associated with subitems G7.01	
c(i)&(iii) above	Percentage (%)

The payment items under subitem G7.01(a)(i), (b)(i), (c)(i) and (d)(i) shall be the stipends associated with each Number of Students/Learners/Candidates employed under each method for the duration of the projects and shall be used to cover the cost of stipend payments made by the Contractor to the participants of the Skills Development Programme, including any associated COIDA and UIF payments, all as authorised by the Employer's Agent.

Where an unemployed learner is employed directly by the contractor, the contractor shall pay the stipend directly to the learner.

Where an unemployed learner is sourced through an SDA, training provider or skills development

facilitator the contractor must pay the stipend to the SDA, training provider or skills development facilitator who in turn will pay the learner.

The notional cost of providing training opportunities will be increase by CPI on an annual basis. The new, revised costs will be published on the cidb website on the 1st April in each year.

The provisional sum under subitem G7.01(a)(ii), (b)(ii), (c)(iii) and (d)(iii) shall be used to cover all costs associated with the provision personal protective equipment, insurance, medical assessments, course fees and trade tools (where applicable) and storage thereof, assessment, moderation and monitoring of learners., all as authorised by the Employer's Agent.

The unit of measurement for subitems G7.01(e)(i) and (ii) shall be the hour. The tendered rates shall include full compensation for all costs related to the Construction for time spent at formal liaison meetings authorised and convened by the Employer's Agent for the specific purpose of liaising with the Employer's project manager and / or the training service provider. The payment shall be made only for the time spent in the formal meeting itself. No payment shall be made for time spent during any other on-site liaison, telephonic liaison, e-mail or written correspondence liaison between these parties, or for liaison conducted with the Employer's project manager and / or the training service provider by any other member of the Contractor's site staff or head office personnel, the cost of all of which shall be deemed to be included in the Contractor's time-related obligations under subitem C1.3.1.3

The unit of measure for subitems G7.01 (c)(ii) and (d)(ii) shall be the Number (No) of mentors employed by the contractor to provide any mentorship for students and candidates employed under method 3 and 4, all as authorised by the Employer's Agent, and shall cover all associated costs for mentorship including travelling, preparation of reports, preparation and review of training plans and any other costs associated with the Mentor fulfilling the requirements of Clause G4.3.

Table 3: The notional cost of providing training opportunities per quarter

The costs for providing training opportunities for this contract shall be as detailed in Table 3, and as published by CIDB on the Standards for Skills Development.

Type of Training Opportunity	Provision for stipends (Unemployed learners only)	Provisions for mentorship	Provisions for additional costs*	Total costs	
				Unemployed learners	Employed learners
Method 1					
Occupational qualification	R7 000	R0	R9 000	R16 000	R9 000
Method 2					
TVET College graduates	R14 000	R0	R9 000	R23 000	N/A
Apprenticeship	R14 000	R0	R12 000	R26 000	R12 000
Method 3					
P1 and P2 learners, or a 240 credits qualification	R24 000	R20 000	R4 500	R48 500	N/A
Method 4					
Candidates with a 360 credits qualification	R37 000	R20 000	R4 500	R61 500	R20 000
Candidates with 480 or more credits qualification	R47 000	R20 000	R4 500	R71 500	R20 000

**PART G: CIDB CONTRACT SKILLS DEVELOPMENT GOAL (CSDG)
ANNEXURES**

Annexure 1 Form A1 List of Recognised Skills Development Agencies

CIDB Recognised Skills Development Agencies								
No	Name of SDA	SDA Registration Number	Status	Recognition Date End	Province	Contact Person	Contact Number	Email Address
01	CIDB SDA	SDA/ZA/16/00001	Active	01/04/2025	National	Pranveer Harriparsadh	012 482 7230	pranveerh@cidb.org.za
02						Thabelo Ramaru	012 482 7249	thabelor@cidb.org.za
03								
04								

Annexure 2 - Form A2 Baseline Training Plan

CIDB SKILLS STANDARD BASELINE TRAINING PLAN

Contractor Details						
Contractor Name:						
CRS Number:						
Estimated start date						
Estimated Completion date						
Size of Organisation	Small (1-49 employees)		Medium (50-149 employees)		Large (≥150 employees)	

Contractor Contact Details	
Name of Contact Person	
Designation of Contact Person	
Contact Details	Cell Number:
	Landline Number:
	Email Address:

Contract Data				
Project Name				
CIDB Contract Number				
Name of Client:				
Project Description				
Final Tender Sum (at tender award)				
Project Location				
Project duration				
Estimated start date				
Estimated Completion date				
Description	Designation	Project Value	CSDG %	Min CSDG Target
Civil Eng.	CE		0.25	
General Building	GB		0.50	
Civil & General Building	CE & GB		0.375	
Electrical Eng. (Building)	EB		0.25	
Electrical Eng.(Infrastructure)	EP		0.25	
Mechanical Eng.	ME		0.25	
Specialist	SW		0.25	
Total				

Construction Skills Development Goal (CSDG) Baseline Training Plan					
Training Method	Number of Employed Learners	Number of Unemployed Learners	Area/s of Specialisation/Trade	Duration of Placement	Total Notional Cost
Method 1: Skills Programme					
Method 2: FET College Graduates/ Apprenticeship					
Method 3: P1 and P2 learners or a 240- credit qualification					
Method 4: Candidacy with 360 credits qualification					
Total					

Note: Refer to Table 3 in the Standard for Developing Skills through Infrastructure Contracts Government Gazette 43495 of 3 July 2020 for the notional costs

Contractor's Representative Name: _____ Designation: _____

Signature: _____ Date: _____

Employer's Representative Name: _____ Designation: _____

Signature: _____ Date: _____

For Office Use for SDA				
Action	Status			
Project verified on CIDB Register of Projects (RoP)	Yes		No	
Training plans developed	Yes		No	
Appropriate learners available	Yes		No	
Target learners sent to contractor	Yes		No	
SDA processes explained to contractor	Yes		No	
Placement plan developed	Yes		No	
Training Method	Percentage (%) contribution to the CSDG			
Method 1				
Method 2				
Method 3				
Method 4				
Total				

CIDB SDA Contact Person: Mr Pranveer Harriparsadh or Thabelo Ramaru
Email address: pranveerh@cidb.org.za or thabelor@cidb.org.za Tel. 012 482 7230/7249

SDA Representative Name: _____ Designation: _____

Signature: _____ Date: _____

[illegible]

Annexure 4 - Form A4 Supervisor Agreement

Memorandum of understanding between Supervisor and Learner

The Contractor is responsible for the effective management of the learning opportunities provided through the cidb *Standard for the Development of Skills through Infrastructure Contracts* (cidb Skills Standard). The attainment of successful learning outcomes and professional development of the learners is largely dependent on the relationship between the assigned Supervisor and the Learner. As a participant in the implementation of the cidb Skills Standard you agree to the Supervisor relationship and commit to endeavour through the challenges of a construction project to give value to the training programme.

The Responsibilities of a Supervisor to the Learner include:

- stimulating a passion for construction
- sharing technical and practical knowledge
- fostering the development of technical and leadership skills
- facilitating networking within the working community
- instilling an expectation of personal growth and learning by the Learner
- developing knowledge and understanding in the areas of health, safety, environment, quality and production
- inculcating professionalism and a desire for continual improvement by the Learner
- creating a nurturing relationship that instils a sense of discipline and professional pride
- giving constructive feedback and
- signing the Learners logbook.

Supervisor's name _____

Signature: _____ Date: _____

The Responsibilities of a Learner are:

- adhere to the Host Employer's onsite rules and policies
- have an expectation of personal growth and learning
- to be enthusiastic and motivated
- to be open and accept supervision from the Supervisor and other colleagues

- to develop a thorough understanding of health, safety, environment, quality and production
- to have a positive attitude
- to display a strong sense of discipline and to be conscious of time
- to operate within the team
- to take the time to learn and practice new skills
- to make time to fill in your logbook and obtain the Supervisor's signature for completed tasks

Intern's Name: _____ ID No: _____

Signature: _____ Date: _____

Section A: Employer Information

Child Employer Number _____
Employer Name _____

Section B: Contract Data

cds Contract Number
Contract Title
Tender Value (R)
Contract Skills Development Goal (R)
SIP Number (If Applicable)
SIP Project Code (If Applicable)

SECTION C: Definitions and Beneficiary Information

Training Methods:

- Method 1M1: structured workplace learning opportunities for learners towards the attainment of a part or a full occupational qualification;
- Method 1M2: structured workplace learning opportunities for apprentices or other artisan learners towards the attainment of a trade qualification leading to a listed trade subject to at least 65% of the artisan learners being holders of public TVET college qualifications;
- Method 3M3: work integrated learning opportunities for University of Technology or Comprehensive University students completing their national diploma;
- Method 4M4: structured workplace learning opportunities for candidates towards registration in a professional category by a statutory council listed in Table 1 in the CDB Standard for Developing Skills Through Infrastructure Contracts Gazette No. 43485

Learner/Candidate Full Name and Surname	Gender	Ethnic Group						Identity Number										Training Method (Please tick)		Placement Start Date	Placement End Date	Placement Duration	Occupation/Trade Description	Description of Practical Task Completed (as per logbook or POE)	Status	Supporting documents available on request (Yes/No or N/A)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		Male	Female	Black	White	Coloured	Indian	Other	M1	M2	M3	M4	X	1	2	3	4	5	6							7	8	9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094

Section D: Declaration; Contractor Representative

Name of Contractor	Rep. Title	Initial	Surname
Designation			
e-mail			
Mobile			
Office Telephone			
Date			

I, the undersigned warrant that:
 • I am duly authorised to submit this notice on behalf of the Contractor
 • The contents of this notice are within my personal knowledge, and are to the best of my belief both true and correct.

Signature _____

Date completed: Y Y Y Y Y Y - M M - D D

Date completed	Y	Y	Y	Y	-	M	M	-	D	D
----------------	---	---	---	---	---	---	---	---	---	---

Name of Representative	Title	Initials	Suriname
Designator			
e-mail			
Mobile			
Office Telephone			
Date			

I, the undersigned warrant that:

- The contents of this notice are within my personal knowledge, and are to the best of my belief both true and correct.

Date completed: / /
 Signature:

PART C4: SITE INFORMATION

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C4.3 EXISTING SERVICES REPORT	C303
C4.4 CONDITIONS ON SITE: MATERIALS INFORMATION	C304
C4.5 TRAFFIC INFORMATION	C306

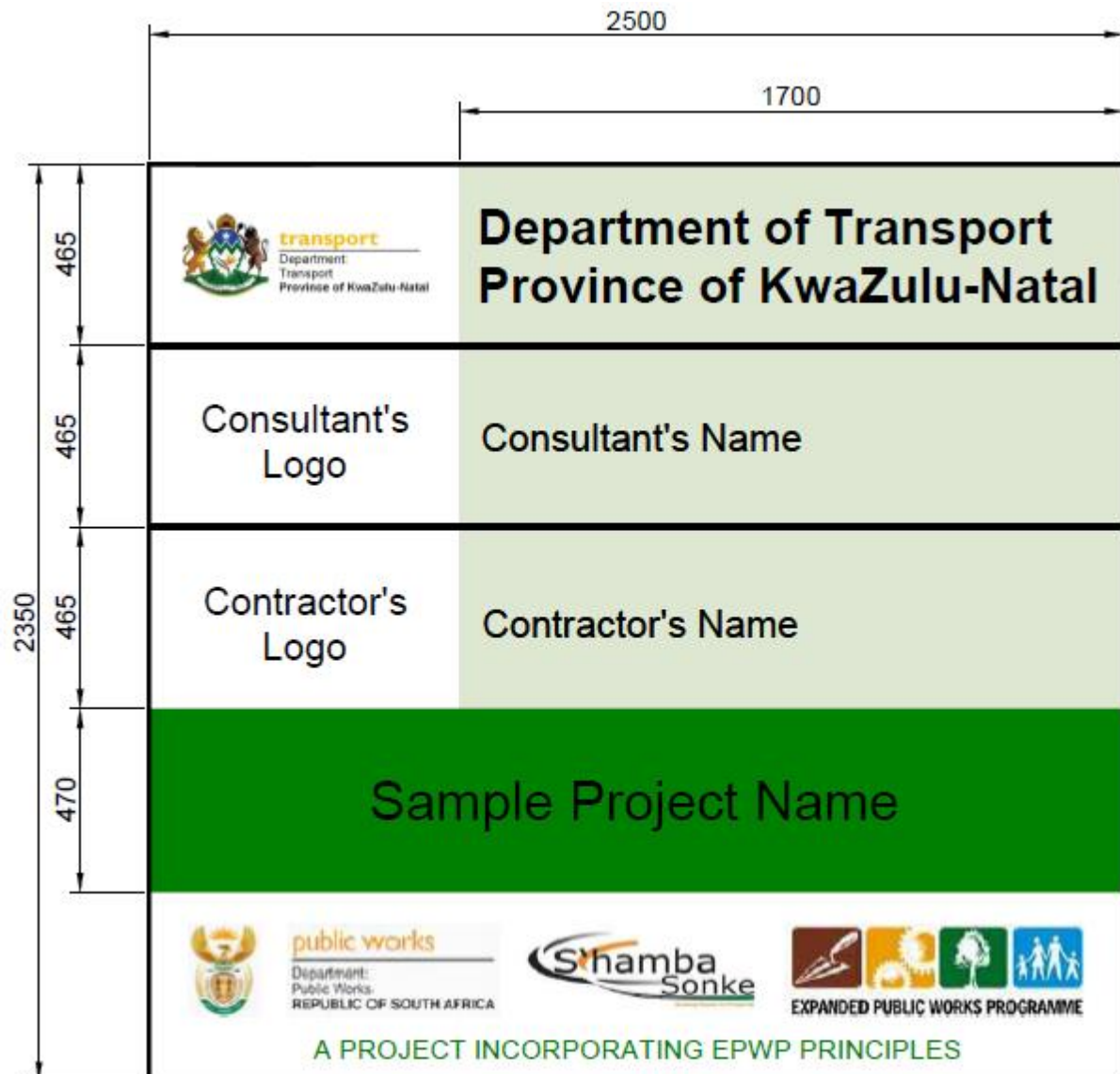
C4.1 LOCALITY PLAN



C4.2 EXAMPLE OF CONTRACT SIGNBOARD DETAILS

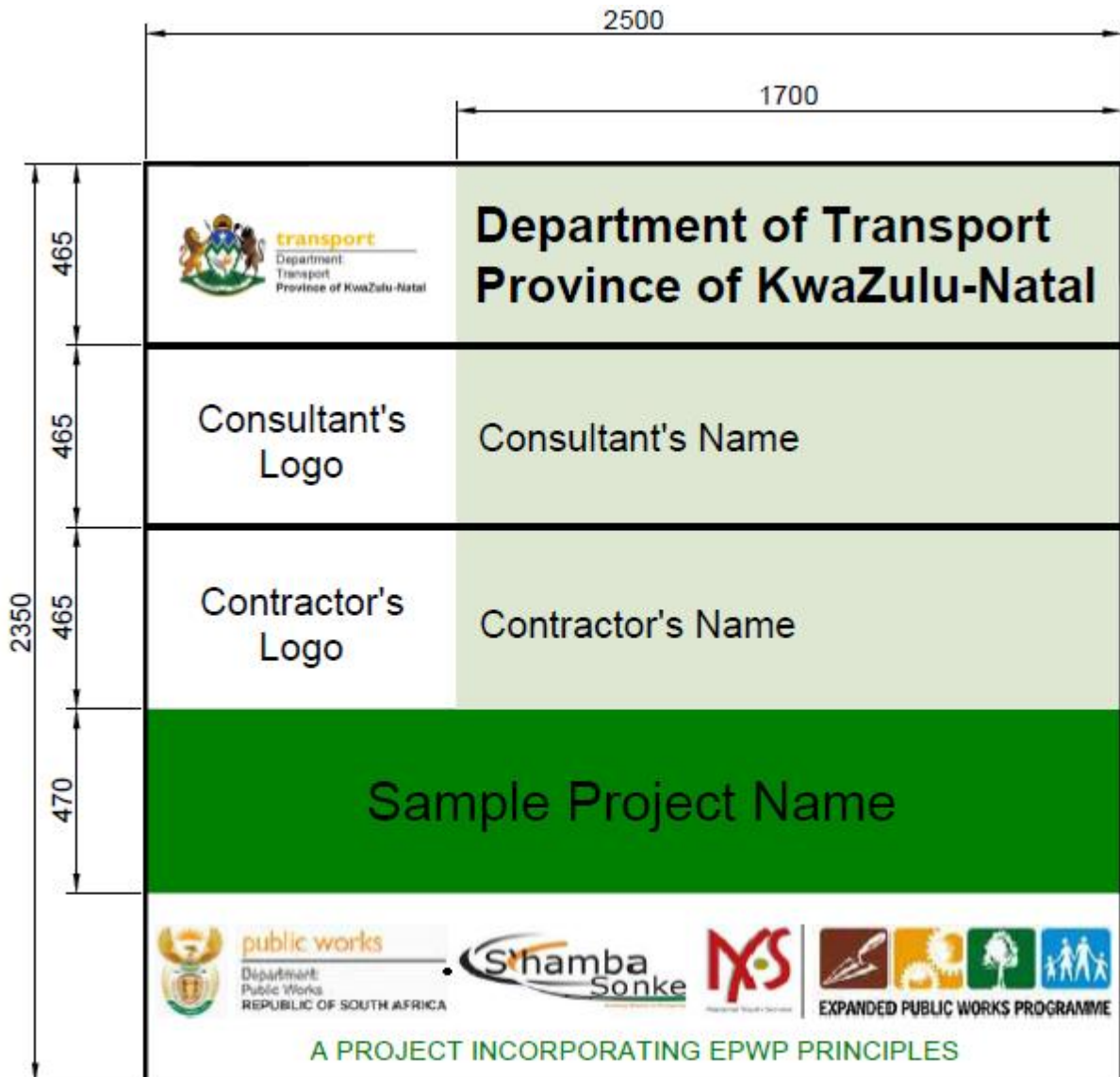
C4.2.1 CONTRACT SIGNBOARD FOR USE WHEN THE NYS PROGRAMME IS NOT REQUIRED:

Note: The “S’hamba Sonke” logo, as indicated below, shall appear on the signboard for Provincial Road Maintenance Grant (PRMG) contracts only. In all other cases it shall be omitted.



C4.2.2 CONTRACT SIGNBOARD FOR USE WHEN THE NYS PROGRAMME IS REQUIRED:

Note: The “S’hamba Sonke” logo, as indicated below, shall appear on the signboard for Provincial Road Maintenance Grant (PRMG) contracts only. In all other cases it shall be omitted.



C4.3 EXISTING SERVICES REPORT

1. Location of services

The known services on the site include:

- Existing overhead power lines crossing the road and also running adjacent to the road at various locations, as indicated on the drawings.

The following services are scheduled for relocation under this contract:

- Supports and anchors for existing overhead power lines crossing the road and also running adjacent to the road at various locations, as indicated on the drawings.

It is also expected that unknown buried domestic services crossings requiring relocation or protection may be encountered along the route as the work proceeds. The Contractor shall therefore make every effort to establish the location of any such unknown services in a particular area prior to excavations commencing in that area. Such efforts shall include the Contractor conducting a thorough visual surface inspection for services in the area, and also diligently enquiring of local landowners as to whether there are any 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 Employer's Agent immediately. Exploratory hand excavation trenching work shall be carried out where necessary to establish the exact position of buried services.

The Contractor shall take note of the requirements of Chapter 2 of the standard specifications with regard to services.

2. Liaison with service owners

Immediately after the site has been handed over to the Contractor and prior to the commencement of any construction work on the site, the Contractor shall arrange a meeting with the relevant authorities to establish the exact location of the various services affected (if any), to plan the necessary services relocations (if required) and to obtain contact details for the service owners' technical and emergency staff.

Where services relocations are required, the Contractor shall arrange regular planning meetings with the service owners until such time as the services have been relocated and commissioned and the existing services uplifted and removed.

3. Protection of existing services

Prior to the commencement of any construction work on the site, the Contractor shall establish markers at 50 m centres (or closer where necessary), clearly delineating the routes traversed by the services within the road reserve as confirmed by the service owners.

Excavation operations shall commence only after the existing services within or in the near vicinity of the excavations have been suitably protected against damage.

The Contractor shall take particular care when carrying out blasting, pneumatic or mechanical breaking, and general excavation operations in the vicinity of the services, and subcontractors, foremen and plant operators shall be fully briefed on precautionary measures to be taken before excavation commences in these areas.

4. Relocation of services

Should any services need to be relocated, the Contractor shall be required to assist the service owner with programming, organising and carrying out the relocation work, in order to minimise any delays in the construction.

5. Payment for the services relocation work

A provisional sum has been provided under chapter C1.2 of the schedule of quantities to cover the costs of any protection, relocation, realignment, removal or replacement of services that may arise.

C4.4 CONDITIONS ON SITE: MATERIALS INFORMATION

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PAGE

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C4.4.2 WATER	C305
C4.4.3 GEOTECHNICAL REPORT	C305

C4.4.1 DISCLAIMER

The information in this document records the results of investigations done and various tests carried out on materials encountered in the existing road. The results are given in good faith and there is no warranty that the results are entirely representative of all the materials that may be encountered, the intention being to give an indication of the materials likely to be encountered.

No responsibility for any consequence arising from variation between the actual material properties and those indicated in this document will be accepted.

The specification and contract drawings shall always overrule this part of the contract documents.

C4.4.2 WATER

No specific source of water for construction purposes is identified. The Contractor will have to make his own arrangements in this regard. Water may be available from local rivers and streams but the Contractor will have to make suitable arrangements for access as required as well as for the necessary testing to prove its suitability.

C4.4.3 GEOTECHNICAL REPORT

The report by Soilkraft cc, on behalf of Enviro Geotech Drilling cc, on the drilling investigation for the Nseleni river bridge replacement is reproduced below.

The report contains a total of 61 pages comprising:

- Cover page (one page only, not numbered)
- Contents page (one page only, not numbered)
- Report (21 pages, not all numbered)
- Addendum A: Borehole profiles and photographs (17 pages, not numbered)
- Addendum B: Driller's daily journals (10 pages, not numbered)
- Addendum C: Materials testing (11 pages, not numbered)

C4.5 TRAFFIC INFORMATION







Extracts from the SADC - Road Traffic Sign Manual are included on the following pages.

13.9.7 Reseal/Resurfacing Work - Just Completed

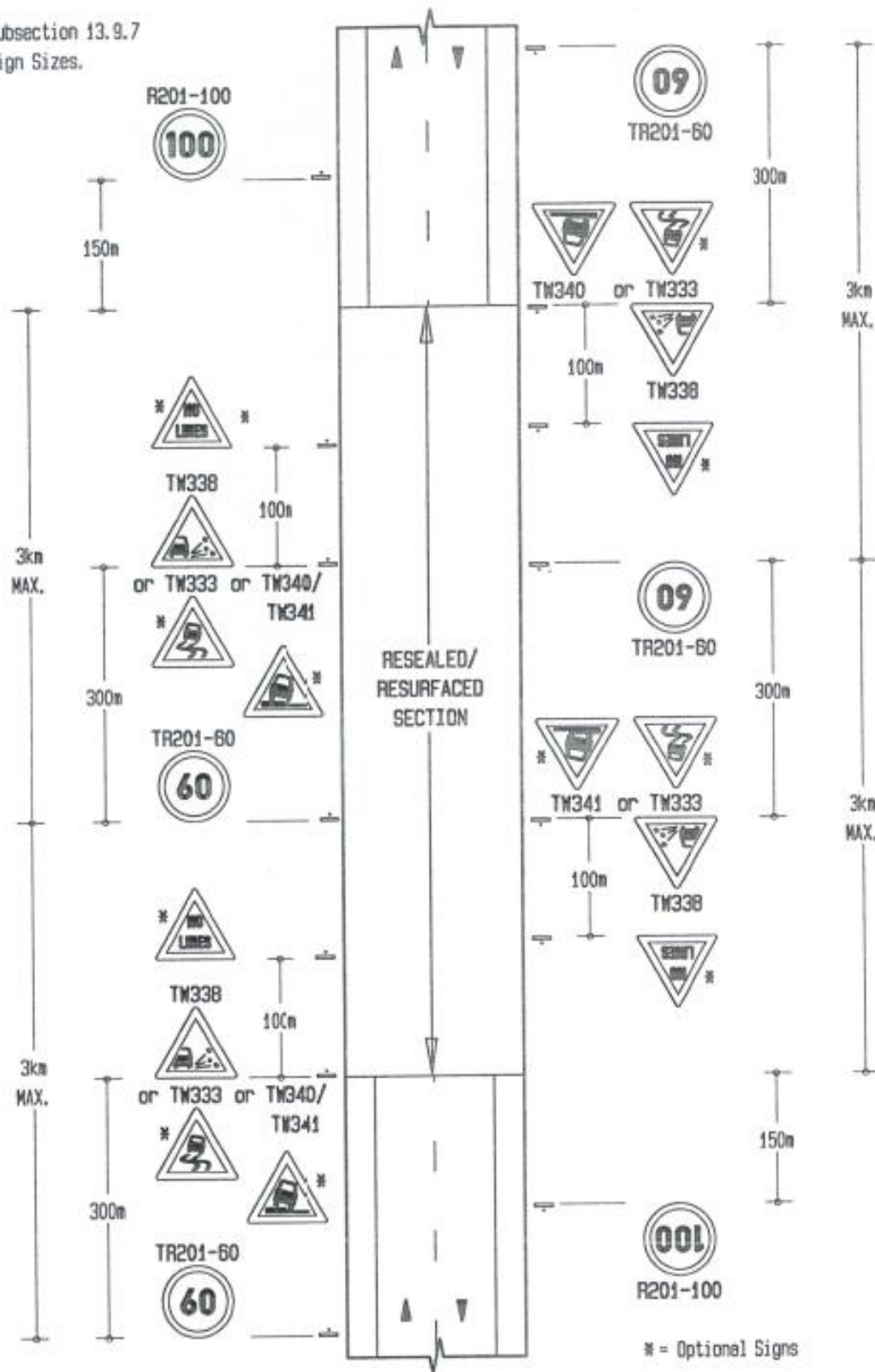
- Figure 13.48 illustrates recommended signing levels where work on resealing of a section of roadway has just been completed. This work activity may occur on sections of roadway within a larger site and may occur in more than one place at a time within such a site. When this is the case, the signing should be adjusted to suit the overall signing requirements of the site. Any temporary speed limit should relate to that operating within the rest of the site and should be as high as is practical and safe (see Section 13.4).
- Sign TW333 and sign TW338 should be considered when there is significant horizontal road curvature and/or the road crossfall or superelevation is also significant, as in hilly country, since the combination of loose stone chippings or dust on the road surface together with this type of road profile can lead to slippery conditions. Alternatively, sign TW333 may be used instead of sign TW338 if the condition of the road surface is considered to be a greater hazard than the risk of stone chippings being thrown up.
- The sign sequence shown should be repeated at approximately three kilometre intervals and, if the road is one carriageway or a dual carriageway road, the signs shall be repeated on the right, on the median island.
- A similar level of signing is appropriate if an asphalt overlay or concrete surface has just been laid and traffic is using it for the first time. With this type of surfacing the use of SURFACE STEP advance warning signs TW340 and TW341 may also be appropriate.
- If road markings are not likely to be re-marked shortly after re-opening the road to traffic, NO LINES advance warning signs should also be provided (see Volume 4, Chapter 3, Section 3.1).

Checklist

- ☐ is a 3 km spacing of sign sets adequate?
- ☐ is the road surface slippery?
- ☐ is there a temporary step in the road surface?
- ☐ will road markings be re-marked shortly after re-opening the road?

MAINTENANCE UNIT INVENTORY			
Sign	No	Size (mm)	Quantity
	TR201-60	1200	2 Plus 2 Every 3km
	TW338	1200	2 Plus 2 Every 3km
	R201-100	1200	2
	TW333	1200	2 Plus 2 Every 3km ⁽¹⁾
	TW340 TW341	1200	2 Plus 2 Every 3km ⁽²⁾
		1200	2 Plus 2 Every 3km ⁽³⁾
<p>(1) Add signs TW333 at 3km intervals if many sharp curves exist especially in mountain passes where loose gravel and crusher dust are located on the road surface.</p> <p>(2) Use signs TW340 / TW341 as appropriate in place of TW333 or TW338 when re-surfacing with asphalt overlay or concrete if a surface step is present.</p> <p>(3) Use text warning sign if repainting is not immediate.</p>			

NB See Subsection 13.9.7
for Sign Sizes.



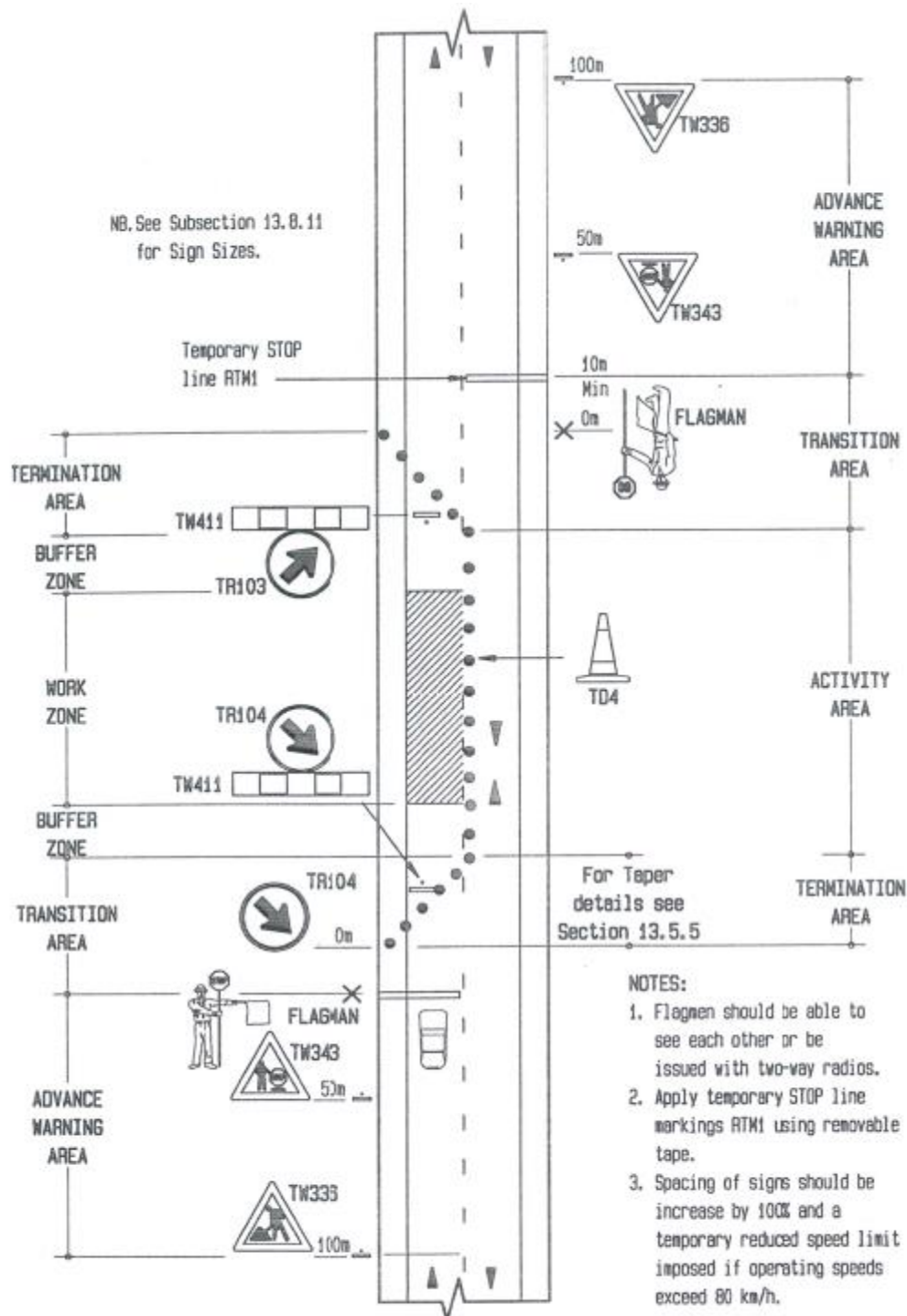
13.8.11 STOP/RV-GO Traffic Control-Minor Works

- 1 STOP/RV-GO operation may be required to control traffic at a variety of short term roadworks sites where the remaining roadway is reduced to less than two lanes in width, for whatever reason. As such, STOP/RV-GO traffic control is effectively a temporary signing sub-system. It may be used on its own or it may be used locally, in more than one place, for short periods within a long roadworks site. The detail in Figure 13.40 may therefore be incorporated with other short term applications and is particularly appropriate for urban areas.
- 2 The signing given in this detail is a minimised treatment for a very short term application lasting only one or two hours. For longer applications the signing should be upgraded to that covered by Subsection 13.9.3 and Figure 13.44. It should be considered as a daytime operation unless the site is very well illuminated at night. NO OVERTAKING signs TR214 should be carried by the maintenance unit and added to the illustrated sign sequence if required.
- 3 If operating speeds are in excess of 80 km/h additional speed limit signs TR201 should be displayed to reduce speed by a maximum of 20 km/h, or in 20 km/h increments to 80 km/h or 60 km/h as appropriate (see Section 13.4).
- 4 Flagmen must be well trained and shall operate in accordance with Figure 13.23. Whilst short term sites are likely to be short in length, if inter-visibility between flagmen cannot be guaranteed the flagmen should be equipped with two-way radios.
- 5 TRAFFIC CONE delineation devices TD4 and DE-LINEATOR PLATE hazard marker signs TW401/TW402 shall be spaced in accordance with Table 13.4 and all tapers shall conform to the provisions of Table 13.5. When cones are to be used during adverse light conditions, they shall be fitted with retroreflective sleeves. The mounting height of all signs shall be at least that given in Table 13.1 or higher. If the work unit's support vehicle is equipped with flashing yellow warning lights, it may benefit the safety of workers for the vehicle to be parked on the shoulder, at the work end of the approach Buffer Zone, between the workers and approaching traffic.

Checklist

- ☐ are operating speeds in excess of 80 km/h?
- ☐ do advance signs for the STOP/RV-GO control clash with other roadworks signs within the site?
- ☐ are the flagmen alert and well trained for their task?
- ☐ are the flagmen fully visible to oncoming traffic?
- ☐ are the flagmen standing in a safe position?
- ☐ can the restriction be eliminated to permit two-way traffic by dusk?

MAINTENANCE UNIT INVENTORY			
Sign	No	Size (mm)	Quantity
	TW336	1200	2
	TW343	1200	2
	R1.5A/ R1.5B	750	2
	TR103 TR104	1200	1 2
	TW411	300 X 1800	2
	FLAGS	450 X 450	2
	TD4	450 Min	20 Min. plus 10 per 100m site length
	TR214	1200	2
	TR201-80 AND TR201-60	1200	2 2



**ANNEXURE A: GUIDELINES FOR CONSTRUCTION
AND MAINTENANCE PROJECTS DURING COVID-19 LOCKDOWN**



transport

Department:

Transport

Province of KwaZulu-Natal

PROJECT SITE OCCUPATIONAL HEALTH AND SAFETY

GUIDELINES FOR CONSTRUCTION AND MAINTENANCE PROJECTS DURING COVID-19 LOCKDOWN

Revision 1/1 July 2020

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1 INTRODUCTION

Coronavirus Disease 2019 (COVID-19) is a respiratory disease caused by the SARS-CoV-2 virus. In order to reduce the impact of COVID-19 on businesses, workers, customers and the public, the KwaZulu-Natal Department of Transport (KZNDOT), within the parameters of the COVID-19 regulatory framework, want to ensure that all those businesses, workers, customers and public it's interacting with are in compliance to the requirements as stipulated to ensure a safe work-environment for all.

On 23 April 2020, President Cyril Ramaphosa addressed the nation and announced that the country would resume economic activity in a phased approach from 1 May 2020. The lockdown levels depicted by Figure 1 below, will be lifted in phases, level 5 the highest and level 1 being the lowest as depicted below:

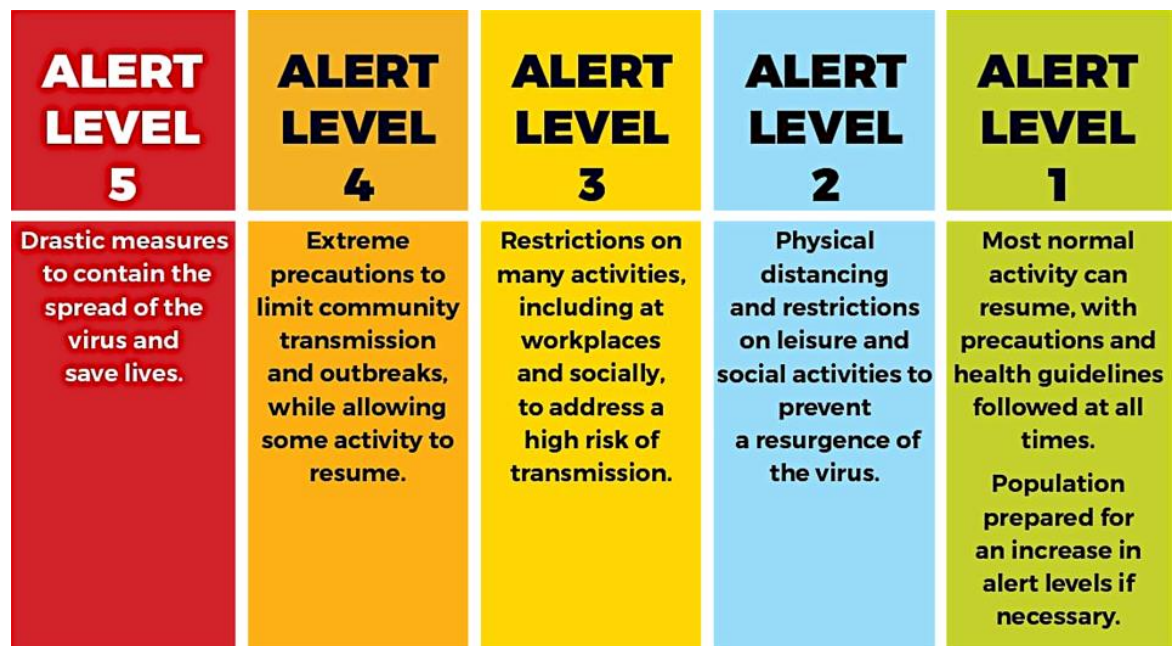


Figure 1: COVID-19 Alert Levels

1.1 BACKGROUND

Occupational Health and Safety are a fundamental segment of the construction industry. Safety must be embedded in all processes, implementing a top down approach, enabling the adoption of a safe and healthy working culture by all. Individual businesses or workplaces must have COVID-19 risk assessments and prevention and mitigation plans in place, and must conduct worker education on COVID-19 and protection measures:

- Identification and protection of vulnerable employees
- Safe transport of employees
- Screening of employees on entering the workplace
- Prevention of viral spread in the workplace
- Hand sanitisers and face masks
- Cleaning of surfaces and shared equipment
- Good ventilation
- Shift arrangements and canteen controls
- Managing sick employees

In addition to the above, monitoring systems must be in place to ensure compliance with safety protocols and to identify infections among employees.

1.2 PURPOSE

This document sets out the key principles and minimum requirements of the KZNDOT that define responsible, healthy and safe operations for road construction related operations working under COVID-19 Lockdown. The present state of the lockdown is geared toward the revival of economic activities and to allow employees involved in permitted services to resume work under certain conditions. This COVID-19 guidance has been developed on the basis of traditional infection prevention and occupational hygiene practices.

1.3 OBJECTIVES

The aims of this document are to:

- Keep workers and the wider public healthy and safe by preventing the spread of COVID-19.
- Apply relevant guidance from the Department of Health, Department of Employment and Labour and other Government Authorities to the construction environment.
- Encourage a safe and respectful work environment and good communication between all stakeholders.
- Sit alongside existing health and safety controls to ensure workers are safe on site.

Contractors and their employees should use this guidance to help identify risk levels on construction sites and to identify any appropriate control measures to be implemented. Additional guidance may be needed as the conditions of the COVID-19 outbreak change and as new information about the virus, its transmission and impact become available. It focuses on, as well as considerations for, the need for contractors to implement engineering, administrative and work practice controls and personal protective equipment (PPE).

2 RISK ASSESSMENT

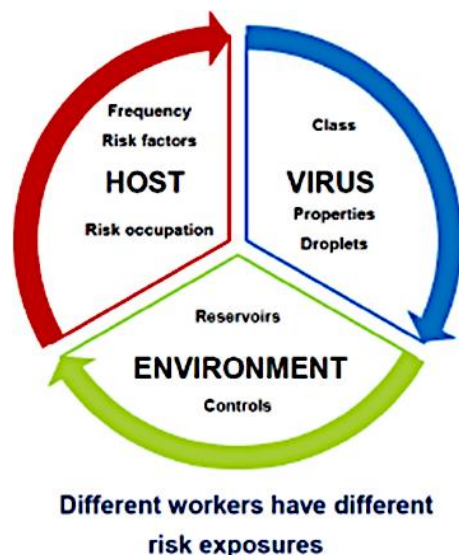


Figure 2: Risk Exposures

The legislation governing workplaces in relation to COVID –19 is the Occupational Health and Safety Act, Act 85 of 1993, as amended, and with the Hazardous Biological Agents Regulations and the Construction Regulation 2014. Section 8(1) of the Occupational Health and Safety Act, Act 85 of 1993, as amended, requires the employer to provide and maintain a working environment that is, to the extent possible reasonably practicable, as amended. Specifically, Section 8(2)(b) requires steps that may be reasonably practicable to eliminate or mitigate any hazard or potential hazard prior to the use of personal protective equipment (PPE).

2.1 BACK TO BASICS

Risk Assessment should be done to determine the **RISK** of **EXPOSURE** and to communicate this to the **WORKERS**.

2.2 IMPLEMENTATION OF CONTROL MEASURES

Before the implementation of control measures, current risk assessments need to be reviewed and updated, taking into account the new hazards posed by exposure to COVID-19 in the workplace. This is in accordance with Section 8 (2) (d) of the OHS Act.

With COVID-19, it may not be possible to eliminate the hazard, the most effective protection measures are engineering controls, administrative controls, safe work practices (a type of administrative control), and Personal Protection Equipment.

Measures for protecting workers from exposure to, and infection with, SARS-CoV-2, the virus that causes Coronavirus Disease 2019 (COVID-19), depend on the type of work being performed and exposure risk, including potential for interaction with people with suspected or confirmed COVID-19 and contamination of the work environment.

Contractors should adapt infection control strategies based on a thorough hazard assessment, using appropriate combinations of engineering and administrative controls, safe work practices, and personal protective equipment (PPE) to prevent worker exposures.

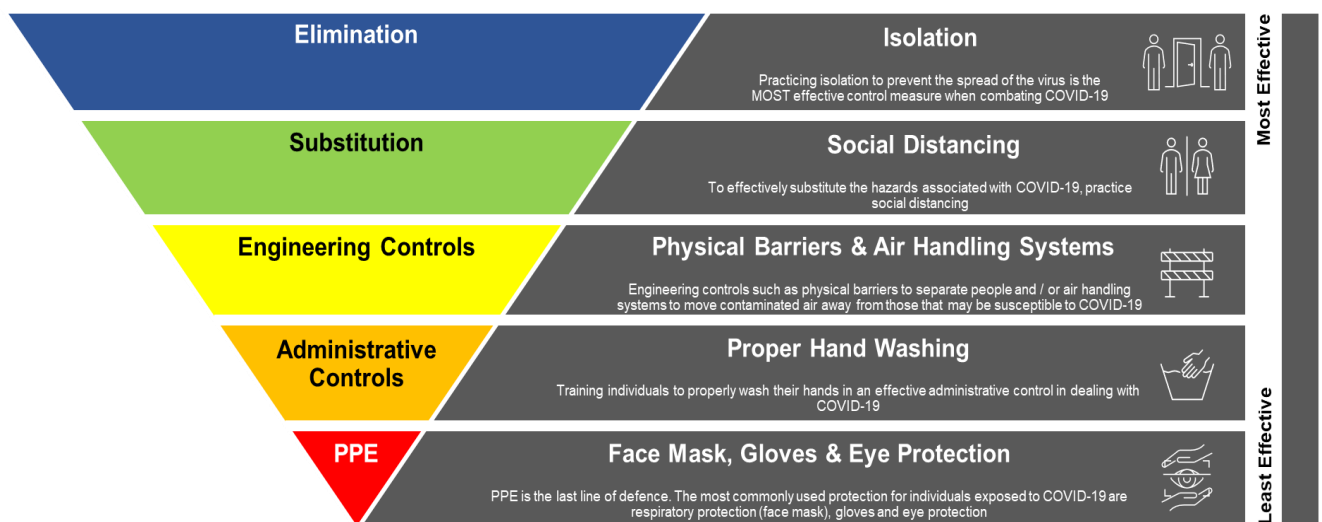


Figure 3: Infection Control Strategies

In preventing occupational exposure to COVID-19 also require Contractors to train workers on elements of infection prevention, including PPE. This would assist Contractors to identify:

- Exposure Levels
- “High Contact” Activities, and
- Vulnerable Workers and Special Measures

Contractors are expected to undertake and champion the principles of constantly focussing on eliminating or reducing the risk of COVID-19 transmission to an acceptable level, engaging meaningfully with their workforce, and making worker health a key priority. A Baseline Risk Assessment is included under Appendix D: COVID-19 Baseline Risk Assessment.

3 SITE OPERATING PROCEDURES

KZNDOT Construction sites operating during the Covid-19 pandemic need to ensure that they protect their workforce and minimise the risk of infection spread. In line with government guidelines on social distancing, this guideline is intended to implement effective steps at all KZNDOT construction sites of any size. These are extraordinary situations, and the KZNDOT intends to abide to the latest COVID-19 advice from national government.

3.1 SELF-ISOLATION

Anyone who meets one of the following criteria should not come to site:

- Has a high temperature or a new persistent cough;
- Is a vulnerable person (by virtue of their age, underlying health condition, clinical condition or pregnancy); or
- Is living with someone in self-isolation or with a vulnerable person.

3.2 IF SOMEONE FALLS ILL

If a worker develops a high temperature or a persistent cough while at work, they should:

- Return home immediately;
- Avoid touching anything; and
- Cough or sneeze into a tissue and put it in a bin, or if they do not have tissues, cough and sneeze into the crook or into the bent elbow.

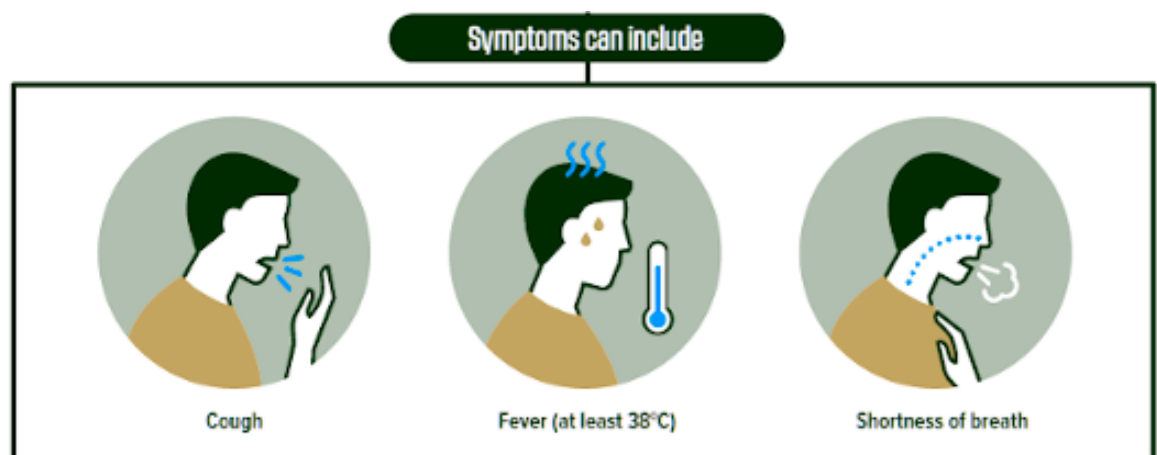


Figure 4: Symptoms of COVID-19

They must self-isolate and not return to work until their period of self-isolation has been completed and his or her negative status has been confirmed.

3.3 TRAVEL TO SITE

Wherever possible workers should travel to site alone using their own transport, and construction sites need to consider:

- Parking arrangements for additional cars, taxis, buses, etc;
- Other means of transport to avoid public transport e.g. cycling;
- They must ensure disinfecting the alternative transport before and after use; and Public Transport Regulations in respect of COVID-19 are adhered to;

- Providing hand cleaning facilities at entrances and exits. This should be soap, water and paper towels (and not fabric towels) wherever possible or hand sanitiser if water is not available; and
- How someone detected vulnerable after screening, taken ill and would get transported home.

3.4 SITE ACCESS POINTS

- Stop all non-essential visitors
- People, be it workers or visitors, without relevant face masks should not be allowed to enter construction sites; and workers should wear face masks at all times.
- Introduce staggered start and finish times to reduce congestion and contact at all times
- Monitor site access points to enable social distancing – you may need to change the number of access points, either increase to reduce congestion or decrease to enable monitoring
- Remove or disable entry systems that require skin contact e.g. fingerprint scanners
- Require all workers to wash or clean their hands before entering or leaving the site or as frequent as possible
- Allow plenty of space (two metres) between people waiting to enter site
- Regularly clean common contact surfaces in Site Office, Access Control and delivery areas e.g. scanners, turnstiles, screens, telephone handsets, desks, particularly during peak flow times
- Reduce the number of people in attendance at site inductions and consider holding them outdoors wherever possible
- Drivers should remain in their vehicles if the load will allow it and must wash or clean their hands before unloading goods and materials.

3.5 HAND WASHING

- Provide additional hand washing facilities to the usual welfare facilities on a large spread out site or significant numbers of personnel on site
- Ensure soap, fresh water and paper towels is always readily available and kept topped up
- Provide hand sanitiser where hand washing facilities are unavailable
- Regularly clean the hand washing facilities and check soap and sanitiser levels
- Provide suitable and enough rubbish bins for hand paper towels with regular removal and disposal.
- Sites will need extra supplies of soap, hand sanitiser and paper towels and these should be securely stored.

3.6 TOILET FACILITIES

- Restrict the number of people using toilet facilities at any one time e.g. use a welfare attendant
- Wash hands before and after using the facilities
- Enhance the cleaning regimes for toilet facilities particularly door handles, locks and the toilet flush handles or buttons
- Portable toilets should be avoided wherever possible, but where in use these should be cleaned and emptied more frequently
- Provide suitable and sufficient rubbish bins for hand towels with regular removal and disposal.

3.7 CANTEENS AND EATING ARRANGEMENTS

Whilst there is a requirement for construction sites to provide a means of heating food and making hot drinks, these are exceptional circumstances and where it is not possible to introduce a means of keeping equipment clean between use, kettles, microwaves etc. must be removed from use.

The workforce should also be required to stay on site once they have entered it and not use local shops.

- Dedicated eating areas should be identified on site to reduce food waste and contamination
- Break times should always be staggered to reduce congestion and contact
- Hand cleaning facilities or hand sanitiser should be available at the entrance of any room where people eat and should be used by workers when entering and leaving the area
- The workforce should be asked to bring pre-prepared meals and refillable drinking bottles from home
- Workers should sit 2 metres apart from each other whilst eating and avoid all contact
- Where catering is provided on site, it should provide pre-prepared and wrapped food only
- Crockery, eating utensils, cups etc. should not be used
- Drinking water should be provided with enhanced cleaning measures of the tap mechanism introduced
- Tables should be cleaned between each use
- All rubbish should be put straight in the bin and not left for someone else to clear up
- All areas used for eating must be thoroughly cleaned at the end of each break and shift, including chairs, door handles, vending machines and payment devices.

3.8 CHANGING FACILITIES, SHOWERS AND DRYING ROOMS

- Always introduce staggered start and finish times to reduce congestion and contact
- Introduce enhanced cleaning of all facilities throughout the day and at the end of each day
- Consider increasing the number or size of facilities available on site if possible
- Based on the size of each facility, determine how many people can use it at any one time to maintain a distance of 1 ½ metres
- Provide suitable and enough rubbish bins in these areas with regular removal and disposal.

3.9 AVOIDING CLOSE WORKING

There will be situations where it is not possible or safe for workers to distance themselves from each other by 1.5 metres.

3.10 GENERAL PRINCIPLES

- Non-essential physical work that requires close contact between workers should not be carried out
- Work requiring skin to skin contact should not be carried out
- Plan all other work to minimise contact between workers
- Re-usable PPE should be thoroughly cleaned after use and not shared between workers
- Single use PPE should be disposed of so that it cannot be reused
- Stairs should be used in preference to lifts or hoists
- Where lifts or hoists must be used:
 - Always lower their capacity to reduce congestion and contact
 - Regularly clean touchpoints, doors, buttons etc.
- Increase ventilation in enclosed spaces
- Regularly clean the inside of vehicle cabs and between use by different operators.

3.11 SITE MEETINGS

- Only absolutely necessary meeting participants should attend
- Attendees should be two metres apart from each other
- Rooms should be well ventilated / windows opened to allow fresh air circulation
- Consider holding meetings in open areas where possible.

3.12 CLEANING

Enhanced cleaning procedures should be in place across the site, particularly in communal areas and at touch points including:

- Taps and washing facilities
- Toilet flush and seats
- Door handles and push plates
- Handrails on staircases and corridors
- Lift and hoist controls
- Machinery and equipment controls
- Food preparation and eating surfaces
- Telephone equipment
- Keyboards, photocopiers and other office equipment

Rubbish collection and storage points should be increased and emptied regularly throughout and at the end of each day.

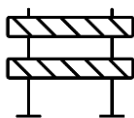
4 CONSTRUCTION PROTOCOLS

The core principle behind this “Construction Protocols” is to protect the health and safety of all workers required to perform duties during the COVID-19 crisis, including related health and safety impacts on operations related to operating under a COVID-19 environment, as well as protecting the wider KwaZulu-Natal population from transmission and spread of the virus.



Before
arriving on
Site

- Each Contractor must have a plan detailing the steps they will take to mitigate risks, including those presented by COVID-19. The details of the plan must be communicated to workers before they start work.
- Before any activity is recommenced the Contractor must ensure that all hazards have been reviewed and appropriately controlled before work activity is commenced after lockdown.
- Where possible, conduct a remote induction before arrival on site, this can be done via video conferencing or by phone.
- If an in-person induction is required, the **Physical Distancing and Hygiene Protocol** must be followed.
- All workers shall undergo a screening process to ensure they are fit for duty by confirming their health status.
- Contractors must understand how workers will travel to and from site and will communicate the **Site Transportation Protocol** to all.
- Ensure all workers understand when additional PPE may be required due to COVID-19 and that workers have access to the correct PPE as per the Department of Employment and Labour guidelines. When required to use face masks or gloves please follow these processes.



Site Entry

- Only relevant personnel to the workplace are to access the site.
- All office employees supporting a project will work remotely, where possible.
- A daily register of workers entering and leaving site must be completed along with a health declaration. Use your existing sign in register or the example Sign-in register.
- Signage reminding workers of the COVID-19 **Physical Distancing and Hygiene Protocol** will be posted at the site entrance and in common areas where appropriate.



Site
Operations

- All work is to be undertaken in such a way as to reduce any possible contact between workers and to promote physical distancing wherever possible, as per the **Physical Distancing and Hygiene Protocol**.
- All visitors to the site, such as necessary delivery workers, will be restricted to one person wherever possible. These workers must follow the **Site Transportation Protocol**.
- All offices and jobsites must implement cleaning measures as per the **Cleaning Protocol**.
- All tools, equipment, plant and vehicles must be used in alignment with the **Cleaning Protocol**.
- Toolbox talks should be held with physical distancing in place as per the **Physical Distancing and Hygiene Protocol**.
- Additional sanitary measures are to be implemented on site to prevent the spread of COVID-19 e.g. hand washing stations, provision of additional hand sanitizer, provision of disinfectant wiping products, as per the **Physical Distancing and Hygiene Protocol**.
- Smokers must follow the **Physical Distancing and Hygiene Protocol**.
- A COVID-19 Response plan must be available and accessible on site.



Leaving Site

- Workers must use the sign-in register to sign out.
- When returning home, workers will need to follow the necessary hygiene measures.
- Each site must be cleaned and sanitised at the end of the working day or end of each shift, as per the **Cleaning Protocol**.
- All waste and disposable PPE must be removed from site and securely disposed of as per the **Cleaning Protocol**.
- Workers must follow the **Site Transportation Protocol**.

4.1 PHYSICAL DISTANCING AND HYGIENE PROTOCOL

Physical distancing, also known as “social distancing”, is about keeping a safe distance from others. For physical distancing, at least one and ½ metre’s separation is required at work, and two metres in uncontrolled environments, like in public. This aligns with World Health Organisation advice. We expect one and ½ metre’s separation between people at work as the minimum and greater separation where it is reasonably practicable to do so. This is important to help protect us from COVID-19, which spreads via droplets from coughing and sneezing.

General Working Arrangements

- Keep team sizes as small as possible.
- Keep a record of who is in each team every day as it is required to assist contact tracing.
- Site teams are encouraged to put forward split/alternating shifts to avoid extensive intermingling to reduce potential of exposure.
- Work site is always to be segregated into zones (or by other methods) as much as possible to keep different teams/trades physically separated.
- Where possible, a one-way system in high-traffic areas, such as lifts, stairwells and scaffolds (Where Applicable).
- Where practical, all office employees supporting a project, work remotely.
- When using a vehicle, the **Cleaning Protocol** needs to be followed.
- When using a vehicle, limit this to one/two person per vehicle if possible.













External Interfaces	<ul style="list-style-type: none"> • One member of the crew nominated to receive supplies etc. • Keep the engagement with the other person as brief as possible and maintain a two-metre physical distance. • Ask for paperwork to be emailed rather than handed over as much as possible. • If unavoidable, then either wear gloves when handling the item or wash hands before and after handling said items.
Site Entry	<ul style="list-style-type: none"> • Limit visitors to site wherever possible. • Introduce staggered start and finish times where possible to reduce congestion and contact. • Monitor site access points to enable physical distancing – you may need to change the number of access points, increase to reduce congestion or decrease to enable monitoring. • Where entry systems that require skin contact, the Cleaning Guide must be followed. • Require all workers to wash or clean their hands before entering and leaving the site. • Allow plenty of space 1½ metres between people waiting to enter site. • Regularly clean common contact surfaces in reception, office, access control and delivery areas e.g. scanners, turnstiles, screens, telephone handsets, desks, particularly during peak flow times. • Where possible, conduct a remote induction before arrival on site, this can be done via video conferencing or by phone. If an in-person induction is required, reduce the number of people and hold them outdoors wherever possible. • Delivery drivers should remain in their vehicles if the load will allow it and must wash or clean their hands before unloading goods and materials. • Any sign in registers should be recorded by one person where possible – do not pass material around the group and minimise contact with any screens.
Site Meetings	<ul style="list-style-type: none"> • Only absolutely necessary meeting participants should attend. • Attendees should be two metres apart from each other • Rooms should be well ventilated / windows opened to allow fresh air circulation. • Hold meetings in open areas where possible. • Meetings are to be held through teleconferencing or videoconferencing where possible.
Avoiding Close Working	<ul style="list-style-type: none"> • Risk assessments and method statements must be updated to include COVID-19 control measures. • At least 1½ metre's separation is required at work. KZNDOT expect 1½ metre separation between people at work as the minimum and greater separation where it is reasonably practicable to do so. • If it is not possible or safe for workers to distance themselves by one metre for a work activity, the works should not be carried out. • Re-usable PPE should be thoroughly cleaned after use and not shared between workers. • Single use PPE should be disposed of so that it cannot be reused. • Stairs should be used in preference to lifts or hoists. • Where lifts or hoists must be used: • Lower their capacity to reduce congestion. • Regularly clean touchpoints, doors, buttons etc. • Increase ventilation in enclosed spaces

Toilet Facilities	<ul style="list-style-type: none"> Physical distancing rules apply to the use of shared facilities, including toilets. Wash hands before and after using the facilities. Enhance the cleaning regimes for toilet facilities particularly door handles, locks, toilet flush and sanitary bins. Provide suitable and sufficient rubbish bins for hand towels with regular removal and disposal.
Eating Measures	<ul style="list-style-type: none"> If you need to leave site for any reason, follow site entry procedures on return. Dedicated eating areas should be identified on site to reduce food waste and contamination. Break times should be staggered to reduce congestion and contact at all times. Hand cleaning facilities or hand sanitiser should be available at the entrance of any room where people eat and should be used by workers when entering and leaving the area. The workforce should be asked to bring pre-prepared meals and refillable drinking bottles from home. Workers should sit 2 metres apart from each other whilst eating and avoid all contact. Where catering is provided on site, it should provide pre-prepared and wrapped food only. Shared crockery, eating utensils, cups etc. should not be used. Tables should be cleaned between each use. All rubbish should be put straight in the bin and not left for someone else to clear up. All areas used for eating must be thoroughly cleaned at the end of each break and shift, including chairs, door handles. Limit access and use of water fountains. Consider numbers on site for site facilities as physical distancing may require additional space/facilities.
Changing Facilities, Showers and Drying Rooms	<ul style="list-style-type: none"> Introduce staggered start and finish times to reduce congestion and contact at all times. Introduce enhanced cleaning of all facilities throughout the day and at the end of each day. Consider increasing the number or size of facilities available on site if possible. Based on the size of each facility, determine how many people can use it at any one time to maintain a distance of one metre. Provide suitable and sufficient rubbish bins in these areas with regular removal and disposal.
General Hygiene	<ul style="list-style-type: none"> Each worker must sanitise their hands with hand sanitiser or soap and running water before entry onto site, use warm water if available. Set up a specific place near the entry of the site for handwashing and/ or sanitising. Any personal items brought to site by workers must be segregated (kept separate from other workers items). Individual PPE for workers must be kept separate from other workers PPE and cleaned correctly as per the Cleaning Protocol. All eating and drinking utensils to be cleaned by the user. Have paper towels accessible to dry.
Smoking	<ul style="list-style-type: none"> Smokers/vapers must use designated area or do so off-site and butts are to be placed in the designated receptacle. Hands must be washed before and after smoking. Stand so that smoke or vapor produced is not going into another person's breathing zone.

Hand Washing	<ul style="list-style-type: none"> • Provide additional hand washing facilities to the usual welfare facilities on large, spread out sites or significant numbers of personnel on site. • Ensure soap and fresh water is readily available and kept topped up at all times. • Provide hand sanitiser where hand washing facilities are unavailable. • Regularly clean the hand washing facilities and check soap and sanitiser levels. • Sites will need extra supplies of soap, hand sanitiser and paper towels and these should be securely stored.
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4.2 SITE TRANSPORTATION PROTOCOL

Employers are required to have an understanding of how workers will travel to and from site.

Workers travel to site		Workers are to travel to the site one person per vehicle where possible.
		Log is to be kept recording who has arrived on site, how they travelled and who they travelled with for contact tracing purposes.
		Workers must travel home in the same vehicle as they arrived in.
		Handwashing protocols to be observed before entering site.
Any travel managed by the employer should ensure that adequate steps can be achieved for this transport which includes:		Allowing for spaces between passengers.
		Hygienic washing of hands before and after the journey.
		Follow Vehicle Cleaning Procedures as per the Cleaning Protocols.
		Restricting equipment and baggage to trailers and or separate parts of the vehicle.
Deliveries to site		Deliveries to site should be delivered by one person only where possible.
		Handwashing protocols to be observed once arrived at site.
		Sign-in register must be completed for persons delivering goods to site.
		1,5 m physical distancing rules to be applied at all times.

4.3 CLEANING PROTOCOL

Construction Sites operating under Coronavirus COVID-19 Lockdown need to ensure they are protecting their workforce and minimising the risk of spread of infection.

Key Cleaning Tips

All construction sites (offices and jobsites included) should implement additional cleaning measures of common areas to help minimise the spread of COVID-19. Consider your work environment and what is frequently used and touched by workers, customers and others. The virus can be spread from person to person or by touching unclean equipment or surfaces. To stop the spread, focus efforts on cleaning areas where the virus is more likely to spread, such as the kitchen and toilet.

- Schedule regular cleaning.
- Use a suitable cleaning product.
- Use disposable cloths, if available.
- Always wear disposable gloves when cleaning. When finished, place used gloves in a rubbish bin.
- Wear disposable gloves while handling soiled items.
- Wash hands immediately after removing gloves or after handling these items.

Physical distancing should also be practiced when cleaning offices and jobsites. Refer to the **Physical Distancing and Hygiene Protocol** for more information.

Disinfecting Cleaning Aids

Cleaning aids, such as cloths or mops, must be germ-free or they'll spread germs to other surfaces. To help prevent the spread of germs:

- Use disposable cloths or paper towels when possible.
- Reusable cloths should be disinfected or washed after each use.
- Wash brushes in a dishwasher regularly or clean with detergent and warm water after each use.
- Use two buckets for mopping - one for detergent and the other for rinsing.
- Mops and buckets should be cleaned and dried after each use.

Site Cleaning

Before leaving the jobsite at the end of the working day or end of each shift, wipe down any tables/surfaces with soapy water or cleaning agents where possible. All workers must be checked out of site and record kept daily.

Common touch points may include:

- All waste and disposable PPE must be securely disposed of.
- All door handles, railings and personal workstation areas are wiped down with a disinfectant, such as disinfectant wipes. Individuals are responsible for cleaning their workstation area with disinfectant wipes.
- Clean all 'high-touch' surfaces such as desks, counters, tabletops, doorknobs, bathroom fixtures, toilets, light switches, phones, and keyboards every day with antiseptic wipes or disinfectant, including bleach solutions.

Cleaning Bathrooms, Toilets and Showers	<p>Clean toilets with a separate set of cleaning equipment (disposable cleaning cloths, mops, etc).</p> <p>Clean sinks frequently if they're used regularly. If your jobsite has a shower:</p> <ul style="list-style-type: none"> • Clean shower trays frequently, if used regularly. • If a shower has not been used for a while, let it run with hot water before using it. • Keep tiles and grout in good condition. • Clean shower curtains frequently. Common toilet touch points may include: • Keep the U-bend and toilet bowl clean by flushing after each use. • Limescale should be regularly removed using a descaling product. • Keep the toilet seat, handle and rim clean by using a disinfectant.
Cleaning Tools and Equipment	<ul style="list-style-type: none"> • Clean tools and equipment before and after each day's work with a disinfectant, concentrating on points of contact such as handles. • Wash your hands after handling tools and equipment to prevent the spread of germs. • If possible, don't share tools on-site. If sharing cannot be prevented, take precautions and follow the hand washing guide before and after each use.
Cleaning Vehicles	<ul style="list-style-type: none"> • Have dedicated drivers when using vehicles to avoid the spread of germs. • Don't share vehicles if possible, if you need to use a shared vehicle then wipe down the common touched areas of the vehicle after each use (steering wheel, handbrake, gear stick, dashboard, handles, etc) and wash hands before and after using the vehicle. • Wipe down the inside and common touched areas of the vehicle before and after each day. • Have one person per vehicle where possible. If you are required to have more than one person then keep as much distance between people as possible, open the windows to keep air circulating and passengers to face towards the window to reduce the spread of germs. • If you need to have multiple people in a vehicle, then where possible, split teams into groups and stay in those groups when you travel together.
Cleaning PPE	<ul style="list-style-type: none"> • Work clothes to be placed in washing machines and clean reusable PPE. • Read and follow directions on the labels of laundry or clothing and detergent. In general, wash and dry laundry and clothing with the warmest temperatures recommended on the label. • When handling soiled laundry wash your hands afterwards. All clothes and towels should be washed with a laundry product to prevent germs from spreading. • Don't leave laundry in the washing machine – any remaining germs can multiply rapidly.
Specialist Clean	<ul style="list-style-type: none"> • If a worker is unwell and removed from site, a specialist clean will be completed in the area/ areas identified where the worker was working and has accessed. These areas are to be isolated until a specialist clean has taken place. • All equipment and vehicles used must be cleaned down and disinfected, concentrating on points of contact such as handles, steering wheels etc.

4.4 SCREENING AND MONITORING PROTOCOL

Construction Sites operating under Coronavirus COVID-19 Lockdown need to ensure they are protecting their workforce and minimising the risk of spread of infection. Screening is a method to assess the possibility of employees and visitors who may have symptoms or have been infected with COVID-19. Rigid screening of employees must take place every day before they enter the workplace. This will be the most effective way to control the spread of the virus within the workplace.

Employees should be screened for COVID-19 related symptoms and report such symptoms to a designated person and / or occupational health practitioner prior to entry into the workplace or work area in order for a decision to be made as to the staff member's continued attendance at work.

During Screening	<ul style="list-style-type: none">• At the start of a workday/shift and prior to ending the workday/shift, designated persons and / or occupational health practitioner must check with employees whether they have experienced sudden onset of any of the following symptoms: cough, shortness of breath or fever/chills (or $\geq 38^{\circ}\text{C}$ measured temperature if this is available at the worksite), in the past 24 hours as outlined in Daily Symptom Monitoring Tool.• If an employee reports any of the above-mentioned symptoms, they should immediately be provided with a FFP1 surgical mask and referred to the designated staff at the workplace so that arrangements can be made for COVID-19 testing at the closest testing centre.• If employee report any additional symptoms as outlined in the symptom monitoring sheet, s/he should be provided with a surgical mask and referred to the occupational health clinic, family practitioner or primary care clinic for further clinical evaluation and requirement for COVID-19 testing if indicated.• On receiving their results, the employee and/or health professional supporting the employee should notify their workplace so that the employee is managed accordingly. The workplace should proactively take steps to obtain this information to avoid any delays in reporting.
After isolation or quarantine period	<ul style="list-style-type: none">• Undergo medical evaluation to confirm that they are fit to work• Wearing of surgical masks at all times while at work for a period of 21 days from the initial test• Implement social distancing measures as appropriate (in the case of health workers avoiding contact with severely immunocompromised patients)• Adherence to hand hygiene, respiratory hygiene, and cough etiquette• Continued self-monitoring for symptoms, and seek medical re-evaluation if respiratory symptoms recur or worsen

"Appendix C: COVID-19 Daily Symptom Monitoring Tool" is a monitoring Tool to track construction workers on a daily basis for two weeks.

ACRONYMS

PPE	Personal Protective Equipment
WHO	World Health Organization
NICD	National Institute of Communicable Diseases
RR	Residual Risk
OHSA	Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

KEY TERMS & DEFINITIONS

Contractor	Is defined as a person or company that arranges to supply materials or workers for building or for moving goods.
Extremely Vulnerable Persons	Defined as someone who is solid organ transplant recipients; people with specific cancers: people with cancer who are undergoing active chemotherapy or radical radiotherapy for lung cancer; people with cancers of the blood or bone marrow such as leukaemia, lymphoma or myeloma who are at any stage of treatment; people having immunotherapy or other continuing antibody treatments for cancer; people having other targeted cancer treatments which can affect the immune system, such as protein kinase inhibitors or PARP inhibitors; people who have had bone marrow or stem cell transplants in the last 6 months, or who are still taking immunosuppressive drugs; People with severe respiratory conditions including all cystic fibrosis, severe asthma and severe COPD; People with rare diseases and inborn errors of metabolism that significantly increase the risk of infections (such as SCID, homozygous sickle cell); People on immunosuppression therapies sufficient to significantly increase risk of infection; Women who are pregnant with significant heart disease, congenital or acquired.)
Physical Distancing	Physical distancing, also known as "social distancing", is about keeping a safe distance from others.
Safe Work Practices	Safe work practices are types of administrative controls that include procedures for safe and proper work used to reduce the duration, frequency, or intensity of exposure to a hazard.
Screening	Screening is a way for health workers to find out if you may have COVID-19 or not. The health worker will ask you questions and scan your forehead to take your temperature.
Workplace	Workplace means any premises or place where a person performs work.

APPENDIX A: SAFE PRACTICES ON SITE

Using Face Masks on Site



Wash Hands First

Always make sure you wash your hands thoroughly before and after touching a mask.



Masks

There are many kinds of masks, depending on the task.



The Right Side

There is a metal clip at the top of the mask.



Placement

Place the metal clip across the top of your nose.



Attach the Mask

Attach the mask by pulling the elastic bands over your ears.



Stretch Down

Stretch the mask down, so that it covers your chin.



Adjust

Bend the metal clip around your nose so that it sits securely.



Taking off the Mask

Pull the elastic bands away from your ears.



Disposal

Always place the used mask in a closed rubbish bin for secure disposal.

Using Face Masks on Site



Any time you are completing a manual task

Use your usual work safety gloves



If you are cleaning any surfaces

Use disposable gloves for this and throw them in the bin when you finish cleaning



Avoid touching your face while wearing gloves



Remove your gloves and then wash your hands prior to eating, drinking or smoking/vaping



Practice good hand hygiene and good cough and sneeze etiquette while wearing gloves

APPENDIX B: SUSPECTED OR CONFIRMED CASE OF COVID-19

If the suspected or confirmed case of COVID-19 is at work



Isolate

Isolate the person from others and provide a disposable surgical mask, if available, for the person to wear.



Inform

Call (Insert No). Follow the advice of health officials.



Transport

Ensure the person has transport to their home or to a medical facility



Clean

Clean the area where the person was working and all places they have been. This may mean evacuating those areas. Use PPE when cleaning. Identify who at the workplace had close contact with the infected person in the 24 hours before that infected person started showing symptoms. Send those people home to isolate. Allow employees to raise concerns.



Identify



Clean

Clean the area where the person was working and all places they have been. This may mean evacuating those areas. Use PPE when cleaning. Review risk management controls relating to COVID-19 and review whether work may need to change. Keep employees up to date on what is happening.



Review

If the suspected or confirmed case of COVID-19 is not at work when diagnosed



Inform

Call (Insert No). Follow the advice of health officials.



Identify

Identify who at the workplace had close contact with the infected person in the 24 hours before that infected person started showing symptoms. Send those people home to isolate. Allow employees to raise concerns.



Clean

Clean the area where the person was working and all places they have been. This may mean evacuating those areas. Use PPE when cleaning.



Review

Review risk management controls relating to COVID-19 and review whether work may need to change. Keep employees up to date on what is happening.

APPENDIX C: COVID-19 DAILY SYMPTOM MONITORING TOOL



COVID-19 DAILY SYMPTOM MONITORING TOOL

Details of Worker			
Identifier	Date of contact	DD/MM/YYYY	Place last contact
Surname	Name		
Date of birth	DD/MM/YYYY	Age (Y)	Sex M <input type="checkbox"/> F <input type="checkbox"/>
Healthcare worker	Y <input type="checkbox"/> N <input type="checkbox"/>	If yes, facility name	
Contact number(s)	Email		
Physical address			
House number	Street	Suburb	Town
District	Province	Patient traced	Y <input type="checkbox"/> N <input type="checkbox"/>
Details of confirmed COVID-19 case (Complete only if Applicable)			
Contact type ¹	Close <input type="checkbox"/> Casual <input type="checkbox"/>	Relationship	Name Surname Date of Birth DD/MM/YYYY

Details of Person completing this form		Date completing form
Surname	Name	DD/MM/YYYY
Role	Facility name	
Email address	Telephone number	

Next of kin details	
Next of Kin name and surname	Next of Kin contact number
Suburb	
Town	
Patient traced Y <input type="checkbox"/> N <input type="checkbox"/>	

Instructions for completion: Mark "Y" if symptom present and "N" if not. If any symptoms are present collect, contact (Insert No) immediately and make immediate arrangements for the collection of a combined nasopharyngeal and oropharyngeal swab. Refer to COVID-19 Quick Guide on the NICD website for additional details. Days post exposure to case.

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Date (DD/MM)														
Measured body temp														
Chills	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
Cough	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
Sore throat	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
Shortness of breath	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
Myalgia/body pains	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
Diarrhoea ³	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N

¹ Close contact: A person having had face-to-face contact (≤ 2 metres) or was in a closed environment with a COVID-19 case; this includes, amongst others, all persons living in the same household as a COVID-19 case and, people working closely in the same environment as a case. A healthcare worker or other person providing direct care for a COVID-19 case, while not wearing recommended personal protective equipment or PPE (e.g., gowns, gloves, NIOSH-certified disposable N95 respirator, eye protection). A contact in an aircraft sitting within two seats (in any direction) of the COVID-19 case, travel companions or persons providing care, and crew members serving in the section of the aircraft where the index case was seated. Casual contact: Anyone not meeting the definition for a close contact but with possible exposure. ² Chase from: Spouse, Aunt, Child, Class mate, Colleague, Cousin, Father, Friend, Grandfather, Grandmother, Healthcare worker taking care of, Mother, Nephew, Niece, Other relative, Uncle. ³ Diarrhoea defined as three or more loose stools in a 24-hour period.

APPENDIX D: COVID-19 BASELINE RISK ASSESSMENT

					Likelihood						
							Very Unlikely	Unlikely	Possible	Likely	Very Likely
					Severity	Negligible	1	2	3	4	5
						Minor	2	4	6	8	10
						Moderate	3	6	9	12	15
						Major	4	8	12	16	20
Extreme	5	10	15	20		25					
Hazard	L	S	Risk	Control Measures	L	S	RR	Persons at Risk			
Exposure from others due to: 1. Living with someone with a confirmed case of COVID-19. 2. Have come into close contact (within 2 metres for 15 minutes or more) with a confirmed case of COVID-19. 3. Being advised by a public health authority that contact with a diagnosed case has occurred.				<ul style="list-style-type: none">To follow government action of self-isolation and only to leave house on the following circumstances: for medical reason; to shop for necessary food supplies; for exercise once per day; and for essential works including those deemed 'key workers'Any existing individual risk assessments (disability, young persons or new / expectant mothers) to be reviewedMaintain contact with line management and Human Resources (HR) and to follow company policy / guidance.Travel is only required for essential travel; reduce the amount of time using public transport and to implement social distancing where possible (2m clearance from persons and not to travel in groups of more than 2 unless it is immediate family)To continue following ongoing government guidanceStay at home and only attend hospital in an emergency. Do not attend GP surgery and phone (Insert No) if further advice is requiredCompany to ensure extremely vulnerable persons are shielding themselves and following their specific medical advice issued to them no later than 29/3/2020Always follow good hygiene measuresAvoid all visitors to your home unless they are providing a medical requirementDo not approach delivery staff, allow packages to be left on the doorstepDo not take any antibiotics as they do not work against viruses.				Individual Workers			
Suspected case whilst working on site				If a worker develops a high temperature or a persistent cough while at work, they should: 1. Return home immediately				Individual workers			

					Likelihood						
					Severity	Very Unlikely	Unlikely	Possible	Likely	Very Likely	
						Negligible	1	2	3	4	5
						Minor	2	4	6	8	10
						Moderate	3	6	9	12	15
						Major	4	8	12	16	20
Extreme	5	10	15	20	25						
Hazard	L	S	Risk	Control Measures	L	S	RR	Persons at Risk			
				2. Avoid touching anything 3. Cough or sneeze into a tissue and put it in a bin, or if they do not have tissues, cough and sneeze into the crook of their elbow. 4. They must then follow the guidance on self-isolation and not return to work until their period of self-isolation has been completed.							
General travel including foreign travel				1. Do not travel unless you cannot work from home or deemed a key worker – implement teleconferencing for meetings 2. Where an individual has recently visited these countries, they should self / home isolate themselves until further notice from the government (lockdown measures continue to apply) 3. Please continue to follow any further national government advice provided 4. Where an occupational health (OH) service provider has been appointed, please seek additional advice or concerns through this service 5. All persons to limit their use of public transport. Where travel is essential, please use private single occupancy where possible				Individual workers			
Access / egress to site				Where possible, please consider and implement the following practices: 1. Stop all non-essential visitors 2. Introduce staggered start and finish times to reduce congestion and contact at all times 3. Monitor site access points to enable social distancing – you may need to change the number of access points, either increase to reduce congestion or decrease to enable monitoring 4. Remove or disable entry systems that require skin contact e.g. fingerprint scanners 5. Require all workers to wash or clean their hands before entering or leaving the site 6. Allow plenty of space (two metres) between people waiting to enter site				Individual workers			

					Likelihood						
					Very Unlikely	Unlikely	Possible	Likely	Very Likely		
					Severity	Negligible	1	2	3	4	5
						Minor	2	4	6	8	10
						Moderate	3	6	9	12	15
Major	4	8	12	16		20					
Extreme	5	10	15	20	25						
Hazard	L	S	Risk	Control Measures	L	S	RR	Persons at Risk			
				7. Regularly clean common contact surfaces in reception, office, access control and delivery areas e.g. scanners, turnstiles, screens, telephone handsets, desks, particularly during peak flow times 8. Reduce the number of people in attendance at site inductions and consider holding them outdoors wherever possible 9. Drivers should remain in their vehicles if the load will allow it and must wash or clean their hands before unloading goods and materials.							
Inclement weather – cold temperature allows disease to survive				1. All persons to dress appropriately for the weather 2. Welfare facilities provided to shelter from the elements 3. Maintain good hygiene measures at all times 4. Appropriate respiratory protective equipment (RPE) masks to be considered as last resort however face fit test (FFT) must be completed to ensure mask effectiveness. It is advised to speak to your H&S competent person on these matters and supplies should be reserved for medical staff as it has been documented that supplies have been difficult to procure				Individual workers			
Poor hygiene				1. Wash your hands thoroughly and regularly. Use soap and water for at least 20 seconds. Use alcohol-based hand sanitiser if soap and water is not available and hand washing technique to be adopted as directed 2. Avoid touching your face/eyes/nose/mouth with unwashed hands and cover your cough or sneeze with a tissue then throw it in the bin. 3. Provide additional hand washing facilities to the usual welfare facilities if a large spread out site or significant numbers of personnel on site 4. Regularly clean the hand washing facilities and check soap and sanitiser levels 5. Provide suitable and sufficient rubbish bins for hand towels with regular removal and disposal. 6. Sites will need extra supplies of soap, hand sanitiser and paper towels and these should be securely stored.				Individual workers			

							Likelihood				
							Very Unlikely	Unlikely	Possible	Likely	Very Likely
					Severity	Negligible	1	2	3	4	5
						Minor	2	4	6	8	10
						Moderate	3	6	9	12	15
						Major	4	8	12	16	20
Extreme	5	10	15	20	25						
Hazard	L	S	Risk	Control Measures			L	S	RR	Persons at Risk	
				7. Restrict the number of people using toilet facilities at any one time e.g. use a welfare attendant. Wash hands before and after using the facilities. Enhance the cleaning regimes for toilet facilities particularly door handles, locks and the toilet flush. Portable toilets should be avoided wherever possible, but where in use these should be cleaned and emptied more frequently.							
Canteen - exposure from large numbers of persons				1. The workforce should also be required to stay on site once they have entered it and not use local shops. 2. Dedicated eating areas should be identified on site to reduce food waste and contamination 3. Break times should be staggered to reduce congestion and contact at all times 4. Hand cleaning facilities or hand sanitiser should be available at the entrance of any room where people eat and should be used by workers when entering and leaving the area 5. The workforce should be asked to bring pre-prepared meals and refillable drinking bottles from home 6. Workers should sit 2 metres apart from each other whilst eating and avoid all contact 7. Where catering is provided on site, it should provide pre-prepared and wrapped food only - Payments should be taken by contactless card wherever possible and Crockery, eating utensils, cups etc. should not be used 8. Drinking water should be provided with enhanced cleaning measures of the tap mechanism introduced 9. Tables should be cleaned between each use 10. All rubbish should be put straight in the bin and not left for someone else to clear up 11. All areas used for eating must be thoroughly cleaned at the end of each break and shift, including chairs, door handles, vending machines and payment devices.						Individual Workers	

					Likelihood							
					Very Unlikely		Unlikely	Possible	Likely	Very Likely		
					Severity	Negligible	1	2	3	4	5	
						Minor	2	4	6	8	10	
						Moderate	3	6	9	12	15	
Major	4	8	12	16		20						
					Extreme	5	10	15	20	25		
Hazard	L	S	Risk	Control Measures					L	S	RR	Persons at Risk
Use of Changing facilities, showers and drying rooms				1. Introduce staggered start and finish times to reduce congestion and contact at all times 2. Introduce enhanced cleaning of all facilities throughout the day and at the end of each day 3. Consider increasing the number or size of facilities available on site if possible 4. Based on the size of each facility, determine how many people can use it at any one time to maintain a distance of two metres 5. Provide suitable and sufficient rubbish bins in these areas with regular removal and disposal.								Individual workers