



**THE SOUTH AFRICAN NATIONAL
ROADS AGENCY SOC LIMITED**

CONTRACT SANRAL N.001-192-2018/1

**CONTRACT TITLE :
FOR THE OPERATIONS AND
MAINTENANCE OF N1 SOUTH AND R30 TOLL
PLAZAS ON NATIONAL ROUTE N1 AND R30**

PROJECT DOCUMENT

BASE DATE: January 2023

TENDER DOCUMENT

**VOLUME 3
BOOK...1...OF...1...**

**CHIEF EXECUTIVE OFFICER
SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED
48 TAMBOTIE AVENUE
VAL DE GRACE
PRETORIA, 0184**

NAME OF TENDERER:

Set sequential number



THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

THIS DOCUMENT IS ISSUED BY SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED
UNDER THE DIRECTION OF THE REGIONAL MANAGER EASTERN REGION

The South African National Roads Agency SOC Ltd

58 Van Eck Place
Mkondeni
Pietermaritzburg
3201

Tel: (033) 392 8100

LIST OF CONTRACT DOCUMENTS

The following documents form part of this Agreement:

VOLUME 1: CONDITIONS OF CONTRACT

<i>Volume 1, Book 1</i>	<i>Conditions of Contract for Design, Build and Operate Projects (2008), issued by the Fédération Internationale des Ingénieurs – Conseils (FIDIC) which the Tenderer shall purchase himself</i>
<i>Volume 1, Book 2</i>	<i>Particular Conditions of Contract (October 2010)</i>

VOLUME 2: EMPLOYER'S REQUIREMENTS

<i>Volume 2, Book 1a</i>	<i>Standard Specifications for Operations and Maintenance of CTROM Projects: Part A: Glossary of Terms (October 2010) and Part B: Generic Scope of Works (October 2010)</i>
<i>Volume 2, Book 2a</i>	<i>Standard Specifications for Operations and Maintenance of CTROM Projects: General (October 2010)</i>
<i>Volume 2, Book 3</i>	<i>Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment (October 2010)</i>
<i>Volume 2, Book 4a</i>	<i>Standard Specifications for Operations and Maintenance of CTROM Projects: Toll Systems (October 2010)</i>
<i>Volume 2, Book 5</i>	<i>Standard Specifications for Operations and Maintenance: Electronic Toll Collection (ETC) (September 2010)</i>
<i>Volume 2, Book 6a</i>	<i>Standard Specifications for Operations and Maintenance of CTROM Projects: Performance Measurement (October 2010)</i>
<i>Volume 2, Book 7a</i>	<i>Standard Specifications for Operations and Maintenance of CTROM Projects: Payment Methodology and Description of Payment Items (October 2010)</i>
<i>Volume 2, Book 8a</i>	<i>Standard Specifications for Operations & Maintenance of CTROM Projects: ETC Interoperability – Business Rules (October 2010)</i>

VOLUME 3: PROJECT DOCUMENT

The Project Document, containing the tender notice, Conditions of Tender, Tender Data, Returnable Schedules, general and particular conditions of contract, project specifications, Pricing Schedule, Form of offer and Site Information is issued by the Employer (see note 3 below). The Employer's Form of Acceptance and any correspondence from the selected tenderer, performance security-demand guarantee, and all addenda issued during the period of tender will also form part of this volume once a successful tenderer has been appointed.

The conditions of tender are the standard conditions of tender as contained in Annexure C of the STANDARD FOR UNIFORMITY IN ENGINEERING AND CONSTRUCTION WORKS CONTRACTS, AUGUST 2019: Standard conditions of tender, document, which the tenderer may download himself from the CIDB website

<https://www.cidb.org.za/download/100/procurement-documents-templates-and-guidelines/6157/standard-for-uniformity-august-2019.pdf>

VOLUME 4: PROJECT INFORMATION DOCUMENT

<i>Volume 4</i>	<i>Project Information Document</i>
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Notes to tenderer:

1. Volume 1 is obtainable from CESA, PO Box 68482, Bryanston, 2021. Tel: (011) 463 2022 Fax: (011) 463 7383, email: general@cesa.co.za
2. Volume 2 is issued in electronic format (PDF) on the SANRAL's website: <https://www.nra.co.za/service-provider-zone/tenders/open-tenders/>.
3. Volume 3 is issued at tender stage in electronic format on SANRAL website (link below) and contains the following files:

<https://www.nra.co.za/service-provider-zone/tenders/open-tenders/>.

- The full Project Document in PDF format (excluding the standard conditions of tender)
- The returnable forms in Ms Word format
- The pricing data in Ms Excel format

The standard conditions may be downloaded from the CIDB website on the following link:

<https://www.cidb.org.za/download/100/procurement-documents-templates-and-guidelines/6157/standard-for-uniformity-august-2019.pdf>

At contract stage Volume 3 will be a bound signed paper copy containing the following documents:

- Returnable schedules relevant to the project
- Agreements and Contract Data
- Pricing Data
- Scope of Work
- Site Information

4. **SUBMISSION OF TENDER** – of the contract documents, only the following elements of Volume 3 needs to be submitted in a neatly bound file and in the following order:
 - a) Technical Proposal (USB Flash Drive and printed and bound hard copy enclosed in one Envelope)
 - All Returnable schedules listed in T2.1 List for Returnable Schedule for inclusion in the Technical Proposal. The Returnable Schedules shall be completed in the electronic format stipulated in Returnable Form E1 and stored in a USB Flash Drive and printed and bound hard copy
 - b) Financial (USB Flash Drive/CD enclosed in one Envelope)

All Returnable schedules listed in T2.1 List for Returnable Schedule for inclusion in the Financial Proposal. The Returnable Schedules shall be completed in the electronic format stipulated in Returnable Form E1 and stored in a USB Flash Drive.

Both envelopes shall be sealed in one envelope and submitted in accordance with instructions as stated in the Tender Data.

Information provided by a tenderer over and above the above elements of volume 3 shall be treated as information only and will only be bound into the document if the tenderer notes on Form A4: Schedule of Variations or deviations that the information has a bearing on the tender price.

5. For alternative offers the tenderer shall comply with instructions of item 4.
6. Volume 3 of a Nominated Subcontract for the Design Build, Operations and Maintenance of the Toll System will also be issued at tender stage in electronic format..

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PART T1: TENDERING PROCEDURES

Part T1: Tendering Procedures

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T1.1 TENDER NOTICE AND INVITATION TO TENDER (INCORPORATING SBD1)

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

CLOSING DATE (at 11:00): FRIDAY, 17 February 2023

The South African National Roads Agency SOC Limited (SANRAL) invites tenders for the Operations and Maintenance of N1 South and R30 Toll Plazas on the National Route N1 and R30. This project is in the provinces of Gauteng, and Free State in the District Municipalities of Lejeweletswa, Mangaung, Fezile Dabi Emfuleni and City of Johannesburg. The approximate duration is 73.5 months including 6 weeks for the Establishment Period. The approximate duration includes the Design-Build and Operation Service Period.

Note: the successful tenderer shall be required to appoint a Nominated Subcontractor that will be nominated by SANRAL, for the Design Build Operations and Maintenance of the Toll System for this project.

Only Tenderers who have a B-BBEE contributor status level of 1, 2, 3 or 4, are registered on the National Treasury Central Supplier Database (CSD) and meet the minimum requirements for **Tenderer's relevant experience** as stated in clause C.2.1(c) of the Tender Data are eligible to tender.

It is a requirement of this project that the successful tenderer subcontract a minimum of thirty percent (30%) of the work by the end of the contract to Targeted Enterprise(s) as defined in the Contract Data.

TENDER DOCUMENTS

Tender documents are available from 14 December 2022 at no cost in electronic format downloaded from the SANRAL's website by the following link: https://www.nra.co.za/sanral-tenders/status?region_id=national.

Tenderers must have access to MS Office ©2013 and Acrobat Adobe ©9.0, or similar compatible software.

Tenderers must submit, via email, the duly completed Form A1.1 Certificate of Intention to Submit a Tender by 16 January 2023. Failure to submit this certificate would result in the tenderer not receiving addenda or additional issued information and may result in the tenderer being non-responsive

TENDERER'S MEETING

A non-compulsory clarification briefing meeting will be held at Grasmere mainline plaza, Control building, on 20 January 2023 at 14:00.

A tenderer's representative cannot represent more than one tenderer at the tender briefing meeting.

COMPLETION AND DELIVERY OF TENDERS

The closing time for receipt of tenders is 11h00 on 10 February 2023.

Telegraphic, telephonic, telex, email, facsimile and late tenders will not be accepted.

Tenders may only be submitted in the format as stated in the Tender Data.

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

Queries relating to issues arising from these documents may be addressed to:

E-mail: ProcurementER4@sanral.co.za

SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

T1.2 TENDER DATA

The conditions of tender are the standard conditions of tender as contained in Annexure C of the CIDB STANDARD FOR UNIFORMITY IN ENGINEERING AND CONSTRUCTION WORKS CONTRACTS as per Government Notice No. 423 published in Government Gazette No. 42622 of 08 AUGUST 2019 and as amended from time to time.

<https://www.cidb.org.za/wp-content/uploads/2021/07/Standard-for-Uniformity-August-2019.pdf>

The standard conditions of tender make several references to the tender data for details that apply specifically to this tender. The tender data shall have precedence in the interpretation of any ambiguity or inconsistency between the tender data and the standard conditions of tender.

Each item of data given below is cross-referenced to the clause marked "C" in the above-mentioned Standard Conditions of Tender.

Definitions

Add to the following to the definition:

Wherever reference is made in the documentation to bill of quantities it shall also mean schedule of quantities.

Wherever reference is made in the documentation to Contractor it shall also mean Service Provider or Operator.

Each item of data given below is cross-referenced to the clause in the standard conditions of tender to which it mainly applies.

Clause Number	Data
C.1	GENERAL
C.1.1	Actions The Employer is The South African National Road Agency SOC Limited (SANRAL). The Employer's domicilium citandi et executandi (permanent physical business address) is: 48 Tambotie Avenue Val De Grace, Pretoria, 0184 The Employer's address for communication relating to this project is: Tel: +27 (0) 33 392 8100 DELIVERY Eastern Region Office South African National Roads Agency SOC Limited 58 Van Eck Place Mkondeni

	Pietermaritzburg 3201
C.1.2	<p>Tender Documents</p> <p>The tender documents issued by the Employer comprise:</p> <p>VOLUME 1 CONDITIONS OF CONTRACT</p> <p>Book 1 Contract for Design, Built and Operate Projects (2008) published by Fédération Internationale des Ingénieurs-Conseils (FIDIC)</p> <p>Book 2 Particular Conditions of Contract (October 2010)</p> <p>VOLUME 2 EMPLOYERS REQUIREMENTS: STANDARD SPECIFICATIONS</p> <p>Book 1a Standard Specifications for Operations and Maintenance of CTROM Projects: Part A: Glossary of Terms and Part B: Generic Scope of Works (October 2010)</p> <p>Book 2a Standard Specifications for Operations and Maintenance of CTROM Projects: General (October 2010)</p> <p>Book 3 Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment (October 2010)</p> <p>Book 4a Standard Specifications for Operations and Maintenance of CTROM Projects: Toll Systems (October 2010)</p> <p>Book 5 Standard Specifications for Operations and Maintenance of CTROM Projects: Electronic Toll Collection (ETC) (September 2010)</p> <p>Book 6a Standard Specifications for Operations and Maintenance of CTROM Projects: Performance Measurement (October 2010)</p> <p>Book 7a Standard Specifications for Operations and Maintenance of CTROM Projects: Payment Methodology and Description of Payment Items (October 2010)</p> <p>Book 8a Standard Specifications for Operations and Maintenance of CTROM Projects: ETC Interoperability - Business Rules (October 2010)</p> <p>VOLUME 3 PROJECT DOCUMENT</p> <p>PART T1 TENDERING PROCEDURES</p> <p>T1.1 Tender Notice and Invitation to Tender</p> <p>T1.2 Tender Data</p> <p>PART T2 RETURNABLE SCHEDULES</p> <p>T2.1 List of Returnable Schedules</p> <p>T2.2 Returnable Schedules</p> <p>PART C1 AGREEMENT AND CONTRACT DATA</p> <p>C1.1 Form of Offer and Acceptance</p> <p>C1.2 Contract Data</p> <p>C1.3 Particular Conditions - Part B: Special Provisions</p> <p>C1.4 Other Standard Forms</p> <p>PART C2 PRICING DATA</p> <p>C2.1 Pricing Instructions</p> <p>C2.2 Schedule of Payments/Cost Matrix</p> <p>PART C3 SCOPE OF WORK</p>

	<p>C3.1 Project Description</p> <p>C3.2 Particular Specifications for Operations and Maintenance</p> <p>C3.3 Environmental Management Plan</p> <p>C3.4 Occupation Health and Safety</p> <p>C3.5 Risk Assessment Plan</p> <p>PART C4 SITE INFORMATION</p> <p>PART D Stakeholder and Community Liaison and Targeted Labour and Targeted Enterprises Utilisation and Development</p> <p>PART E ANNEXURES</p> <p>VOLUME 4 PROJECT INFORMATION DOCUMENT</p>
C.1.4	<p>Communication and employer's agent</p> <p>The Employer's Agent during the tender period can be contacted at SANRAL Procurement Office.</p> <p>They can be contacted at: ProcurementER4@sanral.co.za</p>
C.1.6.2	<p>Competitive negotiation procedure</p> <p>Clause C.1.6.2 is not applicable.</p>
C.1.6.2.1	<p>Option 1</p> <p>Price negotiations.</p> <p>(a) If the price offered by a tenderer scoring the highest points is not market related, the Organ of state may not award the tender to that tenderer.</p> <p>(b) The Organs of state may –</p> <p style="padding-left: 40px;">Negotiate a market related price with the tender scoring the highest points or cancel the tender;</p> <p style="padding-left: 40px;">If the tenderer does not agree to a market related price, negotiate a market related price with the tenderer scoring the second highest points or cancel the tender;</p> <p style="padding-left: 40px;">If the tenderer scoring the second highest points does not agree to a market related price, negotiate a market related price with the tenderer scoring the third highest points or cancel the tender;</p> <p>(c) If a market related price is not agreed as envisaged in paragraph b(iii), the organ of state must cancel the tender.</p>
C.2	Tenderer's Obligations
C.2.1	<p>Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:</p> <p>a) Prequalification Criteria for Preferential Procurement (Form C1.1)</p> <p>A B-BBEE contributor status level of 1, 2, 3 or 4, are eligible to tender.</p> <p style="padding-left: 40px;">The tenderer shall submit a valid B-BBEE certificate or Sworn Affidavit (where applicable) in compliance with the requirements of Tender Data C.3.11., as proof of eligibility.</p>

	<p>The tender will be declared non-responsive:</p> <ul style="list-style-type: none"> a) If the B-BBEE Certificate is not submitted or submitted B-BBEE certificate is not valid; or b) If the B-BBEE Certificate is not submitted, and the tenderer has claimed a status point level; or c) If tenderer failed to submit a valid B-BBEE Certificate but claimed status level points; or d) If the tenderer submits a B-BBEE Certificate that is expired - but did claim preference points; or e) If the tenderer submits a B-BBEE Certificate that does not comply with requirements; or f) If the tenderer submits the Scorecard assessment report only; or g) If, in a case of a Joint Venture, the tenderer submits an unincorporated consolidated Joint Venture B-BBEE Certificate which is not project specific; or h) If, in a case of a Joint Venture, the tenderer submits an unincorporated consolidated Joint Venture B-BBEE Certificate which does not have a contract description and / or a tender number; or i) If a tenderer only submits one B-BBEE certificate in one tender submission, where multiple tenders were issued by SANRAL; or j) If the BBEE certificate or Sworn Affidavit is not submitted or not valid; or k) for a Sworn Affidavit; if <ul style="list-style-type: none"> i. EME (not start-up) submits a Sworn Affidavit with total revenue above R3 million (contractors) instead of a B-BBEE Certificate. or ii. QSE submits Sworn Affidavit (consultants and contractors) instead of a B-BBEE Certificate <p>b) National Treasury Central Supplier Database (Form A3.4)</p> <p>Tenderers, or in the event of a Joint Venture, each member of the Joint Venture, shall be registered on the National Treasury Central Supplier Database at the closing date for tender submissions. Tenders received from such tenderers who do not comply with this requirement, will be declared non-responsive.</p> <p>c) Tenderer's Relevant Experience (Form D5.1/D5.1)</p> <p>The tenderer must be able to show that he has relevant experience by providing information of at least:</p> <p>3 (three) similar or relevant projects, but not necessarily a toll project(s), each to the value of at least R250 million</p> <p>which has either started or been completed within the last 15 (fifteen) years, or which is still ongoing (subject to the provisions of Form D5.1 and or Form D5.2). The relevant experience must be in at least 2 of the following key areas of which one is required to be <i>i) Operations and maintenance of an IT / technology project (but not necessarily toll)</i> (Form D5.1 & Form 5.2):</p> <ul style="list-style-type: none"> i). Operations and maintenance of an IT / technology project (but not necessarily toll); ii). Multi-disciplinary project management; iii). Revenue stream management; iv). Account hosting and / or management; v). Customer Services; <p>Failure to satisfy all the eligibility criteria shall result in a non-eligible tender.</p>
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C.2.2	<p>Cost of tendering</p> <p>Tender documents are available from SANRAL website at no cost.</p>
C.2.6	<p>Acknowledge addenda</p> <p>Failure to apply instructions contained in addenda issued by the Employer will render a Tenderer's offer non-responsive in terms of Condition of Tender C.3.8. Test for Responsiveness.</p>
C.2.7	<p>Clarification meeting</p> <p>A non-compulsory clarification briefing meeting will be held at Grasmere mainline plaza, Control building, on 20 January 2023 at 14:00.</p> <p>A tenderer's representative cannot represent more than one tenderer at the tender clarification briefing meeting.</p> <p>The onus rests with the tenderer to ensure that the representative attending the briefing session is appropriately qualified to understand all directives and clarifications given in the briefing session.</p> <p>The signature on the duly completed and signed Form A1 shall be considered proof that the tenderer attended the whole clarification briefing session and clearly understood all directives and clarifications given in the session.</p>
C.2.8	<p>Seek clarification</p> <p>Request clarifications at least 12 (twelve) working days before the closing date.</p>
C.2.9	<p>Insurance</p> <p>No insurance is provided by the Employer.</p>
C.2.10	<p>Pricing the tender offer</p>
C.2.10.3	<p>The rates and prices shall be adjusted as specified in the conditions of contract clause 13.8 Adjustments for Changes in Costs</p>
C.2.10.4	<p>Tenderers are required to state the rates, amounts and currencies in Rand.</p>
C.2.12	<p>Alternative tender offers</p>
C.2.12.1	<p>An alternative tender offer shall only be considered from a tenderer whose postulated tender offer is the preferred tender</p> <p>A tenderer wishing to submit an alternative offer (excluding alternative offers of different contract duration, retention guarantees, discounted offers or different compliant material sources) shall first apply to the Employer's agent for confirmation that the Employer's standards and requirements envisaged in the design are not compromised or reduced. Such confirmation must have been provided by the Employer's agent in writing within 10 working days after receipt of the application but not later than 5 working days before the date and time of tender closing given in Tender Data clause C.2.15, or as extended by an addendum sent to all tenderers.</p>

	<p>Also, not acceptable as alternative offers are alterations to contingency pay items provided in the bill of quantities (pricing schedule), fixed prices for individual items or a fixed price contract.</p> <p>If an alternative proposal is confirmed to be acceptable, calculations, drawings and all other pertinent technical information and characteristics as well as proposed modification of, or alternative to, the Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals.</p> <p>Calculations must be set in clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal.</p> <p>Acceptance of an alternative offer will mean acceptance in principle of the offer. It will be an obligation of the contract with the tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements.</p>
C.2.13	Submitting a tender offer
C.2.13.2	<p>The returnable documents shall be electronically completed in their entirety, submitted on the issued software format or fully compatible format, unless otherwise specified.</p> <p>Submission in the tender box:</p> <p>Submit the tender offer electronically on a flash drive and printed hard copy of Form of Offer and summary of pricing schedule.</p> <p>(In the relevant MS Word 2013 and MS Excel 2013 format as issued, and not in .pdf format, except where so specified.)</p>
C.2.13.2	The tenderer is required to submit all certificates as listed in the Schedule of Tender Compliance (Form F1) in the stipulated format.
C.2.13.3	<p>Submission in the tender box</p> <p>The tenderer is required to upload all certificates as listed in the List of Returnable Schedules as scanned copies, in .pdf format, on the flash drive</p> <p>Only the following needs to be submitted: Volume 3 – Scanned on a flash drive The following information has to be submitted on flash drive: The 1st file in pdf format which contains:</p> <ul style="list-style-type: none"> • Scanned copy of Form of Offer (pdf) and printed hardcopy of Form of Offer • Scanned copies of all returnable schedules and attachments (pdf) <p>A 2nd file in Excel format</p> <ul style="list-style-type: none"> • Completed pricing schedule (scanned copy in .pdf and copy in Excel) and printed hardcopy of Summary of Pricing Schedule <p>Alternative offers will not be considered.</p> <p>In the event of any discrepancy between the contents of the electronically priced schedule and the electronically provided pricing schedule in pdf format, the contents of the provided pdf format shall be taken as the valid contents. For the information provided by the tenderer as part of his submission, e.g. rates, the signed print-out shall be taken as the valid submission.</p>

C.2.13.6	<p>A two-envelope procedure will apply as follows:</p> <p>Submission in the tender box</p> <p><i>A folder is provided marked “TECHNICAL PROPOSAL”</i> <i>Ensure that all returnable schedules listed in T2.1 List of Returnable Schedules for inclusion in the Technical Proposal and listed in the Technical Proposal folder are electronically completed on a USB Flash Drive. Wherever it is a requirement to attach certificates or letters to the returnable schedules, these should be scanned in, on the Flash Drive in .pdf format. Contents of USB Flash Drive shall be printed and bound in hard copy.</i></p> <p><i>The completed Flash Drive, the printed and bound hard copy should be marked with the tenderer’s company name, the project number and description and marked “TECHNICAL PROPOSAL”.</i> <i>Scan and insert a valid B-BBEE certificate.</i> <i>Electronically sign the declaration in the folder.</i> <i>Insert the electronically completed Flash Drive, the printed and bound hard copy in an envelope marked “TECHNICAL PROPOSAL”.</i></p> <p><i>A folder is provided marked “FINANCIAL PROPOSAL”</i> <i>Ensure that all returnable schedules listed in T2.1 List of Returnable Schedules for inclusion in the Financial Proposal and listed in the Financial Proposal folder are electronically completed on a Flash Drive (Contract Data and Pricing Schedule). Wherever it is a requirement to attach letters or certificates to the returnable schedules, these should be scanned in, on the USB Flash drive in .pdf format. Contents of Flash Drive shall be printed and bound in hard copy.</i></p> <p><i>The completed Flash Drive, the printed and bound hard copy should be marked with the tenderer’s company name, the project number and description and marked “FINANCIAL PROPOSAL”.</i></p> <p><i>Electronically sign the declaration in the folder.</i> <i>Complete and electronically sign the Form of Offer and scan into the folder. A draft copy of this form is provided.</i> <i>Scan and insert a copy of the Summary of Pricing Schedule into the folder.</i> <i>Insert the electronically completed Flash Drive and the printed and bound hard copy in an envelope marked “FINANCIAL PROPOSAL – DO NOT OPEN WITH TECHNICAL PROPOSAL”.</i></p> <p>3. <i>Each envelope shall state on the outside the Employer’s address, contract number and title as well as the Tenderer’s name, authorised representative’s name, postal address and contact telephone numbers.</i></p> <p>4. <i>Seal both envelopes in an outer envelope with the words “TENDER” clearly marked and bearing the Employer’s name, contract number and description as well as the Tenderer’s authorised representative’s name, postal address and contact details.</i></p> <p><i>If a tenderer submits:</i> <i>One envelope with one document or one Flash Drive and printed hard copy (financial and technical); or</i> <i>Incorrectly labelled envelopes where the Financial Offer is labelled Technical, and the Technical Offer is labelled financial.</i> <i>The tender will be declared non-responsive.</i></p>
C.2.14	<p>Information and data to be completed in all respects</p> <p>Provided that the omission is not a material omission, the Employer reserves the right to condone the omission and may waive any nonconformities in the tender.</p>

	<p>Provided that the omission is not a material omission, the Employer reserves the right to condone the omission and may request the tenderer to submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the tender related to documentation requirements.</p>
C.2.15	Closing time
C.2.15.1	<p>Submission in tender box</p> <p>The Employer's address for delivery of tender offers and identification details to be shown on each tender offer package are:</p> <p>Location of tender box: Reception Area Physical address: 58 Van Eck Place Mkondeni Pietermaritzburg 3201</p> <p>Identification details: Place the tender offer and flash drive in a package marked with the tenderer's company name, the project number and description: SANRAL N.001-192-2018/1 FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30</p> <p>Tenders must be submitted during hours (09:00 to 16:00) Monday to Friday at the Employer's address.</p> <p>It is in the tenderer's interest to ensure that the delivery of the tender offer is recorded in the Employer's tenders received register and deposited in the tender box.</p>
C.2.16	Tender offer validity
C.2.16.1	The tender offer validity period is 24 weeks
C2.16.2	Should the tenderer not accept the validity extension or if the tenderer does not withdraw a condition attached to a conditional acceptance, this shall result in a non-responsive tender or the tender is considered to have made an election to exclude itself from the tender process.
C.2.16.3	<p>Where a tenderer, at any time after the opening of his tender offer but prior to entering into a contract based on his tender offer:</p> <ul style="list-style-type: none"> a) withdraws his tender; b) gives notice of his inability to execute the contract in terms of his tender; or c) fails to comply with a request made in terms of C.2.17, C.2.18 or C.3.9, <p>such tenderer shall be barred from tendering on any of the Employer's tenders for a period to be determined by the Employer, but not less than six (6) months from a date determined by the Employer. This sanction also applies to tenders under evaluation and not yet awarded. This sanction does not apply to tenders under evaluation where a request for extension of the validity period was not accepted by the tenderer. The Employer may fully or partly exempt a tenderer from the provisions of this condition if he is of the opinion that the circumstances justify the exemption.</p>
C.2.18	Provide other material

C.2.18.1	Any additional information requested under this clause must be provided within 5 (five) working days of date of request.
C.2.19	<p>Inspections, tests and analysis</p> <p>Access shall be provided for the following inspection of the Works:</p> <p>Toll plaza buildings and lane areas.</p> <p>The documents indicating all the requirements and procedures as specified are available in Volume 4 of this Tender document.</p> <p>Contact the Employer's Agent's at ProcurementER4@sanral.co.za to arrange for a site visit to visit the toll plaza(s).</p>
C.3	The Employer's undertakings
C.3.1	Responding to requests from the tenderer
C.3.1.1	<p>The employer shall respond to clarifications received up to 12 (twelve) working days before tender closing date.</p> <p>The Employer shall respond to any clarifications from the tenderers emanating from the addenda until 3 working days before tender closing date.</p>
C.3.2	<p>Issue Addenda</p> <p>The employer shall issue addenda until 10 (ten) working days before tender closing time.</p>
C.3.4	Opening of tender submissions
C.3.4.1	<p>The time for opening of the tender offer (TECHNICAL PROPOSALS) via live streaming or at Eastern Region Offices are:</p> <p>Time: 11h00 on 17 February 2023 Location:</p> <p>The South African National Roads Agency SOC Limited 58 Van Eck Place Mkondeni Pietermaritzburg 3201</p> <p>A Live Streaming link will be shared with service providers that submitted A1.1 forms. No physical attendance will be allowed.</p>
C.3.5	<p>Two-envelope system</p> <p>The time for opening of the Financial offers via live streaming shall be communicated to all tenderers having achieved the minimum number of points for quality as prescribed.</p> <p>The financial offer of all tenderers who failed to achieve the minimum number of points for quality shall be returned unopened.</p> <p>Reasons for non-responsive/not achieving the threshold will only be communicated when the tender process is concluded, in terms of Clause C.3.16 of the Tender Data. The scores</p>

	obtained for the non-financial proposals will not be announced at the opening of the financial offers /proposals.”
C.3.7	<p>Grounds for rejection and disqualification</p> <p>Prior to disqualification, the Employer shall inform the tenderer and give the tenderer an opportunity to make representations within 14 (fourteen) days as to why the tender submitted should not be disqualified and as to why the tenderer should not be restricted by the National Treasury from conducting any business with any organ of state for a period not exceeding 10 years.</p> <p>In the event of disqualification, the Employer may, at its sole discretion, claim damages from the tenderer and impose a specified period during which tender offers will not be accepted from the offending tenderer and the Employer shall inform the National Treasury.</p>
C.3.8	Test for responsiveness
C.3.8.2	<p>A Substantially responsive tender is a tender in which all of the material information and documentation submitted at close of tender contains non-material and non-conformities to the bid specifications but are not related to price. The correction of any such documentation or information, or the condonement for the non-inclusion of any such document or information may not be prejudicial towards the offer and claimed preference of any responsive tender or be construed to be giving an unfair advantage to any tender.</p> <p>A responsive tender is also one that conforms to all the terms, conditions, and scope of work of the tender documents, without material omissions. The test for a material omission is the same as the test for a material deviation or qualification.</p> <p>SANRAL will cancel the tender should all tenders be non-responsive in terms of Clause C.3.8 and no negotiations will be conducted</p>
C.3.9.	Arithmetical errors, omissions, discrepancies and imbalanced unit rates
C.3.9.1	Check responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount appearing in the Summary of Schedule of Payments/Cost Matrix shall govern.
C.3.9.3	<p>Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers for:</p> <ul style="list-style-type: none"> a) The gross misplacement of the decimal point in any unit rate; b) Omissions made in completing the pricing schedule or Schedule of Payments/Cost Matrix; or c) Arithmetic errors in: <ul style="list-style-type: none"> i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or ii) the summation of the prices. d) imbalanced unit rates. <p>Notify shortlisted tenderers of all errors, omissions or imbalanced rates that are identified in their tender offers and either confirm the tender offers as tendered or accept the corrected total prices.</p>
C.3.9.4	Where the tenderer elects to confirm the errors, omissions or re-balancing of imbalanced rates the tender offer shall be corrected as follows:

	<p>a) If bills of quantities or Schedule of Payments/Cost Matrix apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the unit rate shall govern, and the line item total shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted, and the unit rate shall be corrected.</p> <p>b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall be corrected.</p> <p>c) Where the unit rates are imbalanced, the tenderer shall adjust such rates by increasing or decreasing them and selected others while retaining the total of the prices derived after any other corrections made under (a) and (b) above.</p> <p>Where there is an omission of a line item, no correction is possible, and the offer may be declared non-responsive.</p> <p>Declare as non-responsive and reject any offer from a tenderer who elects not to accept the corrections proposed and subject the tenderer to the sanction under C.2.16.2.</p> <p>The tenderer is required to submit balanced unit rates for rate only items in the pricing schedule. The rates submitted for these items will be taken into account in the evaluation of tenders.</p> <p>If the Form of Offer is submitted but the Pricing Schedule is omitted, where rate only items are applicable; or If a signed Form of Offer is submitted with an incomplete pricing schedule (no summary to tender) that does not balance back to the Form of Offer and the Pricing schedule is incomplete; or If a signed Form of Offer is submitted with an incomplete pricing schedule that does not balance back to the Form of Offer and only summary of Pricing Schedule submitted; then the rates cannot be evaluated and the tender shall be declared non-responsive</p>
C.3.11	<p>Evaluation of tender offers</p> <p>The tender will be evaluated in terms of Preferential Procurement Policy Framework Act (PPPFA, Act 5 of 2000).</p> <p>i. 80/20 preference point system for acquisition of goods and services for Rand value equal to or above R30 000 and up to R50 million</p> <p>The following formula will be used to calculate the points out of 80 for price:</p> $Ps = 80(1 - (Pt - Pm) / Pm)$ <p>Where:</p> <ul style="list-style-type: none"> - Ps is the points scored for price of tender under consideration. - Pt is the price of the tender under consideration; and - Pm is the price of the lowest acceptable tender. <p>ii. 90/10 preference point system for acquisition of goods and services for Rand value above R50 million</p>

The following formula will be used to calculate the points out of 90 for price:

$$P_s = 90(1 - (P_t - P_m) / P_m)$$

Where:

- P_s is the points scored for price of tender under consideration.
- P_t is the price of the tender under consideration; and
- P_m is the price of the lowest acceptable tender.

Points are based on a tenderer's scorecard measured in terms of the Broad-Based Black Economic Empowerment Act (B-BBEE, Act 53 of 2003 as amended in Act 46 of 2013) and the Preferential Procurement Policy Framework Act (PPPFA, Act 5 of 2000).

The following table must be used to calculate the points out of 20 or 10 for B-BBEE:

B-BBEE Status Level of contributor	Number of Points for financial value up to and including R50 000 000	Number of Points for financial value above R50 000 000
1	20	10
2	18	9
3	14	6
4	12	5
5	8	4
6	6	3
7	4	2
8	2	1
Non-compliant contributor	0	0

Eligibility for B-BEE points is subject to the following conditions:

1. A tenderer's scorecard shall be a B-BBEE Certificate issued in accordance with:

- The amended Codes of Good Practice published in Notice 303 of 2019 of Government Gazette No. 42496 issued on 31 May 2019 by the Department of Trade and Industry; or
- the amended Construction Sector Codes published in Notice 931 of 2017 of Government Gazette No. 41287 on 1 December 2017 by the Department of Trade and Industry. If Measured Entity operates in more than one sector or sub-sector, the scorecard for the sector or sub-sector in which the majority of its core activities (measured in terms of Annual Revenue) are located will be acceptable; or
- The Information and Communication Technology (ICT) Sector Codes (Government Gazette No. 40407); or
- The Financial Sector (Government Gazette No. 35914); or
- The Integrated Transport Sector Codes (Government Gazette No. 23511).

	<p>2. The scorecard shall be submitted as a certificate attached to Returnable Schedule Form C1; and</p> <p>3. The certificate shall:</p> <ul style="list-style-type: none"> - be valid at the tender closing date; and - have been issued by a verification agency accredited by the South African National Accreditation System (SANAS); or - be in the form of a sworn affidavit or a certificate issued by the Companies and Intellectual Property Commission in the case of an Exempted Micro Enterprise (EME) with a total annual revenue of less than R3 million if issued in accordance with the amended Construction Sector Codes published in Notice 931 of 2017 of Government Gazette No. 41287 on 1 December 2017 by the Department of Trade and Industry; and - have a date of issue less than 12 (twelve) months prior to the original advertised tender closing date (see Tender Data C.2.15); and <p>4. A valid BBBEE Certificates shall contain:</p> <ul style="list-style-type: none"> - Name of enterprise as per enterprise registration documents issued by CIPC, and enterprise business address. - Value-Added Tax number, where applicable. - The B-BBEE Scorecard against which the certificate is issued, indicating all elements and scores achieved for each element. The actual score achieved must be linked to the total points as per the relevant Codes. - B-BBEE status with corresponding procurement recognition level. - The relevant Codes used to issue the B-BBEE verification certificate. - Date of issue and expiry (e.g. 9 June 2018 to 8 June 2019). Where a measured entity was subjected to a re-verification process, due to material change, the B-BBEE Verification Certificate must reflect the initial date of issue, date of re-issue and the initial date of expiry. Re-verification does not extend the lifespan of the B-BBEE Verification Certificate. - Financial period which was used to issue the B-BBEE Verification Certificate. <p>5. A valid Sworn Affidavit shall contain:</p> <ul style="list-style-type: none"> - Name/s of deponent as they appear in the identity document and the identity number. - Designation of the deponent as either the director, owner or member must be indicated in order to know that person is duly authorised to depose of an affidavit. - Name of enterprise as per enterprise registration documents issued by the CIPC, where applicable, and enterprise business address. - Percentage black ownership, black female ownership and whether they fall within a designated group. - Indicate total revenue for the year under review and whether it is based on audited financial statements or management accounts. - Financial year-end as per the enterprise's registration documents, which was used to determine the total revenue. The valid format of the Financial Year-End is Day/Month/Year - B-BBEE status level. An enterprise can only have one status level. - Date deponent signed and date of Commissioner of Oath must be the same.
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	<p>- Commissioner of Oath cannot be an employee or ex officio of the enterprise because, a person cannot by law, commission a sworn affidavit in which they have an interest, and</p> <p>6. Compliance with any other information requested to be attached to Returnable Schedule Form C1; and</p> <p>7. In the event of a Joint Venture (JV), a project-specific consolidated (SANRAL project number indicated) valid B-BBEE verification certificate in the name of the JV, issued by a verification agency accredited by the South African National Accreditation System (SANAS) shall be submitted.</p> <p>Sub-Regulation 6(5) and 7(5)</p> <p>If the tender documents indicate that the tenderer intends subcontracting more than 25% of the value of the contract to any other person not qualifying for at least the status level that the tenderer qualifies for, 0 (zero) points for preference shall be awarded, unless the intended subcontractor is an EME that has the capability to execute the subcontract and the value of the work is below the EME threshold.</p> <p>Criteria for breaking deadlock</p> <p>If two or more tenders score the same number of points and these tenders are also the highest ranked tenders, the tender with the highest preference points will be recommended for award.</p> <p>If functionality is part of the evaluation process and two or more tenders score equal total points and equal preference points, the tender that scored the highest points for functionality will be recommended for award.</p> <p>If two or more tenders score the same number of financial points and preference points and these tenders are also the highest ranked tenders, the tenderer to be recommended for award will be decided by the drawing of lots.</p>																																								
C.3.11	<p>The quality criteria, maximum score and scoring mechanism in respect of each of the criteria are as follows:</p> <p>A quality scoring is as follows:</p> <table><tr><th colspan="2">Technical Scoring</th><th>Form</th><th>Max Score</th></tr><tr><td>1</td><td>Relevant Experience of the Tendering Entity</td><td>D5.1 & D5.2</td><td>50.00</td></tr><tr><td>2</td><td>Tendering Entity's QMS Credentials</td><td>D14</td><td>10.00</td></tr><tr><td>3</td><td>Development of Key Previously Disadvantaged Individuals (PDI) Staff and New Entrant</td><td>D14</td><td>20.00</td></tr><tr><td>4</td><td>Key Resources (CV's to be provided)</td><td>D4 & D14</td><td>30.00</td></tr><tr><td>5</td><td>Tendering Entity's Proposed Organisation and Staffing</td><td>D3, D4 & D14</td><td>15.00</td></tr><tr><td>6</td><td>Tendering Entity's Proposed Operations and Maintenance Plan</td><td>D14</td><td>90.00</td></tr><tr><td>7</td><td>Tendering Entity's Indicative Establishment Program</td><td>D7.1 & D14</td><td>20.00</td></tr><tr><td colspan="3">Total Score</td><td>240.00</td></tr><tr><td colspan="3">% Score (Minimum = 75%)</td><td>180.00</td></tr></table>	Technical Scoring		Form	Max Score	1	Relevant Experience of the Tendering Entity	D5.1 & D5.2	50.00	2	Tendering Entity's QMS Credentials	D14	10.00	3	Development of Key Previously Disadvantaged Individuals (PDI) Staff and New Entrant	D14	20.00	4	Key Resources (CV's to be provided)	D4 & D14	30.00	5	Tendering Entity's Proposed Organisation and Staffing	D3, D4 & D14	15.00	6	Tendering Entity's Proposed Operations and Maintenance Plan	D14	90.00	7	Tendering Entity's Indicative Establishment Program	D7.1 & D14	20.00	Total Score			240.00	% Score (Minimum = 75%)			180.00
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	The detailed scoring is explained in APPENDIX 1: BREAKDOWN OF QUALITY CRITERIA.
C.3.11 (f)	<p>Determine acceptability of preferred tenderer</p> <p>Price negotiations.</p> <p>(a) If the price offered by a tenderer scoring the highest points is not market related, the Organ of state may not award the tender to that tenderer.</p> <p>(b) The Organs of state may –</p> <ol style="list-style-type: none"> i. Negotiate a market related price with the tender scoring the highest points or cancel the tender; ii. If the tenderer does not agree to a market related price, negotiate a market related price with the tenderer scoring the second highest points or cancel the tender; iii. If the tenderer scoring the second highest points does not agree to a market related price, negotiate a market related price with the tenderer scoring the third highest points or cancel the tender; <p>(c) If a market related price is not agreed</p>
C.3.13	<p>Acceptance of a tender offer</p> <p>The conditions stated in clauses C.3.13(a) to (f) of the Conditions of Tender as well as the following additional clauses C.3.13(g) to (k) shall be applied as objective criteria in terms of section 2(1)(f) of the Preferential Procurement Policy Framework Act, 2000 and as compelling and justifiable reasons in terms of Conditions of Tender clause C.3.11:</p> <ol style="list-style-type: none"> g) The tenderer or any of its directors is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; h) The tenderer has not abused the Employer's supply chain management system; i) The tenderer has not failed to perform on any previous contract and has not been given a written notice to this effect; and j) The tenderer is tax compliant. The recommended tenderer who becomes non-compliant, prior to award, shall be notified and must become compliant within seven (7) working days of the date of being notified. A recommended tenderer who remains non-compliant after the seven (7) working days of being notified, shall be declared non-responsive. k) the tenderer is registered and in good standing with the compensation fund or with a licensed compensation insurer. The licensed compensation insurer shall be approved by Department of Labour in terms of Section 80 of the Compensation for Injury and Disease Act, 1993 (Act No. 130 of 1993). <p>In addition to the requirements under paragraph (b) of the Conditions of Tender, in the event that a due diligence is performed as part of the tender evaluation, the due diligence report will be used to evaluate the tenderer's ability to perform the contract as stated in paragraph</p> <p>(b) The due diligence will evaluate the overall risk associated with the tender. The due diligence will take into consideration the following:</p> <ul style="list-style-type: none"> • Assessment of financial statements to assess the financial position of the tenderer and its ability to obtain the necessary guarantees or insurances, • Evaluation of managerial and technical ability and available resources in relation to the proposed tender, • Integrity Risk Evaluation, • Operations, Activities, Locations and Key Customers, • Reference checks from previous clients, and

	<ul style="list-style-type: none"> • Risk rating (i.e. High Risk, Medium to High risk, Medium risk or Low risk) of the tenderer.
C.3.16	Registration of the award SANRAL will notify unsuccessful tenderers when the tender process has been concluded. Any unsuccessful tenderer may request a debriefing in writing as specified in Clause C.3.19.
C3.17	Provide copies of the contracts The number of paper copies of the signed contract to be provided by the Employer is one (1).
C.5.18	Provide written reasons for actions taken All requests shall be in writing.
ADDITIONAL CONDITIONS OF TENDER CLAUSES	
SC.3.19	Jurisdiction Unless stated otherwise in the tender data, each tenderer and the Employer undertake to accept the jurisdiction of the law courts of the Republic of South Africa.

TENDER DATA: APPENDIX 1: BREAKDOWN OF QUALITY CRITERIA (CLAUSE C.3.11)

C.3.11	<p>The quality criteria, maximum score and scoring mechanism in respect of each of the criteria are as follows:</p> <p>A quality scoring is as follows:</p> <table><tr><th colspan="2">Technical Scoring</th><th>Form</th><th>Max Score</th></tr><tr><td>1</td><td>Relevant Experience of the Tendering Entity</td><td>D5.1 & D5.2</td><td>50.00</td></tr><tr><td>2</td><td>Tendering Entity's QMS Credentials</td><td>D14</td><td>10.00</td></tr><tr><td>3</td><td>Development of Key Previously Disadvantaged Individuals (PDI) Staff and New Entrant</td><td>D14</td><td>20.00</td></tr><tr><td>4</td><td>Key Resources (CV's to be provided)</td><td>D4 & D14</td><td>30.00</td></tr><tr><td>5</td><td>Tendering Entity's Proposed Organisation and Staffing</td><td>D3, D4 & D14</td><td>15.00</td></tr><tr><td>6</td><td>Tendering Entity's Proposed Operations and Maintenance Plan</td><td>D14</td><td>90.00</td></tr><tr><td>7</td><td>Tendering Entity's Indicative Establishment Program</td><td>D7.1 & D14</td><td>20.00</td></tr><tr><td colspan="3">Total Score</td><td>240.00</td></tr><tr><td colspan="3">% Score (Minimum = 75%)</td><td>180.00</td></tr></table> <p>The detailed scoring will be as follows:</p> <table><tr><td><p>1. Relevant Experience of the Tendering Entity</p><p>The minimum number of evaluation points for quality is not less than 180.</p><p>An explanation of the evaluation methodology is provided as part of Returnable Schedule Form D5.1 and Form D5.2.</p></td><td>50</td></tr><tr><td><p>Introduction:</p><p>1. For the purposes of this Scoring Sheet:</p><p>a) Major Projects refer to projects with a value in excess of R 300 million.</p><p>b) Large Projects refer to projects with a value in excess of R 500 million and</p><p>c) Mega Projects refer to projects with a value in excess of R1 Billion.</p></td><td></td></tr><tr><td><p>Criteria:</p><p>Scoring: Scoring on this reflects the tenderer's relevant experience and client satisfaction related to elements of the work associated with this project. Evidence is to be provided in the form of project data sheets and letters of client satisfaction obtained over the past 5 years.</p><p>The minimum criteria are: •</p><p>At least three (3) reference project must be presented.</p><p>All reference projects must have started or finished in the last 5 years OR are current.</p><p>All reference projects should at least be R250 million in value</p><p>Tenderer's should highlight in the project data sheets areas which demonstrate their relevant experience in terms of the evaluation criteria.</p></td><td></td></tr></table>	Technical Scoring		Form	Max Score	1	Relevant Experience of the Tendering Entity	D5.1 & D5.2	50.00	2	Tendering Entity's QMS Credentials	D14	10.00	3	Development of Key Previously Disadvantaged Individuals (PDI) Staff and New Entrant	D14	20.00	4	Key Resources (CV's to be provided)	D4 & D14	30.00	5	Tendering Entity's Proposed Organisation and Staffing	D3, D4 & D14	15.00	6	Tendering Entity's Proposed Operations and Maintenance Plan	D14	90.00	7	Tendering Entity's Indicative Establishment Program	D7.1 & D14	20.00	Total Score			240.00	% Score (Minimum = 75%)			180.00	<p>1. Relevant Experience of the Tendering Entity</p> <p>The minimum number of evaluation points for quality is not less than 180.</p> <p>An explanation of the evaluation methodology is provided as part of Returnable Schedule Form D5.1 and Form D5.2.</p>	50	<p>Introduction:</p> <p>1. For the purposes of this Scoring Sheet:</p> <p>a) Major Projects refer to projects with a value in excess of R 300 million.</p> <p>b) Large Projects refer to projects with a value in excess of R 500 million and</p> <p>c) Mega Projects refer to projects with a value in excess of R1 Billion.</p>		<p>Criteria:</p> <p>Scoring: Scoring on this reflects the tenderer's relevant experience and client satisfaction related to elements of the work associated with this project. Evidence is to be provided in the form of project data sheets and letters of client satisfaction obtained over the past 5 years.</p> <p>The minimum criteria are: •</p> <p>At least three (3) reference project must be presented.</p> <p>All reference projects must have started or finished in the last 5 years OR are current.</p> <p>All reference projects should at least be R250 million in value</p> <p>Tenderer's should highlight in the project data sheets areas which demonstrate their relevant experience in terms of the evaluation criteria.</p>	
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	<p>Tenderers must indicate the projects where the tenderer fulfilled the role as is required of this project, and where the projects were: •</p> <ul style="list-style-type: none"> Similar Operations and Maintenance type, but not necessarily a toll project; • Multi-disciplinary by nature; Required the management of revenue streams; Included account hosting and / or management; Customer Services; and • <p><i>Required HR Management and Union engagement</i></p> <p>Were performance based</p> <p>Scoring</p>	
	<i>No evidence of a similar project</i>	0
	<i>Indicate evidence of a similar project(s), where project was a Major project, and the experience gained was in at least 2 of the areas listed above (highlighted)</i>	20
	<i>Evidence of a similar project(s), where projects presented were either a Large project, or 3 Major projects, and the experience gained was in at least 3 of the areas listed above</i>	30
	<i>Evidence of a similar project(s), where projects presented were either a Mega project, or 3 Major projects, and the experience gained was in at least 4 of the areas listed above</i>	40
	<i>Evidence of a similar project(s), where projects presented were at least 1 Mega project, and 1 Large project, and the experience gained was in all of the areas listed above</i>	50
	2. Tendering Entity's Quality Management System QMS Credentials	10
	Scoring:	
	<i>No evidence of QMS in place</i>	0
	<i>Evidence of QMS based on ISO-9001</i>	3
	<i>Evidence of QMS based on ISO-9001 but in process of certification</i>	5
	<i>ISO-9001 certified QMS in place < 5 years</i>	8
	<i>ISO-9001 certified QMS in place > 5 years</i>	10
	3.1 Participation of Key Previous Disadvantage Individual (PDI) Staff	15
	<p>List of Key Resources:</p> <ul style="list-style-type: none"> <i>Contracts Engineer (Contractor's Representative)</i> <i>Operations Manager</i> <i>Maintenance Manager</i> <p>Criteria (evidence of certificates of qualification plus cv and contacts of previous experience to be provided of qualification/previous experience)</p>	
	<i>Zero PDI Key Resource</i>	0
	<i>One (1) PDI Key Resource</i>	5
	<i>Two (2) PDI Key Resources</i>	10
	<i>Three (3) PDI Key Resources</i>	15
	3.2 Development of Targeted Enterprise (New Entrant)	20
	<i>The process to identify possible Targeted Enterprise (New Entrant)</i>	2

	<i>The proposed program how to develop the TE (New Entrant)</i>	2
	<i>The detail and the level of training required</i>	2
	<i>Risk transfer (less risk transfer higher the score)</i>	4
	<i>Level of supervision and monitoring of the TE (New Entrant)</i>	2
	<i>The proposed period of TE *New Entrant) operating on their own (TE operating for ≥ 12 months maximum score)</i>	8
	4. Key Resources	65
	Contractor's Representative	20
	Minimum Requirements:	
	<i>A Professionally Registered (Pr Eng or Pr Tech) or Pr.CPM or other relevant Business Professional Registration;</i>	3
	<i>At least fifteen (15) years relevant experience;</i>	3
	<i>Contract Management experience;</i>	3
	<i>FIDIC Experience</i>	3
	<i>Full time assigned to the Project.</i>	
	The resource should have experience in:	
	<i>Business Management;</i>	1
	<i>Corporate Governance Management;</i>	1
	<i>Team Development and Management;</i>	1
	<i>Operations Management;</i>	1
	<i>Systems Integration Management;</i>	1
	<i>Maintenance (Systems and Facilities) Management;</i>	1
	<i>Dispute Resolution;</i>	1
	<i>Performance Management.</i>	1
	Operations Manager	10
	Minimum Requirements:	
	<i>At least ten (10) years relevant experience;</i>	2
	<i>A suitable HR Management Qualification, or industry accepted alternate;</i>	1
	<i>Full time assigned to the Project.</i>	1
	<i>The resource should have experience in:</i>	1
	<i>Contract Management;</i>	1
	<i>Operations Management;</i>	1
	<i>Team Development and Management;</i>	1
	<i>Customer Services Management;</i>	1
	<i>Revenue Management</i>	1
	<i>Performance Management;</i>	1
	<i>Maintenance (systems and / or facilities) Management;</i>	1
	Maintenance Manager	10
	Minimum Requirements:	
	<i>At least ten (10) years' relevant experience.</i>	2
	<i>Minimum qualification: National Diploma</i>	1

	<i>Preferred qualification: Engineer</i>	2
	<i>The resource should have experience in:</i> <i>Project Management;</i> <i>Performance Management;</i> <i>Documentation Development (procurement)</i> <i>Procurement Processes;</i> <i>Facilities Maintenance;</i> <i>Network Designs and Maintenance;</i> <i>Device Maintenance Programmes;</i> <i>Maintenance Audit Reviews;</i> <i>Maintenance Trend Analysis</i>	1 0.5 0.5 0.5 0.5 0.5 0.5 0.5
	5. Tendering Entity's Proposed Organisational and Staffing Minimum Criteria <i>Project organogram (proposed)</i> Proposed Organogram, to include: <i>Key Resources - names</i> <i>Operations Departments</i> <i>Staff numbers per department per job category, including toll collectors, maintenance resources, etc</i> <i>In-house vs Outsourced</i> Scoring	15
	<i>All operations and maintenance functions indicated</i>	2
	<i>All operations and maintenance departments indicated</i>	2
	<i>Resources per function and / or department indicated and adequate</i>	3
	<i>In-house vs outsourced resources indicated</i>	1
	<i>Average salaries per staff category indicated (Section 197 staff)</i>	2
	<i>Toll collector numbers adequate to meet manning levels</i>	5
	6. Tendering Entity's Proposed O&M Plan Criteria and Scoring	90
	Understanding the Overall Operations Requirements	15
	<i>Role players</i>	3
	<i>Traffic risk</i>	3
	<i>Transaction risk</i>	3
	<i>Interfaces</i>	2
	<i>Performance Management</i>	2
	<i>Reporting</i>	2
	Understanding the National Interoperability Concept	15
	<i>The role of the national TCH</i>	3
	<i>Dealing with Road Queries (point of presence, Call Centre, etc)</i>	2

	<i>TCH interface management</i>	2
	<i>Electronic transaction file transfer</i>	2
	<i>Account settlement</i>	2
	<i>Road User mobility account registration</i>	2
	<i>Tag management (procurement, distribution and stock control)</i>	2
	Establishment and mobilisation	10
	<i>Staff transfers (Section 197)</i>	3
	<i>Staff procurement</i>	1
	<i>Training</i>	1
	<i>Sub-contractor procurement</i>	1
	<i>On-site establishment</i>	1
	<i>Envisaged timelines and program</i>	3
	Financial Management (including that of revenue streams)	10
	<i>Understanding the financial management requirements</i>	2
	<i>The proposed resource management plan (including all resource categories and numbers)</i>	2
	<i>Cash management solutions</i>	2
	<i>Reconciliations (Revenue vs Transactions)</i>	2
	<i>Banking services management</i>	2
	Traffic Management	5
	<i>Dealing with manning levels</i>	3
	<i>Dealing with queues</i>	1
	<i>Manual processing (no power, no system)</i>	1
	Maintenance management (Facilities, E&M, etc)	10
	<i>Understanding the Maintenance Scope of Works</i>	2
	<i>The approach to specialist maintenance, routine and ad-hoc maintenance</i>	2
	<i>The proposed resource management plan (including all resource categories and numbers)</i>	2
	<i>Fault reporting and responses</i>	2
	<i>Managing system touching equipment and spares availability risk (including Business Continuity Solutions)</i>	1
	<i>Asset replacement and hand-back</i>	1
	System maintenance (1st line support)	10
	<i>Understanding the System Maintenance Scope of Works</i>	2
	<i>Hardware and software support (in the context of the Contractor's scope)</i>	2
	<i>Fault reporting and responses</i>	2
	<i>The proposed resource management plan (including all resource categories and numbers)</i>	2
	<i>Managing toll system and spares availability risk (incl. Business Continuity solutions)</i>	2
	Performance Management	5
	<i>Performance monitoring / reporting / improvement</i>	5
	Risk Management	2

	<i>Risk management plan</i>	2
	Quality Assurance	2
	<i>QA Plan</i>	2
	Environmental Management	2
	<i>Environmental Management plan</i>	2
	Health and Safety	2
	<i>Health and Safety plan</i>	2
	Security	2
	<i>Security plan</i>	2
	7. Tendering Entity's Indicative Program	20
	Criteria - a good understanding of:	
	<i>All establishment and mobilisation activities</i>	10
	<i>The transitioning from the current Contractor</i>	5
	<i>Staff take-over requirements and / or procurement requirements</i>	5

PART T2: RETURNABLE SCHEDULES

SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

PART T2.1: RETURNABLE SCHEDULES

The tenderer must complete the following returnable schedules:

Notes to tenderer:

- 1) Returnable schedules have been based on the CIDB Standard for Uniformity in Construction Procurement and incorporate National Treasury requirements within them. Returnable schedules are separated into the following categories:
 - a) forms, certificates and schedules for completion by the tenderer for use in the quantitative and qualitative evaluation of the tender (Forms A to E)
 - b) a list of all returnable documents for completion by the tenderer (Form F1)
- 2) Failure to submit fully completed relevant returnable documents may render such a tender offer non-responsive.
- 3) Tenderers shall note that their signature appended to each returnable form represents a declaration that they vouch for the accuracy and correctness of the information provided.
- 4) Notwithstanding any check or audit conducted by or on behalf of the Employer, the information provided in the returnable documents is accepted in good faith and as justification for entering into a contract with a tenderer. If subsequently any information is found to be incorrect such discovery shall be taken as wilful misrepresentation by that tenderer to induce the contract. In such event:
 - a) the Employer shall inform the tenderer and give the tenderer an opportunity to make representations within 14 days as to why the tender submitted should not be disqualified and as to why the tenderer should not be restricted by the National Treasury from conducting any business with any organ of state for a period not exceeding ten (10) years;
 - b) if the Employer has already entered into a contract with the tenderer, the Employer has the discretionary right under FIDIC Particular Condition 15.2(g) to terminate the contract.
- 5) These forms must be completed in non-erasable ink and any alterations made prior to tender closure countersigned by an authorised signatory.

PART T2.1 LIST OF RETURNABLE DOCUMENTS

1. This form has been created as an aid to ensure a tenderer's compliance with the completion of the returnable forms and schedules and subsequent placement in the correct envelope.
2. The electronic format for the submissions of the relevant forms is indicated in the schedule below.

FORM NO/SBD NO	ELEC-TRONIC FORMAT	FORM DESCRIPTION	INITIAL IF COM-PLETED	ENVE-LOPE
A1	PDF	CERTIFICATE OF CONFIRMATION THAT THE TENDERER READ THE PRESENTATION/VIEWED THE VIDEO	*1	TECHNICAL PROPOSAL (1 ST ENVELOPE)
A1.1	PDF	CERTIFICATE OF INTENTION TO SUBMIT A TENDER	*1	
A2.1	PDF	CERTIFICATE OF AUTHORITY FOR SIGNATORY	*1	
A2.2	PDF	DECLARATION OF TENDERER'S CURRENT STATUS OF ANY DEBT OUTSTANDING TO SANRAL	*1 & *2	
A2.3	PDF	CERTIFICATE OF SINGLE TENDER SUBMISSION	*1 & *2	
A2.4	PDF	CERTIFICATE OF FRONTING PRACTICES	*1 & *2	
A2.5	PDF	DECLARATION OF DOMESTIC PROMINENT INFLUENTIAL PERSONS, FOREIGN PROMINENT PUBLIC OFFICIALS AND FOREIGN INFLUENTIAL NATIONALS (DPIPS, FPPOS & FINS)	*1 & *2	
A2.6	PDF	CERTIFICATE OF PERMISSION TO CONDUCT DUE DILIGENCE INVESTIGATION	*1 & *2	
A3.1/SBD4	PDF	BIDDER'S DISCLOSURE	*1 & *2	
A3.2/SBD9	PDF	CERTIFICATE OF INDEPENDENT TENDER (REPEALED)	*1 & *2	
A3.3/SBD8	PDF	DECLARATION OF TENDERER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES (REPEALED)	*1 & *2	
A3.4	PDF	REGISTRATION ON NATIONAL TREASURY CENTRAL SUPPLIER DATABASE	*1 & *2	
A3.5	PDF	DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS (SBD 6.2)	*1 & *2	
A3.6	PDF	LOCAL CONTENT DECLARATION: SUMMARY SCHEDULE (ANNEXURE C)	*1 & *2	
A4	PDF	SCHEDULE OF DEVIATIONS OR QUALIFICATIONS BY TENDER	*1 & *2	
A5	PDF	SCHEDULE OF ADDENDA TO TENDER DOCUMENTS	*1	
A6/SBD2	PDF	CERTIFICATES OF TAX COMPLIANCE	*1	
A7	PDF	CERTIFICATE OF INSURANCE COVER	*1	
A8	PDF	TENDERER'S REGISTERED FINANCIAL SERVICE PROVIDER LETTER AND BANK DETAILS	*1	
A9.1	PDF	SCHEDULE OF TENDERER'S LITIGATION HISTORY	*1	
A9.2	PDF	ENVIRONMENTAL, SOCIAL, HEALTH, AND SAFETY PERFORMANCE DECLARATION	*1	
A9.3	PDF	COMPLIANCE WITH LABOUR LEGISLATION DECLARATION	*1	
A10	PDF	SCHEDULE OF CURRENT COMMITMENTS	*1	
A11	PDF	CERTIFICATE OF COMPLIANCE WITH COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT, 1993 (ACT NO. 130 OF 1993)	*1	
A12	PDF	REGISTRATION WITH CIDB	*1	
A13/SBD1	PDF	INVITATION TO BID AND TERMS AND CONDITIONS FOR BIDDING	*1 & *2	
C1.1	PDF	TENDERER'S B-BBEE VERIFICATION CERTIFICATION	*1 & *2	
C1.2/SBD6.1	PDF	PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017 (INCORPORATING SBD6.1)	*1 & *2	
D1	MS EXCEL	SCHEDULE OF TENDERER'S PLANT AND EQUIPMENT	*1	

D.2	PDF	TENDERER'S METHOD STATEMENT	*1	
D3	MS EXCEL	TENDERER'S ORGANISATION AND STAFFING	*1	
D4.1	MS EXCEL	PERSONNEL RESOURCE DETAIL (CONTRACTOR'S REPRESENTATIVE)	*1	
D4.2	PDF	PERSONNEL RESOURCE DETAIL (OPERATIONS MANAGER)	*1 & *2	
D4.3	PDF	PERSONNEL RESOURCE DETAIL (MAINTENANCE MANAGER)	1 & *2	
D4.4.1	PDF	PERSONNEL RESOURCE DETAIL (PLAZA MANAGER 1)	1 & *2	
D4.4.2	PDF	PERSONNEL RESOURCE DETAIL (PLAZA MANAGER 2)	1 & *2	
D4.4.3	PDF	PERSONNEL RESOURCE DETAIL (PLAZA MANAGER 3)	1 & *2	
D4.4.4	PDF	PERSONNEL RESOURCE DETAIL (PLAZA MANAGER 4)	1 & *2	
D4.5	PDF	PERSONNEL RESOURCE DETAIL (H&S MANAGER/OFFICER)	1 & *2	
D5.1	PDF	TENDERER'S EXPERIENCE BASED ON COMPLETED PROJECTS	1 & *2	
D5.2	PDF	TENDERER'S EXPERIENCE BASED ON PROJECTS IN PROGRESS	1 & *2	
D6	MS EXCEL	AFFIDAVIT FOR PAST PERFORMANCE REPORTS ON COMPLETED PROJECTS	1 & *2	
D7.1	PDF	TENDERER'S INDICATIVE PROGRAM	1 & *2	
D7.2	PDF	PROPOSED ESTABLISHMENT PROGRAMME	1 & *2	
D9	PDF	NOMINATION OF COMPANY, MEMBER, SUBCONTRACTOR, ETC. FOR EACH DISCIPLINE	1 & *2	
D10	PDF	TECHNICAL INFORMATION	1 & *2	
D11	PDF	TOLL PLAZA UPGRADING SCHEDULES	1 & *2	
D12	PDF	ADDITIONAL INFORMATION	1 & *2	
D13	PDF	DISTRIBUTION OF RISK BETWEEN THE NSC AND THE MAIN CONTRACTOR AND ANY OTHER SUB-CONTRACTORS	1 & *2	
D14	PDF	TECHNICAL PROPOSAL	1 & *2	
D15	PDF	CORPORATE SOCIAL INVESTMENT	1 & *2	
E1	PDF	ELECTRICAL SCHEDULE OF MATERIALS	1 & *2	FINANCIAL PROPOSAL (2 ND ENVELOPE)
F1	PDF	SCHEDULE OF TENDER COMPLIANCE	1 & *2	
C1.1.1/SBD7	PDF	FORM OF OFFER	*2	
C1.2.3	PDF	CONTRACT DATA – INFORMATION PROVIDED BY THE TENDERER	*2	
C2.2/SBD3	MS EXCEL	PRICING SCHEDULE	*1 & *2	
C2.3	MS EXCEL	SUMMARY OF PRICING SCHEDULE	*1 & *2	
A3.5/SBD6.2	PDF	DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS	*1 & *2	
A3.6	PDF	LOCAL CONTENT DECLARATION: SUMMARY SCHEDULE		
B1	PDF	CURRENCY EXCHANGE RATE FLUCTUATIONS	*1 & *2	
B2	PDF	CONTRACTOR'S ESTABLISHMENT ON SITE	*1 & *2	
D8	PDF	SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE	1 & *2	

NOTES:

*1- SCHEDULES/DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES

*2- SCHEDULES/DOCUMENTS THAT WILL BE INCORPORATED INTO THE CONTRACT

PART T2 RETURNABLE SCHEDULES

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FORM A1: CERTIFICATE CONFIRMING THAT THE TENDERER READ THE PRESENTATION BRIEFING

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

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

representative of (tenderer)

of (address).....
.....
.....

telephone number

fax number

e-mail

read the clarification presentation presented by the Employer online and/or

attended the clarification meeting on (date)

conducted by

in the presence of (Employer's representative)

EMPLOYER'S REPRESENTATIVE

(Signature).....Date.....

TENDERER'S REPRESENTATIVE (Signature)

FORM A1.1: CERTIFICATE OF INTENTION TO SUBMIT A TENDER

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to Tenderer:

- 1. The duly completed certificate of intention to submit a tender must be submitted by whoever intends to tender for this particular tender by 16 January 2023. Failure to submit the certificate of intention to tender within the required period may render the tenderer non-responsive and SANRAL does not accept responsibility for any communication not received by the tenderer timeously.
- 2. Late notification of intention to tender by a prospective tenderer will not necessarily result in the tender closing date being extended.
- 3. Should you intend to submit a tender for this particular tender please sign the certificate, scan and email the completed document to the email address indicated in T1.1 of this tender document.
- 4. The Employer shall send all correspondence, including Addenda, only to the Tenderer’s email address as provided herein.

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

representative of (insert name of tenderer)

of (address)
.....
.....

telephone number

fax number

e-mail

intends to submit a tender in response to the tender notice and invitation for tender this contract.

TENDE’ER’S REPRESENTATIVE Date
(Signature)

FORM A2.1: CERTIFICATE OF AUTHORITY FOR SIGNATORY

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to tenderer:

- 1) The signatory for the tenderer shall confirm his/her authority thereto by attaching on the tendering company's letterhead a duly signed and dated copy of the relevant resolution of the board of directors/partners. Scan a copy of the resolution on Flash drive.
- 2) In the event that the tenderer is a joint venture, a certificate is required from each member of the joint venture clearly setting out:
 - a) authority for signatory,
 - b) undertaking to formally enter into a joint venture contract should an award be made to the joint venture,
 - c) name of designated lead member of the intended joint venture, as required by tender condition C2.13.4.
- 3) The resolution below is given as an example of an acceptable format for authorisation, but submission of this page with the example completed shall not be accepted as authorisation of the tenderer's signatory.

By resolution of the board of directors passed at a meeting held on

Mr/Ms.,

whose signature appears below, has been duly authorized to sign all documents in connection with the tender for

CONTRACT SANRAL N.001-192-2018/1 FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

and any contract which may arise therefrom on behalf of *[enter name of tenderer in block capitals]*

.....

SIGNED ON BEHALF OF THE COMPANY:

IN HIS/HER CAPACITY AS:

DATE:

SIGNATURE OF SIGNATORY:

WITNESS 1:

SIGNATURE: NAME (IN CAPITALS)

WITNESS 2:

SIGNATURE: NAME (IN CAPITALS):

FORM A2.2: DECLARATION OF TENDERER’S CURRENT STATUS OF ANY DEBT OUTSTANDING TO SANRAL

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to tenderer:

- 1) The signatory for the tenderer shall complete and sign this form declaring the current status of any debt outstanding to SANRAL.**
- 2) In the event that the tenderer is a Joint Venture, a declaration is required from each member of the Joint Venture.**

I, the undersigned declare that:
the tenderer or any of its Directors/Members do not have any debt outstanding to SANRAL, other than what is listed below:

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

the tenderer and/or any of its Directors/Members freely, voluntarily and without undue duress unconditionally authorizes the SANRAL to set off any debts agreed to which is due and payable by the tenderer or any of its Directors/Members in terms of this declaration against any moneys due to the tenderer or any of its Directors/Members; and

to the best of my knowledge the above information is true and accurate.

SIGNATURE:

Signed and sworn before me at on the day of 20.....

The deponent having:

- 1. acknowledged that he/she knows and understands the contents hereof;
- 2. confirmed that he/she has no objection to the taking of the prescribed oath;
- 3. confirmed that he/she considered the prescribed oath as binding upon his/her conscience; and
- 4. confirmed that the Regulations contained in the Government Gazette Notice R1258 of July 1972 and R1648 of August 1977 have been complied with.

.....
COMMISSIONER OF OATHS

FORM A2.3: CERTIFICATE OF SINGLE TENDER SUBMISSION

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to tenderer:

- 1) This certificate serves as a declaration by the tenderer that a single tender was submitted.
- 2) In the case of a Joint Venture (JV) or a Targeted Enterprise, a separate certificate is to be completed and submitted by each JV member or Targeted Enterprise.

DECLARATION

I, the undersigned, in submitting the accompanying tender on behalf of the tenderer do hereby make the following statements that I certify to be true and complete in every respect:

- 1. I have read and understand the notes to, and the contents of, this certificate.
- 2. I understand that the accompanying tender and any other tender shall be disqualified in the event that I, including a Joint Venture partner or a Targeted Enterprise, participate in more than 1 (one) tender.

SIGNATURE:

DATE:

NAME:

POSITION:

FORM A2.4: CERTIFICATE OF FRONTING PRACTICES**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****Fronting Practices**

Window-dressing: This includes cases in which black people are appointed or introduced to an enterprise on the basis of tokenism and may be:

1. Discouraged or inhibited from substantially participating in the core activities of an enterprise; and
2. Discouraged or inhibited from substantially participating in the stated areas and/or levels of their participation;

Benefit Diversion: This includes initiatives implemented where the economic benefits received as a result of the B-BBEE Status of an enterprise do not flow to black people in the ratio as specified in the relevant legal documentation.

Opportunistic Intermediaries: This includes enterprises that have concluded agreements with other enterprises with a view to leveraging the opportunistic intermediary's favourable B-BBEE status in circumstances where the agreement involves:

1. Significant limitations or restrictions upon the identity of the opportunistic intermediary's suppliers, service providers, clients or customers;
2. The maintenance of their business operations in a context reasonably considered improbable having regard to resources; and
3. Terms and conditions that are not negotiated at arms-length on a fair and reasonable basis.

Responsibility to Report Fronting

In order to effectively deal with the scourge of Fronting, verification agencies, and/or procurement officers and relevant decision makers are encouraged to obtain a signed declaration from the clients or entities that they verify or provide business opportunities to, which states that the client or entity understands and accepts that the verification agency, procurement officer or relevant decision maker may report fronting practices to the Department of Trade and Industry. Intentional misrepresentation by measured entities may constitute fraudulent practices, public officials and verification agencies are to report such cases to the Department of Trade and Industry.

SANRAL or its appointed agent has every right to embark on an investigation of fronting with regards to any potential service provider. In this regard, SANRAL is entitled to request any further information, interview and any documentation from the respective potential service provider prior to any award. (This statement is for internal use)

Fronting Indicators

<ul style="list-style-type: none"> • The black people identified by an enterprise as its shareholders, executives or management are unaware or uncertain of their role within an enterprise;
<ul style="list-style-type: none"> • The black people identified by an enterprise as its shareholders, executives or management have roles of responsibility that differ significantly from those of their non-black peers;
<ul style="list-style-type: none"> • The black people who serve in executive or management positions in an enterprise are paid significantly lower than the market norm, unless all executives or management of an enterprise are paid at a similar level;
<ul style="list-style-type: none"> • There is no significant indication of active participation by black people identified as top management at strategic decision making level;

<ul style="list-style-type: none">• An enterprise only conducts peripheral functions and does not perform the core functions reasonably expected of other, similar, enterprises;
<ul style="list-style-type: none">• An enterprise relies on a third-party to conduct most core functions normally conducted by enterprises similar to it;
<ul style="list-style-type: none">• An enterprise cannot operate independently without a third-party, because of contractual obligations or the lack of technical or operational competence;
<ul style="list-style-type: none">• The enterprise displays evidence of circumvention or attempted circumvention;
<ul style="list-style-type: none">• An enterprise buys goods or services at a significantly different rate than the market from a related person or shareholder;
<ul style="list-style-type: none">• An enterprise obtains loans, not linked to the good faith share purchases or enterprise development initiatives, from a related person at an excessive rate; and
<ul style="list-style-type: none">• An enterprise shares all premises and infrastructure with a related person, or with a shareholder with no B-BBEE status or a third-party operating in the same industry where the cost of such premises and infrastructure is disproportionate to market-related costs.

DECLARATION

I,..... the undersigned, in submitting the accompanying tender on behalf of the tenderer do hereby make the following statements that I certify to be true and complete in every respect:

1. I have read and understand the contents of this certificate.
2. I accept that the Employer may report fronting practices to the Department of Trade and Industry and the BBBEE commissioner.
3. I accept that intentional misrepresentation by measured entities may constitute fraudulent practices that shall be reported to the Department of Trade and Industry and the BBBEE commissioner.

SIGNATURE:

DATE:

NAME:

POSITION:

FORM A2.5: DECLARATION OF DOMESTIC PROMINENT INFLUENTIAL PERSONS, FOREIGN PROMINENT PUBLIC OFFICIALS AND FOREIGN INFLUENTIAL NATIONALS (DPIPS, FPPOS & FINS)

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to tenderer:

- 1) In line with a policy on Domestic Prominent Influential Persons (DPIP's), Foreign Prominent Public Officials (FPPO's) & Foreign Influential Nationals (FIN's), the purpose of this declaration form is to ensure maintenance and monitoring of the business relationships with prominent, influential stakeholders who have domestic and/or foreign influence as far as the procurement under the management of SANRAL is concerned. This is done to mitigate SANRAL's perceived association, reputational, operational or legal risk, as it strives to foster and maintain fair and transparent business relations. (The policy is available on SANRAL website: www.nra.co.za)
- 2) It is compulsory that all prospective and existing bidders conducting business with SANRAL, who potentially meet the definition of DPIPs, FPPOs or FINs, complete this form by supplying credible information as required and submit together with their bid document.
- 3) Bidders are required at the tender stage to declare any DPIPs, FPPOs or FINs involved in their bids, as part of their submission.
- 4) Further, that bidders shall at the tender stage furnish SANRAL of all information relating to namely, shareholders names, ID numbers and share certificates of the individual and/or transaction concerned using, the form below, for verification purposes, including where applicable, confirmation as it relates to:
 - 4.1 Knowledge of any offence within the meaning of Chapter 2 section 12 & 13 of Prevention and Combating of Corrupt Practices Act no 4 of 2006; and or
 - 4.2 Knowledge of any offence within the meaning of chapter 3 of Prevention of Organised Crime Act no. 121 of 1998 as it relates to any of the shareholders, Directors, Owners and/or individual link to the bidder.
- 5) Bidders undertake that should it be discovered that the information provided in the form below, is fraudulently or negligently misrepresented then Chapter 9 sec 214 & 216 of Companies Act no 17 of 2008 shall apply to shareholders, Directors, Owners and/or individual link to the bidder.
- 6) Should the bidder fail to declare or supply SANRAL with credible information in the prescribed form, the bid may be rendered invalid.
- 7) Should the SANRAL, in the process of conducting verification and investigation of information supplied by the bidder find out that the information poses a reputational risk, the bid shall be rendered invalid.
- 8) The following definitions shall apply:
 - 8.1 "Board" means the Board of Directors or the Accounting Authority of SANRAL
 - 8.2 "Business relationship" means the connection formed between SANRAL and external stakeholders for commercial purposes.
 - 8.3 "DD" means Due Diligence which is defined for this form as:
 - a) the verification of disclosures in the disclosure form, including if the disclosure is "none"; and
 - b) further investigation if any areas of risk are identified from publicly available information.
 - 8.4 "Domestic Prominent Influential Person" means an individual who holds an influential position, including in an acting position for a period exceeding six months, or has held at any time in the preceding twelve months, in the Republic, as defined in the Financial Intelligence Centre Amendment Act (No.1 of 2017).
 - 8.5 "DPIP" means a Domestic Prominent Influential Person.
 - 8.6 "Family members and known close associates" means immediate family members and known close associates of a person in a foreign or domestic prominent position, as the case may be, as defined in the Financial Intelligence Amendment Act, No.1 of 2017).
 - 8.7 "Foreign Influential National" means an individual who is not a South African citizen or does not have a permanent residence permit issued in terms of the Immigration Act (No.13 of 2002), who possesses personal power that induces another person to give consideration or to act on any basis other than the merits of the matter.

8.8 “Foreign Prominent Public Official” means (as defined in the Financial Intelligence Centre Amendment Act (No.1 of 2017) an individual who holds, or has held at any time in the preceding twelve months, in any foreign country a prominent public function

8.9 “FPPO” means a Foreign Prominent Public Official.

8.10 “Improper influence” means personal power that induces another person to give consideration or to act on any basis other than the merits of the matter.

8.11 “PIP” means Prominent Influential Person and includes DPIP, FPPO and FIN

8.12 “SANRAL” means the South African National Roads Agency SOC Limited, with registration number 1998/009584/30.

8.13 “Senior Management” means the Executive Committee or its individual members.

9) A separate declaration is required from each PIP. In the event that the tenderer is a Joint Venture, a separate declaration from each PIP from each of the Joint Venture members, is required

Prominent Influential Persons (PIP’) Reporting Form.

IDENTIFICATION PARTICULARS				
Primary Particulars	First Name	Surname	Middle Name	ID/Passport Number
Country Details	Country of Origin	Citizenship	Current Country of Residence	
CURRENT STATUS AND BACKGROUND				
Current Occupation	Occupational Title		Status	
			Active	Non-active
Is the potential/business partner (mark with an “X” whichever is applicable):				
a DPIP	a FPPO	a FIN	Family member or Close Associate of a DPIP/FPPO/FIN?	
KNOWN BUSINESS INTERESTS				
No	Name of Entity	Role in Entity	Status	
1			Active	Non-active
2				
3				
4				
5				
6				
7				
8				

MEDIA REPORTS / OTHER SOURCES OF INFORMATION

(Please reference all known negative or damaging media reports associated with the DPIP/FPPO/FIN)

Reporting Person/s:

Full names:		
Designation:		
Department:		
Head of Department:		
Head of Department's signature:	Date:	
Reporting Person's signature:	Date:	

I, the undersigned,..... declare that:

1. the information furnished on this declaration form is true and correct, and
2. I accept that any action may be taken against me should this declaration prove to be false.

SIGNATURE:

NAME:

POSITION:

DATE:

NAME OF TENDERER:

FORM A2.6: CERTIFICATE OF PERMISSION TO CONDUCT DUE DILIGENCE INVESTIGATION

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to tenderer:

- 1) The tenderer shall complete the declaration below
- 2) In the case of a Joint Venture (JV), each member of the JV shall comply with the above requirements.

DECLARATION

I, (name)
the undersigned in my capacity as (position)
on behalf of (name of company),
herewith grant consent that SANRAL or any of their appointed Service Providers may conduct a due diligence investigation on (name of company)
to evaluate our ability to perform the contract as stipulated in the Standard Conditions of Tender, Clause C.3.13(b).

In addition, any information in this regard requested by SANRAL or any of their appointed Service Providers, shall be submitted within the timelines of the request.

SIGNATURE:
DATE:
NAME:
POSITION:

FORM A3.1: BIDDER'S DISCLOSURE (SBD4)

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to tenderer:

1. Definitions:

1.1. "State" means:

- i) any National or Provincial Department, National or Provincial Public Entity or Constitutional Institution within the meaning of the Public Finance Management Act, 1999 (Act No 1 of 1999);
- ii) any Municipality of Municipal Entity;
- iii) Provincial Legislature;
- iv) National Assembly or the National Council of Provinces; or
- v) Parliament.
- vi) "Shareholder" means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

1.2. "Shareholder" means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

- 2. In the case of a joint venture (JV), a separate declaration form is to be completed and submitted by each JV member.
- 3. If the Form is omitted or blank; or if the tenderer found to have failed to declare conflict or declare false information, The tender will be declared non-responsive and should it be discovered after the award of a contract, contract maybe terminated and tenderer will be ultimately blacklisted.

PURPOSE OF THE FORM

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

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

BIDDER'S DECLARATION

Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest¹ in the enterprise, employed by the state?

YES/NO

If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

¹ the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

Full Name	Identity Number	Name of State institution

Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution?

YES/NO

If so, furnish particulars:

.....
.....

Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract?

YES/NO

If so, furnish particulars:

.....
.....

DECLARATION

I, the undersigned, (name)..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

I have read and I understand the contents of this disclosure;
I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium² will not be construed as collusive bidding.
In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of

² Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

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

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

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

Signature _____ Date _____

Position	Name of bidder
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FORM A3.2: CERTIFICATE OF INDEPENDENT TENDER (INCORPORATING SBD9) (REPEALED)

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Form REPEALED

**FORM A3.3: DECLARATION OF TENDERER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES
(INCORPORATING SBD8) (REPEALED)**

CONTRACT SANRAL N.001-192-2018/1

**FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL
ROUTE N1 AND R30**

Form REPEALED

FORM A3.4: REGISTRATION ON NATIONAL TREASURY CENTRAL SUPPLIER DATABASE

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

The tenderer shall provide a pdf. copy of the supplier registration form from National Treasury Central Supplier Database (www.treasury.gov.za). Tenderers who are not registered on the Central Supplier Database at tender closure will be declared non-responsive (refer to Tender Data, Clause C.2.1.1). In the case of a Joint Venture or a Targeted Enterprise, a pdf. supplier registration form must be provided for each member of the Joint Venture or Targeted Enterprise.

NAME OF CONTRACTOR:

CENTRAL SUPPLIER DATABASE SUPPLIER NUMBER:

SUPPLIER COMMODITY:

DELIVERY LOCATION:

SIGNED BY TENDERER:

FORM A3.6: LOCAL CONTENT DECLARATION: SUMMARY SCHEDULE (ANNEXURE C)

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to Tenderer

1. If the minimum threshold/s % local content is below the stipulated minimum threshold for local production and content, or if the Form is omitted, the tender will be declared non-responsive.

C1	Tender No.:								Note: VAT to be excluded from all calculations
C2	Tender Description:								
C3	Designated Product(s):								
C4	Tender Authority:								
C5	Tendering Entity Name:								
C6	Tender Exchange Rate:	Pula	P	EU	€	GBP	£		

		Calculation of Local Content						Tender Summary			
Tender Item No.'s	List of Items	Tender Price Each (Excl. VAT)	Exempted Imported Value	Tender Value Net of Exempted Imported Content	Imported Value	Local Value	Local Content % (Per Item)	Tender Qty	Total Tender Value	Total Exempted Imported Content	Total Imported Content
(C8)	(C9)	(C10)	(C11)	(C12)	(C13)	(C14)	(C15)	(C16)	(C17)	(C18)	(C19)
								(C20) Total Tender Value	R		
								(C21) Total Exempt Imported Content		R	
								(C22) Total Tender value net of exempt imported content		R	
								(C23) Total Imported Content			R
								(C24) Total Local Content			R
								(C25) Average Local Content % of tender			...%

Signature of tenderer from Annex B (SANS 1286:2017):

Date:

CONTRACT SANRAL N.001-192-2018/1**FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****ANNEXURE D: IMPORTED CONTENT DECLARATION - SUPPORTING SCHEDULE TO ANNEXURE C**

(D1)	Tender No.:								Note: VAT to be excluded from all calculations
(D2)	Tender Description:								
(D3)	Designated Product(s):								
(D4)	Tender Authority:								
(D5)	Tendering Entity Name:								
(D6)	Tender Exchange Rate:	Pula	P		EU	€		GBP	

A. Exempted imported content				Calculation of imported content						Summary	
Tender item'no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D7)	(D8)	(D9)	(D10)	(D11)	(D12)	(D13)	(D14)	(D15)	(D16)	(D17)	(D18)
(D19) Total exempt imported value										R0	
This total must correspond with Annex C - C 21											

B. Imported directly by the Tenderer				Calculation of imported content						Summary	
Tender item'no's	Description of imported content	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Exchange Rate	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Tender Qty	Exempted imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
(D45) Total imported value by 3rd party										R0	

Signature of tenderer from Annex B (SATS 1286.2011):

Date:

CONTRACT SANRAL N.001-192-2018/1**FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****C. Imported by a 3rd party and supplied to the Tenderer**

				Calculation of imported content						Summary	
Description of imported content	Unit of measure	Local supplier	Overseas Supplier	Foreign currency value as per Commercial Invoice	Tender Rate of Exchange	Local value of imports	Freight costs to port of entry	All locally incurred landing costs & duties	Total landed cost excl VAT	Quantity imported	Total imported value
(D33)	(D34)	(D35)	(D36)	(D37)	(D38)	(D39)	(D40)	(D41)	(D42)	(D43)	(D44)
(D45) Total imported value by 3rd party											R 0

D. Other foreign currency payments

D. Other foreign currency payments			Calculation of foreign currency payments		Summary of payments
Type of payment	Local supplier the making payment	Overseas beneficiary	Foreign currency value paid	Tender Rate of Exchange	Local value of payments
(D46)	(D47)	(D48)	(D49)	(D50)	(D51)
(D52) Total of foreign currency payments declared by tenderer and/or 3rd party					R 0

Signature of tenderer from Annexure B:
(SATS 1286.2011)

(D53) Total of imported content & foreign currency payments - (D32), (D45) & (D52) above

R 0

This total must correspond with Annex C - C 23

Date:

CONTRACT SANRAL N.001-192-2018/1**FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****ANNEXURE E: IMPORTED CONTENT DECLARATION - SUPPORTING SCHEDULE TO ANNEXURE C**

(E1)	Tender No.:		Note: VAT to be excluded from all calculations
(E2)	Tender Description:		
(E3)	Designated Product(s):		
(E4)	Tender Authority:		
(E5)	Tendering Entity Name:		

Local Products (Goods, Services and Works)	Description of items purchased	Local suppliers	Value
	(E6)	(E7)	(E8)
(E9) Total local products (Goods, Services and Works)			R 0

(E10) **Manpower costs** (Tender's manpower cost) **R 0**

(E11) **Factory overheads** (Rental, depreciation & amortisation, utility costs, consumables etc.) **R 0**

(E12) **Administration overheads and mark-up** (Marketing, insurance, financing, interest etc.) **R 0**

(E13) Total local content **R 0**

This total must correspond with Annex C - C24

Signature of tenderer from Annexure B:
(SATS 1286.2011)

Date:

FORM A4: SCHEDULE OF DEVIATIONS OR QUALIFICATIONS BY TENDERER

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to tenderer:

- 1) The postulated tender MUST be priced.**
- 2) When submitting any alternative tender, condition of clause C.2.12 of Tender Data, shall be followed.**

Page	Description

SIGNED BY TENDERER:

FORM A5: SCHEDULE OF ADDENDA TO TENDER DOCUMENTS

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to tenderer:

If an addendum containing material amendments is not incorporated by the tenderer in his tender offer, the tender will be declared non-responsive.

We confirm that the following communications received from the Employer before the submission of this tender offer, amending the tender documents, have been taken into account in this tender offer:		
	Date	Title or Details
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

SIGNED BY TENDERER:

FORM A6: CERTIFICATE OF TAX COMPLIANCE (INCORPORATING SBD2)

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

The tenderer shall complete the declaration below.

I, (name)

the undersigned in my capacity as (position)

on behalf of (name of company)

herewith grant consent that SARS may disclose to the South African National Roads Agency SOC Limited (SANRAL) our tax compliance status. For this purpose, our unique security personal identification number (PIN) isour tax reference number is and our tax clearance certificate number is

In the event of a joint venture, each member shall comply with the above requirement.

SIGNED BY TENDERER:

FORM A7: CERTIFICATE OF INSURANCE COVER

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Note to tenderer:
In the event of the tenderer being a joint venture/consortium, the details of the individual members must also be provided.

The tenderer shall provide the following details of this insurance cover:

- 1. Name of Tenderer:
- 2. Period of Validity:
- 3. Value of Insurance:
 - Insurance for Works and Contractor's Equipment
Company:
Value:
 - Insurance for Contractor's Personnel
Company:
Value:
 - General public liability
Company:
Value:
 - SASRIA
Company:
Value:

SIGNED BY TENDERER:

FORM A8: TENDERER'S REGISTERED FINANCIAL SERVICE PROVIDER LETTER AND BANK DETAILS

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to tenderer:

1. The tenderer shall attach to this form a letter (dated less than 3 months prior to the tender closing date) from a Registered Financial Service Provider (registered with the FSB) confirming his account and confirms the Tenderer's available capital and that the Tenderer has the financial means net of current commitments (independent of any contractual advance payment) available to meet the construction cash flow requirements estimated for the subject contract or a written confirmation from any registered financial institution or the tenderer's independent registered accountant should be requested to submit confirmation of the available working capital to meet the construction workflow requirements estimated for the subject contract. The confirmation by an independent registered accountant must indicate that the review, to be conducted in terms of ISRS4400, was done in terms of the Section 30 and Regulation 29 of the Companies Act No. 71 of 2008.
2. Failure to provide the required letter with the tender submission may render the tenderer's offer non-responsive in terms of tender condition C.3.8. Failure to provide the required letter with the tender submission may render the tenderer's offer non-responsive in terms of tender condition C.3.8.
3. In the event that the tenderer is a joint venture enterprise, details of all the members of the joint venture shall be similarly provided and attached to this form.
4. In the event that the Employer at its sole discretion is not satisfied with the financial capability of the tenderer as a result of whatsoever nature and reason, the Employer reserves the right to invoke the provisions under tender data C.3.13. In addition, the Employer reserve the right to perform a full risk assessment as per tender data C.3.13. Furthermore, if the aforementioned occur, any and all report/s will be used to evaluate the Tenderer's ability to perform the contract as stated in sub-clause C3.13.(b) of the CIDB Standard for Uniformity.
5. The letter shall contain the information as indicated below.
6. The successful Tenderer may be requested to demonstrate its financial capability to execute the contract prior to award at SANRAL's discretion.
7. If the tenderer does not have financial resources, the tender will be declared non-responsive.

DATE

Bank Name

FSB Number

Bank Address

(Letter to be on the Financial Service Provider's letter head)

RE: ACCOUNT CONDUCT AND CASHFLOW CONFIRMATION

To Whom It May Concern:

We hereby confirm that Tenderer Name has been banking with xxxx bank for a period of xxx years and the account has been conducted in a satisfactory manner. Tenderer Name has the financial means, net of current commitments available to meet the construction cash flow requirements to the value of xxxxx for contract (insert contract number).

i) Name
of Account Holder:

ii) Accou
nt Number:

iii) Bank
name:

iv) Branch
h Number:
v) Bank
and branch contact details.....

Yours Sincerely,

Name_____

Signature_____



FORM A9.1: SCHEDULE OF TENDERER'S LITIGATION HISTORY

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Note to tenderer:

The tenderer shall list below details of any litigation with which the tenderer (including its directors, shareholders or other senior members in previous companies) has been involved with any organ of state or state department within the last ten years. The details must include the year, the litigating parties, the subject matter of the dispute, the value of any award or estimated award if the litigation is current and in whose favour the award, if any, was made.

Employer	Other litigating party	Dispute	Award value	Date resolved

SIGNED BY TENDERER:

FORM A3.5: DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS (SBD 6.2)

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to Tenderer

1. If the minimum threshold/s % local content is below the stipulated minimum threshold for local production and content, or if the Form is omitted, the tender will be declared non-responsive.

This Standard Bidding Document (SBD) must form part of all bids invited. It contains general information and serves as a declaration form for local content (local production and local content are used interchangeably).

Before completing this declaration, bidders must study the General Conditions, Definitions, Directives applicable in respect of Local Content as prescribed in the Preferential Procurement Regulations, 2017, the South African Bureau of Standards (SABS) approved technical specification number SANS 1286:2017 (Edition 1) and the Guidance on the Calculation of Local Content together with the Local Content Declaration Templates [Annex C (Local Content Declaration: Summary Schedule), D (Imported Content Declaration: Supporting Schedule to Annex C) and E (Local Content Declaration: Supporting Schedule to Annex C)].

1. General Conditions

- 1.1. Preferential Procurement Regulations, 2017 (Regulation 8) makes provision for the promotion of local production and content.
- 1.2. Regulation 8(2) prescribe Addendum that in the case of designated sectors, organs of state must advertise such tenders with the specific bidding condition that only locally produced or manufactured goods, with a stipulated minimum threshold for local production and content will be considered.
- 1.3. Where necessary, for bids referred to in paragraph 1.2 above, a two-stage bidding process may be followed, where the first stage involves a minimum threshold for local production and content and the second stage price and B-BBEE.
- 1.4. A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 1.5. The local content (LC) expressed as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286:211 as follows:

$$LC = [1 - x / y] * 100$$

Where:

x is the imported content in Rand

y is the bid price in Rand excluding value added tax (VAT)

Prices referred to in the determination of x must be converted to Rand (ZAR) by using the exchange rate published by South African Reserve Bank (SARB) on the date of advertisement of the bid as indicated in paragraph 3.1 below.

The SABS approved technical specification number SANS 1286:2017 is accessible on http://www.thedti.gov.za/industrial_development/ip.jsp at no cost.

- 1.6. A bid may be disqualified if this Declaration Certificate and the Annex C (Local Content Declaration: Summary Schedule – Form A3.6) are not submitted as part of the bid documentation.
- 1.7. Only locally produced or locally manufactured Textiles, Clothing, Leather and Footwear from local raw material or input, with a minimum threshold for local production and content of 100% will be considered.
2. The stipulated minimum threshold(s) for local production and content (refer to Annex A of SATS 1286:2011) for this bid is/are as follows:

Description of services, works or goods	Stipulated minimum threshold
Electrical cable material products	
Low Voltage	90%
Low Cost Reticulation	90%
Medium & High Voltage	90%
ACR	90%
Telecom cable material products	
Optical Fibre Cables	90%
Copper Telecom Cables	90%
Plastic Pipes	
Polyvinyl chloride (PVC) pipes	100%
High density Polyethylene (HDPE) pipes	100%
Polypropylene (PP) pipes	100%
Glass Reinforced Plastic (GRP) pipes	100%
Textiles, Clothing, Leather and Footwear	100%
Only locally produced or locally manufactured textiles, clothing, leather and footwear from local raw material or input	100%

3. Does any portion of the services or goods offered have any imported content?

YES		NO		<i>Tick applicable box</i>
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- 3.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.5 of the general conditions must be the rate(s) published by SARB for the specific currency on the date of advertisement of the bid: 14 December 2022

The relevant rates of exchange information are accessible on <https://www.resbank.co.za>.

Indicate the rate(s) of exchange against the appropriate currency in the table below (refer to Annex A of SATS 1286:2011):

Currency	Rates of exchange
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

NB: Bidders must submit proof of the SARB rate(s) of exchange used.

4. Where, after the award of a bid, challenges are experienced in meeting the stipulated minimum threshold for local content the DTI must be informed accordingly in order for the DTI to verify and in consultation with the AO/AA provide directives in this regard.

LOCAL CONTENT DECLARATION
(REFER TO ANNEX B OF SANS 1286:2017)

**LOCAL CONTENT DECLARATION BY CHIEF FINANCIAL OFFICER OR OTHER LEGALLY RESPONSIBLE PERSON NOMINATED IN WRITING BY THE CHIEF EXECUTIVE OR SENIOR MEMBER/PERSON WITH MANAGEMENT RESPONSIBILITY
(CLOSE CORPORATION, PARTNERSHIP OR INDIVIDUAL)**

IN RESPECT OF BID NO.: CONTRACT SANRAL N.001-192-2018/1

ISSUED BY: THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED (the Procurement Authority / Institution):

N.B.:

1. The obligation to complete, duly sign and submit this declaration cannot be transferred to an external authorized representative, auditor or any other third party acting on behalf of the bidder.
2. Guidance on the Calculation of Local Content together with Local Content Declaration Templates (Annex C, D and E) is accessible on <http://www.thedtic.gov.za/sectors-and-services-2/industrial-development/industrial-procurement/?hilite=%27local%27%2C%27content%27%2C%27declaration%27>. Bidders should first complete Declaration D. After completing Declaration D, bidders should complete Declaration E and then consolidate the information on Declaration C. **Declaration C should be submitted with the bid documentation at the closing date and time of the bid in order to substantiate the declaration made in paragraph (c) below.** Declarations D and E should be kept by the bidders for verification purposes for a period of at least 5 years. The successful bidder is required to continuously update Declarations C, D and E with the actual values for the duration of the contract.

I, the undersigned (full names),

do hereby declare, in my capacity as

of (name of bidder entity)

the following:

- a) The facts contained herein are within my own personal knowledge.
- b) I have satisfied myself that the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SANS 1286:2017; and
- c) The local content percentage (%) indicated below has been calculated using the formula given in clause 3 of SANS 1286:2017, the rates of exchange indicated in paragraph 3.1 above and the information contained in Declarations D and E which has been consolidated in Declaration C:

Bid price, excluding VAT (y)	R
Imported content (x), as calculated in terms of SANS 1286:2017	R
Stipulated minimum threshold for local content (paragraph 2 above)%
Local content %, as calculated in terms of SANS 1286:2017%

If the bid is for more than one product, the local content percentages for each product contained in Declaration C shall be used instead of the table above.

The local content percentage for each product has been calculated using the formula given in clause 3 of SANS 1286:2017, the rates of exchange indicated in paragraph 3.1 above and the information contained in Declarations D and E.

- d) I accept that the Procurement Authority / Institution has the right to request that the local content be verified in terms of the requirements of SANS 1286:2017.
- e) I understand that the awarding of the bid is dependent on the accuracy of the information furnished in this application. I also understand that the submission of incorrect data, or data that are not verifiable as described in SANS 1286:2017, may result in the Procurement Authority/Institution imposing any or all of the remedies as provided for in Regulation 14 of the Preferential Procurement Regulations, 2017 promulgated under the Preferential Procurement Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE:

DATE:

WITNESS 1:

SIGNATURE: NAME (IN CAPITALS):

WITNESS 2:

SIGNATURE: NAME (IN CAPITALS):

FORM A9.2: ENVIRONMENTAL, SOCIAL, HEALTH, AND SAFETY PERFORMANCE DECLARATION**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****Notes to tenderer:**

- 1) The tenderer (and in the case of a Joint Venture, each member of the Joint Venture) shall indicate below by marking with an "X" if suspension or termination of a contract occurred or not, and/or if the performance security has been called or not, related to Environmental, Social, Health or Safety (ESHS) performance, in the past five (5) years prior to the tender submission date.
- 2) In the event that suspension or termination occurred and/or the performance security has been called, the tenderer shall complete the details of all the suspensions and terminations as well as the details of all performance securities called since the date indicated.

The Employer may use this information to seek further information or clarifications in carrying out its due diligence.

Environmental, Social, Health, and Safety Performance Declaration in accordance with clause 4.1.1 of the Tender Data.			
<input type="checkbox"/> No suspension or termination of contract: An employer has not suspended or terminated a contract and/or called the performance security for a contract for reasons related to Environmental, Social, Health, or Safety (ESHS) performance in the past five (5) years prior to the tender submission date.			
<input type="checkbox"/> Declaration of suspension or termination of contract: The following contract(s) has/have been suspended or terminated and/or Performance Security called by an employer(s) for reasons related to Environmental, Social, Health, or Safety (ESHS) performance in the past five (5) years prior to the tender submission date. Details are described below::			
Year	Suspended or terminated portion of contract	Contract Identification	Total Contract Amount
<i>[insert year]</i>	<i>[insert amount and percentage]</i>	<i>[insert complete contract name, contract number, Name of Employer, Address of Employer, Reason(s) for suspension or termination]</i>	<i>[insert amount]</i>
Performance Security called by an employer(s) for reasons related to ESHS performance			
Year	Contract Identification		Total Contract Amount
<i>[insert year]</i>	<i>[insert complete contract name, contract number, Name of Employer, Address of Employer, Reason(s) for calling of performance security]</i>		<i>[insert amount]</i>

SIGNED BY TENDERER:

FORM A9.3: COMPLIANCE WITH LABOUR LEGISLATION DECLARATION

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Note to tenderer:

- 1. **Tenderers must be registered with the Bargaining Council for the Civil Engineering Industry (BCCEI) or the relevant Bargaining Council.**
- 2. **Tenderers must append to this schedule (Form A9.3: Compliance with Labour Legislation) a letter of compliance / letter of good standing in terms of the relevant Government Gazette that indicates compliance/validity at the time of tender or obtain such upon being requested to do so in writing and within the period contained in such a request, failing which their tenders will be declared non-responsive.**
- 3. **Only those tenders submitted by tenderers who are in good standing with the BCCEI or any relevant applicable legislated bargaining council at the time of the tender award will be declared responsive.**
- 4. **Each party to a Consortium/Joint Venture shall append separate certificates for each party in the above regard.**
- 5. **The tenderer, by signing this schedule, declares that it will comply with all labour legislation, as may be applicable.**

SIGNED BY TENDERER:

FORM A10: SCHEDULE OF CURRENT COMMITMENTS**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****Notes to tenderer:**

- 1) The tenderer shall list below all contracts currently in progress or awarded and about to commence and tenders for which offers have been submitted but awards not yet made.
- 2) In the event of a joint venture enterprise, details of all the members of the joint venture shall similarly be attached to this form.
- 3) The lists must be restricted to not more than 20 contracts and 20 tenders. If a tenderer's actual commitments or potential commitments are greater than 20 each, those listed should be in descending order of expected final contract value or sum tendered.

Table 1: CONTRACTS AWARDED				
Employer	Project	Expected total value of contract (incl. VAT)	Duration (Months)	Expected completion date

Table 2: TENDERS NOT YET AWARDED				
Employer	Project	Sum Tendered (incl. VAT)	Tendered Duration (Months)	Expected commencement

SIGNED BY TENDERER:

**FORM A11: CERTIFICATE OF COMPLIANCE WITH COMPENSATION FOR OCCUPATIONAL INJURIES
AND DISEASES ACT, 1993 (ACT NO. 130 OF 1993)**

CONTRACT SANRAL N.001-192-2018/1

**FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL
ROUTE N1 AND R30**

Notes to tenderer:

- 1) Discovery that the tenderer has failed to make proper disclosure may result in SANRAL terminating a contract that flows from this tender on the ground that it has been rendered invalid by the tenderer’s misrepresentation.
- 2) The tenderer shall attach to this Form evidence that he is registered and in good standing with the compensation fund or with a licensed compensation insurer who is approved by Department of Labour in terms of section 80 of the Compensation for Injury and Disease Act, 1993 (Act No. 130 of 1993).
- 3) The tenderer is required to disclose, by also attaching documentary evidence to this form, all inspections, investigations and their outcomes conducted by the Department of Labour into the conduct of the tenderer at any time during the 36 months preceding the date of this tender.
- 4) In the event of a Joint Venture each member of JV must comply with the above.

SIGNED BY TENDERER:

FORM A12: REGISTRATION WITH CIDB

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to tenderer:

- a. If the tenderer is not registered on CIDB within the required contractor grading at the tender closing date or the tenderer has not declared interest of application to upgrade the grading and also failed to submit the new registered grading within 21 days after tender closure the tender will be declared non-responsive.

The tenderer shall provide a pdf. copy of the Active Contractor's Listing off the CIDB website www.cidb.org.za. Tenderers whose CIDB registration expires within 21 days after close of tender shall attach proof of their application for re-registration (refer to tender data clause C.2.1.1). In the case of a Joint Venture, a pdf. copy of the Active Contractor's Listing must be provided for each member of the Joint Venture.

Complete the following details of his registration with the Construction Industry Development Board.

Name of Contractor:

Contractor Grading Designation:

CIDB Contractor Registration Number:

Registration expiry date:

FORM A13: FORM SBD1 – INVITATION TO BID AND TERMS AND CONDITIONS FOR BIDDING**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****PART A: INVITATION TO BID**

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED					
BID NUMBER:	N.001-192-2018/1	CLOSING DATE:	17 February 2023	CLOSING TIME:	11:00
DESCRIPTION	FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30				
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT:					
Reception Area The South African National Roads Agency SOC Limited 58 Van Eck Place Mkondeni Pietermaritzburg 3201					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO					
E-MAIL ADDRESS	ProcurementER4@sanral.co.za				
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
SUPPLIER COMPLIANCE STATUS	TCS PIN:		OR	CSD No:	
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	<input type="checkbox"/> Yes <input type="checkbox"/> No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT		<input type="checkbox"/> Yes <input type="checkbox"/> No
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE (FOR EMEs & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]					
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS / SERVICES /WORKS OFFERED?	<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?		<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES, ANSWER THE QUESTIONNAIRE BELOW]
QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS					
IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?			<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
DOES THE ENTITY HAVE A BRANCH IN THE RSA?			<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?			<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?			<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?			<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
IF THE ANSWER IS “NO” TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW.					

PART B: TERMS AND CONDITIONS FOR BIDDING**1. BID SUBMISSION:**

1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.

1.2. **ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED (NOT TO BE RE-TYPED) OR ONLINE**

1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER LEGISLATION OR SPECIAL CONDITIONS OF CONTRACT.

1.4. **THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).**

2. TAX COMPLIANCE REQUIREMENTS

2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.

2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.

2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) OR PIN MAY ALSO BE MADE VIA E-FILING. THROUGH THE SARS WEBSITE, WWW.SARS.GOV.ZA.

2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS TOGETHER WITH THE BID.

2.5 IN BIDS WHERE CONSORTIA/JOINT VENTURES/SUB-CONTRACTORS ARE INVOLVED; EACH PARTY MUST SUBMIT A SEPARATE TCS/PIN/CSD NUMBER.

2.6 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE.

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS will render the tenderer's offer non-responsive and it will not be considered

SIGNATURE OF BIDDER:

CAPACITY UNDER WHICH THIS BID IS SIGNED:
(Proof of authority must be submitted, e.g. Company Resolution)

DATE:

FORM B1: CURRENCY EXCHANGE RATE FLUCTUATIONS**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****Note to Tenderer:**

Tenderers should note that the Contract and the Contract Price are ZAR (Rand) denominated. The Employer shall however allow the tenderer, should it so elect, to indicate which parts of Plant and specialist foreign labour the tenderer wishes to price in foreign currency. Only Euro or USD will be allowed as foreign currencies. All the remaining items and all the other associated costs shall remain in ZAR and the tenderer shall complete the Schedule of Payments as such. All amounts paid pursuant to the Contract, will however be paid by the Employer to the Contractor in ZAR, with the foreign currency components being converted into ZAR by the Employer (at the rate quoted by the Employer's primary bankers at 10:00 seven (7) days prior to the last day for payment as contemplated in the FIDIC Conditions of Contract (Volume 1) as amended by the FIDIC Particular Conditions of Contract and the Special Provisions (Part C1)). For these purposes, the tenderer shall list below those items of Plant and Specialist Foreign Labour which it intends to price in Euro or USD. Under no circumstances may items which do not constitute Plant or Specialist Foreign Labour, be priced in Euro or USD and included in the items to be listed below.

For tender evaluation purposes only, the tenderer shall include those items of Plant (which are priced in Euro or USD) and which are listed below, in the Schedule of Payments/Cost Matrix in ZAR, by converting those items into ZAR at the applicable exchange rate, taken at 28 days prior to the closing date of the tender. The tenderer shall state the exchange rate used for each item in the table below.

The balance of the tendered amount (i.e. the non-Euro or non-USD based amount) in the Schedule of Payments/Cost Matrix shall be subject to Contract Price Adjustment as contemplated in Part C2: Pricing Data.

This aforementioned is however subject to the requirements of sub-clause 14.17 of the Particular Conditions of Contract (Part C1).

No	Payment Item reference in SoP	Item Description (Plant of Specialist Foreign labour only)	Direct Foreign Price	Tendered Amount in ZAR to be transferred to SoP	Exchange rate used (USD:ZAR)
	Tenderer to add Rows to table as needed				

SIGNED BY TENDERER:

FORM B2: CONTRACTOR’S ESTABLISHMENT ON SITE

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Note to Tenderer:
If the tenderer should require additional compensation for his obligations under Volume 2 Book 2a and Volume 2 Book 7a (over and above the total tendered for series A-1000 and B-1001 a) and b) of the Schedule of Payments/Cost Matrix) by including such additional compensation in the tendered rates and/or lump sum of items in the pricing schedule, these items and the value of such additional compensation shall also be set out in a letter attached to this form.

Should the combined, extended total tendered for:

- Series A-1000 and
- Series B-1001 a) and b)

exceed a maximum of 15% of the tender sum, the tenderer shall clearly set out his reasons for tendering in this manner in a letter attached to this page.

The relevant regional project engineer will duly consider these reasons but reserves the right to consider the tendered rates to be imbalanced and to deal with them in terms of Tender Data clause C.3.9 contained in this volume.

Total tendered for series A-1000 and B-1001 a) and b) of the Schedule of Payments/Cost Matrix expressed as a percentage of the tender sum (excluding VAT) %

SIGNED BY TENDERER:

FORM C1.1: TENDERER'S B-BBEE VERIFICATION CERTIFICATE**Notes to tenderer:****1. The tenderer shall attach to this form a valid B-BBEE verification certificate issued in accordance with:**

- (a) the amended Codes of Good Practice published in Notice 303 of 2019 of Government Gazette No. 42496 on 31 May 2019 by the Department of Trade and Industry or;
- (b) the amended Construction Sector Codes published in Notice 931 of 2017 of Government Gazette No. 41287 on 1 December 2017 by the Department of Trade and Industry.
If Measured Entity operates in more than one sector or sub-sector, the scorecard for the sector or sub-sector in which the majority of its core activities (measured in terms of Annual Revenue) are located will be acceptable.
- (c) the Information and Communication Technology (ICT) Sector Codes (Published in Notice 1387 of Government Gazette No. 40407 of 7 November 2016); or
- (d) the Financial Sector Sector (Published in Notice 1325 of Government Gazette No. 41287 of 1 December 2017); or
- (e) The Integrated Transport Sector Codes (Published in Notice 1162 of Government Gazette No. 32511 of 21 August 2019).

The certificate shall:

- have been issued by a verification agency accredited by the South African National Accreditation System (SANAS); or
- be in the form of a sworn affidavit or a certificate issued by the Companies and Intellectual Property Commission in the case of an Exempted Micro Enterprise (EME) with a total annual revenue of less than R3 million if issued in accordance with the amended Construction Sector Codes published in Notice 931 of 2017 of Government Gazette No. 41287 on 1 December 2017 by the Department of Trade and Industry; and
- be valid at the original advertised tender closing date; and
- have a date of issue less than 12 (twelve) months prior to the tender closing date (see Tender Data C.2.15).

2. If the B-BBEE Certificate is not valid,**3. A valid BBBEE Certificates shall contain:**

- Name of enterprise as per enterprise registration documents issued by CIPC, and enterprise business address.
- Value-Added Tax number, where applicable.
- The B-BBEE Scorecard against which the certificate is issued, indicating all elements and scores achieved for each element. The actual score achieved must be linked to the total points as per the relevant Codes.
- B-BBEE status with corresponding procurement recognition level.
- The relevant Codes used to issue the B-BBEE verification certificate.
- Date of issue and expiry (e.g. 9 June 2018 to 8 June 2019). Where a measured entity was subjected to a re-verification process, due to material change, the B-BBEE Verification Certificate must reflect the initial date of issue, date of re-issue and the initial date of expiry. Re-verification does not extend the lifespan of the B-BBEE Verification Certificate.
- Financial period which was used to issue the B-BBEE Verification Certificate

4. A valid Sworn Affidavit shall contain:

- Name/s of deponent as they appear in the identity document and the identity number.

- - Designation of the deponent as either the director, owner or member must be indicated in order to know that person is duly authorised to depose of an affidavit.
- - Name of enterprise as per enterprise registration documents issued by the CIPC, where applicable, and enterprise business address.
- - Percentage black ownership, black female ownership and whether they fall within a designated group.
- - Indicate total revenue for the year under review and whether it is based on audited financial statements or management accounts.
- - Financial year-end as per the enterprise's registration documents, which was used to determine the total revenue. **The valid format of the Financial Year-End is Day/Month/Year**
- - B-BBEE status level. An enterprise can only have one status level.
- - Date deponent signed and date of Commissioner of Oath must be the same.
- - Commissioner of Oath cannot be an employee or ex officio of the enterprise because, a person cannot by law, commission a sworn affidavit in which they have an interest, and

5. In the event of a Joint Venture (JV), a project specific (SANRAL project number indicated) consolidated B-BBEE verification certificate in the name of the JV, shall be attached.

6. The attached verification certificate and the associated assessment report shall comply with the requirements of Tender Data clause C.3.11.8 and shall identify:

- (a) The name and domicilium citandi et executandi of the tenderer.**
- (b) The registration and VAT number of the tenderer.**
- (c) The dates of granting of the B-BBEE score and the period of validity.**
- (d) The expiry date of the verification certificate.**
- (e) A unique identification number.**
- (f) The standard and/or normative document, including the issue and/or revision used to evaluate the tenderer.**
- (g) The name and/or mark/logo of the B-BBEE verification agency.**
- (h) The category (Generic, QSE, EME) in which the tenderer has been measured.**
- (i) The B-BBEE status level.**
- (j) The South African National Accreditation System (SANAS) logo on the verification certificate once verification agencies have been accredited.**
- (k) The B-BBEE procurement recognition level.**
- (l) The score achieved per B-BBEE element.**
- (m) The % black shareholding.**
- (n) The % black women shareholding.**
- (o) The % black persons with disabilities shareholding**
- (p) The % black youth shareholding**
- (q) The % black people living in rural or underdeveloped areas or townships shareholding**
- (r) The % black military veterans shareholding**
- (s) The value-added status of the tenderer.**

7. The Employer will not be responsible to acquire data that it needs for its own reporting systems and which may not form part of a verification agency's standard certificate format.

The tenderer, at its own cost, must acquire any missing specified data listed in 4 above from its selected verification agency and have it recorded on the certificate. Alternatively, such missing data must be supplied separately, but certified as correct by the same verification agency and also attached to this form.

**FORM C1.2: PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL
PROCUREMENT REGULATIONS 2017 (INCORPORATING SBD6.1)**

CONTRACT SANRAL N.001-192-2018/1

**FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL
ROUTE N1 AND R30**

Notes to tenderer:

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution

NB:BEFORE COMPLETING THIS FORM, THE TENDERER MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.

1. GENERAL CONDITIONS

- 1.1 The following preference point systems are applicable to all bids:
- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
 - the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).
- 1.2 (a) The value of this bid is estimated to exceed R50 000 000 (all applicable taxes included) and therefore the 90/10 preference point system shall be applicable; or
- 1.3 Points for this bid shall be awarded for:
- Price; and
 - B-BBEE Status Level of Contributor.
- 1.4 The maximum points for this bid are allocated as follows:

	POINTS
PRICE	90
B-BBEE STATUS LEVEL OF CONTRIBUTOR	10
Total points for Price and B-BBEE must not exceed	100

- 1.5 Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.
- 1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

- “B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act.
- “B-BBEE status level of contributor”** means the B-BBEE status of an entity 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.
- “bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals.
- “Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003).

- e) **“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;
- f) **“functionality”** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.
- g) **“prices”** includes all applicable taxes less all unconditional discounts.
- h) **“proof of B-BBEE status level of contributor”** means:
 - i. B-BBEE Status level certificate issued by an authorized body or person;
 - ii. A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
 - iii. Any other requirement prescribed in terms of the B-BBEE Act.
- i) **“QSE”** means a qualifying small business 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.
- j) **“rand value”** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes.

3. POINTS AWARDED FOR PRICE

THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 or 90/10

$$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right) \text{ or } P_s = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where:

P_s = Points scored for price of bid under consideration
 P_t = Price of bid under consideration
 P_{\min} = Price of lowest acceptable bid

4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTOR

In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (90/10 system)	Number of points (80/20 system)
1	10	20
2	9	18
3	6	14
4	5	12
5	4	8
6	3	6
7	2	4
8	1	2

5. BID DECLARATION

Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

6. B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 4.1

B-BBEE Status Level of Contributor: = (maximum of 10 or 20 points)

(Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.)

7. SUB-CONTRACTING

7.1 Will any portion of the contract be sub-contracted? (Tick applicable box)

YES		NO	
-----	--	----	--

7.1.1 If yes, indicate:

- a) What percentage of the contract will be subcontracted %
- b) The name of the sub-contractor
- c) The B-BBEE status level of the sub-contractor:
- d) Whether the sub-contractor is an EME or QSE (***Tick applicable box***)

YES		NO	
-----	--	----	--

- e) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations, 2017:

Designated Group: An EME or QSE which is at least 51% owned by:	EME	QSE
Black people	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Black people who are youth	<input type="checkbox"/>	<input type="checkbox"/>
Black people who are women	<input type="checkbox"/>	<input type="checkbox"/>
Black people with disabilities	<input type="checkbox"/>	<input type="checkbox"/>
Black people living in rural or underdeveloped areas or townships	<input type="checkbox"/>	<input type="checkbox"/>
Cooperative owned by black people	<input type="checkbox"/>	<input type="checkbox"/>
Black people who are military veterans	<input type="checkbox"/>	<input type="checkbox"/>
OR		
Any EME	<input type="checkbox"/>	<input type="checkbox"/>
Any QSE	<input type="checkbox"/>	<input type="checkbox"/>

8. DECLARATION WITH REGARD TO COMPANY/FIRM

8.1 Name of company/firm:

8.2 VAT registration number:

8.3 Company registration number:

8.4 Type of company/firm (***Tick applicable box***)

- ☐ Partnership/Joint Venture / Consortium
- ☐ One person business/sole propriety
- ☐ Close corporation
- ☐ Company
- ☐ (Pty) Limited

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....
.....

8.6 COMPANY CLASSIFICATION (*Tick applicable box*)

- ☐ Manufacturer
- ☐ Supplier
- ☐ Professional service provider
- ☐ Other service providers, e.g. transporter, etc.

8.7 Total number of years the company/firm has been in business:

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBEE status level of contributor indicated in paragraphs 1.4 and 6.1 of the foregoing certificate qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If the B-BBEE status level of contributor has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have:
 - (a) disqualify the person from the bidding process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
 - (e) forward the matter for criminal prosecution.

SIGNATURE OF BIDDER(S): **DATE:**

ADDRESS:

WITNESS 1:

SIGNATURE: NAME (IN CAPITALS):

WITNESS 2:

SIGNATURE: NAME (IN CAPITALS):

FORM D1: SCHEDULE OF TENDERER'S PLANT AND EQUIPMENT**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30**

The tenderer shall provide full details in the table below what equipment **will be immediately available for this contract**, what equipment that will become available by virtue of outstanding orders, and what further equipment that will be acquired or hired for the work should the tenderer be awarded the contract.

D1.1 TOLL OPERATIONS (e.g. transport vehicles, fax machines, photostat machines, switchboard, cash boxes, coin counters, coin scales, office computers and associated equipment, debtors system, kitchen appliances, gardening appliances, furniture, traffic management aids, cleaning Equipment, training Equipment, consumables, etc.) **(All equipment listed should be in good working condition)**

- a) Equipment immediately available (I)
- b) Equipment in order (O)
(State details of arrangements made, with delivery dates)
- c) Equipment that will be acquired or hired (H)
(State details of delivery arrangements)

DESCRIPTION, SIZE, CAPACITY	NUMBER	AVAILABILITY

SIGNED BY TENDERER:

FORM D1: SCHEDULE OF TENDERER’S PLANT AND EQUIPMENT (CONTINUED)

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

The tenderer shall provide full details in the table below what equipment **that will be immediately available for this contract**, equipment that will become available by virtue of outstanding orders, and further what equipment that will be acquired or hired for the works should the tenderer be awarded the contract.

D1.2: MIS/BACK OFFICE SYSTEM AND TOLL COLLECTION LANE EQUIPMENT (MIS, TCCs, TCTs, AVCs, OHLS, etc., and testing/measuring equipment, including servers, workstations, laptop computers, mimic test panel, oscilloscope, AVC simulator, ETC Equipment, spare equipment, etc.) **(All equipment listed should be in good working condition)**

- a) Equipment immediately available (I)
- b) Equipment in order (O)
(State details of arrangements made, with delivery dates)
- c) Equipment that will be acquired or hired (H)
(State details of delivery arrangements)

DESCRIPTION, SIZE, CAPACITY	NUMBER	AVAILABILITY

SIGNED BY TENDERER:

FORM D1: SCHEDULE OF TENDERER’ S PLANT AND EQUIPMENT - CONTINUED

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

The tenderer shall provide full details in the table below what equipment **that will be immediately available for this project**, what equipment that will become available by virtue of outstanding orders, and further what equipment that will be acquired or hired for the works should the tenderer be awarded the contract.

D1.3: ELECTRICAL AND MECHANICAL EQUIPMENT (testing/measuring equipment, including circuit testers, multimeters, oscilloscopes, etc) **(All equipment listed should be in good working condition)**

- a) Equipment immediately available (I)
- b) Equipment in order (O)
(State details of arrangements made, with delivery dates)
- c) Equipment that will be acquired or hired (H)
(State details of delivery arrangements)

DESCRIPTION, SIZE, CAPACITY	NUMBER	AVAILABILITY

SIGNED BY TENDERER:

FORM D1: SCHEDULE OF TENDERER’ S PLANT AND EQUIPMENT - CONTINUED

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

The tenderer shall provide full details in the table below of what equipment **that will be immediately available for this contract**, what equipment that will become available by virtue of outstanding orders, and further what equipment that will be acquired or hired for the works should the tenderer be awarded the contract.

D1.4: ROUTE PATROL EQUIPMENT (All equipment listed should be in good working condition)

- a) Equipment immediately available (I)
- b) Equipment in order (O)
(State details of arrangements made, with delivery dates)
- c) Equipment that will be acquired or hired (H)
(State details of delivery arrangements)

DESCRIPTION, SIZE, CAPACITY	NUMBER	AVAILABILITY

SIGNED BY TENDERER:

FORM D2: TENDERER'S METHOD STATEMENT

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Note to tenderer:
The tenderer shall provide a method statement with the details as indicated on this form.

The method statement must respond to the Scope of Work and Site Information under Part C4 and outline the proposed approach/methodology. The method statement should articulate what value the Tenderer will add by in achieving the stated objectives for the project.

The Tenderer must as such explain the following:

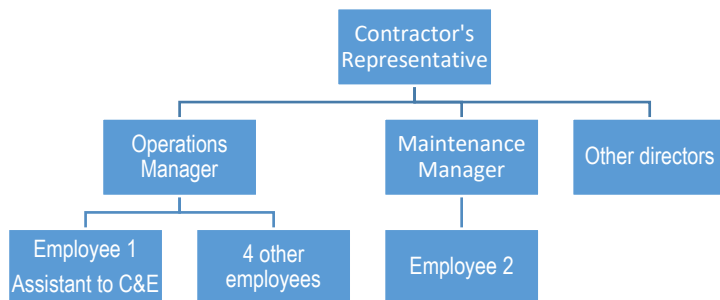
- Its understanding of the objectives of the assignment and the Employer's stated and implied requirements,
- Highlight the issues of importance and explain the technical approach they would adopt to address them, and
- Explain the methodologies which are to be adopted, demonstrate the compatibility of those methodologies with the proposed approach. The approach should also include a quality plan which outlines processes, procedures and associated resources, applied by whom and when, to meet the requirements and indicate how risks will be managed and what contribution can be made regarding value management.

The tenderer must attach his/her approach paper to this page. The approach paper should not be longer than 5 pages.

SIGNED BY TENDERER:

FORM D3: TENDERER'S ORGANISATION AND STAFFING**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****Notes to tenderer:**

1. The intention of this form is to demonstrate the tenderer's project structure, as well as the lines of responsibility between members of the project team and between the project team and the overall company structure. Attach own organogram to this form; do not populate the example diagram below.
2. Tenderers which are large companies may simplify the organogram by 'rolling up' portfolios e.g. combining directors/associates into one box of the organogram. However, the individual positions of the key persons within the structure must still be shown. The same person could fill multiple positions.
3. Joint Venture tenders require each element of the venture to submit separate organograms that show the individual structure of each member company and the lines of responsibility of the proposed personnel involved in the project. In addition, there must also be a combined organogram that indicates how the joint venture itself will function and the proposed share of the work will become a contractual obligation between the members of the joint venture.
4. State the city or town where the company's head office is located. The locality of regional or satellite offices, regardless of degree of autonomy or size is not required. Only submit the number of offices other than the head office. Do not count offices outside RSA.
5. Registered professional engineers, technicians or technologists means those who are involved in the road construction/transport industry. Registered professionals of other disciplines (e.g. mechanical) are considered as employees only.
6. In the lower table list those who will be involved in priority order of most to least responsibility for the service. Provide details of the key staff. Except for the MD, all of others must submit Forms D4. The same person may perform multiple roles.



Head Office:	<i>State City/Town. See note 4.</i>
Other Offices:	<i>Only list number, See note 4</i>
Registered Professionals: ECSA or in terms of ECSA approved International Agreements (PrEng, PrTechEng, PrCertEng, PrTechniEng)	<i>See note 5</i>
Registered Professionals: SACPCMP (Pr CM)	<i>See note 5</i>
Total Employees :	
% share in JV agreement:	<i>State 100% if no JV</i>

Name of employee	Position in team	Estimated monthly hours	Relevant specialist areas of knowledge demonstrating suitability for position
	Construction manager (Contractor's Representative)		
	Operations Manager		
	Maintenance Manager		
	Plaza Manager		

SIGNED BY TENDERER:

FORM D4.1: PERSONNEL RESOURCE DETAIL (CONTRACTOR'S REPRESENTATIVE)**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****1. ORGANISATIONAL STRUCTURE**

The tenderer shall attach to this page a diagram presenting its organisational structure intended for the works, indicating the companies, members of joint ventures and subcontractors that will perform all disciplines as listed in Form D9.

The tenderer must have in its permanent employment key resources as listed in tender data Clause C.3.11 who meet the minimum requirements as stipulated. Alternatively, the tenderer shall provide a signed undertaking from the organisation having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of a subconsultant agreement. Such undertaking must be attached to Form D4 of the Returnable Schedules.

A key person may only be proposed in more than one tender submission if that person is a sub-consultant in each of the tenderers in which the key person is proposed and is not in a permanent employment of any of the tenderers. In the event that the same key person is proposed in more than one tender and the key person is the permanent employment of one of the tenderers, then all tenders proposing the key person will be declared non-responsive.

Where the key personnel are no longer available to undertake then necessary work after the tender award, the Contractor shall within a period of fourteen (14) working days replace the key personnel listed in forms D4 with the personnel with equivalent competencies and subject to approval by the Employer. Such approval shall not be unreasonably withheld.

2. ORGANISATIONAL DATA	
The tenderer shall complete a separate form for each of the following:	
<ul style="list-style-type: none"> • The organisation tendering • Each member firm of a joint venture, consortium, or similar body, as listed in Form D9 • Each subsidiary and subcontractor listed in Form D9. 	
2.1	Name of organisation to whom this data applies
2.2	Role of organisation [i.e. tenderer, member firm (joint ventures, consortia and the like), subsidiary, subcontractor] and in which discipline:
2.3	Total staff complement (excluding skilled/semi-skilled/unskilled labourers and the like)
2.3.1	Directors/Principals
2.3.2	All other staff

3. KEY PERSONNEL DETAILS

The tenderer shall complete this form for each company, member of a joint venture and subcontractor for all disciplines as listed in Form D9. The tenderer shall complete a separate form for each key person (including, at least, managing director, director for toll operations and maintenance, other directors, regional manager, plaza manager, MIS manager, toll collection lane equipment manager, E&M manager and route patrol manager who will be deployed on the project.

Company, member of joint venture, subcontractor:

Discipline:

Name: Present position:

Proposed position in project:.....

Speciality: Qualification:.....

Years Experience

In field of speciality:.....

With organisation:

Language proficiency: (poor/good/excellent?)

Language
Speak
Read
Write

Brief resumé of relevant experience:

Note: A full Curriculum Vitae of each of the key personnel indicated in this form shall be submitted in addition to the above information.

SIGNED BY TENDERER:

FORM D4.2: PERSONNEL RESOURCE DETAIL (OPERATIONS MANAGER)**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****1. ORGANISATIONAL STRUCTURE**

The tenderer shall attach to this page a diagram presenting its organisational structure intended for the works, indicating the companies, members of joint ventures and subcontractors that will perform all disciplines as listed in Form D9.

The tenderer must have in its permanent employment key resources as listed in tender data Clause C.3.11 who meet the minimum requirements as stipulated. Alternatively, the tenderer shall provide a signed undertaking from the organisation having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of a subconsultant agreement. Such undertaking must be attached to Form D4 of the Returnable Schedules.

A key person may only be proposed in more than one tender submission if that person is a sub-consultant in each of the tenderers in which the key person is proposed and is not in a permanent employment of any of the tenderers. In the event that the same key person is proposed in more than one tender and the key person is the permanent employment of one of the tenderers, then all tenders proposing the key person will be declared non-responsive.

Where the key personnel are no longer available to undertake then necessary work after the tender award, the Contractor shall within a period of fourteen (14) working days replace the key personnel listed in forms D4 with the personnel with equivalent competencies and subject to approval by the Employer. Such approval shall not be unreasonably withheld.

2. ORGANISATIONAL DATA
The tenderer shall complete a separate form for each of the following:
<ul style="list-style-type: none"> • The organisation tendering • Each member firm of a joint venture, consortium, or similar body, as listed in Form D9 • Each subsidiary and subcontractor listed in Form D9.
2.1 Name of organisation to whom this data applies
.....
2.2 Role of organisation [i.e. tenderer, member firm (joint ventures, consortia and the like), subsidiary, subcontractor] and in which discipline:
.....
.....
2.3 Total staff complement (excluding skilled/semi-skilled/unskilled labourers and the like)
.....
.....
2.3.1 Directors/Principals
.....
.....
2.3.2 All other staff
.....
.....

3. KEY PERSONNEL DETAILS

The tenderer shall complete this form for each company, member of a joint venture and subcontractor for all disciplines as listed in Form D9. The tenderer shall complete a separate form for each key person (including, at least, managing director, director for toll operations and maintenance, other directors, regional manager, plaza manager, MIS manager, toll collection lane equipment manager, E&M manager and route patrol manager who will be deployed on the project.

Company, member of joint venture, subcontractor:

Discipline:

Name: Present position:

Proposed position in project:.....

Speciality: Qualification:.....

Years Experience

In field of speciality:.....

With organisation:

Language proficiency: (poor/good/excellent?)

Language
Speak
Read
Write

Brief resumé of relevant experience:

Note: A full Curriculum Vitae of each of the key personnel indicated in this form shall be submitted in addition to the above information.

SIGNED BY TENDERER:

FORM D4.3: PERSONNEL RESOURCE DETAIL (MAINTENANCE MANAGER)**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****1. ORGANISATIONAL STRUCTURE**

The tenderer shall attach to this page a diagram presenting its organisational structure intended for the works, indicating the companies, members of joint ventures and subcontractors that will perform all disciplines as listed in Form D9.

The tenderer must have in its permanent employment key resources as listed in tender data Clause C.3.11 who meet the minimum requirements as stipulated. Alternatively, the tenderer shall provide a signed undertaking from the organisation having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of a subconsultant agreement. Such undertaking must be attached to Form D4 of the Returnable Schedules.

A key person may only be proposed in more than one tender submission if that person is a sub-consultant in each of the tenderers in which the key person is proposed and is not in a permanent employment of any of the tenderers. In the event that the same key person is proposed in more than one tender and the key person is the permanent employment of one of the tenderers, then all tenders proposing the key person will be declared non-responsive.

Where the key personnel are no longer available to undertake then necessary work after the tender award, the Contractor shall within a period of fourteen (14) working days replace the key personnel listed in forms D4 with the personnel with equivalent competencies and subject to approval by the Employer. Such approval shall not be unreasonably withheld.

2. ORGANISATIONAL DATA	
The tenderer shall complete a separate form for each of the following:	
<ul style="list-style-type: none"> • The organisation tendering • Each member firm of a joint venture, consortium, or similar body, as listed in Form D9 • Each subsidiary and subcontractor listed in Form D9. 	
2.1	Name of organisation to whom this data applies
2.2	Role of organisation [i.e. tenderer, member firm (joint ventures, consortia and the like), subsidiary, subcontractor] and in which discipline:
2.3	Total staff complement (excluding skilled/semi-skilled/unskilled labourers and the like)
2.3.1	Directors/Principals
2.3.2	All other staff

3. KEY PERSONNEL DETAILS

The tenderer shall complete this form for each company, member of a joint venture and subcontractor for all disciplines as listed in Form D9. The tenderer shall complete a separate form for each key person (including, at least, managing director, director for toll operations and maintenance, other directors, regional manager, plaza manager, MIS manager, toll collection lane equipment manager, E&M manager and route patrol manager who will be deployed on the project.

Company, member of joint venture, subcontractor:

Discipline:

Name: Present position:

Proposed position in project:.....

Speciality: Qualification:.....

Years Experience

In field of speciality:.....

With organisation:

Language proficiency: (poor/good/excellent?)

Language
Speak
Read
Write

Brief resumé of relevant experience:

Note: A full Curriculum Vitae of each of the key personnel indicated in this form shall be submitted in addition to the above information.

SIGNED BY TENDERER:

FORM D4.4.1: PERSONNEL RESOURCE DETAIL (PLAZA MANAGER 1)**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****1. ORGANISATIONAL STRUCTURE**

The tenderer shall attach to this page a diagram presenting its organisational structure intended for the works, indicating the companies, members of joint ventures and subcontractors that will perform all disciplines as listed in Form D9.

The tenderer must have in its permanent employment key resources as listed in tender data Clause C.3.11 who meet the minimum requirements as stipulated. Alternatively, the tenderer shall provide a signed undertaking from the organisation having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of a subconsultant agreement. Such undertaking must be attached to Form D4 of the Returnable Schedules.

A key person may only be proposed in more than one tender submission if that person is a sub-consultant in each of the tenderers in which the key person is proposed and is not in a permanent employment of any of the tenderers. In the event that the same key person is proposed in more than one tender and the key person is the permanent employment of one of the tenderers, then all tenders proposing the key person will be declared non-responsive.

Where the key personnel are no longer available to undertake then necessary work after the tender award, the Contractor shall within a period of fourteen (14) working days replace the key personnel listed in forms D4 with the personnel with equivalent competencies and subject to approval by the Employer. Such approval shall not be unreasonably withheld.

2. ORGANISATIONAL DATA	
The tenderer shall complete a separate form for each of the following:	
<ul style="list-style-type: none"> • The organisation tendering • Each member firm of a joint venture, consortium, or similar body, as listed in Form D9 • Each subsidiary and subcontractor listed in Form D9. 	
2.1	Name of organisation to whom this data applies
2.2	Role of organisation [i.e. tenderer, member firm (joint ventures, consortia and the like), subsidiary, subcontractor] and in which discipline:
2.3	Total staff complement (excluding skilled/semi-skilled/unskilled labourers and the like)
2.3.1	Directors/Principals
2.3.2	All other staff

3. KEY PERSONNEL DETAILS

The tenderer shall complete this form for each company, member of a joint venture and subcontractor for all disciplines as listed in Form D9. The tenderer shall complete a separate form for each key person (including, at least, managing director, director for toll operations and maintenance, other directors, regional manager, plaza manager, MIS manager, toll collection lane equipment manager, E&M manager and route patrol manager who will be deployed on the project.

Company, member of joint venture, subcontractor:

Discipline:

Name: Present position:

Proposed position in project:.....

Speciality: Qualification:.....

Years Experience

In field of speciality:.....

With organisation:

Language proficiency: (poor/good/excellent?)

Language
Speak
Read
Write

Brief resumé of relevant experience:

Note: A full Curriculum Vitae of each of the key personnel indicated in this form shall be submitted in addition to the above information.

SIGNED BY TENDERER:

FORM D4.4.2: PERSONNEL RESOURCE DETAIL (PLAZA MANAGER 2)**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****1. ORGANISATIONAL STRUCTURE**

The tenderer shall attach to this page a diagram presenting its organisational structure intended for the works, indicating the companies, members of joint ventures and subcontractors that will perform all disciplines as listed in Form D9.

The tenderer must have in its permanent employment key resources as listed in tender data Clause C.3.11 who meet the minimum requirements as stipulated. Alternatively, the tenderer shall provide a signed undertaking from the organisation having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of a subconsultant agreement. Such undertaking must be attached to Form D4 of the Returnable Schedules.

A key person may only be proposed in more than one tender submission if that person is a sub-consultant in each of the tenderers in which the key person is proposed and is not in a permanent employment of any of the tenderers. In the event that the same key person is proposed in more than one tender and the key person is the permanent employment of one of the tenderers, then all tenders proposing the key person will be declared non-responsive.

Where the key personnel are no longer available to undertake then necessary work after the tender award, the Contractor shall within a period of fourteen (14) working days replace the key personnel listed in forms D4 with the personnel with equivalent competencies and subject to approval by the Employer. Such approval shall not be unreasonably withheld.

2. ORGANISATIONAL DATA	
The tenderer shall complete a separate form for each of the following:	
<ul style="list-style-type: none"> • The organisation tendering • Each member firm of a joint venture, consortium, or similar body, as listed in Form D9 • Each subsidiary and subcontractor listed in Form D9. 	
2.1	Name of organisation to whom this data applies
2.2	Role of organisation [i.e. tenderer, member firm (joint ventures, consortia and the like), subsidiary, subcontractor] and in which discipline:
2.3	Total staff complement (excluding skilled/semi-skilled/unskilled labourers and the like)
2.3.1	Directors/Principals
2.3.2	All other staff

3. KEY PERSONNEL DETAILS

The tenderer shall complete this form for each company, member of a joint venture and subcontractor for all disciplines as listed in Form D9. The tenderer shall complete a separate form for each key person (including, at least, managing director, director for toll operations and maintenance, other directors, regional manager, plaza manager, MIS manager, toll collection lane equipment manager, E&M manager and route patrol manager who will be deployed on the project.

Company, member of joint venture, subcontractor:

Discipline:

Name: Present position:

Proposed position in project:

Speciality: Qualification:

Years Experience

In field of speciality:

With organisation:

Language proficiency: (poor/good/excellent?)

Language
Speak
Read
Write

Brief resumé of relevant experience:

Note: A full Curriculum Vitae of each of the key personnel indicated in this form shall be submitted in addition to the above information.

SIGNED BY TENDERER:

FORM D4.4.3: PERSONNEL RESOURCE DETAIL (PLAZA MANAGER 3)**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****1. ORGANISATIONAL STRUCTURE**

The tenderer shall attach to this page a diagram presenting its organisational structure intended for the works, indicating the companies, members of joint ventures and subcontractors that will perform all disciplines as listed in Form D9.

The tenderer must have in its permanent employment key resources as listed in tender data Clause C.3.11 who meet the minimum requirements as stipulated. Alternatively, the tenderer shall provide a signed undertaking from the organisation having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of a subconsultant agreement. Such undertaking must be attached to Form D4 of the Returnable Schedules.

A key person may only be proposed in more than one tender submission if that person is a sub-consultant in each of the tenderers in which the key person is proposed and is not in a permanent employment of any of the tenderers. In the event that the same key person is proposed in more than one tender and the key person is the permanent employment of one of the tenderers, then all tenders proposing the key person will be declared non-responsive.

Where the key personnel are no longer available to undertake then necessary work after the tender award, the Contractor shall within a period of fourteen (14) working days replace the key personnel listed in forms D4 with the personnel with equivalent competencies and subject to approval by the Employer. Such approval shall not be unreasonably withheld.

2. ORGANISATIONAL DATA	
The tenderer shall complete a separate form for each of the following:	
<ul style="list-style-type: none"> • The organisation tendering • Each member firm of a joint venture, consortium, or similar body, as listed in Form D9 • Each subsidiary and subcontractor listed in Form D9. 	
2.1	Name of organisation to whom this data applies
2.2	Role of organisation [i.e. tenderer, member firm (joint ventures, consortia and the like), subsidiary, subcontractor] and in which discipline:
2.3	Total staff complement (excluding skilled/semi-skilled/unskilled labourers and the like)
2.3.1	Directors/Principals
2.3.2	All other staff
3. KEY PERSONNEL DETAILS	

The tenderer shall complete this form for each company, member of a joint venture and subcontractor for all disciplines as listed in Form D9. The tenderer shall complete a separate form for each key person (including, at least, managing director, director for toll operations and maintenance, other directors, regional manager, plaza manager, MIS manager, toll collection lane equipment manager, E&M manager and route patrol manager who will be deployed on the project.

Company, member of joint venture, subcontractor:

Discipline:

Name: Present position:

Proposed position in project:.....

Speciality: Qualification:

Years Experience

In field of speciality:.....

With organisation:

Language proficiency: (poor/good/excellent?)

Language
Speak
Read
Write

Brief resumé of relevant experience:

Note: A full Curriculum Vitae of each of the key personnel indicated in this form shall be submitted in addition to the above information.

SIGNED BY TENDERER:

FORM D4.4.4: PERSONNEL RESOURCE DETAIL (PLAZA MANAGER 4)**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****1. ORGANISATIONAL STRUCTURE**

The tenderer shall attach to this page a diagram presenting its organisational structure intended for the works, indicating the companies, members of joint ventures and subcontractors that will perform all disciplines as listed in Form D9.

The tenderer must have in its permanent employment key resources as listed in tender data Clause C.3.11 who meet the minimum requirements as stipulated. Alternatively, the tenderer shall provide a signed undertaking from the organisation having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of a subconsultant agreement. Such undertaking must be attached to Form D4 of the Returnable Schedules.

A key person may only be proposed in more than one tender submission if that person is a sub-consultant in each of the tenderers in which the key person is proposed and is not in a permanent employment of any of the tenderers. In the event that the same key person is proposed in more than one tender and the key person is the permanent employment of one of the tenderers, then all tenders proposing the key person will be declared non-responsive.

Where the key personnel are no longer available to undertake then necessary work after the tender award, the Contractor shall within a period of fourteen (14) working days replace the key personnel listed in forms D4 with the personnel with equivalent competencies and subject to approval by the Employer. Such approval shall not be unreasonably withheld.

2. ORGANISATIONAL DATA The tenderer shall complete a separate form for each of the following: <ul style="list-style-type: none"> • The organisation tendering • Each member firm of a joint venture, consortium, or similar body, as listed in Form D9 • Each subsidiary and subcontractor listed in Form D9.
2.1 Name of organisation to whom this data applies
2.2 Role of organisation [i.e. tenderer, member firm (joint ventures, consortia and the like), subsidiary, subcontractor] and in which discipline:
2.3 Total staff complement (excluding skilled/semi-skilled/unskilled labourers and the like)
2.3.1 Directors/Principals
2.3.2 All other staff
3. KEY PERSONNEL DETAILS

The tenderer shall complete this form for each company, member of a joint venture and subcontractor for all disciplines as listed in Form D9. The tenderer shall complete a separate form for each key person (including, at least, managing director, director for toll operations and maintenance, other directors, regional manager, plaza manager, MIS manager, toll collection lane equipment manager, E&M manager and route patrol manager who will be deployed on the project.

Company, member of joint venture, subcontractor:

Discipline:

Name: Present position:

Proposed position in project:

Speciality: Qualification:

Years Experience

In field of speciality:

With organisation:

Language proficiency: (poor/good/excellent?)

Language
Speak
Read
Write

Brief resumé of relevant experience:

Note: A full Curriculum Vitae of each of the key personnel indicated in this form shall be submitted in addition to the above information.

SIGNED BY TENDERER:

FORM D4-5: PERSONNEL RESOURCE DETAIL (H&S MANAGER/OFFICER)**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****1. ORGANISATIONAL STRUCTURE**

The tenderer shall attach to this page a diagram presenting its organisational structure intended for the works, indicating the companies, members of joint ventures and subcontractors that will perform all disciplines as listed in Form D9.

The tenderer must have in its permanent employment key resources as listed in tender data Clause C.3.11 who meet the minimum requirements as stipulated. Alternatively, the tenderer shall provide a signed undertaking from the organisation having the required personnel, stating that they will undertake the necessary work on behalf of the tenderer in terms of a subconsultant agreement. Such undertaking must be attached to Form D4 of the Returnable Schedules.

A key person may only be proposed in more than one tender submission if that person is a sub-consultant in each of the tenderers in which the key person is proposed and is not in a permanent employment of any of the tenderers. In the event that the same key person is proposed in more than one tender and the key person is the permanent employment of one of the tenderers, then all tenders proposing the key person will be declared non-responsive.

Where the key personnel are no longer available to undertake then necessary work after the tender award, the Contractor shall within a period of fourteen (14) working days replace the key personnel listed in forms D4 with the personnel with equivalent competencies and subject to approval by the Employer. Such approval shall not be unreasonably withheld.

2. ORGANISATIONAL DATA

The tenderer shall complete a separate form for each of the following:

- The organisation tendering
- Each member firm of a joint venture, consortium, or similar body, as listed in Form D9
- Each subsidiary and subcontractor listed in Form D9.

2.1 Name of organisation to whom this data applies

.....

2.2 Role of organisation [i.e. tenderer, member firm (joint ventures, consortia and the like), subsidiary, subcontractor] and in which discipline:

.....

2.3 Total staff complement (excluding skilled/semi-skilled/unskilled labourers and the like)

.....

2.3.1 Directors/Principals

.....

2.3.2 All other staff

.....

3. KEY PERSONNEL DETAILS

The tenderer shall complete this form for each company, member of a joint venture and subcontractor for all disciplines as listed in Form D9. The tenderer shall complete a separate form for each key person (including, at least, managing director, director for toll operations and maintenance, other directors, regional manager, plaza manager, MIS manager, toll collection lane equipment manager, E&M manager and route patrol manager who will be deployed on the project.

Company, member of joint venture, subcontractor:

Discipline:

Name: Present position:

Proposed position in project:.....

Speciality: Qualification:.....

Years Experience

In field of speciality:.....

With organisation:

Language proficiency: (poor/good/excellent?)

Language
Speak
Read
Write

Brief resumé of relevant experience:

Note: A full Curriculum Vitae of each of the key personnel indicated in this form shall be submitted in addition to the above information.

SIGNED BY TENDERER:

FORM D5.1: TENDERER'S EXPERIENCE BASED ON COMPLETED PROJECTS**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****Note to tenderer:**

- 1) The tenderer shall provide details of previous experience required for this project and attach contract performance evaluation certificates in the form of CIDB Contractor Performance Reports or an official reference letters from previous employer(s).
- 2) The Tenderer must have satisfactorily completed (at least completed as a prime contractor, joint venture member, management contractor or sub-contractor) a minimum number of three (3) similar contracts matching the subject project's scope of work, between 1st January 2007 and tender submission deadline. The completed contract must have a minimum value that exceeds R 250 million and have a Performance Rating not less than zero (0) Adequate, as rated in terms of the CIDB Performance Rating system or official reference letters from previous employer(s).
- 3) For contracts under which the Tenderer participated as a joint venture member or sub-contractor, only the Tenderer's share, by value, shall be considered to meet the minimum value requirement.
- 4) If the Tenderer is a joint venture, the value of contracts completed by the individual joint venture members can be combined and shall be treated as one contract to determine whether the requirement of the minimum value of a single contract has been met. In the case of combined contracts, each contract performed by each member shall exceed fifty percent (50%) of the minimum value of a single contract as required for single entity. In determining whether the joint venture meets the requirement of total number of contracts, the number of contracts completed by all JV members each of value equal or more than the minimum value required shall be aggregated. For the afore-mentioned purpose, contracts which are combined to meet the minimum value shall be treated as one contract.
- 5) If the tenderer's experience does not meet the stipulated minimum requirement e.g. less than the minimum stipulated number of recent contracts; or If the proposed project is not relevant and as a result the tenderer does not meet the minimum requirement; the tender will be declared non-responsive in terms of clause C.3.13 (b) of the Tender Data.

(List only the most recent 3 projects of the firm that the tenderer considers relevant to the specified scope of works)

CLIENT	DESCRIPTION OF PROJECT	PROJECT START DATE	PROJECT END DATE	VALUE OF WORK (i.e. the service provided) inclusive of VAT (Rand)	CONTACT PERSON AND FIRM	CONTACT NUMBER	CIDB EQUIVALENT PERFORMANCE RATING (NOT REQUIRED WHERE AN OFFICIAL REFERENCE LETTERS FROM PREVIOUS EMPLOYER(S) IS ATTACHED)

CLIENT	DESCRIPTION OF PROJECT	PROJECT START DATE	PROJECT END DATE	VALUE OF WORK (i.e. the service provided) inclusive of VAT (Rand)	CONTACT PERSON AND FIRM	CONTACT NUMBER	CIDB EQUIVALENT PERFORMANCE RATING (NOT REQUIRED WHERE AN OFFICIAL REFERENCE LETTERS FROM PREVIOUS EMPLOYER(S) IS ATTACHED)

Comments:

I confirm that the information provided herein is true, that the projects reported, and the corresponding responsibilities are truly the experiences of the firm or consortium of firms tendering for this project.

SIGNED BY TENDERER:

FORM D5.2: TENDERER'S EXPERIENCE BASED ON PROJECTS IN PROGRESS**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****Note to tenderer:**

1. Submission of this form is optional. This form must be submitted if the tenderer does not comply with the requirements of Form D5.1, and elects to list project(s) that are in progress to comply with afore- mentioned requirements.
2. The Tenderer must list details of similar projects in progress (as a prime contractor, joint venture member, management contractor or sub-contractor) matching the subject project's scope of work, between 1st January 2007 and tender submission deadline. Each project in progress must have a certified value of work that exceeds 40% of the awarded value and exceeds R 250 million, and have a Performance Rating not less than zero (0) Adequate, as rated in terms of the CIDB Performance Rating system or official reference letters from previous employer(s). The Performance Rating and certified value of work at closing date must be confirmed by the Project Employer or Project Engineer in writing.
3. For contracts under which the Tenderer participated as a joint venture member or sub-contractor, only the Tenderer's share, by value, shall be considered to meet the minimum value requirement.
4. If the Tenderer is a joint venture, the value of contracts completed by the individual joint venture members can be combined and shall be treated as one contract to determine whether the requirement of the minimum value of a single contract has been met. In the case of combined contracts, each contract performed by each member shall exceed fifty percent (50%) of the minimum value of a single contract as required for single entity. In determining whether the joint venture meets the requirement of total number of contracts, the number of contracts completed by all JV members each of value equal or more than the minimum value required shall be aggregated. For the afore-mentioned purpose, contracts which are combined to meet the minimum value shall be treated as one contract.
5. If the tenderer's experience not meeting minimum requirements (certified value of work that exceeds 80% of the awarded value and exceeds specified rand value); or If the proposed project is not relevant and as a result the tenderer does not meet the minimum requirement; the tender shall be declared non-responsive.

(List only the most recent 3 projects of the firm that the tenderer considers relevant to the specified scope of works)

CLIENT	DESCRIPTION OF PROJECT	PROJECT START DATE	PROJECT END DATE	AWARD VALUE OF WORK (i.e. the service provided) inclusive of VAT (Rand)	VALUE OF WORKS CERTIFIED BY THE ENGINEER	CONTACT PERSON AND FIRM	CONTACT NUMBER	CIDB EQUIVALENT PERFORMANCE RATING (NOT REQUIRED WHERE AN OFFICIAL REFERENCE LETTERS FROM PREVIOUS EMPLOYER(S) IS ATTACHED)

CLIENT	DESCRIPTION OF PROJECT	PROJECT START DATE	PROJECT END DATE	AWARD VALUE OF WORK (i.e. the service provided) inclusive of VAT (Rand)	VALUE OF WORKS CERTIFIED BY THE ENGINEER	CONTACT PERSON AND FIRM	CONTACT NUMBER	CIDB EQUIVALENT PERFORMANCE RATING (NOT REQUIRED WHERE AN OFFICIAL REFERENCE LETTERS FROM PREVIOUS EMPLOYER(S) IS ATTACHED)

Comments:

I confirm that the information provided herein is true, that the projects reported, and the corresponding responsibilities are truly the experiences of the firm or consortium of firms tendering for this project.

SIGNED BY TENDERER:

FORM D6: AFFIDAVIT FOR PAST PERFORMANCE REPORTS ON COMPLETED PROJECTS**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30**

I, the undersigned,

Full name and surname	
Identity number	

hereby declare under oath as follows:

- The contents of this statement are to the best of my knowledge a true reflection of the facts.
- I am the authorised signatory for the tendering entity.

Enterprise name (Tendering entity)	
Trading name (if applicable)	

- I hereby declare under oath, by ticking the applicable box below, that the Enterprise has only previously completed:

0 (zero) projects	
1 (one) project	
2 (two) projects	

and as a result cannot submit Past Performance Reports for the required 3 (three) projects.

- I know and understand the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the Owners of the Enterprise which I represent in this matter.

Signed and sworn before me at on the day of 20.....

.....
SIGNATURE OF DEPONENT

The deponent having:

1. Acknowledge that he/she knows and understands the contents hereof;
2. Confirmed that he/she has no objection to the taking of the prescribed oath; and
3. That he/she considered the prescribed oath as binding upon his/her conscience.

.....
COMMISSIONER OF OATHS

FORM D7.1: TENDERER'S INDICATIVE PROGRAM

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to tenderer:

- 1. The tenderer shall attach an indicative programme, reflecting the proposed sequence and tempo of execution of the various activities comprising the work for this contract. The programme shall be in accordance with the information provided in Form D1: Schedule of Contractor's Equipment and with all other aspects of the tender. The programme shall indicate the resources anticipated to be used.
- 2. The programme shall be in accordance with the information provided in Form D1: Schedule of Contractor's Equipment, Form D14: and with all other aspects of the tender.
- 3. If a tenderer wishes to submit an alternative tender then this form, appropriately completed, shall also be attached to the Pricing Schedule for the alternative proposal.

SIGNED BY TENDERER:

FORM D7.2: PROPOSED ESTABLISHMENT PROGRAMME**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30**

The tenderer shall indicate the proposed establishment programme. The Establishment Period shall be complete fourteen (14) days before the Commencement Date of Operation Service Period, except for activities indicated below.

ACTIVITY		WEEKS FOR THE ESTABLISHMENT PERIOD						
		-6	-5	-4	-3	-2	-1	0
1	Receipt of contractor's unconditional letter of acceptance							Start of Operations Services Period
2	Finalise/formalise JVs/consortia and contractual documentation							
3	Supply copies of letter of intent to subcontractors to the Employer.							
4	Appointment of personnel							
5	Training of personnel							
6	Evaluation of personnel							
7	Personnel transport arrangements							
8	Appointment of subcontractors (if applicable)							
9	Submission of operations and maintenance procedure manuals							
10	Supply of office equipment, consumables							
11	Supply of electronic/electrical test measurement equipment							
12	Supply of other LE/E&M/MIS equipment							
13	Supply of equipment for route patrol services							
14	Supply of minimum traffic management aids							
15	Provision of insurance certificates and performance security							
16	Registration of utilities in contractor's name							
17	Start of Operation Service Period							
18	Other							

Note: Tick the appropriate boxes indicating during which week the activity will take place.

SIGNED BY TENDERER:

FORM D8: SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****Note to tenderer:****If a tenderer wishes to submit an alternative tender then this form, appropriately completed, shall also be attached to the Pricing Schedule for the alternative proposal.**

The tenderer shall state his estimated value of the work to be completed every month, based on his preliminary programme and his tendered unit rates, in the table below.

CERTIFICATE / MONTH	VALUE	CERTIFICATE / MONTH	VALUE
Establishment M1	R.....	TOTAL b/f	R
Establishment M2	R.....	37	R
1	R.....	38	R
2	R.....	39	R
3	R.....	40	R
4	R.....	41	R
5	R.....	42	R
6	R.....	43	R
7	R.....	44	R
8	R.....	45	R
9	R.....	46	R
10	R.....	47	R
11	R.....	48	R
12	R.....	49	R
13	R.....	50	R
14	R.....	51	R
15	R.....	52	R
16	R.....	53	R
17	R.....	54	R
18	R.....	55	R
19	R.....	56	R
20	R.....	57	R
21	R.....	58	R

22	R.....	59	R
23	R.....	60	R
24	R.....	61	R
25	R.....	62	R
26	R.....	63	R
27	R.....	64	R
28	R.....	65	R
29	R.....	66	R
30	R.....	67	R
31	R.....	68	R
32	R.....	69	R
33	R.....	70	R
34	R.....	71	R
35	R.....	72 (FINAL)*	R
36	R.....		
TOTAL c/f			
		TOTAL: R	

* Final payment at end of Defects Notification Period is for balance of retention and any other payments due.

SIGNED BY TENDERER:

FORM D9: NOMINATION OF COMPANY, MEMBER, SUBCONTRACTOR, ETC. FOR EACH DISCIPLINE**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30**

1. Nomination of company, member, subcontractor, etc. for each discipline							
The tenderer shall indicate which company, subcontractor, member of a joint venture, etc. will execute EACH of the disciplines listed below. Where the tenderer has not yet identified or selected a company, subcontractor or member of a joint venture to execute a specific discipline, this shall be stated by entering "not assigned" in the appropriate row of the table. All companies, members of a joint venture and subcontractors that the tenderer intends to include in its organisation must be listed in the table. When one of the listed disciplines is not assigned to a specific party, this party must be listed under "other parties", and the intended role/function of the party must be given.							
DISCIPLINE	NAME OF ORGANISATION	TYPE OF ORGANISATION [e.g. (Pty) Ltd]	CATEGORY OF ORGANISATION (e.g. BE(SMME))	STATUS IN PROJECT: LEADING MEMBER OF JV, COMPANY, SUBCONTRACTOR, ETC	NATIONALITY	YEARS EXPERIENCE IN DISCIPLINE	
						OWN COUNTRY	INTERNATIONAL
1.1 Project management							
1.2 Toll plaza operations							
High-level management							
Toll plaza contractor							
Route patrols							
Cash transfer to banks							
Other							
1.3 Toll Collection Lane Equipment							
Not applicable. (Note: This work falls in the scope of the Nominated Subcontractor that the Employer will appoint and nominate to the successful tenderer.)							

FORM D9: NOMINATION OF COMPANY, MEMBER, SUBCONTRACTOR, ETC. FOR EACH DISCIPLINE (CONTINUED)

1. Nomination of company, member, subcontractor, etc. for each discipline							
DISCIPLINE	NAME OF ORGANISATION	TYPE OF ORGANISATION [e.g. (Pty) Ltd]	CATEGORY OF ORGANISATION [e.g. BE(SMME)]	STATUS IN PROJECT: LEADING MEMBER OF JV, COMPANY, SUBCONTRACTOR, ETC	NATIONALITY	YEARS EXPERIENCE IN DISCIPLINE	
1.4 Back Office System (BOS)							
Not applicable. (Note: This work falls in the scope of the Nominated Subcontractor that the Employer will appoint and nominate to the successful tenderer.)							
1.5 Customer call centre							
Supply							
Call centre							
Maintenance							
1.6 Incident management system							
IMS management participant							
1.7 Electrical & mechanical equipment							
Equipment	Supply						
	Maintenance						
Generator (maintenance)							
UPS (maintenance)							
1.8 Financial							
Internal audit							
1.9 Legal							
1.10 Environment							

1. Nomination of company, member, subcontractor, etc. for each discipline							
DISCIPLINE	NAME OF ORGANISATION	TYPE OF ORGANISATION [e.g. (Pty) Ltd]	CATEGORY OF ORGANISATION [e.g. BE(SMME)]	STATUS IN PROJECT: LEADING MEMBER OF JV, COMPANY, SUBCONTRACTOR, ETC	NATIONALITY	YEARS EXPERIENCE IN DISCIPLINE	
1.11 Points of sale							
1.12 Tag management							
1.13 Customer service centres (CSC)							
1.14 Other parties							

**** Level 1 Maintenance** means that Lane Equipment maintenance comprising, including but not limited to:

- (i) Real time monitoring of servers and lane equipment including error logs, alarms, and specific messages
- (ii) Visual camera and antenna inspections to ensure that camera and antenna angles/aim have not changed
- (iii) Camera glass cleaning on a weekly basis and more frequently during weather events
- (iv) Camera/antenna cable inspections on a regular basis
- (v) Lane cabinet inspections of i/o cards, status lights, camera power supplies, toll system equipment UPSs, loop detectors, and lane controllers

- (vi) Monitors, performs diagnostics, and repair of problems involving vehicle loop detection equipment, automatic vehicle id readers, antennas, rf sources, video cameras switches, multiplexers, optical treadles, and touchscreen pos monitors.
- (vii) Maintain toll collection systems through physical inspection and electronic test and measurement procedures.
- (viii) Performs diagnosis and repair of equipment problems with: zone controllers, computers, printers, traffic signals, gates, ir beams, message signs, scanners, and other toll related equipment
- (ix) And arranging lane closure and coordinating with responsible parties in the event of level 2 maintenance support.

SIGNED BY TENDERER:

FORM D10: TECHNICAL INFORMATION

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

The tenderer shall complete the following schedule by providing technical details of the equipment to be supplied under this contract. The information given shall be included in the tender document and will be used to determine equipment performance during the testing and commissioning stages. All additional technical information on equipment that the tenderer wishes to include with its tender shall be included in a separate document, entitled "TECHNICAL INFORMATION". The tenderer shall clearly indicate the extent to which the existing assets will be utilized. It should be noted whether existing equipment will be upgraded or replaced.

1. STANDARDS

The tenderer shall itemise each and every standard used in the manufacture of the equipment and shall include such information either in the schedule below or in the separate document entitled "TECHNICAL INFORMATION".

2. TOLL EQUIPMENT PERFORMANCE

The tenderer shall provide the information required below and shall substantiate all information given.

(Note that the Toll Equipment apart from 2.1 below will be provided by a Nominated Subcontractor that the Employer will appoint.)

2.1 Help Desk System

Provide full details of the proposed help desk system.

- i. Supplier details
 - Supplier
 - Other installations
 - Technical support and standby arrangements.
- ii. Technical proposal must provide information pertaining to the following (as per the Contractual requirement detailed in Volume 2)
 - Support services
 - Quality assurance and reporting.

SIGNED BY TENDERER:

FORM D11: TOLL PLAZA UPGRADING SCHEDULES

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

The tenderer shall complete this form if it intends to submit an alternative toll plaza expansion schedule, in which case it shall submit an alternative tender. The tenderer shall indicate any revised average service rates or manageable flow rates used in the table below, if applicable. The tenderer shall indicate all innovative measures it intends to implement, if applicable.

The tenderer shall:

- (a) List any revised average service rates or manageable flow rates, if applicable
- (b) List the innovative measures it intends to implement, if applicable
- (c) Provide a short written description of the tenderer's alternative toll plaza expansion schedule.

1. AVERAGE SERVICE RATES AND MANAGEABLE FLOW RATES

Note: The tenderer may only vary average service rates or manageable flow rates used by the Employer with full written motivation, to be provided below:

PARAMETER	EMPLOYER	TENDERER
Average service rate (vehicles per lane per hour)		
Manual lane (urban toll plaza)	300	
Manual lane (rural toll plaza)	250	
Automatic card lane	300	
Mixed manual / ETC lane (urban toll plaza)	300	
Mixed manual / ETC lane (rural toll plaza)	250	
Dedicated ETC lane (with booms)	700	
Dedicated ETC lane (without booms)	1200	
Manageable flow rate		
(The queuing theory function shall be made available on request)		
The tenderer shall list changes		

2. MOTIVATION FOR CHANGE OF AVERAGE SERVICE RATES OR MANAGEABLE FLOW RATES

The tenderer shall provide motivation hereunder, if applicable.

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FORM D11: TOLL PLAZA UPGRADING SCHEDULES (CONTINUED)

3. INNOVATIVE MEASURES THE TENDERER INTENDS TO IMPLEMENT

The tenderer shall provide full information of any innovative measures it intends to implement hereunder, if applicable.

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4. ALTERNATIVE TOLL PLAZA EXPANSION SCHEDULE

The tenderer shall provide full particulars of any alternative toll plaza expansion schedule it intends to employ hereunder, if applicable.

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SIGNED BY TENDERER :

FORM D12: ADDITIONAL INFORMATION

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

ADDITIONAL INFORMATION

Any further information to be considered with the tender shall be added below. In addition, if other documents are attached, these shall be listed below. If no additional information is submitted, this form shall be marked "N/A" (not applicable).

SIGNED BY TENDERER:

FORM D13: DISTRIBUTION OF RISK BETWEEN THE MAIN CONTRACTOR AND THE NSC AND ANY OTHER SUBCONTRACTORS

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Notes to tenderer:

This form shall be signed by the Contractor (appointed through this tender process and known as the “Operations and Maintenance Contractor” or MC) and the Nominated Subcontractor (appointed through another tender process and also referred to as the NSC) and is included in both tenders. The form jointly covers the risk related to the collection of Toll or the supply, installation or maintenance of the Toll System.

If the risk for any of these activities will be shared or carried by any party other than a sub-contractor, the agreements with these party(s) shall be submitted in terms of Clause 4.4 of FIDIC General Conditions of Contract (2008) Volume 1 Book 1 for sub-contracts.

Risk transfer model:

The Toll system is a factor in controlling many of the operational risks inherent in the CTROM contract. As such, any underperformance of the Toll System heightens the risk. This section defines the mechanism of transferring the risks equitably and accurately to the entity most capable of detecting issues, managing, and implementing timeous corrective steps.

The Payment Methodology (V2B7a) transfers income losses (V2B7a clause 4.5) to the Main Contractor, for which the Main Contractor tenders as part of their monthly OPEX rate. Income losses, under optimal Toll System performance, is therefore covered by Main Contractor. Mechanisms are in place to address Main Contractor losses due to exceptional events.

The Payment Methodology also includes the inherent data source variances, which include Toll System detection and classification variances.

Reducing Toll System related risks and losses is reliant on a properly designed and deployed Toll System, hardware and software support, operational mitigation and effective management of personnel and resources. The responsibilities therefore are:

The monitoring of all the relevant aspects of the operational, technical and KPI conformance at regular intervals, by the MC and/or NSC. This includes inspections and feedback from site staff, monitoring of system incidents, monitoring of statistical trends and electronic payment submission processes.

Early detection of possible non-compliances and

Implementation of corrective steps, including steps/procedures to limit the impact of the identified non- performance. This includes steps/procedures to limit the impact of known system defects and system limitations.

Toll System support procurement models:

For the Toll System Support and related A5300 range Cost Matrix items, the following roles and responsibilities are defined for the Main Contractor (MC) and the Nominated Subcontractor (NSC):

The MC will perform Toll Operations only and the NSC will perform Toll System Software and Hardware Maintenance.

The NSC will therefore have full-time on-site technicians and do remote software support and maintenance.

The MC will be responsible for the supply and maintenance of the Help Desk and Toll Equipment record system and regular Workshop spares stock control.

The NSC will also be required to do maintenance and update the Help Desk and Toll Equipment record system entries, based on their site activities and regular Workshop spares stock control and replenishment.

Toll System supply and upgrade

The roles of the MC and NSC during the Toll System supply and upgrade are as follow:

The MC will perform Toll Operations only

The NSC will perform Toll System Software and Hardware Maintenance, that will include:

The design, procurement, testing, commissioning and handover of the Toll System software and hardware supply in terms of the various cost matrix items (B 2000 and B3000 range items).

Toll system functional, provisional, and full compliance verification.

Supply a full set of critical spares,

Maintenance: Hardware and software maintenance of the system. All system KPIs will apply during the upgrade process

Definition of Roles in Main Contract and Nominated Subcontract

Please refer to PART C1 for a definition of the various roles between the two contracts, including that of the Employer, Principal Employer, Employer's Representative, Main Contractor and Nominated Subcontractor.

RISK CATEGORY, DESCRIPTION, CAUSES, MITIGATION AND ALLOCATION

	CATEGORY	DESCRIPTION	CAUSES	MITIGATION	ALLOCATION*						
1	Technical specifications risk: Design	Design that results in individual technical characteristics of the Toll System that fail to meet standards and specifications.	Low quality of works, non-compliance with standard Specifications and the rectification of known or latent defects. Failure to implement accurate KPI reporting and Health Monitoring	NSC, MC and ER to perform quality control. Apply Penalties	Main CTROM Contractor (MC) or Subcontractor (NSC) <table><tr><td colspan="2"></td></tr><tr><td>MC</td><td>NSC</td></tr><tr><td>20%</td><td>80%</td></tr></table>			MC	NSC	20%	80%
MC	NSC										
20%	80%										
2	Completion risks: Toll system Upgrade	The possibility that the completion of Toll System works may be delayed	Difficulties/Delay in developing undelivered requirements. Incomplete requirements Supply, deployment and commissioning failures.	Apply Penalties.	Main CTROM Contractor (MC) or Subcontractor (NSC) <table><tr><td colspan="2"></td></tr><tr><td>MC</td><td>NSC</td></tr><tr><td>20%</td><td>80%</td></tr></table>			MC	NSC	20%	80%
MC	NSC										
20%	80%										
3	Completion risks: SANRAL MIS and SANRAL Toll System	The possibility that the completion of SAP MIS RSS Mediation layer works may be delayed	Difficulties in developing mediation layer to requirements. Incomplete requirements Failure in understanding technical requirements	Follow Contractual process.	Covered under other items in this table.						
4	Cost over-run risk	The possibility that during the design build phase of the SANRAL MIS Toll System Interface, the actual costs will exceed projected Project costs (Provisional Sum).	Mistakes in design build cost estimates. Underestimating technical requirements Increased costs through the fault of Subcontractor. Contingencies.	Follow Contractual process.	Follow Contractual process.						
5	Design risk	The possibility of mistakes in SANRAL MIS Toll System Interface mediation layer project solutions.	Technical solutions mistakes.	Follow Contractual process.	Follow Contractual process.						
6	Exceptional Event and risks	The possibility of the occurrence of certain unexpected events that are beyond the control of	Various natural and man-made causes.	Follow Contractual process.	Follow Contractual process.						

	CATEGORY	DESCRIPTION	CAUSES	MITIGATION	ALLOCATION*						
		the Parties (natural disasters, civil riots)									
7	Insolvency risk	The possibility of the insolvency of the Main CTROM Contractor or/ and Subcontractor.	Increased debt liabilities under the Project. Low revenue - Main Contractor/ Subcontractor	Follow Contractual process.	Follow Contractual process.						
8	Insurance risk	The possibility that insurance services become inaccessible or too costly.	Increase theft and Vandalism	Follow Contractual process.	Follow Contractual process.						
10	Currency Volatility risk	The possibility that volatility in currency will increase the cost of specialized imported TS equipment	Due to inflation levels, interest rates, geopolitical stability, import and export levels, and monetary policy	List items subject to exchange rate fluctuations on Form B1, Part T2.	Follow Contractual process.						
12	Regulatory risk	The possibility that Consents required from the government will not be obtained or, if obtained, can only be implemented at a greater cost than originally projected.	Relating to planning	Follow Contractual process.	Follow Contractual process.						
13	The risk that the Project Assets at termination or expiry will not be in the prescribed condition.	Risk of value loss on the transfer of the project or at termination of the Concession Agreement.	Insufficient maintenance of the toll system, civils and E& M. Delayed overhaul and preventive maintenance. Carelessness of contractors.	Follow Contractual process.	Follow Contractual process.						
14	Resource or input risk	The possibility of a failure or shortage in the supply of the inputs or resources required for the operation of the project.	Main Contractor's & or Subcontractor cash-flow problems	Financial Sustainability checks as part of evaluation stage.	<div>Main CTROM Contractor (MC) or Subcontractor (NSC)</div> <table><tr><td colspan="2"></td></tr><tr><td>MC</td><td>NSC</td></tr><tr><td>65%</td><td>35%</td></tr></table>			MC	NSC	65%	35%
MC	NSC										
65%	35%										
15	Technology obsolescence risk	The possibility that the technology inputs for the outsourced institutional function may fail to deliver the required	The use of obsolete materials and equipment.	Obligation on Main CTROM Contractor to refresh technology as required from time to time	<div>Main CTROM Contractor (MC) or Subcontractor (NSC)</div> <table><tr><td colspan="2"></td></tr><tr><td>MC</td><td>NSC</td></tr></table>			MC	NSC		
MC	NSC										

	CATEGORY	DESCRIPTION	CAUSES	MITIGATION	ALLOCATION*	
		output specifications, or technological improvements may render these technology inputs out-of-date.		to meet the output specifications. Penalty Deductions for failure to meet output specifications.	20%	80%
16	Utilities risk	Shortage of utilities (e.g. water, electricity, etc.), necessary for construction and/or operation of the project.	Failure of the utility companies to provide utility services.	Emergency back-up facilities.	Main Contractor	
17	Revenue risk	Income lost to fraud or due to system failure	Due to vehicle discrepancies not assigned correctly for cash transaction. Toll staff collusion Processing in lanes with known defects	Close faulty lanes in favor of fully functional lanes. Payment Methodology - decision tree Segregation of duties Internal controls VGS audits and Incident control to ensure quick mitigation of risks	Main Contractor, follow Contractual process.	
18	Revenue risk Design defect risk: AVC detection and classification	TEL traffic may be used to determine the income payable to SANRAL	Due to AVC or MIS not been the highest income traffic arising from AVC detection and or classification inabilities.	Validation and Verification of vehicles by the supervising toll plaza personnel Audit reports Count accuracy audits Create lost transactions Assign lifted axle status. Apply KPI penalties.	Main Contractor.	
19	Revenue risk Design defect risk: Lost transactions	System defects arising in Loss of income	Due to flaws in the systems mentioned or failures of the systems mentioned Written-off cross-read and overdue ETC transactions.	System compliance NSC to correct defects Recover identified errors Use VGS audit to assign responsibility.	Main Contractor and NSC, follow Contractual process.	

	CATEGORY	DESCRIPTION	CAUSES	MITIGATION	ALLOCATION*						
20	Revenue risk Design defect risk:	Contractor might lose income due to differences between the MIS and TEL traffic or income as per the payment decision tree as applied by the Main Contractor's ER.	Toll system defects TEL defects	Toll System Maintenance Data verification and validation Video footage of traffic entering and exiting lanes Count accuracy audits Create lost transactions Assign lifted axle status. Apply KPI penalties.	Main Contractor						
21	Revenue risk	Charge - backs	Validations list not implemented on time as per the merchant agreement	Monitor processes and ensure validation list are implemented as per the merchant agreement	Main Contractor and NSC, follow Contractual process						
22	Design defect risk.	Latent defects taken over from existing Toll System	System not compliant to Employer's requirements	Manual workarounds need to be implemented by MC. Expedite establishment upgrades and system replacement.	Main Contractor and NSC, follow Contractual process						
23	Financial risk Operational risk	Data loss	Back-up and data archiving failure HDD failure Loss of data via network	Contractual Storage Requirement must be adhered to and verified	Main Contractor and NSC, follow Contractual process						
24	Toll System risk	System limitations	Poor System Design	Manual workarounds need to be implemented	Main Contractor and NSC, follow Contractual process						
25	Risk due to non-compliant AVC accuracy	Non-compliant AVC accuracy – Software related		Decision tree AVC related KPI's	<div>OPEX: Main Contractor Related KPI: Main Contractor & NSC</div> <table><tr><td>MC</td><td>NSC</td></tr><tr><td>20%</td><td>80%</td></tr></table> <div>The following KPI's will be assigned as indicated by the table above.</div> <table><tr><td>Ref</td><td>Name</td></tr></table>	MC	NSC	20%	80%	Ref	Name
MC	NSC										
20%	80%										
Ref	Name										

	CATEGORY	DESCRIPTION	CAUSES	MITIGATION	ALLOCATION*														
					<table><tr><td>CT3a</td><td>AVC Availability (Critical Errors)</td></tr><tr><td>CT3b</td><td>AVC Availability (Serious Errors)</td></tr><tr><td>CT3c</td><td>Automatic Vehicle Classification for Class 1 to 4</td></tr><tr><td>CT3d</td><td>AVC Count</td></tr><tr><td>CT8a</td><td>Compliance with Employer's reporting requirements – Critical Reports</td></tr><tr><td></td><td>AVC Accuracies</td></tr><tr><td></td><td>System Availability</td></tr></table>	CT3a	AVC Availability (Critical Errors)	CT3b	AVC Availability (Serious Errors)	CT3c	Automatic Vehicle Classification for Class 1 to 4	CT3d	AVC Count	CT8a	Compliance with Employer's reporting requirements – Critical Reports		AVC Accuracies		System Availability
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CT3d	AVC Count																		
CT8a	Compliance with Employer's reporting requirements – Critical Reports																		
	AVC Accuracies																		
	System Availability																		
26	Risk of increase cost due to system upgrades	Additional cost due to system upgrades brought on by system obsolescence, lack of support for operating systems, hardware and application software and performance related issues.	Obsolete Equipment, Software etc.	Contractual requirements – Upgrade / Replacement of equipment due to obsolescence, lack of support or performance problem	Main CTROM Contractor (MC) and Subcontractor (NSC) <table><tr><td colspan="2"></td></tr><tr><td>MC</td><td>NSC</td></tr><tr><td>20%</td><td>80%</td></tr></table>			MC	NSC	20%	80%								
MC	NSC																		
20%	80%																		
27	Risk of Inadequate Insurance	Risk of damage to systems and the consequential losses thereof due to lightning, theft, vandalism and accident damage not covered by insurance.	Inadequate insurance coverage	Penalties and KPIs pertaining to non-compliance to repair of damaged assets, equipment functionality, maintenance performance etc.	Main Contractor														
28	Asset replacement risk-RdS	Cost of equipment replacement, spares and equipment related consumables related to toll systems.		Asset replacement responsibility specified in contract	Main CTROM Contractor (MC) and Subcontractor (NSC) <table><tr><td colspan="2"></td></tr><tr><td>MC</td><td>NSC</td></tr><tr><td>20%</td><td>80%</td></tr></table>			MC	NSC	20%	80%								
MC	NSC																		
20%	80%																		
29	Risk of damages arising	Risk due to any other consequential, incidental or indirect damages		Follow the Contractual Process	Follow the Contractual Process														
30	System defect risk	System Compliance Penalties	Non-Compliance	Apply Penalties	Main CTROM Contractor (MC) and Subcontractor (NSC) <table><tr><td colspan="2"></td></tr><tr><td>MC</td><td>NSC</td></tr></table>			MC	NSC										
MC	NSC																		

	CATEGORY	DESCRIPTION	CAUSES	MITIGATION	ALLOCATION*		
					20%	80%	
31	Interest risk due to late deposits: Cash	Interest on late deposits to the bank arising from cash	Cash at the plaza not deposited within the prescribed contractual time.	Follow the Contractual Process.	Main Contractor		
32	Interest risk due to late deposits: Credit cards- RdS stop here	Interest on late deposits to the bank arising from credit card transactions	Bank not receiving the credit card transaction information within the prescribe merchant agreement.	Follow the Contractual Process	Main Contractor (MC) or Subcontractor (NSC)		
					MC	NSC	
					50%	50%	
33	Loss of Income – Electronic settlement of toll transactions	Charge backs implemented by the Banks due to “Negative files” not downloaded to lanes within the contractual timelines	Hotlisted cards not downloaded into the toll lanes within the prescribed contractual time.	Follow the Contractual Process	Main Contractor (MC) or Subcontractor (NSC). The Party responsible for the loss of income – 90% the other Party 10%.		
34	Operational and Financial risk-	Late submission of monthly reports	All transaction not validated, Missing data, Contractor’s personnel have not closed all shifts.	Contractual recourse (penalties) + Payment cert not being processed Apply applicable KPIs	KPI: Main Contractor (MC) or Subcontractor (NSC)		
					MC	NSC	
					50%	50%	
					The following KPI's will be assigned as indicated by the table above.		
					Ref	Name	
					CT8a	Compliance with Employer’s reporting requirements – Critical Reports	
						Hourly, Daily & Monthly Traffic Report	
						Discount / Exempt Report	
						Account Status	
						Payment Trends	
						Day/Month Closures	
						AVC Accuracies	

	CATEGORY	DESCRIPTION	CAUSES	MITIGATION	ALLOCATION*	
						System Availability
						Equipment failures
						Response & Repair times
						Problem Data
						Support Reports
						Stock & Spares
						Performance Measurement Report
						KPI 11
						KPI 19
					CT8b	Compliance with Employer's reporting requirements – Non-Critical Reports
						Transaction Tariff report
						Discount Structure Report
						Transaction details report
						Class discrepancy acknowledgement
						Access Control
						Version Control
						MTBF
						Incident Report
						Dashboard Report
						Upgrade Reports
35	Reputational and safety risk	Queue Length penalties	Not enough lanes opened to process vehicles as per average processing time.	Contractual Requirements governing queues	Main Contractor	
36	TS enhancement risks-	Regression after system fixes and enhancements implemented	Patched deployed on production site without proper internal quality and control checks	Contractual requirements addressing software changes	Main Contractor and NSC, follow Contractual process	

	CATEGORY	DESCRIPTION	CAUSES	MITIGATION	ALLOCATION*																														
37	System defect risk	Software or AVC, TCC or other 3 rd party license expiry, failure or termination	Subcontractor has a AVC license expiry date which is not in accordance to the contractual license agreement	Subcontractor provided a 20yr to perpetual license/s	Main Contractor and NSC, follow Contractual process																														
38	Maintenance risk-FR	Unavailability of spares	Poor inventory control and spares management	Contractual requirement governing repair times and availability of spares	Main Contractor and NSC, follow Contractual process																														
39	Support and Maintenance risk-	Toll system supplier poor performance with regards to providing satisfactory service and support in terms of system supply and maintenance	Low quality of maintenance of the works, lack of spares and other site factors that cause non-compliance with standard Specifications.	NSC and MC monitor, detect issues and inform Operational staff ASAP. The MC to manage the use of affected lanes, when possible, to limit the risk.	OPEX: Main Contractor (MC) KPI: Main Contractor (MC) or Subcontractor (NSC) <table border="1"><tr><td colspan="2"></td></tr><tr><td>MC</td><td>NSC</td></tr><tr><td>20%</td><td>80%</td></tr></table> The following KPI's will be assigned as indicated by the table above. <table border="1"><tr><th>Ref</th><th>Name</th></tr><tr><td>CT1a</td><td>Repair Time Compliance – Severity Level 1 - Employer Facilities</td></tr><tr><td>CT1b</td><td>Repair Time Compliance – Severity Level 2 - Employer Facilities</td></tr><tr><td>CT1c</td><td>Repair Time Compliance – AVC and TCC</td></tr><tr><td>CT2a</td><td>SCADA Availability</td></tr><tr><td>CT2b</td><td>VGS Availability (Critical Errors)</td></tr><tr><td>CT2c</td><td>QLS Availability (Critical Errors)</td></tr><tr><td>CT2d</td><td>QL1 Availability (Critical Errors)</td></tr><tr><td>CT2e</td><td>QL2 Availability (Critical Errors)</td></tr><tr><td>CT2f</td><td>BOS Availability (Critical Errors)</td></tr><tr><td>CT2g</td><td>PGW Availability (Critical Errors)</td></tr><tr><td>CT4a</td><td>Daily AVC Data Transmission – Un-validated</td></tr></table>			MC	NSC	20%	80%	Ref	Name	CT1a	Repair Time Compliance – Severity Level 1 - Employer Facilities	CT1b	Repair Time Compliance – Severity Level 2 - Employer Facilities	CT1c	Repair Time Compliance – AVC and TCC	CT2a	SCADA Availability	CT2b	VGS Availability (Critical Errors)	CT2c	QLS Availability (Critical Errors)	CT2d	QL1 Availability (Critical Errors)	CT2e	QL2 Availability (Critical Errors)	CT2f	BOS Availability (Critical Errors)	CT2g	PGW Availability (Critical Errors)	CT4a	Daily AVC Data Transmission – Un-validated
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CT2g	PGW Availability (Critical Errors)																																		
CT4a	Daily AVC Data Transmission – Un-validated																																		

	CATEGORY	DESCRIPTION	CAUSES	MITIGATION	ALLOCATION*	
					CT4b	Daily AVC Data Transmission – Validated
					CT4c	Daily Back-Office Data Transmission
					CT4d	Monthly Back-Office Data Transmission
					CT4e	Monthly Back-Office Income Data Transmission
					CT10	Charging and charge reconciliation processes - accuracy
					CT12	ETC lane availability
					CT13	ETC Transaction Records submitted to TCH – timeliness.
					CT15	QLS –availability
					CT16	Maintenance

The MC and NSC should note that the table above, which considers the various possible risks, will have an impact on the application of the Performance Measurement Model (PMM), contained in Volume 2 Book 6a. Each KPI, or Penalty Item could be influenced in terms of risk distributions, depending on the risk at play. The tables below show how each performance measurement could be influenced by various risk types above, which impacts on the risk distribution between the MC and NSC. If a case occurs where the situation is not accurately described in the risk table, and/or the risk allocation is not fair, the ER for the Main Contractor shall consult with the MC, NSC and the Principal Employer and issue a Determination in line with the Conditions of Contract (FIDIC) Sub-clause 3.5 [Determinations].

Volume 2 Book 6a - Section 4				
KPI #	Description	Penalty Application		Comment
		MC	NSC	
CT1a	Repair Time Compliance – Severity Level 1 - Employer Facilities	100%	0%	Main Contractor
CT1b	Repair Time Compliance – Severity Level 2 - Employer Facilities	100%	0%	Main Contractor
CT1c	Repair Time Compliance (AVC & TCC)	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 13, 15, 17, 19, 22, 23, 24, 25, 26, 36, 37, 38
CT1d	Repair Time Compliance – Severity Level 1 Permanent Design Built Assets	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 13, 15, 17, 19, 22, 23, 24, 26, 36, 37, 38

Volume 2 Book 6a - Section 4				
KPI #	Description	Penalty Application		Comment
		MC	NSC	
CT1e	Repair Time Compliance – Severity Level 2 Permanent Design Built Assets	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 13, 15, 17, 19, 22, 23, 24, 26, 36, 37, 38
CT2a	SCADA Availability	100%	0%	Main Contractor
CT2b	VGS Availability (Critical Errors)	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 1, 13, 15, 17, 19, 22, 23, 24, 26, 36, 37, 38
CT2c	QLS Availability (Critical Errors)	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 1, 13, 15, 17, 19, 22, 23, 24, 26, 36, 37, 38
CT2d	QL1 Availability (Critical Errors)	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 1, 13, 15, 17, 19, 22, 23, 24, 26, 36, 37, 38
CT2e	QL2 Availability (Critical Errors)	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 1, 13, 15, 17, 19, 22, 23, 24, 26, 36, 37, 38
CT2f	BOS Availability (Critical Errors)	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 1, 13, 15, 17, 19, 22, 23, 24, 26, 36, 37, 38
CT2g	PGW Availability (Critical Errors)	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 1, 13, 15, 17, 19, 22, 23, 24, 26, 36, 37, 38
CT3a	AVC Availability - Critical Errors	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 1, 13, 15, 25, 26, 36, 37, 38
CT3b	AVC Availability - Serious Errors	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 1, 13, 15, 25, 26, 36, 37, 38

Volume 2 Book 6a - Section 4				
KPI #	Description	Penalty Application		Comment
		MC	NSC	
CT3c	AVC Accuracy	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 1, 13, 15, 17, 19, 22, 23, 24, 25, 26, 36, 37, 38
CT3d	AVC TOTAL Count Accuracy	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 1, 13, 15, 17, 19, 22, 23, 24, 25, 26, 36, 37, 38
CT4a	DAILY UN-Validated AVC Transmission Data (ITIS)	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 13, 15, 26, 36, 37, 38
CT4b	DAILY Validated AVC Transmission Data (ITIS)	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 13, 15, 26, 36, 37, 38
CT4c	DAILY BOS Transmission Data (ITIS)	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 13, 15, 26, 36, 37, 38
CT4d	MONTHLY BOS Transmission Data (ITIS)	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 13, 15, 26, 36, 37, 38
CT4e	MONTHLY BOS INCOME Transmission Data (ITIS)	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 13, 15, 26, 36, 37, 38
CT6a	Route Call Centre Service Availability including IVR Services	20%	80%	
CT6c	Route Call Centre Queuing Time including IVR Services pending transfers to an Operator	20%	80%	
CT8a	Compliance with Employer's reporting requirements – Critical Reports	20%	80%	
CT8b	Compliance with Employer's reporting requirements – Non-Critical Reports	20%	80%	
CT9	POP Customer Service Facilities - availability	20%	80%	
CT10	Charging and charge reconciliation processes - accuracy	20%	80%	
CT11	Customer Satisfaction	20%	80%	
CT12	ETC Lane Availability	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 1, 13, 15, 17, 19, 22, 23, 24, 26, 36, 37, 38

Volume 2 Book 6a - Section 4				
KPI #	Description	Penalty Application		Comment
		MC	NSC	
CT13	ETC Transaction Records submitted to TCH – timeliness. Availability	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 1, 13, 15, 17, 19, 22, 23, 24, 26, 36, 37, 38
CT14	TCH Account Registration Processing Accuracy	20%	80%	
CT15	QLS Availability	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 1, 13, 15, 26, 36, 37, 38
CT16	Maintenance	20%	80%	For Risk Allocation, see the applicable risk description and allocation. The following Risk numbers are applicable to this KPI: 38
CT18	Tactical marketing programme Level of Service (LOS)	20%	80%	
CT20	Route Patrol Personnel Qualifications	100%	0%	Main Contractor
CT21	Fresh Air Management System	100%	0%	Main Contractor
Volume 2 Book 6a - Section 6				
Clause #	Description			Description
		MC	NSC	
6.2.1	In the event that the Contractor does not fully comply with its obligations relating to maintenance of documents, drawings and Software in terms of Clauses 2 of the Standard Specifications of the Operations and Maintenance for CTROM Projects: General (Volume 2 Book 2a) herein, the Contractor shall pay a penalty for the following:			See Risk Allocations in the Risk table when this penalty item is triggered because of the following risk numbers: 1, 13, 38
6.3.1	In the event that the Contractor does not provide for and accept all specified Methods of Payment as specified in Clause 7 of the Standard Specifications of Operations and Maintenance for CTROM Projects: General (Volume 2 Book 2a) from the Commencement Date of the Operations Service Period or such other date as may be stipulated by the Employer Representative, the Employer shall be entitled to terminate this Agreement. Alternatively, the Contractor shall pay a penalty for the initial event of non-compliance and for each month of non-compliance thereafter.			See Risk Allocations in the Risk table when this penalty item is triggered because of the following risk numbers: 1, 17, 19, 22, 23, 24, 36, 38

Volume 2 Book 6a - Section 4				
KPI #	Description	Penalty Application		Comment
		MC	NSC	
6.3.2	In the event that the Contractor does not comply with the VAT business rules contained in the Standard Specifications for Operations and Maintenance of CTROM Projects: Toll Systems (Volume 2 Book 4a) from the Commencement Date of the Operation Service Period or such other date as stipulated by the Employers Representative, the Employer shall be entitled to terminate this Agreement. Alternatively, the Contractor shall pay a penalty for the initial event of non-compliance and for each month of non-compliance thereafter.			See Risk Allocations in the Risk table when this penalty item is triggered because of the following risk numbers: 1, 17, 19, 22, 23, 24, 36, 38
6.4.1	In the event that the Contractor does not meet the Queue Length Specification in terms of Clause 10.3 of the Standard Specification for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a) during any 15 (fifteen) minute period of monitoring done by the Contractor or the Employer's Representative, the Contractor shall pay a penalty for each 15 (fifteen) minute period of non-compliance.	100%	0%	Risk is for the Main Contractor
6.4.2	In the event that the Contractor meets the Queue Length Specification in terms of Clause 10.3 of the Standard Specifications for Operations and Maintenance for CTROM Projects: General (Volume 2 Book 2a) during any 15 (fifteen) minute period of monitoring done by the Contractor or Employer Representative for a period, as specified in the Project Document (Volume 3), the Employer shall pay an incentive to the Contractor.	100%	0%	Risk is for the Main Contractor
6.4.3	In the event that the Contractor does not meet the Average Service Time Specification in terms of Clause 10.5 of the Standard Specifications of Operations and Maintenance for CTROM Projects: General (Volume 2 Book 2a) the Contractor shall pay the penalty for each event of non-compliance.	100%	0%	Risk is for the Main Contractor
6.4.4	In the event that the Contractor meets the Average Service Time Specification in terms of Clause 10.5 of the Standard Specifications of Operations and Maintenance for CTROM Projects: General (Volume 2 Book 2a) for a period, as specified in the Project Document (Volume 3), the Employer shall pay an incentive to the Contractor.	100%	0%	Risk is for the Main Contractor
6.5.1	In the event of an MIS failure , the Contractor shall pay a penalty for each day that such failure was recorded or for each day or part thereof that data loss occurred.			See Risk Allocations in the Risk table when this penalty item is triggered because of the following risk numbers: 1, 13, 15, 17, 19, 22, 23, 24, 36, 37, 38

Volume 2 Book 6a - Section 4				
KPI #	Description	Penalty Application		Comment
		MC	NSC	
6.5.2	In the event that the Contractor process more than ten (10) vehicles in a lane where the AVC is in Critical Error Mode , the Contractor shall pay a penalty for each event of non-compliance. This penalty shall be applied per event of non-compliance up to a maximum of twenty (20) events per lane per calendar month. (Incident 49)			See Risk Allocations in the Risk table when this penalty item is triggered because of the following risk numbers: 1, 13, 15, 37, 38
6.5.3	In the event the Contractor has not submitted the complete results of the initial AVC accuracy certification process (including all requisite corroboratory information) as indicated in the Standard Specifications for Operations and Maintenance of CTROM Projects: Toll Systems (Volume 2 Book 4a) within forty five (45) days after the completion of the initial AVC monitoring period, the Contractor shall pay a penalty per week until such time as these results have been submitted to the Employer Representative.			See Risk Allocations in the Risk table when this penalty item is triggered because of the following risk numbers: 1, 25, 38
6.5.4	In the event that the Contractor operates the lanes in Manual Mode , the Contractor shall pay the following penalties –			See Risk Allocations in the Risk table when this penalty item is triggered because of the following risk numbers: 17, 19, 22, 23, 24, 36, 37, 38
6.5.5	In the event that the Contractor does not comply with the AVC system/the Employer interface requirements of the Standard Specifications for Operations and Maintenance for CTROM Projects: Toll Systems (Volume 2 Book 4a), from the Commencement Date or such other date as stipulated by the Employers Representative, such non-compliance, the Contractor shall pay a penalty per equipment type for each event of non-compliance. This penalty shall be applied once per calendar month, for each calendar month of non-compliance.			See Risk Allocations in the Risk table when this penalty item is triggered because of the following risk numbers: 1, 13, 15, 38
6.5.6	In the event that the Contractor's Toll Collection Lane Equipment does not comply with the requirements for User Fare Displays, Receipts and/or Lane Tax Invoices issued in the Lanes, Tariff boards, Lane mode boards, Overhead Lane Signs and Traffic Lights (User interface), as contained in the Standard Specifications for Operations and Maintenance for CTROM Projects: Toll Systems (Volume 2 Book 4a), the Contractor shall pay a penalty per equipment type for each event of non-compliance. This penalty shall only be applied once per month, for each month of non-compliance.			See Risk Allocations in the Risk table when this penalty item is triggered because of the following risk numbers: 1, 13, 15, 17, 19, 22, 23, 24, 36, 37, 38

Volume 2 Book 6a - Section 4				
KPI #	Description	Penalty Application		Comment
		MC	NSC	
6.5.7	In the event that the Contractor does not comply with the interface requirements between all other systems excluding the AVC, and the Employer, as contained in the Standard Specifications for Operations and Maintenance for CTROM Projects: Toll Systems (Volume 2 Book 4a) from the Commencement Date or such other date as stipulated by the Employers Representative, the Contractor shall pay a penalty for each month of non-compliance.			See Risk Allocations in the Risk table when this penalty item is triggered because of the following risk numbers: 1, 13, 15, 17, 19, 22, 23, 24, 36, 37, 38
6.5.8	In the event that the Contractor does not fully comply with the requirements of the Standard Specifications for Operations and Maintenance for CTROM Projects: Electronic Toll Collection (ETC) (Volume 2 Book 5), the Contractor shall pay a penalty for each month of non-compliance and for each month of non-compliance thereafter.			See Risk Allocations in the Risk table when this penalty item is triggered because of the following risk numbers: 1, 13, 15, 17, 19, 22, 23, 24, 36, 37, 38
6.5.9	In the event that the Contractor does not provide a detailed program for the complete Toll System upgrade/replacement activities within a) 5 days for Section 1, b) 21 days for section 2, c) 14 days for any onther notice after the commencement date, the Contractor shall pay a penalty as specified in the Project Document (Volume 3) per day for each day or part thereof, that the program is submitted late.	20%	80%	
6.5.10	In the event that the Contractor does not meet the dates for the milestone targets (listed below), as indicated on the approved Toll System upgrade/replacement program , the Contractor shall pay a penalty. This penalty shall be applied per event where milestone target dates have not been met by the Contractor:	20%	80%	
6.6.1	In the event that the Contractor does not comply with its obligations relating to recording and reporting of damage in terms of Clause 14.3.5 of the Standard Specifications of Operations and Maintenance for CTROM Projects: General – (Volume 2 Book 2a), the Contractor shall pay a penalty for each occurrence.	100%	0%	Risk is for the Main Contractor
6.7.1	In the event that the Contractor does not comply with its obligations relating to Asset Management System as detailed in Clause 14.4 of the Standard Specifications of the Operations and Maintenance for CTROM Projects: General (Volume 2 Book 2a), the Contractor shall pay a penalty for the following:			See Risk Allocations in the Risk table when this penalty item is triggered because of the following risk numbers: 1, 13, 15, 36, 37, 38

Volume 2 Book 6a - Section 4				
KPI #	Description	Penalty Application		Comment
		MC	NSC	
6.8.1	In the event that more than 10% (ten percent) of the canopy luminaires are not functional at any Toll Plaza, the Contractor shall pay a penalty for each event of non-compliance.	100%	0%	Risk is for the Main Contractor
6.8.2	In the event that more than 10% (ten percent) of the lighting mast luminaires are not functional at any Toll Plaza, the Contractor shall pay a penalty for each event of non-compliance.	100%	0%	Risk is for the Main Contractor
6.8.3	In the event that the Contractor does not submit a 3 (three) yearly corrosion status reports on all assets, in accordance with the Standard Specifications of the Operations and Maintenance for CTROM Projects: General (Volume 2 book 2a), within 5 (five) Business Days after the last day of each 2 (two) month period commencing from the Commencement Date, the Contractor shall pay a penalty for each event of non-compliance, and every subsequent month thereafter.	100%	0%	Risk is for the Main Contractor
6.8.4	In the event that the Contractor does not submit a monthly handyman, HVAC or equipment failure report , in accordance with the Standard Specifications for Operations and Maintenance of CTROM Projects: General (Volume 2 book 2a), Contractor shall pay a penalty for each event of non-compliance, and every subsequent month thereafter.	100%	0%	Risk is for the Main Contractor
6.9.1	In the event if an interruption of electricity supply to any Toll Plaza as a result of the Clause 15.1 of the Standard Specifications of the Operations and Maintenance for CTROM Projects: General (Volume 2 Book 2a) the Contractor shall pay a penalty. Without prejudice to any other remedy which the Employer may have either in terms of this Agreement or in law, the Employer shall be entitled to call on the Performance security.	100%	0%	Risk is for the Main Contractor
6.9.2	In the event of non-compliance by the Contractor of its obligations pursuant to Clauses .15.1 of the Standard Specifications for Operations and Maintenance for CTROM Projects: General – Volume 2 Book 2(a), (save in respect of electricity supply) , the Contractor shall pay for each event of non-compliance.	100%	0%	Risk is for the Main Contractor

Volume 2 Book 6a - Section 4				
KPI #	Description	Penalty Application		Comment
		MC	NSC	
6.9.3	In the event of an interruption in the UPS or emergency electricity supply to the Toll Plaza , the Contractor shall pay the following penalty:	20%	80%	
6.10.1	In the event that the Contractor does not comply with its obligations specified in Clauses 15.4 (Safety and Security) of the Standard Specifications for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a), the Contractor shall pay a penalty for the each event of non-compliance.	100%	0%	Risk is for the Main Contractor
6.10.2	In the event that the Contractor achieves any type of safety rating, i.e. NOSA-5star or similar, during the duration of this agreement, an incentive for the safety ratings obtained during a twelve (12) month period will be paid to the Contractor.	100%	0%	Risk is for the Main Contractor
6.11.1	In the event that the Contractor does not comply with its obligations specified in Clause 15.5 (Quality Assurance) of the Standard specifications for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a), the Contractor shall pay a penalty for each event of non-compliance.	100%	0%	Risk is for the Main Contractor
6.12.1	In the event that the Contractor does not comply with its obligations relating to the handover of documents to the Next Contractor pursuant to the provisions of this Agreement, the Employer shall without prejudice to any other remedy which the Employer may have pursuant to this Agreement and in law, be entitled to call on the Performance Security, if any.	100%	0%	Risk is for the Main Contractor
6.13.1	In the event the Contractor does not comply with all the requirements related to the participation of Incident Management System specifications as specified in Clause 19.2 of the Standard Specifications of Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a), then the Contractor shall pay a penalty for each event of non-compliance.	100%	0%	Risk is for the Main Contractor
6.14.1	In the event that the Contractor does not meet the following route service patrol specifications . The following penalties shall apply:	100%	0%	Risk is for the Main Contractor

Volume 2 Book 6a - Section 4				
KPI #	Description	Penalty Application		Comment
		MC	NSC	
6.14.1.1	If the Contractor does not comply to the frequency of Route Service Patrols and the number of Patrol Vehicles as specified in the Standard Specifications for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a) then the Contractor pay a penalty for each day of non-compliance.	100%	0%	Risk is for the Main Contractor
6.14.1.2	If the Contractor does not comply with activities listed in Clause 19.4 of the Standard Specifications for Operations and Maintenance CTROM Projects: General (Volume 2 Book 2a) then the Contractor pay a penalty for each day of non-compliance.	100%	0%	Risk is for the Main Contractor
6.14.1.3	If the Contractor does not comply with the verification of incidents listed in Clause 19.4 of the Standard Specifications for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a) then the Contractor pay a penalty for each day of non-compliance.	100%	0%	Risk is for the Main Contractor
6.14.1.4	If the Contractor does not comply with the minimum required equipment specified in Clause 19.4 (Route Patrol Service) of the Standard Specifications for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a) then the Contractor pay a penalty for each day of non-compliance.	100%	0%	Risk is for the Main Contractor
6.15.1	In the event that the Contractor does not meet the requirements related to the Customer Call Centre as specified in Clause 19.3 of the Standard Specifications for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a). The Contractor shall pay a penalty for each day of non-compliance.	100%	0%	Risk is for the Main Contractor

SIGNED BY TENDERER:

SIGNED ON BEHALF OF PROSPECTIVE CONTRACTOR:

NAME OF REPRESENTATIVE:

SIGNATURE:

FORM D14: TECHNICAL PROPOSAL

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

The tenderer shall submit a signed copy of this Technical Proposal, providing a clear statement of his / her understanding and approach to execute the work, using the headings and sub-headings listed below. The Employer shall only consider a tender if the information provided is clearly stated in the tender documentation. Any other relevant details that the tenderer intends to submit, must be compiled and submitted as an Appendix to the Technical Proposal.

Tenderer to provide:

1. Toll Operations and Maintenance

1.1 Organisational Structure

1.1.1 Key Persons

- (a) The tenderer to provide Curriculum Vitae (no longer than A4 page) reflecting the contract management, toll operations, human resource management and any other experience on SANRAL type of Contracts and/or similar Contract for other Employers for following Key Persons:
 - (i) Contractor's Representative
 - (ii) Operations Manager
 - (iii) Maintenance Manager
 - (iv) Plaza Manager(s)
 - (v) SHEQ Manager/officer

1.1.2 Organisation and Staffing

- (a) The tenderer to provide the proposed overall project organogram.
- (b) The tenderer to provide the proposed detailed organogram indicating the proposed names of key resources, operations departments, number of staff for each staff level / category for each Toll Plaza.
- (c) The tenderer to provide breakdown of costs for the proposed manning levels.
- (d) The tenderer to provide breakdown of the costs of various staff categories that is reflected in the appropriate items of the Schedule of Payments/Costs Matrix.

1.2 Development of Key Previously Disadvantage Individual (PDI) Previous disadvantage individual Staff and New Entrant

1.2.1 Key PDI Staff

The tenderer to provide a list of Key PDI staff development proposed for this project.

1.2.2 Targeted Enterprise (New Entrant)

The tenderer is required to provide in detail the intended/proposed process how a Targeted Enterprise (TE) (New Entrant) will be mentored/trained in order to be able to do all the functions/tasks related to day to day Toll Operations and Maintenance. The information to be provided should include but not be limited to the following:

- (a) Describe the process to identify the TE (New Entrant)
- (b) Detailed program indicating all the steps/stages that the TE (New Entrant) will go through until it manages toll operators.
- (c) List all the training module(s) and duration for each module(s) or training stage(s).
- (d) How the risk transfer from tenderer to TE (New Entrant) will be managed and the type of risk that will be transferred.
- (e) How the tenderer will supervise and monitor the TE (New Entrant).

- (f) The proposed timeframe (month(s) or year(s) that the New Entrant will fulfil all the Toll Operations and Maintenance functions on their own.
- (g) Any other relevant information.

1.3 Proposed Operations Management Plan

1.3.1 Financial Management

- (a) The tenderer to provide a copy of the latest available Audited Financial Statement
- (b) The tenderer to provide financial management strategies detailing how the management and controls of Toll Income will be done at the various levels of the contract requirements
- (c) The tenderer to provide previous relevant experience on financial management
- (d) The tenderer must show that it has an average annual turnover, over the last five (5) years of the tendering entity, in excess of R100 million (Excl VAT) per year. If the tendering entity is a Consortium or Joint Venture, the annual turnover will be considered the sum of all shareholders or members and evidence thereof.

1.3.2 Traffic Management

- (a) The tenderer to provide detail traffic management plan indicating how the management and control of the various traffic conditions that may incur at the Toll Plazas including the how manning levels will be adapted to cater for various possible traffic conditions
- (b) The tenderer to provide previous relevant experience in traffic management

1.3.3 Risk Management

- (a) The tenderer is to provide a Risk Management Plan (RMP) detailing all the perceived risks while execution this type of contract. The risks need to be categorized in terms of risk severity (low to high risk) and how these risks be managed and controlled. The RMP needs to provide comfort to the Employer that the tenderer understands the risks in this contract.

1.3.4 Quality Assurance

- (a) The tenderer is to provide a Quality Assurance Plan indicating the processes and controls at the various facets of toll operations and maintenance
- (b) The tenderer to provide copies of any Quality related Certification(s)

1.3.5 Environmental Management

- (a) The tenderer to provide an Environmental Management Plan indicating the processes and controls to be applied at the various facets of toll operations and maintenance
- (b) The tenderer to provide any Environmental related Certification(s)

1.3.6 Health and Safety

- (a) The tenderer to provide a plan indicating how the latest OSHACT requirements will be met and maintained during the Contract
- (b) The tenderer to provide copies of any OHS related Certification(s)

1.3.7 Security

- (a) The tenderer to provide the proposed level of security to be implemented at the various Toll Plazas

1.3.8 Other

- (a) The tenderer to provide other relevant information

2. Toll System and Maintenance

Note: The Toll System Development and Maintenance shall be performed by a Nominated Subcontractor to be appointed by the Employer. This Technical Proposal shall include the Tenderer's understanding of the management and function of the Toll System and Maintenance component of this project, including the management and control of the Nominated Subcontractor and the management of the risk factors in this relationship.

2.1 Organisational Structure

- (a) The tenderer to provide Curriculum Vitae (no longer than A4 page) indicating the relevant qualifications, experience and duration on the Employers type contracts and any other types of contracts for the following Key Personnel:
 - (i) Project Manager (for the Design and Built stages and for the Operations phase)
- (b) The tenderer to provide an organogram indicating the actual numbers of staff proposed for the various levels for each Toll Plaza

2.2 Financial Management:

- (a) The tenderer to provide financial management strategy indicating the toll system process and procedures to control Toll Income
- (b) The tenderer to provide previous relevant experience on financial management

2.3 Risk Management

- (a) The tenderer shall complete, sign and clearly define/distribute the risk between NSC and the Main Contractor, and any subcontractor(s) in the Returnable Documents "Form D13".
- (b) The tenderer shall provide a Risk Management Plan indicating and listing all the perceived toll system related risks. The perceived risks need to be categorised in terms of risk severity (low to high risk) and how these risks will be managed and controlled on the, but not limited to the following items:
 - i) Communication risks (WAN and LAN)
 - ii) AVC (level of compliance in terms of CTROM requirements)
 - iii) Toll lane (level of compliance in terms of CTROM requirements)
 - iv) ETC and all other Payment Mechanisms in the Toll Lane (level of compliance in terms of CTROM requirements and downstream obligations).
 - v) VGS/QLS and Booth Camera obligations (to surpass the minimum levels of compliance in terms of CTROM requirements).
 - vi) BOS and other peripheral systems and data platforms (level of compliance in terms of CTROM requirements).

2.4 Quality Assurance

- (a) The tenderer to provide Quality Assurance Plan indicating the process and controls related to the design, built, operation and maintenance of the toll system at the toll plazas
- (b) The tenderer to provide copies of any Quality related Certification(s)

2.5 Environmental Management

- (a) The tenderer to provide an Environmental Management Plan indicating the processes and controls related to the design, built, operation and maintain of the toll system at the Toll Plazas
- (b) The tenderer to provide copies of any Environmental related Certification(s)

2.6 Health and Safety

- (a) The tenderer to provide a plan indicating how the latest OHSACT requirements related to the design, built, operate and maintain of the toll system will be maintained during the Design Build phase and during the Operation Service Period
- (b) The tenderer to provide copies of any OHS related Certification(s)

2.7 Past performance

- (a) The tenderer to provide all relevant experience and durations on the Employers type Contracts and any other types of projects

2.8 Other

- (a) The tenderer to provide any other information relevant to his management and control of the design, built, operate and maintenance of the toll system.

3. Electrical and Mechanical Maintenance

3.1 Organisational Structure

- (a) The tenderer to provide Curriculum Vitae (no longer than A4 page) indicating the qualifications, relevant experience and duration on the Employers type Contracts and any other type Contracts for the following key personnel:
 - (i) Project Manager
 - (ii) Route Technician
 - (iii) Site Technician(s)
- (b) The tenderer to provide an organogram indicating the actual numbers of staff proposed at various levels at each Toll Plaza

3.2 Risk Management

- (a) The tenderer to provide a Risk Management Plan indicating all risks related to the electrical and mechanical maintenance at the Toll Plazas, including the management and control of these risks
- Quality Assurance
- (a) The tenderer to provide a Quality Assurance Plan indicating the process and controls related to various levels of Electrical and Mechanical maintenance at the Toll Plazas
 - (b) The tenderer to provide copies of any Quality related certification(s)

3.3 Environmental Management

- (a) The tenderer to provide Environmental Management Plan indicating the process and controls related to the Electrical and Mechanical maintenance of the Toll Plazas
- (b) The tenderer to provide copies of any Environmental related certification(s)

3.4 Health and safety

- (a) The tenderer to provide a plan indicating how the latest OHSACT requirements in terms of Electrical and Mechanical maintenance will be met and maintained
- (b) The tenderer to provide copies of related OHS related certification(s)

3.5 Specialist subcontractors

- (a) The tenderer to provide the name, the experience in the specialist field and the details of the proposed maintenance and support team for the following specialist services:
 - i) Generator maintenance
 - ii) UPS maintenance
 - iii) HVAC maintenance

3.6 Other

- (a) The tenderer to provide any other relevant Electrical and Mechanical maintenance information

SIGNED BY TENDERER:

FORM D15: CORPORATE SOCIAL INVESTMENT

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

With regard to clause D1012: Community Development, of the Project Specifications:

Notes to tenderer:

- 1) The tenderer shall list below Corporate Social Investment initiatives that will actively be pursued for this project.
- 2) The Corporate Social Investment initiatives will be evaluated and applied as objective criteria in terms of section 2(1)(f) of the Preferential Procurement Policy Framework Act, 2000.

CSI Initiative	Community Affected	Estimated Rand Value of Initiative	Estimated Time for Implementation

SIGNED BY TENDERER:

FORM E1: ELECTRICAL SCHEDULE OF MATERIALS**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****Note to Tenderer:**

The schedules must only be completed insofar as the equipment and materials required for this particular contract are concerned.

If these schedules are not properly completed by the tenderer, his bid document will be regarded as incomplete. All technical data sheets to be attached to this Form E1 to complete the tender submission to ensure the complete evaluation of the tender offer.

Where types, etc. are filled in below and these do not comply with the Specification, this must be specifically pointed out by the Tenderer. Filling in of types, etc. below does not, if they do not comply, signify that they are acceptable or will be accepted. Any changes to the specification or requirements must be approved in writing by SANRAL before making any changes.

3. CABLES, CONDUCTORS AND ACCESSORIES AS PER V2B3 AND Sub-Clause C3.2.3

EQUIPMENT AND MATERIAL	DESCRIPTION AND MAKE
PVC SWA PVC LV Cable	
PVC SWA PVC LV Cable glands	
PVC SWA PVC LV Cable joints	
PVC SWA PVC LV Cable terminations	

4. POWER METER AS PER V2B3 AND Sub-Clause C3.2.3

EQUIPMENT AND MATERIAL	DESCRIPTION AND MAKE
Power meter	

5. LED LUMINAIRES AS PER V2B3 AND Sub-Clause C3.2.3

TYPE	SUPPLIER AND LED LUMINAIRE INFORMATION THAT COMPLIES WITH PS9
Design D1, D2 & D3	
L1	
L2	
L3	
L4	
L5	
L6	
L7	
L8	

TYPE	SUPPLIER AND LED LUMINAIRE INFORMATION THAT COMPLIES WITH PS9
LMS1	
LMS2	
L9	
L10	
L11	
L12	
L13	
L14	
L15	
L16	
LMS3	
Ctrl	
Licence	

6. LIGHT POLES/MASTS AS PER V2B3 AND Sub-Clause C3.2.3

TYPE	MANUFACTURER, CONSTRUCTION AND TYPE
A- P1	
B- P2	
C- P3	
B- P1	
C- P1	

7. UNINTERRUPTED POWER SUPPLY UP TO 50kVA AS PER V2B3 AND Sub-Clause C3.2.3

TYPE	MANUFACTURER AND MODULE
Static	
20kVA	
30kVA	
Modular	
20kVA	
30kVA	
40kVA	
60kVA	
Note special conditions:	

8. AUTOMATIC DIESEL STANDBY GENERATOR UP TO 250KVA AS PER V2B3 AND Sub-Clause C3.2.3

TYPE	MANUFACTURER AND MODULE	
Prime power rating	Motor	Alternator
12kVA		
20kVA		
46Kva		
100kVA		
180kVA		
200kVA		
Note special conditions:		
Tank Capacity	Location	MANUFACTURER
Verkeerdevlei Mainline Toll Plaza and Grasmere Remote Ramps Toll Plaza		
2000lts	Above ground	
Tank support	Above ground	
Bund wall	Above ground	
Piles and connections	Above ground	
Design	Above ground	
Project management	Above ground	
Grasmere Mainline Toll Plaza		
10000lts	Above ground	
Tank support	Above ground	
Bund wall	Above ground	
Piles and connections	Above ground	
Design	Above ground	
Project management	Above ground	
Note special conditions:		

9. ELECTRIC FENCE AS PER V2B3 AND Sub-Clause C3.2.3

TYPE	MANUFACTURER AND MODULE
Energizer	
Electric fence	

10. CCTV SECURITY CAMERAS AS PER V2B3 AND Sub-Clause C3.2.3

TYPE	MANUFACTURER AND MODULE
Camera	
Control room / monitoring	

11. SCADA SOLUTION V2B3 AND Sub-Clause C3.2.3

TYPE	MANUFACTURER AND MODULE
SCADA or	
BMS or	
Other	

12. PHOTOVOLTAIC SYSTEM SOLUTION V2B3 AND Sub-Clause C3.2.3

TYPE	MANUFACTURER AND MODULE
Detail design	
Photovoltaic panels	
Photovoltaic panel lightning protection	
Earthing installation	
Optimiser	
Combiner	
Battery charge controller or battery inverter	
Batteries	
Inverter	
DC cables	
DC connectors	
Management software	
Photovoltaic System design	
Commissioning	
Maintenance	

FORM F1: SCHEDULE OF TENDER COMPLIANCE**CONTRACT SANRAL N.001-192-2018/1****FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30****Note to tenderer:**

This form has been created as an aid to ensure a tenderer's compliance with the completion of the returnable forms and schedules and subsequent placement in the correct envelope.

FORM NO / SBD NO	FORM DESCRIPTION	TICK IF COMPLETED
A1	CERTIFICATE OF CONFIRMATION THAT THE TENDERER READ THE PRESENTATION/VIEWED THE VIDEO	
A1.1	CERTIFICATE OF INTENTION TO SUBMIT A TENDER	
A2.1	CERTIFICATE OF AUTHORITY FOR SIGNATORY	
A2.2	DECLARATION OF TENDERER'S CURRENT STATUS OF ANY DEBT OUTSTANDING TO SANRAL	
A2.3	CERTIFICATE OF SINGLE TENDER SUBMISSION	
A2.4	CERTIFICATE OF FRONTING PRACTICES	
A2.5	DECLARATION OF DOMESTIC PROMINENT INFLUENTIAL PERSONS, FOREIGN PROMINENT PUBLIC OFFICIALS AND FOREIGN INFLUENTIAL NATIONALS (DPIPS, FPPOS & FINS)	
A2.6	CERTIFICATE OF PERMISSION TO CONDUCT DUE DILIGENCE INVESTIGATION	
A3.1/SBD4	BIDDER'S DISCLOSURE	
A3.2/SBD9	CERTIFICATE OF INDEPENDENT TENDER (REPEALED)	
A3.3/SBD8	DECLARATION OF TENDERER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES (REPEALED)	
A3.4	REGISTRATION ON NATIONAL TREASURY CENTRAL SUPPLIER DATABASE	
A3.5/SBD6.2	DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS	
A3.6	LOCAL CONTENT DECLARATION: SUMMARY SCHEDULE (ANNEXURE C)	
A4	SCHEDULE OF DEVIATIONS OR QUALIFICATIONS BY TENDER	
A5	SCHEDULE OF ADDENDA TO TENDER DOCUMENTS	
A6/SBD2	CERTIFICATES OF TAX COMPLIANCE	
A7	CERTIFICATE OF INSURANCE COVER	
A8	TENDERER'S REGISTERED FINANCIAL SERVICE PROVIDER LETTER AND BANK DETAILS	
A9.1	SCHEDULE OF TENDERER'S LITIGATION HISTORY	
A9.2	ENVIRONMENTAL, SOCIAL, HEALTH, AND SAFETY PERFORMANCE DECLARATION	
A10	SCHEDULE OF CURRENT COMMITMENTS	

FORM NO / SBD NO	FORM DESCRIPTION	TICK IF COMPLETED
A11	CERTIFICATE OF COMPLIANCE WITH COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT, 1993 (ACT NO. 130 OF 1993)	
A12	REGISTRATION WITH CIDB	
A13/SBD1	INVITATION TO BID AND TERMS AND CONDITIONS FOR BIDDING	
B1	CURRENCY EXCHANGE RATE FLUCTUATIONS	
B2	CONTRACTOR'S ESTABLISHMENT ON SITE	
C1.1	TENDERER'S B-BBEE VERIFICATION CERTIFICATION	
C1.2/SBD6.1	PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017 (INCORPORATING SBD6.1)	
D1	SCHEDULE OF TENDERER'S PLANT AND EQUIPMENT	
D2	TENDERER'S METHOD STATEMENT	
D3	TENDERER'S ORGANISATION AND STAFFING	
D4.1	PERSONNEL RESOURCE DETAIL (CONTRACTOR'S REPRESENTATIVE)	
D4.2	PERSONNEL RESOURCE DETAIL (OPERATIONS MANAGER)	
D4.3	PERSONNEL RESOURCE DETAIL (MAINTENANCE MANAGER)	
D4.4.1	PERSONNEL RESOURCE DETAIL (PLAZA MANAGER 1)	
D4.4.2	PERSONNEL RESOURCE DETAIL (PLAZA MANAGER 2)	
D4.4.3	PERSONNEL RESOURCE DETAIL (PLAZA MANAGER 3)	
D4.4.4	PERSONNEL RESOURCE DETAIL (PLAZA MANAGER 4)	
D4.5	PERSONNEL RESOURCE DETAIL (H&S MANAGER/OFFICER)	
D5.1	TENDERER'S EXPERIENCE BASED ON COMPLETED PROJECTS	
D5.2	TENDERER'S EXPERIENCE BASED ON PROJECTS IN PROGRESS	
D6	AFFIDAVIT FOR PAST PERFORMANCE REPORTS ON COMPLETED PROJECTS	
D7.1	TENDERER'S INDICATIVE PROGRAM	
D7.2	PROPOSED ESTABLISHMENT PROGRAMME	
D8	SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE	
D9	NOMINATION OF COMPANY, MEMBER, SUBCONTRACTOR, ETC. FOR EACH DISCIPLINE	
D10	TECHNICAL INFORMATION	
D11	TOLL PLAZA UPGRADING SCHEDULES	
D12	ADDITIONAL INFORMATION	
D13	DISTRIBUTION OF RISK BETWEEN THE NSC AND THE MAIN CONTRACTOR AND ANY OTHER SUB-CONTRACTORS	

FORM NO / SBD NO	FORM DESCRIPTION	TICK IF COMPLETED
D14	TECHNICAL PROPOSAL	
D15	CORPORATE SOCIAL INVESTMENT	
E1	ELECTRICAL SCHEDULE OF MATERIALS	
F1	SCHEDULE OF TENDER COMPLIANCE	
C1.1.1/SB D7	FORM OF OFFER	
C1.2.3	CONTRACT DATA – INFORMATION PROVIDED BY THE TENDERER	
C2.2/SBD3	PRICING SCHEDULE	
C2.3	SUMMARY OF PRICING SCHEDULE	

PART C1: AGREEMENTS AND CONTRACT DATA

C1.1 FORMS OF OFFER AND ACCEPTANCE

C1.1.1 LETTER OF OFFER (INCORPORATING SBD7)

The South African National Roads Agency SOC Limited
PO Box 415
PRETORIA
0001

Sir,

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

1. I/we, by signing this part of the forms of offer and acceptance acknowledge they are the equivalent of the Letters of Tender and Acceptance as defined in clauses 1.1.48 and 1.1.49 in the "Conditions of Contract for Design, Build and Operate Projects" (2008), published by the Fédération Internationale des Ingénieurs-Conseils, (FIDIC).
2. I/we confirm that I/we practise the principles of corporate governance that abhors corruption and fraud, and that I/we have examined the documents listed in the tender data and addenda thereto as listed in the returnable schedules and am/are duly authorised to represent and commit the tenderer to the contractual obligations contained therein.
3. I/we further confirm that by submitting this offer the tenderer accepts the conditions of tender and 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 tender and the conditions of contract identified in the contract data.

4. PRICE OFFERED

- a) THE OFFERED TOTAL OF THE PRICES FOR THE DESIGN-BUILD OF WORKS AND THE OPERATION SERVICE PERIOD OF 6 YEARS (INCLUSIVE OF VALUE ADDED TAX) BROUGHT FORWARD FROM SECTION C2.2 SCHEDULE OF PAYMENTS/COST MATRIX IS:**

.....
.....
.....(in words)

R(in figures)

I/we confirm that if any difference between the total of the Schedule of Payments/Cost Matrix and the amounts stated above exists, the amount stated in words shall apply.

I/

PREFERENCE CLAIMED

I/we claim the following B-BBEE contributor status level as per Returnable Schedule Form C1: Tenderer's B-BBEE Verification Certificate subject to Tender Data C.3.11 In the event of any difference between the above stated status level and the Verification Certificate attached to Form A13, the Verification Certificate shall apply.

You may accept this offer by signing and returning to the tenderer one copy of the letter of acceptance before the end of the period of validity stated in the tender data, (or at the end of any agreed extension

thereof), whereupon the tenderer becomes the party named as the contractor in the conditions of contract identified in the contract data.

Notwithstanding anything contained in a covering letter to this tender, I/we declare this offer is submitted entirely without deviations or qualifications other than those stipulated in Form A4: Schedule of Deviations or Qualifications by the tenderer, and that it is made free from any fraud, corruption and misrepresentation.

Yours faithfully

SIGNATURE: DATE:

NAME (IN CAPITALS):
.....

CAPACITY:
.....

Date and minute reference of Board resolution if different from returnable schedule Form A2.1:

Certificate of Authority for Signature

NAME AND ADDRESS OF ORGANISATION:
.....

NAME AND SIGNATURE OF WITNESSES:

AS WITNESSES:

1
.....
SIGNATURE NAME (IN CAPITALS)

2
.....
SIGNATURE NAME (IN CAPITALS)

C1.1.2 FORM OF ACCEPTANCE (INCORPORATING SBD7)

[Form to be printed on SANRAL letterhead]

To *[Name of successful tenderer]*

Dear Sir,

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

ACCEPTANCE OF OFFER

1. It is our pleasure to inform you that the South African National Roads Agency SOC Limited (the Employer) accepts your *[select if applicable corrected/corrected alternative/alternative]* offer in the amount of R..... (i.e. including VAT but excluding cost indexation and any contingent sum not in the priced schedule) for the Operation Service Period of six (6) years with the base date of January 2023 (28 days prior to the actual closing date of tender).
2. The amount due may not be the Accepted Contract Amount but payment shall be made in accordance with the conditions of contract identified in the contract data.
3. This Letter of Acceptance constitutes the Letter of Acceptance as defined in clause 1.1.48 of the "Conditions of Contract for Design, Build and Operate Projects" (2008), published by the Fédération Internationale des Ingénieurs-Conseils (FIDIC) Gold Bank.
4. Acceptance shall form an agreement between us according to the terms and conditions contained in this form and in the Contract that is comprised of:

Part C1: Agreements and Contract Data (including this Letter of Acceptance),
Part C2: Pricing Data,
Part C3: Scope of the Work,
Part C4: Site Information,
Part D: Stakeholder and Community Liaison, and Targeted Labour and Targeted Enterprises utilisation and development; and
Part E: Annexures
together with issued drawings, addenda, Employer Requirements and other documents, or parts thereof, which may be incorporated by reference into Parts listed above.
5. Deviations and/or qualifications included in your offer as well as any changes to the terms of the offer agreed by us during the process of tender offer and acceptance shall not be valid unless contained in the tendered Returnable Schedule of deviations. In the event that an alternative offer is accepted, it is a fundamental Condition of Acceptance that all responsibilities and concomitant liabilities arising from the alternative design, methodology or the like, pass from us to you. *[Note to compiler: If no deviation/alternative tender then replace the above part of this paragraph with "There are no alternatives, deviations, qualifications or changes to the documents"]*. Addenda issued during the tender period are not deemed to be deviations to the tender documents and schedules.
6. Notwithstanding the need to agree the mandate required by Section 37 of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), a proforma of which is attached for your reference, we hereby appoint you as the Principal Contractor in terms of Regulation 5(1)(k) of the Construction Regulations, GNR. 84 of 2014.
7. A SARS compliance check has been done on you and you are found to be **(Select: "compliant" or "non-compliant")**. "Within 7 calendar days of the date of this Form of Acceptance you shall provide proof that you are SARS compliant. Failure to fulfil this obligation shall constitute a repudiation of this agreement."

8. Within fourteen (14) calendar days of the date of this Letter of Acceptance (including the tendered Returnable Schedule of deviations if any) you shall deliver to us:
- Performance Security – Surety Bond (as per clause 4.2 and 13.8 of the Conditional of Contract (FIDIC)) a pro forma is contained in the sample forms of tender and agreement of the FIDIC DBO Conditions of Contract for your reference. There shall be no deviations from the wording of the pro forma Performance Security – Surety Bond.
 - Proof of insurance in terms of the information provided in the Contract Data and clause 19 of the Condition of Contract (FIDIC). Proof of currency of insured cover shall be provided on a monthly basis until date stated in Contract Completion Certificate.
 - Fully completed and signed form together with your Health and Safety plan and proof of the Construction Health and Safety Officer's Registration with SACPCMP.
 - Proof that you are registered and in good standing with the compensation fund or with a licensed compensation insurer.
 - A completed Form of banking Details.
 - Proof of registration on the Employer's Project Information Module (ITIS).
 - Alternative nominated DAB member details.

Failure to fulfil either of the obligations in (i), (ii) or (iii) above, shall constitute a repudiation of this agreement and we may at our discretion apply any rights of remedy including barring you from tendering on any of our future tenders for a period to be determined by us, but not less than twelve (12) months, from the date of tender closure.

9. The effective date of the contract shall be the date of this Letter of Acceptance unless you within four (4) calendar days of the effective date, notify us in writing of any justification why you cannot accept the contents of this agreement.
10. The Commencement Date of the Works shall be that on which the commencement meeting is held, which shall not be later than *[Note to compiler: the commencement meeting date indicated above is usually within 28 calendar days after the date of this form, as circumstances demand and as agreed between tenderer/Employer. The above can also be amended by fixing the Commencement Date to a given date].* Access to the Site shall be on the Commencement Date.
11. Notwithstanding that a full, original-signed copy of the Contract document containing all Contract Data and schedules (including that of accepted deviations) will be delivered to you, this Letter of Acceptance constitutes the binding contract between us.
12. Messrs act as our Employers Representative to fulfil the functions and duties in the administration of this Contract. Please contact at to make arrangements for the signing of the Contract documents and handover of the Site.

SIGNATURE: DATE:

NAME (IN CAPITALS):

CAPACITY: Regional Manager Eastern Region

EMPLOYER'S NAME AND ADDRESS:

The South African National Roads Agency SOC Limited
58 Van Eck Place
Mkondeni
Pietermaritzburg
3201

AUTHORITY TO ACT: **SANRAL Delegation of Authority: Item 2.4.1.2.**

NAME AND SIGNATURE OF WITNESSES:

AS WITNESSES:

.....

SIGNATURE

.....

NAME (IN CAPITALS)

.....

SIGNATURE

.....

NAME (IN CAPITALS)

The tenderer must register an account on SAP Ariba before the hand-over meeting. The link and information to register the Ariba account is provided below.

<https://www.nra.co.za/sap-ariba/>

Contact supplierenablement@nra.co.za or for queries regarding SAP Ariba registration.

C1.1.3 APPENDIX TO FORM OF ACCEPTANCE

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 AND R30

Schedule of Deviations

The deviations listed below constitute agreed deviations/amendments to the tender document negotiated between the tenderer and Employer based on information provided in the tendered Returnable Schedule of Deviations or Qualifications by tenderer or imposed conditions of award.

1.

Subject:

.....

Details:

.....

2.

Subject:

.....

Details:

.....

3.

Subject:

.....

Details:

.....

4.

Subject:

.....

Details:

.....

By the duly authorised representatives signing this agreement, the Employer and the tenderer agree to and accept the afore-going 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 Returnable Schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the tenderer and the Employer during this process of offer and acceptance.

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

C1.1.4 CONTRACT AGREEMENT

This Agreement made on the _____ day of _____ ,
20_____,

between **THE SOUTH AFRICAN NATIONAL ROADS AGENCY LIMITED**

of **48 Tambotie Avenue, Val de Grace, Pretoria, South Africa**

(herein called "the Employer"), of the one part,

and _____ (*name of Contractor*)

of _____ (*address of Contractor*)

(herein called "the Contractor"), of the other part:

Whereas the Employer desires that the **"FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 SOUTH AND R30"** (the Works), should be completed, improved, expanded, replaced, designed, executed, commissioned, operated and maintained by the Contractor and has accepted a Tender from the Contractor for the design, execution, completion, commissioning and operation and maintenance of these Works, and the remedying of any defects therein,

The Employer and the Contractor agree as follows:

1. In this Agreement, the words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as a part of this Agreement:

The Letter of Acceptance dated

The Letter of Tender dated

The Addenda Nos.

The Conditions of Contract

The Employer's Requirements

The completed Schedules

The Operating Licence, and

The Contractor's Proposal

3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby agrees with the Employer to design, execute, complete and commission the Design-Build works, and to operate and maintain the Works and remedy any defects therein in conformity with the provisions of the Contract and the Operating Licence granted by the Employer.
4. The Employer hereby agrees to pay the Contractor, in consideration of the design, execution, completion and commissioning of the Design-Build works, and the operation and maintenance of the Works and the remedying of defects therein, the Contract Price at the times and in the manner

prescribed by the Contract, and to grant the Contractor a royalty-free licence to enable him to take-over, operate and maintain the Works during the Operation Service Periods.

In witness whereof the Parties hereto have caused this Agreement to be executed on the day and year first above written.

SIGNED BY: _____
(Signature)

SIGNED BY: _____
(Signature)

for and on behalf of the Contractor in the presence of
presence of

for and on behalf of the Employer in the

WITNESS: _____
(Signature)

WITNESS: _____
(Signature)

NAME: _____

NAME: _____

ADDRESS: _____

ADDRESS: _____

DATE: _____

DATE: _____

C1.2 CONTRACT DATA

C1.2.1 INTRODUCTION

This Contract will be a Main Contract for the Operations and Maintenance of N1 South and R30 Toll Plazas on National Route N1 and R30. A Nominated Subcontractor will be nominated by the Employer and the Contractor shall be required to appoint this nominated subcontractor, in accordance with the stipulations of the Contract.

C1.2.1.1 CONDITIONS OF CONTRACT CONCEPTS

The Conditions of Contract comprise the "General Conditions", "Particular Conditions Part A – Contract Data" and "Particular Conditions Part B – Special Provisions", which include amendments and additions to such General Conditions.

For the Main Contract the following shall apply:

1. The **General Conditions** of Contract shall be the “Conditions of Contract for Design, Build and Operate Projects, First Edition 2008” published by the Fédération Internationale des Ingénieurs-Conseils (FIDIC)
2. The Contract Data (Particular Conditions, Part A) as set out in the Main Contract Part C1, and which provisions take preference over the General Conditions and Special Provisions; and
3. The Special Provisions (Particular Conditions, Part B) as set out in the Main Contract PART C1, and which provisions take preference over the General Conditions.
4. A copy of the Main Contractor’s Tender Document will be available on SANRAL’s website to the NSC for purposes of context and a better understanding of the Works.

For the Nominated Sub-Contract (NSC) (this Contract) the following shall apply:

1. The General Conditions of Contract shall be the “Conditions of Contract for Design, Build and Operate Projects, First Edition 2008” published by the Fédération Internationale des Ingénieurs-Conseils (FIDIC)
2. The Contract Data (Particular Conditions, Part A) as set out in C.1.2.1 below, and which provisions take preference over the General Conditions and Special Provisions; and
3. The Special Provisions (Particular Conditions, Part B) as set out in C.1.2.2 below, and which provisions take preference over the General Conditions.
4. A copy of the Nominated Subcontract will be made available to the MC for purposes of context and a better understanding of the Works.

C1.2.1.2 ASSOCIATED CONTRACTS AND TERMINOLOGY

The terminology used for the contracts and the various roles versus the FIDIC terminology is tabled and clarified below.

TABLE 1: ASSOCIATED CONTRACTS AND TERMINOLOGY

Entity (vertical) / Contract (horizontal)	Main Contract (MC) (CTROM Operations and Maintenance Contract)	Toll System Subcontract (NSC)	How these should be interpreted in this contract
SANRAL	Employer	Principal Employer	Employer
Main Contractor (MC) (Operations and Maintenance Contract)	Contractor Operator	Employer Operator	Main Contractor
Toll System Subcontract (NSC)	Nominated Subcontractor System Integrator	Contractor System Integrator	Nominated Subcontractor (NSC)
Employer's Representative	Employer's Representative	Main Contractor's (MC) Subcontractor's Representative	MC Subcontractor's Representative
SANRAL MIS System Integrator			SANRAL MIS System Integrator (SI)

The Special Provisions (Particular Conditions, Part B) as set out in C.1.2.2 below, include clarifications and special stipulations to make the Conditions of Contract specific to this Contract.

All references to Main Contractor in the General Conditions, the Contract Data and the Special Provisions refer to this Contractor.

C1.2.2 PART A: "PARTICULAR CONDITIONS: CONTRACT DATA

Clause No.	Condition Reference.	Data
1.1.24	Where the Contract allows for Cost Plus Profit, percentage profit to be added to the cost:	5%
1.1.26	Cut Off Date (number of days after the Time for Completion of Design-Build):	180 days
1.1.32	Employer's name and address:	Means the South African National Roads Agency SOC Limited, instituted in terms of South African National Roads Agency Limited and National Roads Act (Act no 7 of 1998) or a person delegated by the South African National Roads Agency SOC Limited to act on its behalf. The Employer's Address is: The South African National Roads Agency SOC Limited 48 Tamboe Avenue Val de Grace Pretoria 0184
1.1.35	Employer's Representative name and address:	To be notified once appointment has been finalised.
1.1.70	Parts of the Works that shall be designated a Section for the purposes of the Contract:	Contract Data for Sections is provided in Appendix 1 hereto.
		<u>Operation Service Period</u> Section 1: Operation Service Period at the Toll Plazas Grasmere, Vaal, Verkeerdevelei, Brandfort using the Legacy toll system or the Contractor's toll system. Section 2: Operation Service Period at the Toll Plazas Grasmere, Vaal, Verkeerdevelei, Brandfort using the Employer's Management Information System.
1.1.78	Time for Completion of Design-Build:	Contract Data for Sections is provided in Appendix 1 hereto.
1.3	Agreed methods of electronic transmission:	Virus protected E-mail
1.3	Address of Employer for communications:	The Regional Manager Eastern Region) The South African National Roads Agency SOC Ltd 58 Van Eck Place

Clause No.	Condition Reference.	Data
		Mkondeni Pietermaritzburg 3201
1.3	Address of Employer's Representative for communications:	<i>(To be confirmed after award)</i>
1.3	Address of Contractor for communications:	<i>(To be confirmed by the Employer prior to Contract signing)</i>
1.4	Contract shall be governed by the law of:	South Africa
1.4	Ruling language:	English
1.4	Language for communications:	English
2.1	After receiving the Letter of Acceptance, the Contractor shall be given access to all or part of the site within:	Contract Data on envisaged site access is given in Appendix 1 hereto.
4.2	Initial Performance Security during the design-built section 2: As an amount in currencies:	10% of the Design Build part of the Contract Amount at Base Date value and which shall be adjusted in accordance with Sub-Clauses 4.2 and 13.8
4.2	Performance Security during the Operation Service part of the Work: (due from the start of the Contract for the duration of the Operations Service)	25% of the highest monthly AGI from the previous 12 months at Base Date value and which shall be adjusted in accordance with Sub-Clauses 4.2 and 13.8
	Currency.....	ZAR (South African Rand)
5.1	Period of notification of errors, faults and other defects is:	21 days
5.2	Contractor's documents requiring approval:	Contract Data is tabled in Appendix 2 hereto.
6.5	Normal working hours on the Site:	With the exception of public holidays (including statutory election days) of the Country and necessary shift works pursuant to the Employer's Requirements and the Operation and Maintenance Plan, the normal working hours are: South African time (7:00 to 18:00) on Mondays to Fridays. For Toll Operations the working hours are 24 hours for 7 days
8.2	Period of the Operation Service:	
	Operation Service Period sections 1 and 2 at the Toll Plazas on the N1 South and R30 Toll Roads commencing on the issuing of Commissioning Certificate for Design-Build: Section 1.	6 years

Clause No.	Condition Reference.	Data
8.3	Software to be used for Contractor's time programmes:	Unless otherwise stated in the Employer's Requirements, appropriate Microsoft programming products shall be used.
9.2	Time for Completion of Design-Build of all Works:	3 years
9.2	Time for Completion of each Section:	Contract Data for Sections is provided in Appendix 1 hereto.

9.6	Delay damages relating to Design-Build (amount per day of delay at Base Date value and which shall be adjusted in accordance with Sub-Clause 13.8):	Contract Data for Sections is provided in Appendix 1 hereto.
	<i>Note: If specified in the Employer's Requirements and in addition to the application of delay damages, programme performance adjustments may be applicable when the Contractor fails to achieve interim milestones on his time programmes.</i>	
9.6	Maximum Amount of delay damages:	10% of Value of Work for particular section
10.6 (a)	Maximum Compensation payable by Contractor (Amount):	10% of Contract Amount at Base Date value and which shall be adjusted in accordance with Sub-Clause 13.8
10.6 (b)	Maximum Compensation payable by Employer (Amount):	ZAR 0.00
10.7 (b)	Rights of Employer if failure continues for more than 84 days:	In addition to the stated Conditions of Contract, the Employer shall also be entitled to: (i) arrange for the performance of the relevant affected part of the Operation Service by another person at the Contractor's cost, or (iv) terminate the affected, relevant and appropriate part of the Operation Service by giving not less than 56 days' Notice, in accordance with Sub-Clause 15.2 <i>[Termination for Contractor's Default]</i>
14.2	Amount of Advance Payment (percent of Accepted Contract Price):	ZAR 0.00 (0%)
14.2	Currencies of Advance Payment if different to the currencies quoted in the Contract:	Not applicable
14.2	Percentage deductions for the repayment of the Advance Payment:	Not applicable
14.3 (c)	Retention deductions from Interim Payments during:	

	Design – Build Period	0%
14.3 (c)	Operation Service Period	0%
	Limit of Retention Money during:	
	Design – Build Period	ZAR 0.00
	Operation Service Period Note: The provisions for retention (deductions, retention money, maintenance retention fund, retention period, retention guarantee / bond and the like) is not applicable to the Contract.	ZAR 0.00
14.6	Plant and Materials for payment when shipped and delivered to Site:	0%, This provision shall not be applicable to the Contract.
14.7	Minimum Amount of Interim Payment Certificate:	ZAR 0,00
14.9	Financing charges for delayed payment (percent points above discount rate):	2 % above the repo rate of the South African Reserve Bank
14.17	Currencies for payment of Contract Price:	ZAR (South African Rand) only
14.17	Proportions of Local and Foreign Currencies are:	
	Local.....	100 %
	Foreign.....	0 %
14.17	Payments of damages shall be:	
	Currency.....	ZAR (South African Rand)
	Proportion.....	100 %
14.19	Amount of Maintenance Retention Fund:	ZAR 0.00, This provision shall not be applicable to the Contract.
17.1 (b)	Operation of forces of nature allocated to the Contractor:	The Conditions of Contract shall be applicable.
17.8	Total liability of Contractor shall not exceed:	10% of the Accepted Contract Amount
19.2(a)(i)	Permitted deductible limits:	ZAR 100 000 per event at Base Date Value which shall be adjusted in accordance with Sub-Clause 13.8
19.2(a)(ii)	Additional sum to be insured:	15% of the value of the assets of the project.
19.2(a)4	Additional sum to be insured:	Contract Data is given in Appendix 3 hereto
19.2(a)4	Employer's Risk to be insured if different to Sub-Clause 17.1(b)(iii):	Contract Data is given in Appendix 3 hereto

19.2(a)5	Exceptional Risks to be insured if different to Sub-Clause 18.1(4):	Contract Data is given in Appendix 3 hereto
19.2(b)	Insurance of Contractor's Equipment (amount required):	An amount equal to the full replacement value thereof at Base Date Value and which shall be adjusted in accordance with Sub-Clause 13.8
19.2(c)	Amount of Professional Liability Insurance required:	Contractor to determine appropriate amount
19.2(c)	Period for which professional liability insurance required:	Up to the issuing of the Contract Completion Certificate
19.2(e)	Amount of insurance required for injury to employees and damage to property	Contractor to determine appropriate amount
19.3(a)	Insurance of the works:	As specified in Table 1 of Appendix 3 hereto and at full replacement value at Base Date and which shall be adjusted in accordance with sub-Clause 13.8 on an annual basis.
	Permitted deductible limits:	Employer's Equipment: As specified in Table 1 of Appendix 3 hereto
19.3(b)	Injury to any person and damage to property amount:	Contractor to determine appropriate amount
19.3(d)	Other insurances required by law and local practice:	Contract Data is given in Appendix 3 hereto
19.3(e)	Other optional Operational Insurances:	Contract Data is given in Appendix 3 hereto
20.3	Date for appointment of ad-hoc DAB.....	The date shall be a date within 28 days after the date of a Dispute Notice of either Party to the other Party
20.3	Selection list of DAB Chairperson:	Not applicable
20.4	The DAB shall comprise:	One (1) member
20.8	Appointing entity (official) for DAB members, if not agreed, shall be.....	President of the South African Institute for Civil Engineers or a person nominated by him/her
	Language of arbitration:	English
C3.3.5(d)	Environmental Management Plan (EMPC)	DEO means: Designated Environmental Officer
C3.4.2.1(q)	Targeted Enterprises	Minimum of thirty percentage (30%) of work to be Sub-contracted to Targeted Enterprises by the end of Contract
C3.4.2.1(p)	Target Area(s)	For Targeted Labour: Two (2) provinces, Gauteng, and Free State in the following District Municipalities:

		Lejeweleputswa, Mangaung, Fezile Dabi Emfuleni and City of Johannesburg
C3.4.4(a)	Contract Participation Goals (CPG)	To be confirmed after award, 30% of contract value
C3.4.4(e)	Appointed PLO	<u>Verkeerdevlei Toll Plaza</u> Zondi Mandla zimandla81@gmail.com 078 463 6550 <u>Vaal/Grasmere Plaza</u> Lebogang Motlhabane 081 461 7939 lebu.motlhabane@gmail.com <u>Brandfort Plaza</u> Thabiso Mokhele 073 499 6403 t.mokhele@qaconsulting.co.za
	Targeted Labour of which minimum contributions by:	Minimum of 10%
	Target Groups:	
	Woman	To be confirmed
	Youth	To be confirmed
	Targeted Enterprise of which minimum contribution by Targeted Groups:	To be confirmed after award once market analysis has been completed
a)	b) Targeted Enterprise with \geq 51% ownership by youth	
c)	d) Targeted Enterprise with \geq 51% ownership by woman	
e)	f) Targeted Enterprise with \geq 51% ownership by N/c veterans	
g)	h) Targeted Enterprise with \geq 51% ownership by disabled persons	

C1.2.3 APPENDIX 1 TO CONTRACT DATA: SECTION DATA.

Design-Build Section data

The summarized Design-Build Section data (definitions) tabled below shall also be read and construed in accordance with the Employer's Requirements and Schedule of Payments.

It shall be noted that the Design-Build works for the defined Sections shall be executed in a real time operational environment.

Sections 4 and 5 are subject to If-Triggered Notices and may or may not be implemented. The Contractor shall not be entitled to claim in case one or more Sections are not triggered by the Employer.

More than one Section may have to be executed in parallel, depending on the date of a Trigger Notice. The Contractor shall not be entitled to claim for additional time and cost in case the Sections are to be executed and/or performed simultaneously.

Section 1 covers the existing system handed over at Commencement Date.

Section 2 covers the establishment upgrades to the Toll System and the relocation of the TCH payment gateway from an external service provider to a plaza on the N1 South and R30 route. The Contractor shall participate extensively during the planning, design, testing, data migration, interfacing, switch-over, commissioning, etc, in order to sign-off the upgrades to the existing Toll System for the purpose of operations. The Contractor shall perform the management, coordination, liaison and interface management during the upgrading of the existing Toll System.

Section 3 covers the provision of a new Toll System (hardware and software) during which the Contractor shall participate extensively during the planning, design, testing (including the performance of the trial operations testing by the Contractor), data migration, interfacing, switch-over, commissioning, etc, in order to sign-off and take-over the new Toll System for the purpose of operations. The Contractor shall perform the management, coordination, liaison and interface management during the replacement of existing Toll System.

Section 4 covers the provision of a SANRAL MIS interface. This section overlaps with Section 2. This will include inter-alia, interface management, liaison, cooperation, etc between all applicable third-party contracts during the development of the interface.

Section 5 covers the provision and deployment of a national SANRAL toll system. This Section can overlap with Section 2 or 3 during the migration period. This will include inter-alia, interface management, liaison, cooperation, etc between all applicable third-party contracts during the development.

The Section data tabled below is of a general nature and shall be interpreted in accordance with the corresponding or associated data as detailed in the Employer's Requirements. The data also refers to the general provisions for access to and possession of the applicable part of the Site pursuant to Sub-Clause 2.1 (Right of Access to the Site) of the Conditions of Contract. It further refers to the Employer's Assets to be taken over by the Contractor prior to the issue of a Section Commissioning Certificate and for the purpose of operations and maintenance thereof, pursuant to Sub-Clause 4.26 (Take-over of Employer's Assets) of the Conditions of Contract.

The Employer is entitled to re-allocate any part (subject that it is not material) of the Works, Design-Build and/or Operation Service of an earlier Section to a subsequent Section by notifying the Contractor at a reasonable period in advance. Notwithstanding any other contrary provision of the Contract, the execution of this entitlement shall not give rise to any Contractor's claim for delay and additional cost [pursuant to Sub-Clause 20.1 (Contractor's Claims) of the Conditions of Contract] in relation thereto.

TABLE 2: APPENDIX TO CONTRACT DATA

Section no	Design-Build Section definition	Section Start date	Time for completion (days)	Delay damages (per day)	Section Commissioning Certificate	Cut-off date (days)	Retention
<i>Sub-Clause references</i>		1.1.6, 8.1, 9.1	1.1.78, 8.2; 9.2	8.5; 9.6	1.1.71, 11.5, 11.7	1.1.26, 9.13	1.1.66
1	Maintenance and support services for existing Toll System at Fixed Tendered Rates and Prices, including the Take-over (establish, train, transfer Employer's Facilities & Equipment, documents & processes / procedures, subcontracts, etc)	Commencement Date	Max 42 days	NA	Yes	90 days	NA
2	Establishment upgrade of existing Toll System and relocation of the TCH payment gateway. (This section runs in parallel with Section 1).	Commencement Date	Max 182 days	NA	Yes (testing, commissioning and sign-off applicable)	180 days	NA
3	Provision of replacement Toll System. (This section runs in parallel with Section 1) and contains the following sub-sections 2.1 to 2.9	Commencement Date	Max 730days	NA	Yes (testing, commissioning and sign-off applicable)	180 days	NA
3.1	AVC/DCS: Count and class accuracy, redundancy, TCC interface, DCS interface, ITIS submission, health monitoring, version control and KPI						
3.2	Dedicated ETC lane: ETC accuracy and processing speed, TCH submission, health monitoring, version control and KPI						
3.3	ANPR: Transaction framing, ANPR accuracy and capture %, ANPR TCH submission, ANPR inc control (ANPR fail, like class fail						

Section no	Design-Build Section definition	Section Start date	Time for completion (days)	Delay damages (per day)	Section Commissioning Certificate	Cut-off date (days)	Retention
	integration), health monitoring, version control and KP						
3.4	Bank card processing: Lane level validation, Tap and go, processing speed, PCI, health monitoring, version control, Bank interface, VAT and KPI						
3.5	Cash processing: Lane level process, processing speed, health monitoring, version control and KPI						
3.6	Discount and concessions: Lane level process, processing speed, discrepancy handling, tariff's structure, validation list accuracy, health monitoring, version control and KPI						
3.7	Incident control: Lane level process, Control room process (class/VLN fail, serious/critical mode, other), image capture, processing speed, images to TCH, health monitoring, version control and KPI						
3.8	VGS system: Lane level implementation, transaction framing and video/image extraction, VGS audit/VGS clerk interface, processing speed, images to TCH, health monitoring, version control and KPI						
3.9	QLS and QL system: Queue detection, Queue reporting, queue audit, Control room process and queue reporting to incident control, image capture, processing speed, health monitoring, version control and KPI						

Section no	Design-Build Section definition	Section Start date	Time for completion (days)	Delay damages (per day)	Section Commissioning Certificate	Cut-off date (days)	Retention
4	Provision of a SANRAL MIS interface. This section overlaps with Section 2. This will include inter-alia, interface management, liaison, cooperation, etc between all applicable third-party contracts during the development.	Date stated in trigger Notice	540 days	NA	Yes (testing, commissioning and sign-off applicable)	90 days	NA
5	Provision of a national SANRAL toll system deployment. This Section can overlap with Section 2 or 3 during swap over. This will include inter-alia, interface management, liaison, cooperation, etc between all applicable third-party contracts during the development.	Date stated in trigger Notice	540 days	NA	Yes (testing, commissioning and sign-off applicable)	90 days	NA

C1.2.4 APPENDIX 2 TO CONTRACT DATA: APPROVAL DATA

The Contractor's Documents requiring approval pursuant to Sub-Clause 5.2 and the provisions and requirements of the Contract include:

- C1.2.4.1 All Contractor's documentation related to his quality assurance system, OHS and environmental plans,
- C1.2.4.2 The functional specifications, testing procedures, software executable release plans and as-built documentation in relation to the Design-Build,
- C1.2.4.3 The Operation and Maintenance Plan,
- C1.2.4.4 The Operation and Maintenance Manuals related to the Operation Service,
- C1.2.4.5 The Maintenance Manuals related to the Maintenance and Support Services,
- C1.2.4.6 Design-Build documents requiring approval in terms of the Employer's Requirements, and
- C1.2.4.7 Operation Service documents requiring approval in terms of the Employer's Requirements.

C1.2.5 APPENDIX 3 TO CONTRACT DATA: INSURANCE DATA

The following insurance obligations and data shall apply in relation to the corresponding Sub-Clauses of the Conditions of Contract:

Sub-Clause 19.2(a)(4)

The insurance cover provided by the Contractor shall include the Employer's Risks pursuant to Sub-Clause 17.1 (b)(iii) [*Operation of Forces of Nature*].

Sub-Clause 19.2(a)(5)

The insurance cover provided by the Contractor shall include the Exceptions Risks pursuant to Sub-Clause 18.1(f) [*Natural Catastrophes*].

Sub-Clause 19.3(a)

The fire extended insurance cover for the Works [including all Employer's Equipment and Contractor's Documents delivered by the Contractor to the Employer pursuant to his Design-Build obligations] shall comprise comprehensive assets all risk insurance from the commencement of the Operations Service Period until the date stated in the Contract Completion Certificate at the end of the Contract Period, and it shall include amongst others the following:

1. Insurance for the full replacement value (which replacement value shall be adjusted in terms of Sub-Clause 13.8) of all assets associated with the Works;
2. an additional sum of 15% (fifteen percent) of the above replacement value to cover any additional costs incidental to the rectification of loss or damage, including professional fees and the cost of demolition and the removal of debris;
3. the initial asset replacement values and maximum deductibles in ZAR Base Date (subject to adjustment in terms of Sub-Clause 13.8) of the Employer's Equipment that are tabled below:

Table 3: EMPLOYER'S EQUIPMENT

Asset	Replacement value	Max Deductible
Hardware and equipment	R 183 million	R100,000
Software	R 64 million	R100,000

4. loss and damage to any part of the assets as a consequence of failure of elements defectively designed or constructed with defective material and workmanship;
5. full perils cover;
6. accidental damage;
7. malicious damage;
8. electrical, mechanical and electronic equipment, hardware and software breakdown;
9. loss of money;

10. theft, including malicious damage;
11. goods in transit; and`
12. loss of rent, where applicable.

Sub-Clause 19.3(d)

The Contractor shall provide, in the joint names of the Employer and the Contractor, special cover insurance as insured by the South African Special Risks Assurance Association (SASRIA).

Sub-Clause 19.3(e)

a) Contractor's Equipment

The Contractor shall insure in the joint names of the Employer and the Contractor the Contractor's Equipment and other things brought onto Site by the Contractor. This insurance shall be for the full replacement value thereof at Base Date value, subject to adjustment pursuant to Sub-Clause 13.8, and the deductible limits shall be set at reasonable limits.

b) Liability for Breach of Professional Duty

The Contractor shall maintain the insurance pursuant to Sub-Clause 19.2(c).

C1.3 PART B: PARTICULAR CONDITIONS SPECIAL PROVISIONS

C1.3.1 PART B: THE PARTICULAR CONDITIONS OF CONTRACT: SPECIAL PROVISIONS

Notes to tenderer:

The International Federation of Consulting Engineers (“FIDIC”), Conditions of Contract for Design, Build and Operate Projects, First Edition 2008 (“GCC”), shall apply to this Contract. The amendments and additions as set out below shall constitute the Special Provisions and shall be read in conjunction with the GCC. In the event of any conflict between the provisions of GCC and these Special Provisions, the Special Provisions shall prevail.

The following additions and amendments shall be made to the GCC. References to clause numbers are as they appear in the GCC.

SUB-CLAUSE 1.1.2: “ASSET REPLACEMENT FUND”

Insert a second sentence to the definition:

“In the case of no Contract Data provided under this sub-clause 1.1.2, specifically confirming applicability, the Asset Replacement Fund and associated contractual provisions shall not apply to the Contract.”

SUB-CLAUSE 1.1.3: “ASSET REPLACEMENT SCHEDULE”

Insert a second sentence to the definition:

“In the case of no Contract Data provided under this sub-clause 1.1.3, specifically confirming applicability, the Asset Replacement Schedule and associated contractual provisions shall not apply to the Contract.”

SUB-CLAUSE 1.1.8: “COMMISSIONING CERTIFICATE”

Insert the following at end of the definition:

“... the commencement of the Operations Service Period, if applicable.”

SUB-CLAUSE 1.1.10: “CONTRACT”

After ‘Letter of Acceptance’ on the last line of the paragraph add the following wording:

“... and any subsequent written supplementary agreement or amendment mutually agreed and legitimately signed by the Parties”

SUB-CLAUSE 1.1.15: “CONTRACT PERIOD”

Delete this definition and replace with the following wording:

“means the period from the date notified under sub-clause 8.1 [commencement date] to the date stated in the Contract Completion Certificate.”

SUB-CLAUSE 1.1.30: “DESIGN-BUILD PERIOD”

Delete the definition under this sub-clause and replace with the following wording:

“means the period from the Commencement Date to the date stated in the Contract Completion Certificate at the end of the Contract Period or the date stated in the last section Commissioning Certificate to be issued under the Contract. Each Design-Build section shall have its own period of Design-Build or “Time for Completion” as defined in the Contract Data and on Completion of a Section Commissioning Certificate shall be issued for each section. The Section Commissioning Certificate shall state the actual date of completion of the relevant section. The Section Design-Build periods shall run concurrently with the Operation Service Period.

SUB-CLAUSE 1.1.36: “EMPLOYERS REQUIREMENTS”

Delete the definition under this sub-clause and replace with the following wording:

“means all the books of Volume 2 (entitled Employers Requirements) of the Contract as may have been amended and/or expanded pursuant to Volume 3 and Volume 4 of the Contract and any additions and modifications made thereto in accordance with the Contract. Such documents specify the purpose, scope and/or design and/or other technical criteria for the execution of the works and provision of operation services.”

SUB-CLAUSE 1.1.43: “FINANCIAL MEMORANDUM”

Insert a second sentence to the definition:

“In the case of no Contract Data provided under this sub-clause 1.1.43, specifically confirming applicability, the Financial Memorandum and associated contractual provisions shall not apply to the Contract.”

SUB-CLAUSE 1.1.48: “LETTER OF ACCEPTANCE”

After the heading insert the following words:

“Letter of Acceptance or Form of Acceptance” means the letter.”

SUB-CLAUSE 1.1.49: “LETTER OF TENDER”

After the heading insert the following words:

“Letter of Tender or Form of Offer” means the document

SUB-CLAUSE 1.1.51: “MAINTENANCE RETENTION FUND” AND “MAINTENANCE RETENTION GUARANTEE”

Insert a second sentence to the definition:

“In the case of no Contract Data provided under this sub-clause 1.1.51, specifically confirming applicability, the Maintenance Retention Fund and Maintenance Retention Guarantee and associated contractual provisions shall not apply to the Contract.”

SUB-CLAUSE 1.1.58: “OPERATION SERVICE PERIOD”

Delete this definition and replace with the following:

“means the period commencing on the date contemplated in the Section Commissioning Certificate in respect of Section 1 stipulated in the Contract Data and ending third (3rd) anniversary of the commencement of the Operation Service Period, - Section 1 unless extended by the Employer in accordance with sub-clause 10.8 [Completion of Operation Service Period].“

SUB-CLAUSE 1.1.65: “RETENTION MONEY”

Insert a second sentence to the definition:

"In the case of no Contract Data provided under this sub-clause 1.1.65, specifically confirming applicability, Retention Money and associated contractual provisions shall not apply to the Contract."

SUB-CLAUSE 1.1.66: "RETENTION PERIOD"

Insert a second sentence to the definition:

"In the case of no Contract Data under this sub-clause 1.1.66, specifically confirming applicability, the Retention Period and associated contractual provisions shall not apply to the Contract."

SUB-CLAUSE 1.1.78: "TIME FOR COMPLETION OF DESIGN-BUILD"

Insert after the words 'Commencement Date' the following additional wording:

"or any other date(s) stipulated in the Contract Data"

SUB-CLAUSE 1.1.72: "SITE"

Add a second sentence to the definition:

"The extent of the site for the Design-Build and for Operation Service Period shall include the toll plazas with associated assets and is indicated in the drawings included in the Employer Requirements."

SUB-CLAUSE 1.1.82: "WORKS"

Delete this definition and replace with the following:

"means the Permanent Works [including assets related to plant, materials and Contractor's documents as appropriate] and Temporary Works [including assets relating to temporary Contractor's facilities, pursuant to Sub-clause 1.16 [Project Assets] or either of them as appropriate and the facility [including assets relating to Employer's Facilities and Contractor's facilities as appropriate, pursuant to sub-clause 1.16 (Project Assets)] to be operated by the Contractor during the Operation Service Period."

After Sub-clause 1.1.83, insert the following new definitions:

"SUB-CLAUSE 1.1.84: EMPLOYER'S DOCUMENTS: *means the calculations, computer programs and other software, drawings, manuals, models and other documents supplied by the Employer under the Contract; which are also referred to in sub-clause 1.12 [Contractor's Use of Employer's Documents] and sub-clause 1.16 [Project Assets] and as detailed in the Employer's Requirements;"*

"SUB-CLAUSE 1.1.85: EMPLOYER'S FACILITIES: *means those facilities made available by the Employer to the Contractor for purposes of the Works and the Operation Service and includes the Employer's Fixed Assets, Employer's Equipment and Employer's Documents; which facilities are also referred to in sub-clause 1.16 [Project Assets], sub-*

clause 4.26 [Use of Employer's Facilities] and as detailed in the Employer's Requirements;"

"SUB-CLAUSE 1.1.86: EMPLOYER'S FIXED ASSETS: means generally but not necessarily, the Employer's fixed type of infrastructure associated with civil works, structural works, building, electrical and mechanical assets and as detailed in the Employer's Requirements."

"SUB-CLAUSE 1.1.87: NOMINATED SUBCONTRACTOR means any person named in the Contract as a Nominated Subcontractor, or any person appointed as a Nominated Subcontractor, for a part of works; and the legal successor in title to each of these persons."

SUB-CLAUSE 1.2: "INTERPRETATION"

At the end of this sub-clause 1.2, insert the following sentence:

"Reference to a person shall include a natural person, a juristic person and any unincorporated association."

SUB-CLAUSE 1.3: "NOTICES AND OTHER COMMUNICATIONS"

At the end of this sub-clause 1.3, insert the following paragraph:

"Any notice, consent, approval, certificate or determination by any person shall not be deemed to have been given or issued by virtue of its appearance in the minutes of any meeting or in the content of an e-mail message. For the avoidance of doubt, e-mail messages, although permitted for the purposes of informal communications, shall not constitute contractual correspondence or be used to gain benefit under the Contract."

SUB-CLAUSE 1.5: "PRIORITY OF DOCUMENTS"

Delete the wording under this sub-clause and replace with the following:

"The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents, as may have been amended during tender stage, shall be in accordance with the following sequence:

- a) The Contract Agreement (if any);
- b) The Letter of Acceptance; [Form of Acceptance]
- c) The Letter of Tender; [Form of Offer]
- d) The Particular Conditions Part A – Contract Data;
- e) The Particular Conditions Part B – Special Provisions;

- f) The General Conditions;
- g) Any additions or modifications to the Employer's Requirements pursuant to Volume 3 and Volume 4 of the Contract.
- h) Volume 2 entitled "Employer's Requirements", which for purposes of interpretation shall be in accordance with the following sequence –
 - hi) *Volume 2 Book 1a – Standard Specification for Operations and Maintenance of CTROM Projects: Part A: Glossary of Terms and Part B: Generic Scope of Works*
 - hii) *Volume 2 Book 2a – Standard Specification for Operations and Maintenance of CTROM Projects: General*
 - hiii) *Volume 2 Book 7a - Standard Specification for Operations and Maintenance of CTROM Projects: Payment Methodology and Description of Payment Items*
 - hiv) *Volume 2 Book 6a - Standard Specification for Operations and Maintenance of CTROM Projects: Performance Measurement*
 - hv) *Volume 2 Book 8a - Standard Specification for Operations and Maintenance of CTROM Projects: ETC Interoperability – Business Rules*
 - hvi) *Volume 2 Book 4a – Standard Specification for Operations and Maintenance of CTROM Projects: Toll Systems*
 - hvij) *Volume 2 Book 5 – Standard Specification for Operations and Maintenance of CTROM Projects: Electronic Toll Collection (ETC)*
 - hviij) *Volume 2 Book 3 – Standard Specification for Operations and Maintenance of Toll Projects: Electrical and Mechanical Equipment*
- i) The Schedules of Payment/Cost Matrix; and
- j) The Contractor's Proposal.

If an ambiguity or discrepancy is found in the documents, the Employer's Representative shall issue any necessary clarification or instruction, save that where this relates to the Employer's Requirements; the following principles shall also apply:

- i. If any provision of the Employer's Requirements imposes a standard or duty that is more onerous than, or additional to that imposed by another provision of the Employer's Requirements, this will not be considered as an error, inconsistency, discrepancy or ambiguity and the relevant standard or duty will be treated as cumulative, failing which the more onerous standard or duty will apply;*
- ii. If any ambiguity or discrepancy is found between a provision in one book and a provision of another book of the Employer's Requirements, the provision of the book with the highest priority shall prevail, unless the application of the provision in the other book will, as clarified or instructed by the Employer's Representative, result in a higher standard and/or will result in Works or Operation Service which are most beneficial to the Employer, then in such circumstances the provision of the other book shall prevail;*
- iii. If any ambiguity or discrepancy is found between the provisions of any single book of the Employer's Requirements, the provisions which results in a higher standard and/or result in Works or Operation Service which is safer or more conservative and/or will result in works which are most beneficial to the Employer shall prevail;*

iv. The aforementioned shall not constitute an error in the Employer's Requirements for purposes of Clause 1.10 and the provisions thereof shall not apply hereto and accordingly such ambiguity or discrepancy shall be resolved solely by the necessary clarification or instruction issued by the Employer's Representative;

v. The Contractor having had the opportunity to negotiate the Employer's Requirements (where applicable), the contra preferentum rule shall not be applied in the interpretation of the Employer's Requirements.

No above-mentioned ambiguity or discrepancy shall vitiate this Contract."

SUB-CLAUSE 1.9: "CARE AND SUPPLY OF DOCUMENTS"

At the end of the sub-clause insert new paragraphs which read as follows:

"In case of Contractor's Documents which are in the form of computer programs and other software, the Contractor shall place and maintain the same in ESCROW, in accordance with the Employer's Requirements.

In the case of Employer's Documents and/or in the case of expansions, upgrades, replacements, modifications and the like to Employer's Documents (as part of the Contractor's Design-Build and / or Operation Service obligations), which Employer's Documents are in the form of computer programs and other software, the Contractor shall place and maintain the same in ESCROW, in accordance with the Employer's Requirements.

In the case of integrated computer program and other software systems, consisting of Employer's Documents and Contractor's Documents, such integrated software systems shall be placed and maintained in ESCROW by the Contractor, in accordance with the Employer's Requirements."

SUB-CLAUSE 1.11: "EMPLOYER'S USE OF CONTRACTOR'S DOCUMENTS"

At the end of paragraph 2 of this sub-clause and after sub-paragraph (d) insert the following:
"and;

- (e) enable the Employer to take over the whole or part of the Works and effectively operate and maintain the Works or any part thereof; and*
- (f) enable the Employer, at the end of the Operation Service Period, to appoint any other person/s for purposes of effectively operating and maintaining the Works or any part thereof; and*
- (g) transfer to the Employer the right to the use and/or licenses in respect of any computer programs, software, design documents, codes and information of which a party, other than the Contractor, holds proprietary rights and/or copy right to enable the Employer to effectively operate and maintain the Works or to appoint another person/s to operate and maintain the Works or any part thereof; and*
- (h) enable the Employer to incorporate any other toll roads or associated national systems, in the Republic of South Africa, into the Works."*

SUB-CLAUSE 1.12: “CONTRACTOR’S USE OF EMPLOYER’S DOCUMENTS”

Insert the following new paragraphs at the end of this sub-clause 1.12 that read:

“In the case of Employer’s Documents which are in the form of computer programs and other software, the Contractor shall:

take-over, operate, maintain, resolve defects, modify, expand, replace, dispose, upgrade and hand-back such documents in accordance with the Operating License, and relevant parts of the Conditions of Contract and the Employer’s Requirements; and

in the case of access by the Contractor to such documents be restricted or prevented, in relation to proprietary and intellectual / copy rights of other parties, then the Contractor shall perform and implement all things necessary at his expense to ensure compliance to the Conditions of Contract and the Employer’s Requirements. For the avoidance of doubt, such case shall not imply any excuse, or right to claim, or relieve for the Contractor being unable to meet the associated risks, liabilities, obligations and Employer’s Requirements under the Contract.”

After Sub-clause 1.15, insert a new Sub-clause 1.16 with the following wording:

“SUB-CLAUSE 1.16: PROJECT ASSETS”

The complete project assets consist of:

(a) Employer’s Facilities

The Employer’s Facilities are those on-Site assets, whether of a permanent or temporary nature, made available by the Employer to the Contractor for purposes of the Works and the Operation Service under the Contract. The Employer’s Facilities are those taken over and used by the Contractor in accordance with sub-clause 4.26 [Use of Employer’s Facilities], are detailed in the Employer’s Requirements and consist of:

- (i) **Employer’s Fixed Assets** (as defined in the Conditions of Contract and generally, but not necessarily, of a fixed asset type),*
- (ii) **Employer’s Equipment** (as defined in the Conditions of Contract and generally, but not necessarily, of a semi-fixed asset type and/or hardware system nature), and*
- (iii) **Employer’s Documents** (as defined in the Conditions of Contract and generally, but not specifically, of a documentation and software system asset type); and*

(b) Permanent Design-Build assets

The permanent Design-Build assets are generally on Site assets and are those assets designed, built, operated and handed back (at the end of the Contract Period) by the Contractor for the purposes of the Works and Operation Service under the Contract, as specified and detailed in the Employer’s Requirements and consist of:

- (i) **Plant** (as defined in the Conditions of Contract and generally, but **not** necessarily, of a semi-fixed asset type and/or hardware system nature),*

- (ii) **Materials** (as defined in the Conditions of Contract and including assets such as the levels of spares, as specified in the Employer's Requirements or provided in accordance with **recognized good practice for the purpose of maintaining Employer's Facilities, Plant and Contractor's Documents**), and
- (iii) **Contractor's Documents** (as defined in the Conditions of Contract and generally, but not necessarily, of a documentation and software system **asset type**); and

(c) Contractor's facilities

The Contractor's facilities include all other facilities / assets, whether of a permanent or temporary nature and whether on or off Site [in addition to those listed under this sub-clause 1.16 (a), (b) and (d)] made available by the Contractor and required to complete the Works and to perform the Operation Service under the Contract.; and

- (d) **Contractor's Equipment** (as defined in the Conditions of Contract and generally, but not necessarily, of a movable asset type)."

"SUB-CLAUSE 1.8 ASSIGNMENT

Replace the whole clause with the following:

"1.8 Assignment

Neither Party shall assign the whole or any part of the Contract and may not transfer its rights and obligations in or under the Contract.

However, either Party may, Cession its right to payment of any moneys due, or to become due, under the Contract, only in the event that:

- (a) *the Cession is in favour of a registered Financial Services Provider (FSP) or a State Institution established for the express purpose of providing funding to businesses and entities; and*
- (b) *the written request for Cession is made by the Party and not a third party; and*
- (c) *the written request by the Party is accompanied by a cession agreement; and*
- (d) *the other Party agrees to the Cession."*

SUB-CLAUSE 2.1: "RIGHT OF ACCESS TO THE SITE"

At the end of paragraph 1, insert the following:

"The Contractor shall liaise and fully co-operate with any other contractor appointed by the Employer, in order to gain access to the Site or any part thereof."

After paragraph 2, insert the following:

"The Contractor shall not, whether directly or indirectly, cause the closure of any public road or any lanes forming part of a public road. If and when the Contractor requires access to the Works or any part thereof which will necessitate the closure of a public road or lanes forming part of a public road, he shall notify the Employer's Representative, who shall, as soon as is reasonably possible, arrange for the closure of such road or lanes as is reasonably necessary to allow access to the Site or part thereof."

SUB-CLAUSE 4.2: “PERFORMANCE SECURITY”

Replace the wording of the second paragraph under this sub-clause 4.2 with:

“For the Design Build Performance Security, the following shall apply:

The Contractor shall renew the Performance Security whenever the amount of it changes due to the contractual requirements. The amount of the Performance Security shall have been adjusted, not later than 90 (ninety) days on each anniversary of the Commencement Date in accordance with sub-clause 13.8 [Adjustments for changes in Costs].

For the Operation Service Performance Security, the following shall apply:

The Performance Security includes all guarantees / bonds and the like and the renewals, replacements or extensions thereof as required to meet the Performance Security obligations and requirements.

The Contractor shall renew the Performance Security whenever the amount of it changes due to the contractual requirements. The amount of the Performance Security shall have been adjusted, not later than 90 (ninety) days on each anniversary of the Commencement Date in accordance with sub-clause 13.8 [Adjustments for changes in Costs] but in any event the value of the Performance Security after adjustment shall not be less than 25 (twenty-five percent of the amount of the highest monthly income for the preceding year.”

Replace the wording of the fourth paragraph under this sub-clause 4.2 with:

“The Contractor shall ensure that the Performance Security remains valid and enforceable until 120 days after the date of the issue of the Contract Completion Certificate or 90 days after the Date of Termination.

Failure by the Contractor to maintain the validity of the Performance Security shall be grounds for termination in accordance with sub-clause 15.2 [Termination for Contractor’s Default].

Replace the wording in sub-clause 4.2 (a) with:

“ (a) in the case of a renewal, extension or replacement of the Performance Security required to meet the Performance Security obligations and requirements and failure by the Contractor to renew, extend or replace such Performance Security prior to a date determined at, 21 days prior to the expiry or invalidity of the Performance Security, in which event the Employer may claim the full or, in case of an earlier reduction, the reduced amount of the Performance Security;”

Below sub-paragraph (d), insert a new sub-paragraph (e) with the following wording:

“or circumstances which entitle the Employer under sub-clause 12.1 (Completion of Outstanding Work and Remedying Defects).”

Replace the wording of the last paragraph in this sub-clause 4.2 with:

“The Employer shall return the Performance Security to the Contractor within 21 days after the valid expiry date(s) thereof.”

SUB-CLAUSE 4.4: “SUBCONTRACTORS”

At the end of sub-clause 4.4, insert the following:

“Every subcontract entered into between the Contractor and any Subcontractor shall contain the following provisions:

- a) the Contractor shall be entitled to cede and assign and make over all its rights and obligations in terms of the subcontract in favour of the Employer and shall notify the Subcontractor within 21 days of entering into any cession or assignment; and*
- b) The Subcontractor shall be deemed, by signing this subcontract, to give the Contractor and the Employer a non-terminable, transferable, non-exclusive royalty free license to copy, use and communicate the Subcontractor’s documents for purposes of the Works and the Operation Service. This license shall:*
 - c) apply throughout the actual or intended working life (whichever is the longer) of the relevant part of the Works; and*
 - d) entitle any person, in lawful possession of the relevant part of the Works, to copy, use and modify the Subcontractor’s documents for purposes of completing, operating, maintaining, altering, adjusting, repairing and/or demolishing the Works; and*
 - e) in the case of the Subcontractor’s documents, which are in the form of computer programs and other software, permit the use thereof on any computer on the Site, or any other place envisaged in this Contract, including the replacement, upgrading or expansion of any software supplied by the Contractor and/or the Employer; and*
 - f) enable the Contractor to transfer all rights to the Employer and enable the Employer to re-let the Contract; and*
 - g) enable the Employer to take over the whole or part of the Works and effectively operate and maintain the Works or any part thereof; and*
 - h) enable the Employer, at the end of the Operation Service Period, to appoint any other person/s for purposes of effectively operating and maintaining the Works or any part thereof; and*
 - i) transfer to the Employer the licenses and/or the right of use in respect of any computer programs, software, design documents, codes and information of which a party, other than the Subcontractor, holds proprietary rights and/or copyright so as to enable the Contractor and/or Employer to effectively operate and maintain the Works or appoint another person/s to operate and maintain the Works or any part thereof; and*
 - j) enable the Employer to incorporate any other toll roads or national systems, in the Republic of South Africa, into the Works.*
 - k) The Subcontractor shall ensure that, where necessary, the consent and/or license for the use of any design, computer program, software and other documents, which may be required for the effective operation and maintenance of the Works, are obtained in favour of the Contractor and the Employer.”*

SUB-CLAUSE 4.5: “NOMINATED SUBCONTRACTORS”

At the end of sub-clause 4.5, insert the following:

“The Employer advertised a tender for a Nominated Subcontract for the Design-Build, Operate and Maintenance of the Toll System part of the Works. Once the Employer has awarded this tender, the Employer will issue an instruction for the appointment of this nominated Subcontractor under this Contract.

The Contractor shall enter into such Nominated Subcontract agreement and shall be obliged to liaise, interface and manage the Nominated Subcontractor from the Commencement Date until its expiry or termination. The Conditions of the Nominated Subcontract is made available as part of the tender process for this Contract.

To aid the process, the Employer will make available, as soon as possible, in an Addendum to the Contractor’s tender, the names of the prospective NSC tenderers that attended the compulsory Tender Briefing meeting.

PAYMENT OF NOMINATED SUBCONTRACTORS

The Contractor shall pay to the nominated Subcontractor the amounts shown on the nominated Subcontractor’s invoices approved by the Contractor which the Employer’s Representative certifies to be due in accordance with the subcontract. These amounts plus other charges shall be included in the Contract Price in accordance with sub-paragraph (b) of Sub-clause 13.5 [Provisional Sums], except as stated in Evidence of Payments below.

The Contractor shall pay to the Nominated Subcontractor the amounts due within 7 days after the Contractor received the payment in question from the Employer.

EVIDENCE OF PAYMENTS

Before issuing a Payment Certificate which includes an amount payable to a Nominated Subcontractor, the Employer’s Representative may request the Contractor to supply reasonable evidence that the nominated Subcontractor has received all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor:

- (a) submits this reasonable evidence to the Engineer, or*
- (b) (i) satisfies the Engineer in writing that the Contractor is reasonably entitled*

to withhold or refuse to pay these amounts, and

- (ii) submits to the Engineer reasonable evidence that the nominated Subcontractor has been notified of the Contractor’s entitlement,*

then the Employer may (at his sole discretion) pay, direct to the nominated Subcontractor, part or all of such amounts previously certified (less applicable deductions) as are due to the nominated Subcontractor and for which the Contractor has failed to submit the evidence described in sub-paragraphs (a) or (b) above. The Contractor shall then repay, to the Employer, the amount which the nominated Subcontractor was directly paid by the Employer.

SUB-CLAUSE 4.20: “EMPLOYER’S EQUIPMENT AND FREE-ISSUE MATERIALS”

Delete the wording in this sub-clause 4.20 and insert the following:

“The Employer shall make the Employer’s Equipment available for the use of the Contractor in the execution and operation of the Works in accordance with the details and arrangements stated in the Employer’s Requirements and Contractor’s approved programme pursuant to sub-clause 8.3 [Programme] of the Conditions of Contract.

The Contractor shall be responsible for each item of Employer’s Equipment whilst the Contractor is in possession and control of it.

The Employer shall supply, free of charge, the “free-issue materials” (if any) in accordance with the details stated in the Employer’s Requirements.”

After sub-clause 4.25, insert a new Sub-Clause 4.26, which reads as follows:

“SUB-CLAUSE 4.26 USE OF EMPLOYER’S FACILITIES

The Employer shall transfer to the Contractor the Employer’s Facilities, as described in the Employer’s Requirements, for purposes of the Contractor undertaking the Works and Operation Service.

The Contractor shall, promptly after having received right or shared right of access to the Site where the Employer’s Facilities are located, commence to inspect the facilities and shall within 90 days of the date of inspection of the Employer’s Facilities, notify the Employer’s Representative of any defects, shortages or defaults in these facilities. Unless otherwise agreed by the Parties, the Employer shall within a reasonable period rectify the notified shortages, defects or defaults.

After the inspection by the Contractor and immediately upon having received right of possession of the Employer’s Facilities, the Contractor shall take custody and control of the facilities and be responsible for the operation, maintenance and care of the Employer’s Facilities in accordance with the Employer’s Requirements for the remainder of the Contract Period.

The risk of any loss or damage to the Employer’s Facilities, save for ‘Employer’s Fixed Assets’ as described in sub-clause 1.16 (Project Assets) and as otherwise stated in the Employer’s Requirements, shall be borne by the Contractor.”

SUB-CLAUSE 6.1: “ENGAGEMENT OF STAFF AND LABOUR”

At the end of this Sub-Clause add the following:

“The Contractor shall give effect to the Laws of the Country and specifically relating to Broad Based Black Economic Empowerment and Employment Equity.”

SUB-CLAUSE 6.2: “RATES OF WAGES AND CONDITIONS OF EMPLOYMENT”

At the end of this sub-clause, insert the following paragraph:

“The Contractor shall use his best endeavours to employ the existing staff currently employed in the Operations of the Toll Plazas, provided that:

- a) The Contractor can reach an agreement with an employee on conditions that are in line with the prevailing employment laws and Labour Relations Act.; and
- b) The Employee is qualified for the specific job he/she currently holds;
- c) The Contractor can demonstrate to the employer that, he/she has conducted a process that is in accordance with the prevailing laws of the Republic of South Africa.

The Average Monthly Cost to the current Contractor per category listed in the following table:

Staff Category Description	Shift Rate (AVE)	Basic Salary ⁽¹⁾ (AVE)	Company Contributions ⁽²⁾ (AVE)	Total
1. Supervisor	412.14	9,067.18	3,455.14	12,522.32
2. Assistant Supervisor (Senior Toll Collectors)	275.07	6,051.63	2,071.91	8,123.54
3. Toll Collectors				
3.1 Toll Collectors (Permanent)	250.70	5,515.45	1,929.74	7,445.19
3.2 Toll Collectors (Aux)	206.64	4,546.08	869.67	5,415.75
4. Administrative Staff				
4.1 Administrator	408.79	8,993.34	3,932.91	12,926.25
4.2 Clerk	254.11	5,590.37	2,122.71	7,713.08
5. Cleaners				
5.1 Plaza Attendant	243.01	5,346.26	1,900.69	7,246.95
5.2 General Worker	243.01	5,346.26	1,900.69	7,246.95
6. Route Patrol				
6.1 Route Patrol Officers	255.84	5,628.42	1,999.26	7,627.68

Note: 1. Basic Salary includes a cash component only.

2. Company contribution includes COIDA, Bonus Provision, Leave Provision, Provident Fund, SDL Levy, UIF, Medical Aid, Funeral Fund and Personal Accident Fund.

3. The next annual staff increases are scheduled for 1 March 2023.

The Contractor shall make provision for the possible future increases in the Schedule of Rates/Cost Matrix for the duration of the Contract.

SUB-CLAUSE 6.4: “LABOUR LAWS”

At the end of this sub-clause, insert the following:

“At the end of the Operation Service Period or in the event of early termination of the Contract, the Employer may or re-let the Contract or any part thereof to another/other person/s and should such action constitute a transfer of business, the old and the newly appointed Contractor should adhere to the provisions of Section 197 of the Labour Relations Act 1995 (Act 66 of 1995) or any amendment or replacement thereof and shall take such steps as may be necessary to facilitate the transfer of business. In the event that the early termination or re-let of the Contract doesn’t warrant a Section 197 transfer, the Contractor is obliged to comply to the applicable provisions of the Labour Relations Act including section 189 or any other employment laws

SUB-CLAUSE 6.9: “CONTRACTOR’S PERSONNEL”

Add the following to this sub-clause:

“The Contractor is to make provision for any costs incurred due to the employment of the following personnel with the required qualifications and training.

PERSONNEL CATEGORY	REQUIRED QUALIFICATION AND TRAINING
1. Assistant Technician (Electronic)	HEQSF* level 5 (Referring to a minimum qualification of a higher certificate or advanced certificate) in electronics or similar Basic electricity safety awareness Six months practical experience
2. Technician (Electronic)	HEQSF* level 6 National Diploma in Information Technology, Computer Engineering, Digital Technology or Instrumentation and Process Control or similar accredited diploma Preferably registered with the Engineering Council of SA (ECSA) or similar accredited institution Minimum one year experience in similar technical field or proof of logbooks from practical period for Diploma Extensive knowledge in electricity safety Access to transport between Plazas with a valid driver’s licence
3. Senior Technician (Electronic)	HEQSF* level 6 National Diploma in Information Technology, Computer Engineering, Digital Technology or Instrumentation and Process Control or similar accredited diploma Preferably registered with the Engineering Council of SA (ECSA) or similar accredited institution Minimum of three years related technical experience Extensive knowledge in electricity safety Access to transport between Plazas a valid driver’s licence Minimum of 2 years’ experience in managing staff and resources
4. Call Centre Personnel	Be able to speak English and one other language Computer literacy Accredited and certified life skills program completion (as offered by Lifeline or similar) Call Centre Management Certificate Communications Training Certificate IMS Certificate

PERSONNEL CATEGORY	REQUIRED QUALIFICATION AND TRAINING
	Trained in call handling skills such as, but not limited to, telephone etiquette, customer relations, emergency call handling and dispatching
5. Construction Health and Safety Officer	<p>NQF Level 6 National Diploma in Safety Management (NDS MN) equivalent training course as a minimum qualification.</p> <p>Preferably registered with the South African Council for the Project and Construction Management Professions (SACPMP).</p> <p>Minimum five (5) years of experience with regards to implementing and maintaining a health and safety management system compliant.</p> <p>Access to transport between Toll Plazas with a valid driver's licence.</p>

Note: *Reference to the Engineering Qualifications and the Higher Education Qualifications sub-framework (HEQSF) presentation by ECSA (<http://www.sasee.org.za/CMS/WP-content/uploads/2014/07/HEQSF-And-Engineering-Qualifications-B-van-Wyk.PDF>)

SUB-CLAUSE 7.7: “OWNERSHIP OF PLANT AND MATERIALS”

At the end of this clause, insert the following:

“To the extent that the Contractor is unable, for any reason whatsoever, to transfer ownership in and to any item of Plant, the Contractor hereby grants the Employer a license, in perpetuity, to use such Plant. The license of use shall be in accordance with the terms and conditions as in respect of the Employer's use of the Contractor's Documents as set out in clause 1.11 [Employer's use of Contractor's Documents].”

SUB-CLAUSE 8.1: “COMMENCEMENT DATE”

Delete Sub-clause 8.1 and replace with the following:

“The Employer shall give notice stating the Commencement Date to the Contractor not less than 7 days prior to the Commencement Date. Unless otherwise stated in the Particular Conditions, Commencement Date shall be within 28 days after the issue of the Letter of Acceptance.”

SUB-CLAUSE 8.3: “PROGRAMME”

Replace the first sentence of this sub-clause 8.3 with the following new wording:

The Contractor shall submit detailed time programmes to the Employer's Representative within:

- a) “5 days” after receiving the Notice under sub-clause 8.1 [Commencement Date] for the purpose of Section 1; and*
- b) “21 days” after receiving the Notice under sub-clause 8.1 [Commencement Date] for the purpose of Sections 2, 3 and 4; and*
- c) “14 days” after receiving a Notice that triggers the commencement date for any ad-hoc Section or any major activity to be performed by the Contractor during the Operation Service Period.*

Each programme shall be compiled using the software as set out in the Contract Data.”

After sub-paragraph (e) (iii), insert (iv) which reads as follows:

- (e) “and shall clearly identify the critical path”*

At the end of paragraph 1, insert the following sub-paragraph: -

- “(f) shall identify key milestone areas and target dates as contained in the Employer’s Requirements and Contractor’s Proposal.”*

SUB-CLAUSE 8.6: “CONTRACT COMPLETION CERTIFICATE”

The third line of the first paragraph to be modified to read as follows:

“.... the Contract Completion Certificate has been signed by the Employer and issued to the Contractor....”

Amend the existing paragraph 2, by deleting the last sentence and replacing the same with the following:

“The Employer may exercise the option referred to in sub-clause 10.8 [Completion of Operation Service] to extend the Operation Service Period.”

Insert a paragraph at the end of this sub-clause 8.6 that reads:

“The Contractor shall render his full co-operation and provide sufficient shared access to the operations, resources and project assets [as described in sub-clause 1.16 (Project Assets)] associated with the Works and do all things necessary to assure that the next contractor / person is in a position to comply with similar Design-Build and establishment obligations and requirements applicable to Section 1 of this Contract.”

SUB-CLAUSE 9.1: “COMMENCEMENT OF DESIGN-BUILD”

In the first sentence, replace the words “28 days” with “5 days”.

SUB-CLAUSE 10.2: “COMMENCEMENT OF OPERATION SERVICE PERIOD”

Delete Paragraph 1 of this sub-clause and replace with the following:

“The Operation Service Period shall commence on the date stated in the Section Commissioning Certificate issued in respect of Section 1.”

SUB-CLAUSE 10.3: “INDEPENDENT COMPLIANCE AUDIT”

Delete this sub-clause 10.3 and replace with the following:

“Either Party may or both Parties may jointly, at any point when circumstances warrant, elect to appoint an Auditing Body to carry out an independent and impartial audit during the performance of the Operation Service. The terms of the appointment of an Auditing Body shall be in accordance with the terms included in the Employer’s Requirements and the purpose will be to audit performance of either Party or both Parties in compliance with the Operation Management Requirements. In the case of a joint appointment where the Parties cannot agree on the appointment, the matter shall be referred to the / a DAB and the / a DAB shall make the appointment.

All reports issued by an Auditing Body shall be distributed to both Parties and both Parties shall cooperate with the Auditing Body and give due regard to the matters raised in each report issued by the Auditing Body.

In case of a joint appointment, each Party shall carry 50% of the cost of the Auditing Body.

In case of an appointment by either Party, the Party who made the appointment shall carry 100% of the cost of the Auditing Body.

All Auditing Body costs to be carried by the Employer shall be made by the Contractor to the Auditing Body against a Provisional Sum provided for this purpose in the Schedule of Payments. All Auditing Body costs to be carried by the Contractor shall be deemed to be included in his Rates and Prices."

SUB-CLAUSE 10.6: "DELAYS AND INTERRUPTIONS DURING THE OPERATION SERVICE"

Replace the second sentence of sub-paragraph (a) with the following wording:

"The amount of the compensation due or performance adjustments to be made shall be calculated in accordance with the relevant Employer's Requirements or as determined by the Employer's Representative in accordance with sub-clause 3.5 [Determinations] and the Employer shall be entitled to make a corresponding adjustment to the next payment due to the Contractor."

At the end of the wording of sub-paragraph (a), insert a new sub-paragraph that reads as follows:

"The amount of compensation that the Employer may recover as aforesaid shall be in addition to any payment adjustments which the Employer may be entitled to make by reason of the failure by the Contractor to reach the production outputs as contemplated in sub-clause 10.7 [Failure to Reach Production Outputs]."

SUB-CLAUSE 10.7: "FAILURE TO REACH PRODUCTION OUTPUTS"

Delete paragraph 2 of sub-paragraph (b) and replace with the following:

"In these circumstances the Employer shall be entitled to apply a payment reduction in accordance with the performance criteria and measurements set out in the Employer's Requirements."

At the end of this sub-clause insert a new sub-paragraph that reads as follows:

"(c) In the event that the Contractor exceeds the performance criteria set out in the Employer's Requirements, the Contractor shall be entitled to payment of the performance incentives and/or bonuses (if any) as set out in the Employer's Requirements.

Payment adjustment, negative or positive, shall be reflected in Payment Certificates as contemplated in sub-clause 14.7 [Issue of Advance and Interim Payment Certificates] and be deducted from or added to the payment to the Contractor

In this regard and for the avoidance of doubt, performance payment reductions shall first be made up to the maximum provided for in the Employer's Requirements and thereafter the Employer shall be entitled to recover the actual loss suffered or incurred subject to sub-clause 3.5 [Determinations]."

SUB-CLAUSE 10.8: "COMPLETION OF OPERATION SERVICE"

At the end of this sub-clause add the following:

“The Employer shall have the option to extend the Operation Service Period for a further period of 3, 6, 12 or 24 months.

The Employer’s Representative shall notify the Contractor, in writing, not later than 180 days prior to the end of the Operation Service Period, of the Employer’s intention to exercise such option to extend the Operation Service Period. The price payable to the Contractor in respect of the extended Operations Service Period shall be calculated in accordance with the Rates and Prices quoted by the Contractor for the appropriate Operation Service and shall be adjusted in accordance with sub-clause 13.8 [Adjustments for Changes in Costs] hereunder.”

After sub-clause 10.9 add the following clause:

“SUB-CLAUSE 10.10: ADVERTISING AND MARKETING AND ASSOCIATED INCOME

The Contractor shall be entitled to all income generated through direct mandating at the relevant sites such as handing out pamphlets, provided the direct marketing relates to a road safety initiative and subject to the prior approval of the Employer.

The Contractor shall report such income to the Employer on a monthly basis. Any other income generated through advertising on the site shall be for the benefit of and accrue to the Employer.”

SUB-CLAUSE 11.8: “JOINT INSPECTION PRIOR TO CONTRACT COMPLETION”

In the first sentence in the first line replace the words “two years” with “180 days”.

SUB-CLAUSE 12.1: “COMPLETION OF OUTSTANDING WORK AND REMEDYING DEFECTS”

Replace the wording of sub-paragraph (b) and the last paragraph of this sub-clause 12.1 with the following:

“(b) Operation Service Period: Unless otherwise stated in the Employer’s Requirements, the Contractor shall be responsible for repairing and making good any damage or defect occurring during the Operation Service Period, whether such defect or damage is notified by the Employer or his Representative, or observed by the Contractor himself.

In the case of all outstanding work, defects and damage, including all such items reported by the next Contractor and identified under sub-clause 11.8 [Joint Inspection Prior to Contract Completion] not completed or resolved by the Contractor at the time of the issue of the Contract Completion Certificate, the Contractor shall remain liable until completion thereof and the Employer shall be entitled to claim under sub-clause 4.2 [Performance Security].”

SUB-CLAUSE 12.2: “COST OF REMEDYING DEFECTS”

Below sub-paragraph (b), insert a new sub-paragraph (c) with the following wording:

“(c) or where such risk and cost is specifically excluded by virtue of the Employer’s Requirements.”

In the last paragraph, insert after the words ‘or (b)’, the words “or (c)”.

SUB-CLAUSE 13.1 “RIGHT TO VARY”

- a) In the first sentence delete words “at any time prior to issuing of the Commissioning Certificate” and replace with the following “during the Contract Period.”
- b) In the third paragraph, replace the term “proceed with variation” with the word “proceed with variation (save for provisional variation arising from Provision Sums in the Schedule of Payments/Cost Matrix)”

SUB-CLAUSE 13.3 “VARIATION PROCEDURE”

The first sentence of the 2nd paragraph to be modified to read as follows:

“The Employer’s Representative shall, as soon as practicable after receiving such proposal (under sub-clause 13.2 [*value Engineering*] or otherwise) make a recommendation to the Employer to approve, disapprove or comment. Upon receipt of the Employer decision, the Employer Representative will notify the Contractor of the approval, disapproval or comments. The Contractor”

SUB-CLAUSE 13.5: “PROVISIONAL SUM”

The first sentence of the 1st paragraph to be modified to read as follows:

“The Employer will approve the usage of a Provisional Sum, in whole or in part and the contract price”

Delete the last sentence of sub-clause 13.5(b) (ii) and replace with the following:

“... Appropriate schedule. The maximum percentage allowed for each item is stated in the Contract Data. If there is no such rate, the percentage shall be zero (0) and shall be applied to all scheduled and provisional sums added during the contract period.”

After sub-clause 13.8 insert the following new Sub-Clause 13.9 to read as follows:

“SUB-CLAUSE 13.9: “ADJUSTMENTS FOR PERFORMANCE OUTPUTS”

“The amount payable to the Contractor shall be adjusted as contemplated by sub-clause 10.7 [Failure to Reach Production Outputs].”

SUB-CLAUSE 14.5: “ASSET REPLACEMENT SCHEDULE”

Replace the wording under this sub-clause 14.5 with the following:

“Unless otherwise specified in the Employer’s Requirements, the Contractor shall be responsible for all project assets [as described in sub-clause 1.16 (Project Assets)] replacements and all associated costs in relation thereto, save for the Employer’s Fixed Assets of which replacements (if any) shall be effected by the Employer or as provided for in the Employer’s Requirements.”

SUB-CLAUSE 14.7: “ISSUE OF ADVANCE AND INTERIM PAYMENT CERTIFICATES”

In the first paragraph of this sub-clause 14.7, replace the words ‘28 days’ with the words “21 days”.

SUB-CLAUSE 14.8: “PAYMENT”

In sub-paragraph (b) of this sub-clause 14.8, replace the words ‘56 days’ with the words “32 days”.

SUB-CLAUSE 14.10: “PAYMENT OF RETENTION MONEY”

Delete the wording and insert the following:

“Void”

SUB-CLAUSE 14.18: “ASSET REPLACEMENT FUND”

Delete the wording and insert the following:

“Void”

SUB-CLAUSE 14.19: “MAINTENANCE RETENTION FUND”

Delete the wording and insert the following:

“Void”

SUB-CLAUSE 15.2: “TERMINATION FOR CONTRACTOR’S DEFAULT”

In paragraph 1 at the end of sub-paragraph (c), insert the following:

“or;

(iii) fails to proceed with and bring to completion the Design-Build parts of the Works, within the periods stated in the Contract Data.”

In paragraph 1 at end of sub paragraph (h), insert the following

“(i) In the case of the Contractor default referred to under Clause 15.1, The Employer may terminate this Contract by notice in writing having immediate effect (with a copy to the Employer Representative). Then the provision in Clause 15.3 and Clause 15.4 shall apply.

The Employer will also have the right to terminate any other Contract between the Employer and Contractor and not allow to tender on any future project put out to tender by the Employer for a period of five (5) years from the date of Notice, which period may be reduced by application to and at the sole discretion of the Employer.”

SUB-CLAUSE 17.4: “THE CONTRACTOR’S RISKS DURING THE OPERATION SERVICE PERIOD”

At the end of this sub-clause 17.4, insert new sub-paragraphs as set out hereunder:

- “(c) and all risk relating to loss of revenue, resulting or arising from the design, operation and maintenance of the Works by the Contractor; and*
- (d) all risk in respect of loss or damage to the project assets (as described in sub-clause 1.16 (Project Assets), save for the Employer’s Fixed Assets (fixed type of assets).”*

SUB-CLAUSE 20.3: “APPOINTMENT OF DISPUTE ADJUDICATION BOARD”

In paragraph 1, delete the last sentence and replace with the following:

“On an ad-hoc basis and whenever either Party gives Notice to the other Party, the Parties shall promptly proceed to appoint a DAB.”

Delete paragraph 4 of this sub-clause 20.3.

SUB-CLAUSE 20.6: “OBTAINING DISPUTE ADJUDICATION BOARD’S DECISION”

In the first sentence of paragraph 4 of this sub-clause: change “84 days” to “56 days” and “105 days” to “84 days”.

SUB-CLAUSE 20.8: “ARBITRATION”

In the 4th line of the 1st paragraph, delete the word ‘international’.

In sub-paragraph (a), replace the words ‘International Chamber of Commerce’ with “South African Association of Arbitration”.

SUB-CLAUSE 20.10: “DISPUTES ARISING DURING OPERATION SERVICE PERIOD”

Delete the existing clause 20.10 and replace with the following:

“Disputes arising during the Operation Service Period which cannot be resolved between the Parties shall be settled by a one-person ad-hoc DAB (“Operation Service DAB”). Such person shall be jointly agreed and appointed by the Parties by the date 28 days after one Party has given Notice to the other Party of its intention to refer a Dispute to a DAB in accordance with sub-clause 20.10 [Disputes Arising during the Operation Service Period].

If the Parties cannot agree on the person who shall be the Operation Service DAB, then the person shall be appointed according to the provisions of sub-clause 20.4 [Failure to Agree Dispute Adjudication Board].

The agreement between the Parties and the Operation Service DAB shall incorporate by reference the General Conditions of Dispute Adjudication Agreement contained in the General Conditions of Contract, with such amendments as are agreed between them.

The terms of remuneration of the Operation Service DAB shall be mutually agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration. All Employer’s costs associated with all DAB matters shall be effected by the Contractor in accordance with a Provisional Sum, if provided in the Schedule of Payments. All Contractor’s costs associated with all DAB matters are deemed to be included in his Rates and Prices.

The procedure of obtaining a decision from the Operation Service DAB shall be in accordance with the provisions of sub-clause 20.6 [Obtaining Dispute Adjudication Board’s Decision], and the DAB shall give its decision no later than 56 days after receiving the response or, if no response is submitted, 84 days after receiving the reference and the supporting documentation from the Parties.

The appointment of the Operation Service DAB shall expire 28 days after it has given its decision in writing to both Parties.

If either Party is dissatisfied with the decision of the Operation Service DAB, the provisions of sub-clause 20.6 [Obtaining Dispute Adjudication Board's Decision], 20.7 [Amicable Settlement], 20.8 [Arbitration] and 20.9 [Failure to Comply with Dispute Adjudication Board's Decision] shall apply."

C1.4 OTHER STANDARD FORMS

C1.4.1 OPERATING LICENCE

The South African National Roads Agency SOC Limited, Registration Number: 1998/009584/30, (the "Employer") a Public Company incorporated in accordance with the South African National Roads Agency Limited and National Roads Act, 1998 ("**the Act**"), hereby grants to:

.....
[INSERT CONTRACTOR'S NAME]
(hereinafter referred to as "**the Contractor**")

The Operating Licence on the terms and conditions of the Contract, Sub-clause 1.7 [Operating License] and as contemplated in the Act.

The Contractor shall during the period stated in the Contract, on behalf of the Employer (and without derogating, in any way whatsoever, from the Contractor's obligations in terms of the Contract):

operate and maintain the Works; and

be responsible for care of the Works and ensure that the Works and Goods are in proper working order; and

collect, on behalf of the Employer, the toll on the road(s) as identified in the Contract; and

levy toll that is determined by the Minister of Transport and published in the Government Gazette from time to time; and

process the payment of tolls, recover tolls from any person(s) liable to pay same and procure compliance with the terms of the Act by all road users; and

in general comply with all its obligations in terms of the Contract and the Act.

For the avoidance of doubt, where there is any conflict between the terms of this Operating License and the obligations imposed on the Contractor pursuant to the Contract, the provisions of the Contract shall prevail.

THUS DONE and SIGNED at on this the day of 2020.

.....
For and on behalf of:
THE EMPLOYER

C1.4.2 FORM OF PERFORMANCE SECURITY – SURETY BOND

Note to Tenderer:

This Pro forma is for information only. The successful tenderer’s Bank will need to reproduce it without amendment, omission or addition for completion and lodgement with the Employer. A separate copy of this Pro forma will be issued to the successful tenderer with the Letter of Acceptance.

To be provided to the South African National Roads Agency SOC Limited established in terms of section 2 of South African National Roads Agency Limited and National Roads Act 1998 (Act No. 7 of 1998) of the Republic of South Africa having its principal place of business in [Pretoria](hereinafter called the "THE EMPLOYER")

Whereas:

- (a) The Employer has awarded CONTRACT SANRAL N.001-192-2018/1 FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 SOUTH AND R30 (the Contract) to (the Contractor),
- (b) the Contractor is required in terms of the Contract to obtain or procure this Bond to be provided to The Employer.

We, the undersigned

..... and
(Name) (Name)
acting herein as

..... and
(Position) (Position)
of

.....
(hereinafter called the “Bank”)

being duly authorised to sign and incur obligations in the name of the Bank under and in terms of a Resolution of the Board of Directors of the Bank, a certified copy of which is annexed hereto, hereby irrevocably and unconditionally guarantee and undertake on behalf of the Bank that:

- 1. The Bank shall pay amounts not exceeding R (..... Rand) (the “Maximum Amount”) without delay, on receipt by the Bank of the first written demand of the Employer that the amount is due and payable and without proof of any breach or other default. The Bank shall pay such amount(s) to the Employer (as specified in clause 5 below) upon receipt of a certificate herein after called the “Certificate” which shall be signed by any of the following authorised Employer representative, the Chief Executive Officer, the Chief Financial Officer, the Engineering Executive or the relevant Regional Manager certifying that the Employer is entitled to draw on this Bond pursuant to the provisions of the Contract. The Employer may make partial and/or multiple demands under this Bond provided that the aggregate amounts paid under this Bond shall not exceed the Maximum Amount.
- 2. The demand for payment together with this Bond (or a certified copy hereof) and the Certificate shall constitute prima facie proof of the Bank’s indebtedness hereunder for the purposes of any proceedings including but not limited to provisional sentence proceedings instituted against the Bank in any court of law having jurisdiction.

C1.4.2 FORM OF PERFORMANCE SECURITY – SURETY BOND (CONTINUED)

3. The failure of the Employer to enforce strict or substantial compliance by the Contractor with its obligations or any act, conduct, or omission by the Employer prejudicial to the interests of the Bank including, without limitation, the granting of time or any other indulgence to the Contractor or any other person or by amendment to or variation or waiver of terms of the Contract or any ancillary or related document (the "Underlying Documents") will not discharge the Bank from liability under this Bond. For the avoidance of doubt, the Bank's liability under this Bond will not be discharged notwithstanding the winding up, dissolution or judicial management of the Contractor or any other person and the Bond shall be honoured regardless of the invalidity, illegality or unenforceability of the Underlying Documents.
4. This Bond shall:
 - 4.1 remain in full force and effect from the date hereof, and shall expire on the earlier of:
 - 4.1.1 Four (4) months after the issue of the Contract Completion Certificate;
 - 4.1.2 Ninety (90) days after the date of termination of the Contract;
 - 4.2 exist independently of the Contract or any amendment, variation or notation thereof;
 - 4.3 not be ceded, assigned or otherwise transferred by the Employer, or otherwise dealt with in any manner whatsoever (save for the purposes and in the manner referred to above) which has or may have the effect of transferring or encumbering or alienating the Employer rights hereunder;
 - 4.4 be returned to the Bank on its expiry, cancellation, withdrawal or this Bond being fully drawn; and
 - 4.5 be governed by the laws of the Republic of South Africa.
5. The Bank shall deposit any payment made under this Bond into the account named SANRAL held at ABSA Bank Limited, Hatfield, Pretoria, Branch code, under account number: 01045510073.
6. The Bank shall make any payment demanded under this Bond free, clear of and without any deduction, withholding, counterclaim or set-off of any kind. If the Bank is required by law to make payments subject to the deduction or withholding of tax, it will make such further payments as are necessary to ensure that the amounts paid to the Employer equal the amounts that would have been paid to the Employer had no such deduction or withholding been made or been required to be made.
7. The obligations of the Bank under this Bond shall not in any way be affected by the invalidity, illegality or unenforceability for any reason of the obligations of the Contractor.
8. Addresses and Notices:
 - 8.1 The parties hereto choose *domicilium citandi et executandi* for all purposes of and in connection with this Contract as follows:

EMPLOYER: The South African National Roads Agency SOC Limited

Telefax: 012 844 8200

The Bank:

Telefax

C1.4.2 FORM OF PERFORMANCE SECURITY – SURETY BOND (CONTINUED)

- 8.2 Any party hereto shall be entitled to change its *domicilium* from time to time, provided that any new *domicilium* selected by it shall be a physical address in the Republic of South Africa, and any such change shall only be effective upon receipt of notice in writing by the other party of such change.
- 8.3 All notices, demands, communications or payments intended for any party shall be made or given at such party's *domicilium* for the time being.
- 8.4 Any notice required or permitted to be given under this Bond shall be valid and effective only if in writing.
- 8.5 A notice sent by one party to another party shall be deemed to be received
- 8.5.1 on the same day, if delivered by hand;
- 8.5.2 on the same day of transmission, if sent by telefax with a receipt confirming completion of transmission.
- 8.6 Notwithstanding anything to the contrary herein contained a written notice or communication actually received by a party shall be an adequate written notice or communication to it notwithstanding that it was not sent to or delivered at its chosen *domicilium citandi et executandi*.

SIGNED ON THIS..... DAY OF 20

AT (Place)

SIGNATURE SIGNATURE

[NAME] [NAME]

[TITLE] [TITLE]

WITNESS 1 WITNESS 2

C1.4.3 FORM OF CERTIFICATE

To: [Name and address of Bank]

Attention: ●

From: [South African National Roads Agency SOC Limited] hereinafter referred to as "the Employer"

Address:

Dated: ●

Dear Sirs

Performance Security - Surety Bond Dated [insert date] (the "Bond")

We refer to the above Bond issued by you. Terms defined in the Bond shall have the same meaning when used in this Bond.

The Employer is entitled to call on this Bond under Clause [insert relevant clause number of the Agreement] and we demand payment of the sum of R[●] under the Bond. Payment is to be made in accordance with the provisions of the Bond.

Payment must be made without delay to [Employer's bank account details].

Yours faithfully,

.....
for and on behalf of
[South African National Roads Agency SOC Limited]

C1.4.4 FORM OF AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993) AND CONSTRUCTION REGULATIONS, 2014

This AGREEMENT made at.....

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

THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED (hereinafter called "the Employer") on the one part,

herein represented by

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

..... (hereinafter called "the Mandatory") on the other part,

herein represented by.....

in his capacity as

WHEREAS the Employer is desirous that certain Works be constructed, namely

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 SOUTH AND R30

and has accepted a tender by the Mandatory for the construction, completion and maintenance of such works and has appointed the Mandatory in terms of Regulation 5(1)(k) of the Construction Regulations 2014, and whereas the Employer and the Mandatory have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatory with the provisions of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993);

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. The Mandatory shall execute the work in accordance with the Contract Documents pertaining to this Contract.
2. This Agreement shall hold good from its Commencement Date, to either:
 - (a) the date of the Contract of Completion Certificate issued in terms of sub-clause 8.6 of the FIDIC Conditions of Contract for Construction for Design, Build and Operate Projects (2008) published by Federation Internationale des Ingenieurs-Conseils (FIDIC) (hereinafter referred to as "the GCC"), as contained in Volume 1 Book 1 of the Contract Documents pertaining to this Contract, or
 - (b) the date of termination of the Contract in terms of Clauses 15, 16 or 18 of the GCC.
3. The Mandatory declares himself to be conversant with the following:-
 - (a) All the requirements, regulations and standards of the Occupational Health and Safety Act (Act 85 of 1993), hereinafter referred to as "The Act", together with its amendments and with special reference to the following Sections of The Act.
 - (i) Section 8: General duties of employers to their employees.
 - (ii) Section 9: General duties of employers and self-employed persons to persons other than employees.
 - (iii) Section 37: Acts or omissions by employees or mandataries and
 - (iv) Sub-section 37(2) relating to the purpose and meaning of this Agreement.

- (b) The procedures and safety rules of the Employer as pertaining to the Mandatary and to all his subcontractors.
- 4 In addition to the requirements of sub-clauses 4.8, 6.7 and 17.9 of the GCC and all relevant requirements of Volume 3 of the Contract Documents pertaining to this Contract, the Mandatary agrees to execute all the works forming part of this Contract and to operate and utilize all machinery, plant and equipment in accordance with The Act.
5. The Mandatary is responsible for the compliance with the Act by all his sub-contractors, whether or not nominated and/or approved by the Employer.
6. The Mandatary warrants that all his and his subcontractors' workmen are covered in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 (Act No 130 of 1993) which cover shall remain in force whilst any such workmen are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Employer upon signature of the Agreement.
7. The Mandatary undertakes to ensure that he and/or his sub-contractors and/or their respective employees will at all times comply with the following conditions:
- (a) The Mandatary shall assume the responsibility in terms of Section 16.1 of The Act. The Mandatary shall not delegate any duty in terms of Section 16.2 of The Act without the prior written approval of the Employer. If the Mandatary obtains such approval and delegates any duty in terms of section 16.2 a copy of such written delegation shall immediately be forwarded to the Employer.
- (b) All incidents referred to in The Act shall be reported by the Mandatary to the Department of Labour as well as to the Employer. The Employer will further be provided with copies of all written documentation relating to any incident.
- (c) The Employer hereby obtains an interest in the issue of any formal enquiry conducted in terms of section 32 of The Act into any incident involving the Mandatary and/or his employees and/or its sub-contractors.

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

SIGNED FOR AND ON BEHALF OF THE EMPLOYER:

AS WITNESSES:

1
SIGNATURE NAME (IN CAPITALS)

2
SIGNATURE NAME (IN CAPITALS)

SIGNED FOR AND ON BEHALF OF THE MANDATARY:

AS WITNESSES:

1
	SIGNATURE	NAME (IN CAPITALS)
2
	SIGNATURE	NAME (IN CAPITALS)

**C1.4.5 (a) FORM OF APPLICATION FOR A PERMIT TO DO CONSTRUCTION work to
DEPARTMENT OF LABOUR**

CONTRACT SANRAL N.001-192-2018/1

**FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON
NATIONAL ROUTE N1 SOUTH AND R30**

ANNEXURE 1

Occupational Health and Safety Act, 1993

(Regulation 3(2) of the Construction Regulations, 2014)

APPLICATION FOR A PERMIT TO DO CONSTRUCTION WORK

This application must be submitted with the following documents:

Health and Safety specification.

Baseline risk assessment.

1. Name, postal address and telephone numbers of the client:

.....
.....

2. Details of the Agent:

(a) Title, Surname and Initials:

(b) Identity number / Passport number:

(c) Registration number with SACPCMP:

(d) Office Tel. Number and/or Mobile number:

(e) Postal address:

3. Name, postal address and telephone numbers of the appointed principal contractor:

.....
.....

4. Name, postal address and telephone numbers of the designer of the project:

.....
.....

5. Name, postal address and telephone numbers of the following persons:

(a) Construction Manager:

.....

(b) Construction Health and Safety Manager:

.....

(c) Construction Health and Safety Officer:

.....

6. Exact physical address of the construction and site office:

.....
.....

7. Nature of construction work:

.....
.....

8. Expected commencement date:

.....

9. Expected completion date:

.....

10. Estimated maximum number of persons on the construction site:

.....

11. Planned number of contractors on the construction site accountable to the principal contractor:

.....

12. Name(s) of contractors appointed:

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

Signature of Client / Client's Agent

Signature of the Principal Contractor

FOR OFFICE ONLY

Authorization / Unique No.	LABOUR CENTRE	OFFICIAL APPROVAL STAMP
-------------------------------	---------------	-------------------------

Date of application:

Submitted documents prescribed in Construction Regulation 5(1) (Please tick ✓):

CR 5(1)(a)		CR 5(1)(b)		CR 5(1); (C-S)	
------------	--	------------	--	----------------	--

Result of the application (Please tick ✓)

Approved		Declined	
----------	--	----------	--

Reason for declining the application

Signature of the Supervisor

Signature of revoking officer / Inspector

C1.4.5 (b) FORM OF NOTIFICATION OF CONSTRUCTION WORK TO DEPARTMENT OF LABOUR

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 SOUTH AND R30

Annexure 2

Occupational Health and Safety Act, 1993 (Act No 85 of 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:
South African National Road Agency SOC Limited
Eastern Region
58 Van Eck Place
Mkondeni
Pietermaritzburg
3207

- b) Name and telephone number of client's contact person or agent:

Client:

Agent:

4. a) Name and postal address of designer(s) of the Project:

.....

- b) Name and telephone number of the designer's contact person:

.....

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 on site appointed in terms of Regulation 8(2):

.....

7. Exact physical address of the construction site or site office:

.....

.....

8. Nature of 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 the principal contractor:

.....

.....

.....

13. Name(s) of contractors already selected:

.....

.....
PRINCIPAL CONTRACTOR

.....
DATE

.....
CLIENT 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.
- ALL PRINCIPAL CONTRACTORS THAT QUALIFY TO NOTIFY MUST DO SO EVEN IF ANOTHER PRINCIPAL CONTRACTOR ON THE SAME SITE HAD DONE SO PRIOR TO THE COMMENCEMENT OF WORK

C1.4.6 FORM OF AGREEMENT FOR DAB MEMBERS

[All italicised text and any enclosing square brackets is for use in preparing the final form and shall be deleted from the final product.]

Name of Contract:

This Agreement made the day of20

between

Name and address of Employer:

Name and address of Contractor:

Name and address of DAB Member:

Whereas the Employer and the Contractor have entered into a Contract and desire jointly to appoint the above-named Member to act on the DAB as the chairman of the *[insert 1 or 3 whichever applies]* Member DAB during the *[insert Contract Period or any other period as may be applicable]*,

And whereas the Member accepts the appointment.

The Employer, Contractor and Member jointly agree as follows:

1. The conditions of this Dispute Adjudication Agreement comprise the "General Conditions of Dispute Adjudication Agreement" which are appended hereto, and the following provisions. In these provisions, which include amendments and additions to the "General Conditions of Dispute Adjudication Agreement", words and expressions shall have the same meanings as are assigned to them in the "General Conditions of Dispute Adjudication Agreement".
2. *[Details of any amendments or additions or deletions from the "General Conditions of Dispute Adjudication Agreement" should be given here or in an attachment hereto.]*
3. In accordance with Clause 6 of the "General Conditions of Dispute Adjudication Agreement", the Member shall be paid as follows:
 - (a) A retainer fee of per calendar month, and
 - (b) A daily fee of per day spent on Site visits, hearings, and other time in connection with submissions to the DAB made in accordance with the provisions of the Contract between the Employer and the Contractor.
4. In consideration of these fees and other payments to be made by the Employer and the Contractor in accordance with Clause 6 of the "General Conditions of Dispute Adjudication Agreement", the Member undertakes to act as the DAB Member in the capacity above-mentioned in accordance with the terms of this Dispute Adjudication Agreement.
5. The Employer and the Contractor jointly and severally undertake to pay the Member in consideration for his acting as the DAB Member as aforementioned in accordance with this Dispute Adjudication Agreement.
6. This Dispute Adjudication Agreement shall be governed by the laws of the Republic of South Africa.

Signed by: Signed by: Signed by:
(signature) (signature) (signature)

for and on behalf of Employer for and on behalf of Contractor for and on behalf of Member

in the presence of in the presence of in the presence of

Witness: Witness: Witness:
(signature) (signature) (signature)

Name: Name: Name:

Address: Address: Address:

Date: Date: Date:

C1.4.7 FORM OF BANKING DETAILS

Notes to Contractor:

1. The Employer applies an Electronic Funds Transfer system for all payments.
2. If you are already registered as a vendor with the Employer, you are required to confirm your banking details in the form below but not required to submit documentation as per note 3.1 and 3.2.
3. If you are not registered as a vendor with the Employer, you are required to supply:
 - 3.1 a completed SANRAL Vendor Application Form (to be obtained from the relevant Regional Project Manager); or
 - 3.2 an original cancelled cheque bearing your company name and account number; or
 - 3.3 if you are unable to supply an original cancelled cheque, you are to provide a letter on your letterhead as per the pro forma below and return the original letter to the address as stated in clause 1.3 of C1.2.2 - Information provided by the Employer, delivered by hand or sent by post.

To:
The South African National Roads Agency SOC Limited
58 Van Eck Place
Mkondeni
Pietermaritzburg
3201

Dear Sir

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 SOUTH AND R30

BANKING DETAILS

By signing this document, we accept the following:

- The banking details submitted are those of (Contractor Name) and we take full responsibility for their correctness.
- We indemnify the Employer from any and all outcomes if an electronic transfer is made into an incorrect bank account using the banking details submitted.

Account Name:

Bank:

Branch Name:

Branch Code:

Account Number:

Yours sincerely

.....
Authorised Signatory for Contractor

.....
Date:

C1.4.8 TAX COMPLIANCE PERMISSION DECLARATION

CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 SOUTH AND R30

Note:

In terms of National Treasury Instruction No 3 of 2014/2015 with reference to the Public Finance Management Act, 1999 (Act No 1 of 1999) and Regulations, the contractor and subcontractors are required to provide the Employer with written confirmation to access the SARS Electronic Tax Compliance Status (TCS) System to verify and continuously track the tax compliance status of all persons conducting business with the State.

The Contractor shall complete the declaration below.

I, (name)

the undersigned in my capacity as (position)

on behalf of

..... (name of company)

herewith grant consent that SARS may disclose to the South African National Roads Agency SOC Limited (SANRAL) our tax compliance status on an ongoing basis for the contract term.

For this purpose, our unique security personal identification number (PIN) is

our tax reference number is and our tax clearance certificate number is

In addition, the Contractor shall obtain written consent from each of its subcontractors, undisclosed principals and partners involved in this contract confirming that SARS may, on an ongoing basis during the contract term, disclose the subcontractors' tax compliance status to the Employer. For this purpose, the Contractor shall provide the Employer with the unique security personal identification number (PIN), tax reference number and tax clearance certificate for each of its subcontractors, undisclosed principals and partners involved in this contract.

SIGNATURE:

DATE:

C1.4.9 APPOINTMENT OF PRINCIPAL CONTRACTOR IN TERMS OF REGULATION 5.1(k) OF THE CONSTRUCTION REGULATIONS, 2014 INCORPORATED IN THE OCCUPATIONAL HEALTH AND SAFETY ACT, ACT 85 OF 1993

APPOINTMENT OF PRINCIPAL CONTRACTOR BY CLIENT (EMPLOYER)

This AGREEMENT made at

on this the day of in the year

between THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED (hereinafter called "the Client") on the one part, herein represented by

in his/her capacity as

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

(hereinafter called "the Principal Contractor") on the other part, herein represented by

.....

in his capacity as

WHEREAS the Client is desirous that certain works be constructed, viz. CONTRACT SANRAL N.001-192-2018/1

FOR THE OPERATIONS AND MAINTENANCE OF N1 SOUTH AND R30 TOLL PLAZAS ON NATIONAL ROUTE N1 SOUTH AND R30

and has accepted a tender by the Principal Contractor for the construction, completion & maintenance of the works.

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. The Principal Contractor shall execute the work in accordance with the contract documents pertaining to this contract.
2. This Agreement shall hold good from its commencement date, to either:
 - a) the date of the Performance Certificate issued in terms of sub-clause 11.7 of the Conditions of Contract for Design, Build and Operate Projects i (2008) published by Federation Internationale des Ingenieurs-Conseils (FIDIC), as contained in Volume 1 of the contract documents pertaining to this contract, or
 - b) the date of termination of the contract in terms of clauses 15, 16 or 19 of the GCC.
3. The Principal Contractor declares himself to be conversant with all the requirements and standards of the Occupational Health and Safety Act (Act 85 of 1993) together with its amendments and incorporated Regulations, hereinafter referred to as "The Act", and with special reference to the Construction Regulation 7: Duties of Principal Contractor and Contractor.
4. The Principal Contractor is responsible for the compliance with the Act by all his subcontractors and suppliers when entering the construction site, whether or not nominated and/or approved by the Client.
5. The Principal Contractor warrants that all his and his subcontractors' workmen are covered in terms of the Compensation for Occupational Injuries and Diseases Act 1993, which cover shall

remain in force whilst any such workmen are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Employer upon signature of the agreement.

6. The Principal Contractor warrant that adequate provision has been made for the cost of health and safety measures during the execution of the project, and that sufficient resources (including competent personnel) are available to carry out the construction work safely.
7. The Principal Contractor warrants that the Employer / Client has carried out his duties in terms of Construction Regulation 5.1(a)(b)(f):
 - a) Construction Regulation 5.1(a): A baseline risk assessment for the intended construction work was prepared by the client and included in the tender documentation.
 - b) Construction Regulation 5.1(b) & (f): A suitable, sufficiently documented and coherent site-specific health and safety specification for the intended construction work based on the baseline risk assessment was included in the tender documentation.

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

SIGNED FOR AND ON BEHALF OF EMPLOYER

WITNESS 1:

SIGNATURE:

NAME (IN CAPITALS)

WITNESS 2:

SIGNATURE:

NAME (IN CAPITALS)

SIGNED FOR AND ON BEHALF OF THE PRINCIPAL CONTRACTOR

WITNESS 1:

SIGNATURE:

NAME (IN CAPITALS)

WITNESS 2:

SIGNATURE:

NAME (IN CAPITALS)

PART C2: PRICING DATA

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C2.1 PRICING ASSUMPTIONS

1. The measurement and payment shall be in accordance with relevant provision of the Standard Specification for Operations and Maintenance of CTROM Projects: Payment Methodology and Description of Payment items (Volume 2 Book 7a) (October 2010).
2. The assumptions listed in this section must be read in conjunction with the Preamble to Schedule of Payments in the Standard Specifications for Operations and Maintenance of CTROM Projects: Payment Methodology and Description of Payment Items (Volume 2 Book 7a) (October 2010).
3. The tenderer is to note that Schedule of Payments are in the Cost Matrix format to allow the tenderer to price different monthly rates to cater for the various traffic peaks that may occur during the Contract Period.
4. The tenderer shall submit prices for the Contract Period for the Fixed and Variable Cost Payment Mechanism for the Grasmere, Vaal, Verkeerdevelei and Brandfort Control Centres.
5. Items indicated with the term “if triggered” will only be paid on implementation when instructed by the Employer. Payment for these items will be delayed coinciding with the actual implementation. The prices must include for all developing, procurement, installation and removal of redundant material from site (if applicable).
6. An electronic version of the Schedule of Payments/Cost Matrices is included in Volume 4. The tenderer shall provide all entries required in the Schedule of Payments/Cost Matrix for each Control Centre.
7. SUBTOTAL (COST CARRIED FORWARD TO SCHEDULE OF PAYMENTS/COST MATRIX). All entries shall be to Rand (R0,00) and shall exclude VAT. The cells in the electronic version of the Schedule of Payments/Cost Matrix that require input by the tenderer are shaded in light blue **“either in the” rate” or in the “month column(s)”**. All the blue shaded cells, including those in the personnel cost breakdown tables, must be filled in, either with zeros, or otherwise. THE TENDERER SHALL NOT ALTER THE INPUT IN OTHER CELLS. The tenderer shall submit the priced Schedule of Payments/Cost Matrices in both electronic and hard copy format with its tender **“offer”**.
8. Some of the “light blue” shaded items in the Schedule of Payments/Cost Matrix require a total price for the route instead of a price per Control Centre.
9. The “Grey cells” as well as the Items with “Green text” in the electronic version of the Schedule of Payments/Cost Matrix have been locked due to the items either not being applicable or not required for the specific control centres.
10. The model, in MS Office Excel format, that is used to determine the Operations and Maintenance Fee, is included in Volume 4. The payment model will automatically read the Operations and Maintenance Fee from the Schedule of Payments/Cost Matrices, which have to be completed by the tenderer. Please note that for this to happen, both of the payment model and the Schedule of Payments/Cost Matrix Files must be in the same directory.
11. The tenderer shall fill in the relevant percentage mark-up values for Provisional Sums in the place cells in column D. If the relevant percentages are not filled in the Sub-Clause 13.5 shall apply.
12. Cost items for the relevant activities/requirements in terms of the Clauses in the Contract are indicated on the Schedule of Payments/Cost Matrix. Tenderers must ensure that only costs related to the relevant cost items must be included in the specific item.
13. The tenderer must note that should there be any statutory levies that are added or removed during the contract period, it shall be added or removed from the Schedule of Payments/Cost Matrix item.
14. In the case of “Milestone dependent items”, only the “Blue shaded cell” in column “D” for the relevant items for each Control Centre(s) must be completed. The tenderer must make provision for all cost described for each item detailed in Clause 3.4 of the Standard Specifications for Operations and Maintenance of CTROM Projects: Payment Methodology and Description of Payment Items (Volume 2 Book 7a) (October 2010). This clause also indicates the percentage payments for each item when the various milestones have occurred. Software factory acceptance test, functional compliance,

provisional compliance and full compliance will be as defined in the Standard Specifications for Operations and Maintenance of CTROM projects: Toll Systems (Volume 2 Book 4a) (October 2010).

15. Should the tenderer have other costs not described in any of the appropriate items, as in the Schedule of Payments/Cost Matrix, the tenderer must allocate such costs in the most appropriate item as no additional payments related to milestone items will be made.
16. The Employer's Representative may inform the relevant sub-contractors when payments are made for the above-mentioned milestones.

C2.2 SCHEDULE OF PAYMENTS/COST MATRIX (INCORPORATING SBD3)

Notes to Tenderer:

- a) If the Form of Offer is submitted but the Schedule of Payments/Cost Matrix is omitted
 - i. Where rate only items are applicable.
- b) If a signed Form of Offer is submitted with an incomplete Schedule of Payments/Cost Matrix (no summary to tender) that does not balance back to the Form of Offer
 - i. *Schedule of Payments/Cost Matrix incomplete
- c) If a signed Form of Offer is submitted with an incomplete Schedule of Payments/Cost Matrix that does not balance back to the Form of Offer
 - i. *Only summary of Schedule of Payments/Cost Matrix submitted

The tender submitted shall be declared non-responsive tender.

The spreadsheet containing the Schedule of Payments/Cost Matrix is provided separately in Excel format in Volume 4.

PART C3: SCOPE OF WORKS

PART C3 SCOPE OF WORK

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PART C3 SCOPE OF WORK (SECTION A)

PART C3.1 PROJECT DESCRIPTION (SECTION B)

C3.1 PROJECT DESCRIPTION**C3.1.1 PROJECT OVERVIEW****C3.1.1.1 Toll Road and Toll Plaza**

The declared N1 South Toll Road stretches from km 28,0 on Section 15 (Sydenham Interchange) to km 10.70 on section 20 (Armadale Interchange) of the National Route N1, a distance of approximately 396.2km. The existing Toll Road sections can be broadly described as follows:

Section	Toll Plazas
Sydenham I/C to Kroonstad North I/C	Verkeerdevlei Mainline Toll Plaza
Kroonstad North I/C to Louisrust I/C	Vaal Toll Plaza
Louistrust I/C to Armadale I/C	Grasmere Mainline Toll Plaza Grasmere Local Ramp Plaza Grasmere Remote Ramp Toll Plaza

The declared R30 Toll Road stretches from km 0,0 on section P55-1 (Glen Lyon I/C) to km 48.2 on section P36-1 (Brandfort) on the R30, a distance of approximately 191.9km. The existing Toll Road section can be described as follows:

Section	Toll Plaza
Glen Lyon I/C to Brandfort	Brandfort Mainline Toll Plaza

There are five (5) existing Toll Plazas located along the N1 South Toll Road and the general details of which, can be summarised as follows:

Toll Plaza	Control Centre	Location (Interchange)	Section of N1	Distance km	Number of Lanes*
Verkeerdevlei Mainline	Verkeerdevlei	-	16	35.525	6/6
Vaal Mainline	Vaal	Sasolburg/Parys	18	39.00	5/5
Grasmere Mainline	Grasmere	Ennerdale I/C	19	47.2	5/5
Grasmere Local Ramps		Ennerdale I/C	19	47.2	5/5
Grasmere Remote Ramp		Ennerdale I/C	19	46.35	1/1

* x/y denotes per direction (Northbound/Southbound)

There is one (1) existing Toll Plaza at km 9,930 on section 1 of the R30 (P55-1) Toll Road. The details of which, can be summarised as follows:

Toll Plaza	Control Centre	Location (Interchange)	Section of R30(P55/1)	Distance km	Number of Lanes*
Brandfort Mainline	Brandfort	-	1	9,930	4/4

* x/y denotes per direction (Northbound/Southbound).

C3.1.1.2 Alternative Route

The Alternative Route runs parallel to the N1 South Toll Road between Kroonstad and Parys on the Route R721 and from Parys on Route R59 to where it joins the N1 South Toll Road just North of the Vaal Toll Plaza. The Alternative Route resumes at Louisrust Interchange and runs parallel to the N1 South Toll Road on Route R553, crossing over the N1 Toll Road just South of the Grasmere Toll Plaza, until it joins the N1 Toll Road just North of Misgund Interchange.

C3.1.2 DESCRIPTION OF THE WORKS

C3.1.2.1 Description of Roles and parties to this Contract

The Employer's procurement strategy includes tenders for two contracts simultaneously:

1. The first contract will be for the Main Contractor, for the operations and maintenance of N1 South and R30 toll plazas on National route N1 and R30 (also known as the CTROM contract).
2. The second contract will be for the Nominated Subcontractor for the Design Build Operations and Maintenance of the Toll System for the Operations and Maintenance of (Note to compiler: Insert names of toll plazas) Toll Plazas on the (state route description).
3. Once the Employer has selected the two contractors; the Main Contractor will be instructed to appoint the Nominated Subcontractor.

This Contract is the CTROM Contract for the Operations and Maintenance of the N1 South and R30 toll plazas on National Route N1 and R30.

The terminology used for the contracts and the various roles versus the FIDIC terminology is tabled and clarified below.

TABLE 4-1: ASSOCIATED CONTRACTS AND TERMINOLOGY

Entity (vertical) / Contract (horizontal)	Main Contract (MC) (CTROM Operations and Maintenance Contract)	Toll System Subcontract (NSC)	How these should be interpreted in this contract
SANRAL	Employer	Principal Employer	Employer
Main Contractor (MC) (Operations and Maintenance Contract)	Contractor	Employer	Contractor
Toll System Subcontract (NSC)	Nominated Subcontractor	Contractor	Nominated Subcontractor (NSC)
Employer's Representative	Employer's Representative	Main Contractor's (MC) Subcontractor's Representative	Employer's Representative
SANRAL MIS System Integrator			SANRAL MIS System Integrator (SI)

All references to Contractor in this document refer to the Main Contractor.

The Nominated Subcontractor (NSC) will be appointed by the Employer but sub-contracted and managed by the Contractor.

All references to Main Contractor refer to the Contractor appointed for (*Note to compiler: insert contract description here*).

In the event where any ambiguity or discrepancy is found in the documents, the Employer shall be responsible to clarify this.

C3.1.2.1 General Description

The description of the Works contained in this section is a general outline of the Contractor's responsibilities and shall not limit the Works to be carried out by the Contractor under this Contract.

The Employer will appoint the Contractor to design, operate, and maintain the Works. The Employer will also select a Nominated Subcontractor who will perform the Toll System Integration work as a nominated subcontractor work for the Main Contract (the CTROM contract). The Toll System Integration work shall include the design, procurement, installation, testing, and maintenance of the Toll System.

It should be noted that the Contractor and the Nominated Subcontractor (System Integrator)'s scope of works are not separated in different specifications. The Nominated Subcontractor is responsible for the Toll System and should therefore be cognisant of the Toll System specifications.

The Contractor in turn is responsible for all the Works, including the management of the Nominated Subcontractor and to ensure that the Toll System meet the contractual design and performance criteria. The Works assigned to the Nominated Subcontractor therefore form part of the Works of the Contractor.

The Nominated Subcontractor scope of works typically relates to the design, procurement, installation, testing, and maintenance of the Toll System, including the maintenance of the existing Toll System handed over at the Commencement Date.

C3.1.2.2 Toll Plaza Operations

The Works include full responsibility for *inter alia* the following:

- Collection and control of toll at the various Toll Plazas.
- Traffic management.
- Financial management.

C3.1.2.3 Provision and Maintenance of Employers Facilities and Permanent Design-Build

The Works include the maintenance of all Employers Facilities and Permanent Design-Build Assets, which will remain the property of the Employer.

The Contractor shall take over, provide or replace, where applicable, all Permanent Design-Build Assets and maintain these Assets for the duration of the Contract period. The Contractor shall take over all Employers facilities and maintain these Assets for the duration of the Operation Service Period.

The Contractor shall take over and maintain the existing toll system which shall facilitate the collection and control of toll. The Contractor shall take full responsibility for retaining and for the maintenance of portions of the existing toll systems. The Contractor shall also be responsible for the maintenance and support for the portion of the toll systems described in the Nominated Subcontract.

The Contractor is to manage, and coordinate functions related to the Nominated Subcontractor to ensure that the Contractor meets the requirements and obligation of this Contract. The Contractor must refer to part C3.2.4 for the roles and responsibilities between Contractor and the Nominated Subcontractor.

C3.1.2.4 Contractor's Facilities and Equipment

The Contractor shall provide all necessary Contractor's facilities and equipment and maintain these Assets for the duration of the Operation Service Period.

C3.1.2.5 Road Incident Management Systems

The Contractor will be required to participate in the existing Road Incident Management System (RIMS) from Bloemfontein to Armadale I/C on the N1 South Toll Road. .

The Contractor will be required to participate in the existing Road Incident Management System (RIMS) for the R30 Toll Road from Glen Lyon I/C just North of Bloemfontein to Virginia on R73 and then R34 until it re-joins the N1 Toll Road just South of Kroonstad.

C3.1.2.6 Customer Control Centre (CCC)

The Works includes the implementation, operation and maintenance of the Customer Call Centre along the N1 South and R30 Toll Roads.

C3.1.2.7 Video Grabbing System (VGS)

A Digital Video Surveillance System (DVSS), as described in Volume 2 Book 2a and Volume 2 Book 4a, are currently installed at the mainline Toll Plaza/s (Verkeerdevlei, Vaal, Grasmere and Brandfort) to monitor queue lengths with surveillance function. The system may be upgraded to incorporate other functions should it be required, by the Employer at any time during the Contract period.

C3.1.2.8 Queue Length Monitoring System (QLS)

There are QLS's installed at all the existing Mainline Toll Plaza/s (Verkeerdevlei, Vaal, Grasmere, including Local and Remote Ramps and Brandfort Toll Plazas, refer to Part D18 of Volume 4 for the summary of the description of system installed.

C3.1.2.9 Video Grabbing System (VGS) and Queue Length Monitoring System (QLS) Remote Access Facility

It is required that a remote access facility as stipulated in Volume 2 Book 4a for both the VGS and QLS systems be implemented, in order for the Employer's Representative and the Employer to remotely access the VGS and QLS to view historical data records and/or real time data. The Contractor shall implement the necessary means to allow for data transfer during the remote access process, over broad band (ASDL) or other means that would be approved by the Employer's Representative, at a minimum downstream speed of 10 Mbps and upstream speed of M10 bps.

The remote access facility provides the remote user with the same functionality as the user at the Toll Plaza, to query events and or incidents on the VGS and QLS servers.

C3.1.2.10 Cameras

C3.1.2.10.1 Fixed Cameras

The Contractor shall comply with the following minimum specification when installing new cameras during the Operation Service Period:

IP (Internet Protocol) based and have a resolution of at least 1920 x 1080.

Minimum illumination of: 0.5 lux (colour)

0.04 lux (black and white)

Be capable to automatically switch to infrared sensitive black and white video at low light conditions.

Auto iris.

Contain a progressive scan CCD image sensor.

Support both JPEG and MPEG4.

H264 compliant or other non-proprietary compression algorithm approved by the Employer's Representative in addition to JPEG and MPEG4 support.

Cameras shall have a frame rate of at least 25 fps.

Existing cameras may be re-used by the Contractor and can make use of IP servers or converters with the following minimum specification:

IP (Internet Protocol) based and have a resolution of at least 1280 x 720.
support both JPEG and MPEG4.

C3.1.2.10.2 PTZ Cameras

All PTZ cameras must comply with the following minimum specifications:

A frame rate of at 25 fps.

IP (Internet Protocol) based and have a video resolution at least 1920 x 1080.

Image stabilization of 10%-pixel displacement up to 10 HZ

Minimum illumination of: 0.5 lux (colour)
 0.03 lux (black and white)

Auto gain controls up to 28dB – on/off.

Adjustable auto iris.

Support both JPEG and MPEG4.

H264 compliant or other non-proprietary compression algorithm approved by the Employer's Representative in addition to JPEG and MPEG4 support.

Frame rate of 25 fps.

PTE functions:

manual
sequential positions
auto pan
pre-set tours

Zoom min 20x optical with auto focus.

The Contractor shall ensure that, as a minimum, CAT 6A cable is only utilised within the boundaries of buildings. Cabling provided for any cameras or video servers between buildings shall be connected by means of fibre optic cable or other technology as approved by the Employer's Representative which is not prone to damage caused by electrical or lightning surges. The Contractor is also to ensure that CAT 6A (or later high-speed derivatives) or coax cable shielding be earthed at one end only or as instructed by the Contractor's surge and lightning protection specialist.

C3.1.2.11 Impact Attenuators

The Contractor is to maintain the existing "Armco Quadguard" impact attenuator system for the design speed 60km/h (2 bay x 3 cartridges – effective length: 2,64m) at the existing Toll Plazas as listed in the table below for duration of the Operation Service Period:

Toll Plaza	Direction	Model QS 3536
Verkeerdevlei Mainline	Both	12
Vaal Mainline	Both	10
Grasmere Mainline	Both	10
Grasmere Local Ramp	Both	10
Grasmere Remote Ramp	North Direction	1
Brandfort Mainline	Both	8

Should it be necessary to replace any of the Impact Attenuators during the Operation Service Period, the Contractor shall ensure that the replacement equipment conforms to the following requirements:

To EN1317 (Parts 1 to 8) and/or AASHTO MASH or NCHRP350 as alternative where no MASH product is available. Included are end wings, bullnoses and bridge adaptors to SANS 1350 and end treatments, crash cushions and transitions to rigid elements of performance-based specification compliant to EN1317 and/or AASHTO MASH or NCHRP350 as alternative where no MASH product is available.

Reflective sheeting suppliers for reflector plates shall supply an official test report as per the requirements of SANS 1519-1.

Suppliers of Performance Based Systems will be required to obtain from the foreign testing facility where the product was tested, a Type Approval Report and submit it to a SANAS accredited Certification Body for independent verification at the cost of the supplier. Once verified, the Certification Body will conduct auditing of the product being manufactured, to ensure that it is the same product as described in the Type Approval Report, which will verify the testing report provided to the Employer Representative.

The manufacturer of the RRS will be required to issue a limited material defects warranty for a period of not less than twelve (12) months.

The entity that is tasked with the installation of the RRS system, must be a certified installer and certify that the system has been installed in accordance with the manufacturers installation guidelines, in order to comply with the crash testing conditions.

C3.1.3 EXPECTED GENERAL CONTRACT PROGRAMME

C3.1.3.1 Expected Programme

It is anticipated that the Establishment Period at all the Toll Plazas will be approximate 6 weeks. The following key milestones are as follows:

Design Build Commencement Date 1 June 2023 Expected

Commencement of Operation Service Period - 1 June 2023

C3.1.4 CONTRACT DURATION

The Contract Period shall be for a duration of 73.5 months, including the Design-Build and Operation Service Periods.

Note however that the Employer is planning to roll out their national Management Information System (SANRAL MIS) on all the Toll Plaza/s within the next 6 years, upon which the Nominated Subcontract (Note to compiler: insert contract number) may terminate. The Contractor will be notified at least 6 months in advance.

C3.1.5 OTHER EMPLOYER CONTRACTS

During the Operation Service Period, there will be other Contract(s) between the Employer and third parties executing work within this contract boundaries, such as:

TABLE C3.1.5/1: PROGRAMME OF CONTRACTS				
ROUTE		WORKS DESCRIPTION	PERIOD	
From	To		From	To
N1-20 km 30.8,0	N1-15 km 28,0	N1 South Routine Road Maintenance	Ongoing	Ongoing
R30-36-1 km 48,2	R30-P55-1 km 0,0	R30 Routine Road Maintenance	Ongoing	Ongoing
N1-18 km 0.00 Heuningspruit	N1-18 km 29.20 Koppies	Increase capacity on N1 South Route (Project Still in Design)	October 2016	February 2024
R034 -06 km 0.0 Kroonstad	R34-06 km 48 Welkom	Increase capacity on N1 South Route (Project Still in Design)	October 2016	February 2024
N1-16 km 32.0 Zandkraal	N1-16 km 78,0 Winburg South	Road upgrade between Zandkraal and Winburg South	March 2020	February 2024
N1-26 km 13,9	N1-27 km 33,0	Upgrade of Street Lighting – Bloemfontein, Kroonstad Interchange and Ventersburg	February 2020	March 2024
N1-19 km 47,2, N1-18 km 39,0, N1-16 km 35,5, R30-1 km 9,93		Grasmere, Vaal, Verkeerdevlei and Brandfort Toll Plaza upgrade to Solar PV and Wind Energy Projects	August 2020	November 2023
N1-19 km 47,2, N1-18 km 39,0, N1-16 km 35,5, R30-1 km 9,93		Grasmere, Vaal, Verkeerdevlei and Brandfort Toll Plaza Building and Civils Refurbishment	To be confirmed	To be confirmed
N1-19 km 47,2, N1-18 km 39,0, N1-16 km 35,5, R30-1 km 9,93		Grasmere, Vaal, Verkeerdevlei and Brandfort Toll Plaza Systems Integration into SAPS	To be confirmed	To be confirmed

Contracts for the refurbishment of the Toll Plaza Buildings will be carried out by a Third Party appointed by the Employer. The Contractor is made aware that these refurbishment projects will disrupt the Contractor's "day to day" operations and the Contractor is to make allowances for these disruptions.

A schedule of the work to be undertaken in this plaza refurbishment contract is listed in Part C4 of Volume 4.

C3.1.6 DRAWINGS

The available As-built drawings of key civil layouts of each Toll Plaza and for the toll system electrical, mechanical and electronic Assets are included in Part C2 of Volume 4.

Selected drawings and figures are included in Part A of Volume 4.

Available As-built drawings of the remainder of the Assets, the Toll Road, including relevant structures, roadside furniture will be made available on request after the Commencement Date at the Employer standard printing tariffs, as applicable. Drawings will, however, be made available for scrutiny during the tender period at the Employer Eastern Region offices in Pietermaritzburg if so requested.

C3.1.7 PENALTIES FOR NON-PERFORMANCE

In instances, where the Contractor do not comply with any specific requirement of the Contract, the Employer may:

Apply a penalty related to the non-compliance by the Contractor to a specific requirement of the Contract as described in the Contract, for that specific item, or;

Employ a third party to perform, complete or rectify the item of non-compliance by the Contractor to a specific requirement of the Contract and to recover any costs incurred by the Employer from the Contractor.

Where the Termination of this Contract is specified as a penalty that may be applied by the Employer, the Employer may, at its sole discretion apply a penalty of ten percent (10%) of the monthly Operation and Maintenance Fee (excluding capital expenditure), per Control Centre in lieu of Termination of the Agreement.

C3.1.8 INTEGRATED TRANSPORTATION INFORMATION SYSTEM

The Employer has developed a comprehensive information management tool called ITIS (Integrated Transportation Information System) to address all facets of its strategic and tactical planning, design, construction and maintenance of the entire road network. This provides support for the management tasks of the Employer and to allow the Employers personnel to make technical decisions more quickly and efficiently.

ITIS is an integrated approach to the sharing and inter-relating of technical performance information for the Employer and relies on people following procedure to populate the system with data. ITIS currently consist of the following platforms:

- ITIS Web -Web enable portal providing online access to various functions, workflows and reports.
- ITIS Desktop - Offline data capture tool enabling the capturing of information offline, validation and synchronisation of data with ITIS database.
- ITIS Mobile - Application (Android 6 or later) that allows the infield capture of information using a smart phone or tablet (must have a camera and GPS), validation of the synchronisation of data with ITIS database.

The Employer then has several ITIS modules running on any of the above ITIS platforms which affect the Contractor, who will need to use these modules to perform certain procedures to provide required information. The current modules applicable to toll operations and maintenance and their description are as follows:

Contract Module	-	Management of Contracts;
Incident Module	-	Recording of incidents on site;
Project Information Module	-	Employment and training data; and
Toll Module	-	Management of toll system data and payments.

An ITIS Desktop Project information Module – User Manual is included in Part C9 of Volume 4 and User manuals for the various functions can be downloaded from <https://itisnra.co.za/Portal/Myaccount/UserManuals> after the successful registration as a Public user.

C3.1.9 EMPLOYER'S MANAGEMENT INFORMATION SYSTEM

The Employer is currently planning to design and to develop the Employer's Management Information System (SANRAL MIS) that is expected to be rolled out on all the Toll Plaza/s on the N1 South and R30 Toll Roads during the Operations Service Period.

The SANRAL MIS forms part of the National Back Office System that will allow for the National Management of all toll related issues that will enable the Employer to provide the

Road User with a single point of contact for all toll-related activities and concerns, such as but not limited to queries, discounts, transaction payment clearing, customer care and other value-added services.

The SANRAL MIS deployment, for the purpose of this project will be implemented in two phases. The Contractor will be required to implement a complete data interface, along the line of the TCH interface, as part of the Toll System upgrade. The complete SANRAL MIS interface and integration will follow as a later phase when the SANRAL MIS development reaches the appropriate implementation level.

The Contractor will be required to adapt the standard CTROM architecture to allow for integration with the SANRAL MIS. Based on the information available to date, the expected major changes amongst others can be summarised as follows:

The Toll Plaza Back Office is to be replaced, in part or in full, with the SANRAL MIS. It shall not replace all the Toll Plaza Back Office functionality, which means that the Plaza Back Office shall become a lesser involved system and shall be called the Lane Mediator. The functionalities that the SANRAL MIS does not take over, shall remain on the Mediation Layer. The following toll plaza related functions may remain:

- Control room monitoring functions.
- Incident control and exception management.
- Cash-up and shift control functions.
- Site health monitoring and configuration control.
- Local discount control.
- Queue management.
- VGS audits.

The SANRAL MIS shall therefore take over the following minimum functionality from the Back Office / CTROM equipment:

- Fetching of validation and negative files information and push these lists to the Lane Mediation Layer.
- Manual validation and corrections of incidents, including ANPR and OCR.
- Management of accounts and discounts.
- Customer Service Interface(s).

The SANRAL MIS shall become the Toll Plaza's Time Synchronization Master. Additional responsibilities shall be required from the Contractor in order to facilitate the successful change over, such as:

- Automated System Checks to ensure that all the communication from the Lane Mediation Layer has been communicated successfully to the SANRAL MIS
- The existing VGS System must be modified to a full time Network Video Recorder only. The implementation of ANPR and OCR services shall be the responsibility of the SANRAL MIS. The Contractor shall provide the required interfacing requirements.
- All Cameras shall provide clear enough images to allow for OCR and ANPR processing. This means that the VLN's must be humanly readable from the images provided by the Contractor's Toll System.
- The DCS interface shall now be to the SANRAL MIS and not externally to the Employer's interface called ITIS.
- Audit Logs of all interaction shall be required.

The Contractor is to make provision for coordination and assisting the SANRAL MIS System Integrator and to develop to implement the required changes to the existing Toll Plaza System which allows for the successful integration between the systems.

The diagram below provides insight on the foreseen changes required during the Contract period.

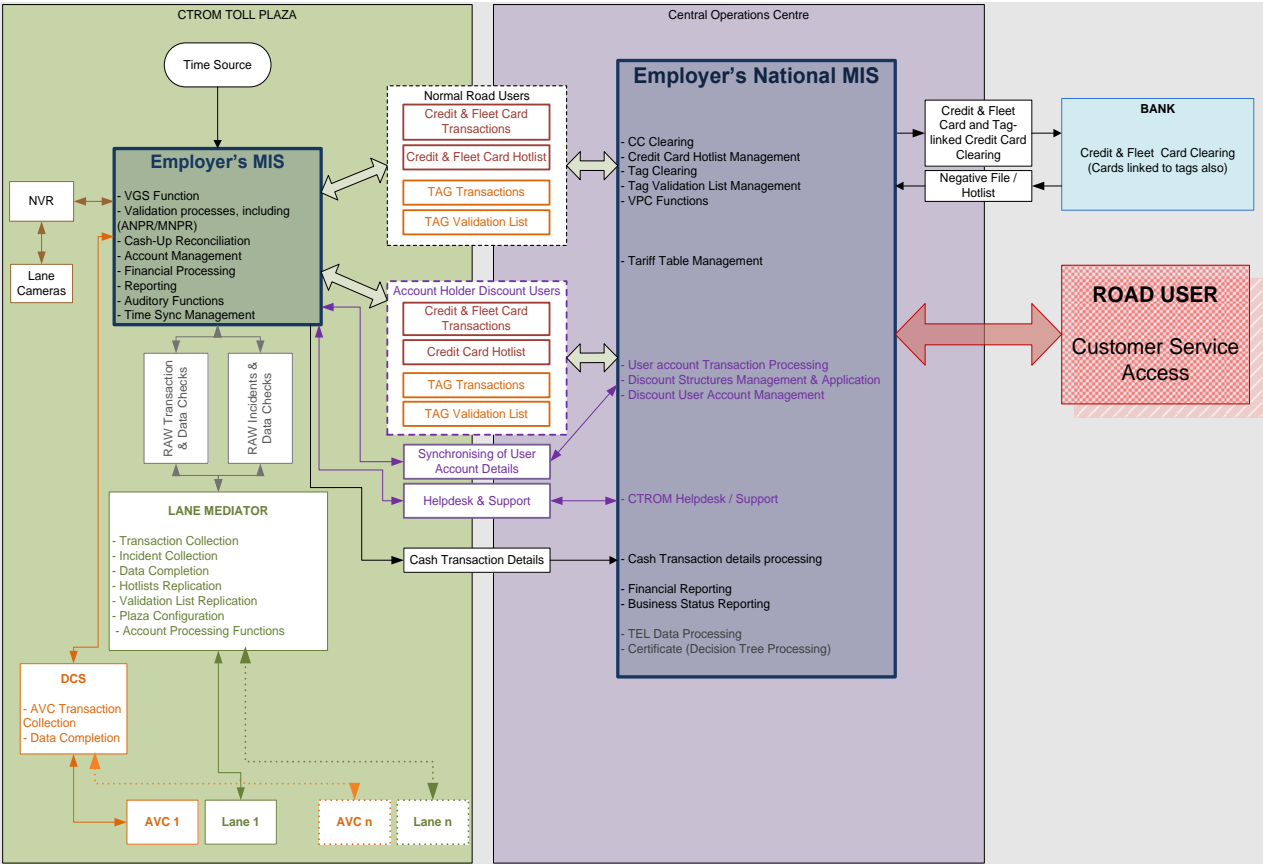


Figure 1: SANRAL MIS Interface

The Contractor must make provision for the testing and coordination function to facilitate the rollout of the SANRAL MIS and must make provision for staff training on the new SANRAL MIS.

C3.1.10 MENTORING OF TARGETED ENTERPRISE (NEW ENTRANT)

The Contractor is required to identify a sub-contractor/s who are Targeted Enterprise (TE) (New Entrant-Developing Operator) during the tendering stage, to train and develop, during the Operation Service Period. The Contractor must transfer all the skills related to all levels of toll operations and maintenance, in order for the TE (New Entrant) to be able to operate and maintain a toll plaza on his/her own.

The Contractor must provide the mentor role to the TE (New Entrant-Developing Operator) during the entire process from identifying the TE (New Entrant) to end the Operations Service Period when the TE (New Entrant-Developing Operator) has gained the necessary skills and experience for the TE (New Entrant) to ready be to tender for future toll operations and maintenance contracts.

The Contractor shall complete mentoring obligations with the following timelines:

Activity	Duration (months)
Identification and contracting	0-6 months
Training and mentoring	7-24 months
Operating under Mentoring	25-36 months
Operating independently	37 – end of contract

C3.1.11 MAINTENANCE OF DEDICATED ETC/SHESHA LANE SIGNS

There are Dedicated ETC/Shesha Lane signs currently installed in one (1) lane per direction at the Verkeerdevlei Mainline, Vaal Mainline, Grasmere Mainline and Brandfort Mainline Toll Plazas. The drawings and details of these signs are included in Part C29 of Volume 4. The Contractor is required to maintain these signs for the duration of the Operation Service Period. If these signs get damaged either through accident and/or due to extreme weather conditions, the Contractor is required to provide a rate to replace these signs. The Contractor to refer to the Schedule of Payment/Cost Matrix for the relevant payment items.

C3.1.12 SANRAL TOLL SYSTEM

The Employer intends to procure a national SANRAL Toll System.

The Employer will select the national SANRAL Toll System from one of the existing nominated subcontractors participating on any of the existing CTROM routes.

The Nominated Subcontractor, subcontracted through the Main CTROM Operations Contract, may therefore be selected as the national Nominated Subcontractor for the provision of the SANRAL Toll System. In such a case the Nominated Subcontractor may be required, at the rates tendered by the Nominated Subcontractor for the route, to replace the nominated subcontractors on the other SANRAL routes and deploy its own Toll System.

The deployment of the SANRAL Toll System will be triggered by the Employer. The SANRAL Toll System deployment will require full integration with the SANRAL MIS.

The SANRAL Toll System will include the following Toll System components;

- Lane System (TCC) and AVC
- DCS
- Back-office system (BOS) inclusive of interfaces and interface management subsystems.
- TCH payment gateway
- VGS
- QLS
- QL1

C3.1.13 ELECTRICAL AND MECHANICAL ASSET UPGRADES AND NEW ASSETS

The contract allows for the following electrical and mechanical asset upgrades and for new assets due to services risk, vandalism of utility infrastructure, or legislation changes. The Contractor shall price each asset as listed in Section B4000 and in the Schedule of Payments/Cost Matrix. The list below summarises the required work that the Contractor shall price for:

- B4001 – Uninterruptable Power Supply (UPS). The Contractor shall replace current faulty UPS systems at Brandfort and Grasmere Remote Ramps Toll Plazas. Provision was made for the replacement of other UPS units during the Operation Service Period (If triggered).
- B4003 – Air-conditioning and ventilation upgrades. The Contractor shall provide a tendered rate for the replacement of the existing fresh air systems at Grasmere and Vaal Mainline Toll Plazas. The Contractor shall replace the fresh air system with a new and high-efficiency system for energy avoidance. The Contractor shall also replace all the existing airconditioned units at Grasmere Mainline and Remote Ramps Toll Plazas with high-efficient split type air-conditioners to ensure energy avoidance. The Contractor must also replace the airconditioned units at the other Toll Plazas when required.
- B4004 – Lighting design. The Contractor shall provide the Employer's Representative with a complete and detailed lighting design as per areas indicated. The design will allow for replacement of all the outdated luminaires with new energy-efficient LED technology luminaires for better operation, control and energy avoidance.

- B4005 – Existing luminaires. The Contractor shall replace the existing luminaires based on the Contractors approved detail design provided under item B4004 with new LED technology luminaires.
- B4006 & B4007 – Lighting control system. To manage the lighting system to achieve the optimum control and energy avoidance, the Contractor shall provide and install controllers with software and licences as required by the Contract.
- B4008 – Road and area lighting masts repairs. The existing high mast luminaires ring shall be serviced or replaced. The Contractor shall provide tendered rates to replace or repair the damaged assets.
- B4009 – The Contractor shall provide a power meter to measure the entire Toll Plaza energy consumption before the Contractor starts with the asset upgrades or replacements. The meter should provide a base from where energy avoidance measures will be reported on.
- B4010 – Due to vandalism to utility electricity supply networks and load shedding, the Contractor shall provide tendered rates for continuous new prime generators to work as single or as parallel systems. The Contractor shall also increase maintenance frequency of generators that are continuously (24 hours /7 days a week) in operation to ensure system reliability. The Contractor shall appoint capable and experienced specialists for this function.
- B4011 – Diesel bulk storage. Due to the utility electricity supply risk, as mentioned under item B4010. The Contractor shall design and install new above-ground diesel storage tanks at Grasmere and Verkeerdevlei Mainline Toll Plazas.
- B4013 – Security cameras. The Contractor shall manage the risk of vandalism and theft of the Employers Assets. The Contractor shall supply, install and monitor wireless and battery-operated security cameras with motion detection or analytics. The cameras to monitor specific remote areas and can be relocated to other areas as required. Active control room shall be provided.
- B4014 – To ensure all systems are monitored and managed according to the specification, the Contractor shall implement a Supervisory Control and Data Acquisition (SCADA) system. The SCADA system to interface with existing (where possible) and new systems.
- B4015 – Photovoltaic (PV) with battery storage solution. Due to the current power supply issues from Johannesburg City Power and to become less dependent on generators and to mitigate power interruptions, including load shedding, the Contractor shall design and supply new PV and back-up battery storage solutions or use during peak periods and energy avoidance.
- B4020 – Energy Performance Certificate (EPC) for Buildings. The new mandatory regulations published by the Energy Department in December 2020 for energy performance certificates for buildings, requires that all buildings must display an Energy Performance Certificate. The Contractor shall therefore provide the required EPC within 12 months from the Commencement Date or before any major renovations.
- B4021 – Natural gas installation and other energy avoidance measures. The Contractor needs to investigate and provide tendered rates for each item listed in the Schedule of Payments/Cost Matrix in order to implement energy avoidance measures.
- B4023 - Earthing and lightning protection. The Contractor shall do a proper survey and testing of the complete installations at plazas. The Contractor shall on completion of his survey, submit a comprehensive and detailed report of his findings and recommendations to the engineer, listing in detail all the repairs required with the associated cost. The Contractor shall complete the repairs, re-test the complete installation and submit the results to the Engineer.

PART C3.2 PARTICULAR SPECIFICATIONS FOR TOLL OPERATIONS AND MAINTENANCE (SECTION B)

In certain Clauses the Standard Specifications allow a choice to be specified in the Scope of Work between alternative materials or methods of operations and maintenance and for additional requirements to be specified to suit a particular Contract. Details of such alternatives or additional requirements applicable to the contract and some additional specifications required for this particular Contract are contained in this section of the Scope of Works as particular specifications.

C3.2.1 PARTICULAR AMENDMENTS TO THE STANDARD SPECIFICATIONS FOR OPERATIONS AND MAINTENANCE OF CTROM PROJECTS: GLOSSARY OF TERMS AND GENERIC SCOPE OF WORKS

The number of each Clause as a Particular Specification in this section consists of Prefix PS, followed by a number corresponding to the number of the relevant Clause in the Standard Specification for Operations and Maintenance of CTROM Projects: Glossary of Terms and Generic Scope of Works, (Volume 2 Book 1a). The number of any new Clause which does not form part of any Clause in the Standard Specifications for Operations and Maintenance of CTROM Projects: Glossary of Terms and Generic Scope of Works (Volume 2 Book 1a), and which is included herein, is also prefixed by PS followed by a new number. Such new number flowed on the last Clause used in the relevant section of the Standard Specifications for Operations and Maintenance of CTROM Projects: Glossary of Terms and Generic Scope of work (Volume 2 Book 1a).

PART A: GLOSSARY OF TERMS

PS3 DEFINITIONS

“Base date”

The Base Date month shall be January 2023.

‘Control Centre’

The existing Control Centres are listed in the following table:

TOLL PLAZAS	CONTROL CENTRE
Verkeerdevlei Mainline	Verkeerdevlei Control Building
Vaal Mainline	Vaal Control Building
Grasmere Mainline	Grasmere Control Building
Grasmere Local Ramp	
Grasmere Remote Ramp	
Brandfort Mainline	Brandfort Control Building

“Customer Service Kiosk”

In this Contract references will be made to “Customer Service Kiosk” or “Customer Service Centre” which is the same facility.

“Lane Area”

The extent of the Lane Area for each Toll Plaza along the N1 South and R30 Tol Roads is detailed in the drawings included in Part A4 of Volume 4.

“SANRAL MIS”

Means the centralised management information system developed by the Employer through a 3rd party contract, that allows a Toll Agency to execute the administration, accounting, transaction processing, control and management functions of the toll collection process in a computerised way. The management information system, inter alia, exchanges information with the Nominated Subcontractor's Toll System to enable centralised information and control. In the case where ETC is catered for, the Nominated Subcontractor's Back Office shall be required to interface to the TCH, which shall manage all ETC accounts nationally.

“Road”

The road comprises of the following sections.

N1 SOUTH TOLL ROAD				
ROUTE	SECTION	FROM (KM)	TO (KM)	LENGTH (KM)
	15	28,0	68,9	40,9
	16	0,01	85,3	85,3
	16x	85,3	133,5	48,2
	17x	0,0	44,9	44,9
	17	67,2	101,6	34,4
	18	0,0	78,2	78,2
	19	0,0	53,6	53,6
	20	0,0	10,7	10,7
SUB-TOTAL				396.2

R30 TOLL ROAD				
ROUTE	SECTION	FROM (KM)	TO (KM)	LENGTH (KM)
P55	1	0,0	34,5	34,5
P1	1	0,0	44,3	44,3
P1	2	0,0	24,7	24,7
P3	1	0,0	13,3	13,3
P3	2	0,0	19,7	19,7
P4	1	4,0	11,2	11,2
P36	1	0,0	48,2	48,2
			Sub-total	191,9
			TOTAL	588,1

“Site for Operations and Maintenance”

The extent of the site for Operations and Maintenance shall include the existing Toll Plaza(s) on the N1South and R30 Toll Roads with associated Employer Facilities, as indicated in the drawings included in Part A4 of Volume 4.

“Toll Plaza”

The Toll Plazas that form part of this contract is listed in the following table:

TOLL PLAZAS	LOCATION
Verkeerdevlei Mainline	N1-16, km 38,0
Vaal Mainline	N1-18, km 68,4
Grasmere Mainline	N1-19, km 47,0
Grasmere Local Ramp	
Grasmere Remote Ramp	
Brandfort Mainline	P55-1, km 9.9

The extent of the Toll Plaza(s) on the N1 South and R30 Toll Road(s) is detailed in the drawings included in Part A4 of Volume 4.

“Toll Road”

The extent of the N1 South Toll Road shall be the National Road Reserve Boundaries from Sydenham I/C (km 28 Section N1-15) to Armadale I/C (km 10,7 section N1-20).

The extent of the R30 Toll Road shall be the National Road Reserve Boundaries from Glen Lyon (km 0,00, P55-1) to Kroonstad (km 48,2 – P36-1), via the R73 and the R34 routes.

C3.2.2 PARTICULAR AMENDMENTS TO THE STANDARD SPECIFICATION FOR OPERATIONS AND MAINTENANCE OF CTROM PROJECTS: GENERAL (VOLUME 2 BOOK 2a)

The number of each Clause as a particular specification in this section consists of the prefix PS followed by a number corresponding to the number of the relevant Clause in the Standard Specification for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a). The number of any new Clause which does not form part of any Clause in the Standard Specification for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a), and which is included herein, is also prefixed by PS followed by a new number. Such new numbers follow on the last Clause used in the relevant section of the Specification for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a).

PS2 PROJECT COMMENCEMENT: HANDOVER AND PROVISION OF DOCUMENTS

PS2.2 Employer's documents, drawings and software

PS2.2.1 General

PS2.2.1.2 As-built Drawings

A list of available As-built drawings for existing Toll Plaza(s) is contained in [Part C2 of Volume 4](#).

PS2.2.1.3 Equipment user manuals

A list of available equipment user manuals is contained in [Part C3 of Volume 4](#).

PS2.2.1.4 Equipment supplier's manuals

A list of available equipment supplier manuals is contained in [Part C3 of Volume 4](#).

PS2.2.1.5 Software and Software user manuals

The current software licences for the toll system are in the name of the Employer. The Contractor may utilise the existing software and associated licences.

A list of available software and software user manuals is contained in [Part C3 of Volume 4](#).

The list of current software contractors is included in [Part B1 of Volume 4](#).

PS2.2.2 Electrical Certificate of Compliance

The Electrical Certificate of Compliance for each of the existing Toll Plazas is contained in [Part C6 of Volume 4](#).

PS2.2.3 Asset Register

The provisional Asset Registers per discipline (i.e., general operations, civil, electrical and mechanical, toll collection lane equipment and MIS), are included in Part C4 of Volume 4.

The Contractor Asset Management System (AMS) must be able to print the Assets in a "rolled-up" format for ITIS submission and in "rolled-down", detailed format when submitting to the Employer Representative.

The existing Employer format of the Asset Management System (AMS) to be implemented by the Contractor is included in Part C5 of Volume 4.

The Contractor is to note that the Employer is currently reviewing the reporting format to ITIS and may change during the Operation Service Period.

PS2.3.2.1 Software Licenses

Replace this clause with the following:

“The Contractor and /or Nominated Subcontractor shall comply with the licencing obligations pursuant to Sub-Clause 1.11 [*Employer’s Use of Contractor’s Documents*] of the FIDIC DBO Conditions of Contract and the requirements regarding proprietary Software Licences and Escrow agreements as specified in the Standard Specifications for Operations and Maintenance of CTROM Projects: Toll Systems (Volume 2 Book 4a).

All Toll System and Sub-System Licenses shall be perpetual (no expiry date), transferable, non-terminable, non-exclusive, royalty-free and unrestrictive. Other Software from third parties and Software complimentary to the Toll System, but not specifically developed as a Toll System component, shall be valid until the end of the Contract, or, whichever is the latest, valid until the end of the next Contract’s design build period. All off the shelf Software with a license which gets renewed on a yearly basis and requires no specific toll related expertise to update, shall be valid until the end of the Contract period. Software which may influence the Toll System functionality when upgraded, such as operating system, shall be valid until the end of the next Contract’s Design Build period.

Software Descriptions	Perpetual	End of Contract	End of Contract +3 years
Toll System Software Developed by Contractor / System Integrator			
Back Office / MIS	X		
LSDU	X		
Back Office / MIS Interfaces	X		
Lane	X		
AVC	X		
DCS	X		
VGS	X		
QLS	X		
Other Software Complimentary to the Toll System			
Operating Systems			X
Anti-Virus Software		X	
Microsoft Office Products		X	
Helpdesk			X
Asset Management System		X	
Network Management Software			X
All firmware			X

All Licenses which will roll over into the next Contract period, shall be transferred to the Employer at successful commissioning of the respective equipment and/or systems or in the event of Contract termination.”

PS3 OPERATIONAL FOOTPRINT**PS3.1.2 Permanent and temporary customer service kiosks**

The permanent Customer Service Centre has been installed by the Employer and is currently, systematically managed by the Employer’s TCH Contractor, ETC (Pty) Ltd in the Administration Office in the control building of the following Toll Plazas:

The Contractor is required to provide staff and the first line technical support at the Customer Service Centre installed at each Toll Plaza.

- Verkeerdevlei Mainline
- Vaal Mainline
- Grasmere Mainline
- Brandfort Mainline

If instructed by the Employer, the Contractor is to identify area(s)/location(s) along the N1 south and R30 Toll Roads, for possible temporary Customer Service Centre(s). Provision for the cost related to the temporary Customer Service Centre(s), have been made in the Schedule of Payments/Cost Matrix.

PS3.2.1 Conventional and ORT Footprint

The Contractor may use the control building at the existing Toll Plaza/s as the Central Operations Centre for the project. However, should the Contractor choose to use any other venue as a Central Operations Centre, the costs related to this facility shall be to the Contractor account for the duration of the Contract period.

If instructed by the Employer, the Contractor is to identify area(s)/location(s) along the N1 South and R30 Toll Roads for possible temporary Customer Service Centre(s). Provision for the cost related to the temporary Customer Service Centre(s) have been made in the Schedule of Payments/Cost Matrix.

PS3.4.1.2 (b)

If instructed by the Employer, the Contractor is to identify area(s)/location(s) along the along the N1 South and R30 Toll Roads for possible temporary Customer Service Centre(s). Provision for the cost related to the temporary Customer Service Centre(s) have been made in the Schedule of Payments/Cost Matrix.

PS4 TOLL PLAZA EXPANSIONS AND UPGRADES, ROAD IMPROVEMENTS AND OTHER IMPROVEMENTS

PS4.1.1 The Toll Plaza expansion schedule

The existing Toll Plazas expansion schedule are provided schematically in Part C7 of Volume 4.

The proposed reconfiguration of existing Toll Plazas with mixed Manual/ETC and Dedicated ETC lanes are also indicated in the figures in Part C7 of Volume 4.

PS4.1.1.3(J)

The queuing theory function shall be made available on request.

PS4.4.1 Road Improvements Schedule

PS4.4.1.2

The road improvement schedule planned for the duration of the Operations Service Period is detailed in the Clause C3.1.5 of this document.

PS4.5 Other Improvements

Add the following Clause:

“PS4.5.2 Toll Plaza Security Upgrade and Refurbishment

The Employer is reviewing and is considering upgrading the Employers Facilities to improve the Toll Plaza security and facilities.

The Contractor is to make provisions for the impact these improvements will have on the Contractors “day to day” operations.

Please note, the Employer planned improvements to security does not relieve the Contractor responsibilities as stated in Clause 15.4 in the Standard Specifications for Operations and Maintenance for CTROM Projects: General (Volume 2 Book 2a)."

PS5 ESTABLISHMENT

PS5.1.1 Contractor's General Establishment Responsibilities

The Contractor will have one establishment phase in this Contract which is defined as follows:

Design Build – Section 1: The Establishment Period at all the Toll Plaza/s on the N1South and R30 Toll Roads is expected to be the 6-week period ending on 1 June 2023.

PS5.1.3.1(d)(i)

"The minimum traffic management aids to be provided by the Contractor are listed below the table:

Traffic Management Aids	Minimum Required
Verkeerdevlei Toll Plaza	
Emergency Luminaries for Control Building	10
Emergency Luminaries for Toll Booths	12
Stop-watch	1
Three-cell torch	3
Day glow orange traffic cone	30
Lane open/closed signs	12
Reflective safety vests	10
Reflective safety sleeves	6
Reflectorized barricades	8
Dry cell battery operated amber flashing units	12

Traffic Management Aids	Minimum Required
Vaal Toll Plaza	
Emergency Luminaries for Control Building	7
Emergency Luminaries for Toll Booths	10
Stop-watch	1
Three-cell torch	2
Day glow orange traffic cone	25
Lane open / closed signs	10
Reflective safety vests	10
Reflective safety sleeves	6
Reflectorized barricades	6
Dry cell battery operated amber flashing units	10

Traffic Management Aids	Minimum Required
Grasmere Mainline and Local Ramps	
Emergency Luminaries for Control Building	10

Traffic Management Aids	Minimum Required
Emergency Luminaries for Toll Booths	20
Stop-watch	1
Three-cell torch	3
Day glow orange traffic cone	50
Lane open / closed signs	20
Reflective safety vests	10
Reflective safety sleeves	6
Reflectorized barricades	8
Dry cell battery operated amber flashing units	20

Traffic Management Aids	Minimum Required
Grasmere Remote Ramp	
Emergency Luminaries for Toll Booths	2
Three-cell torch	2
Day glow orange traffic cone	10
Lane open / closed signs	2
Reflective safety vests	4
Reflective safety sleeves	4
Reflectorized barricades	2
Dry cell battery operated amber flashing units	2
Emergency Luminaries for Toll Booths	2
Three-cell torch	2

Traffic Management Aids	Minimum Required
Brandfort Toll Plaza	
Emergency Luminaries for Control Building	10
Emergency Luminaries for Toll Booths	8
Stop-watch	1
Three-cell torch	2
Day glow orange traffic cone	25
Lane open / closed signs	8
Reflective safety vests	10
Reflective safety sleeves	6
Reflectorized barricades	6
Dry cell battery operated amber flashing units	8

Traffic Management Aid Specifications

Day-glow orange traffic cones (750mm) each with one full reflective sleeve about 150mm long in sufficient numbers so that when placed at 3m distance they demarcate one separate Lane the length of

the Toll Plaza. Such cones shall, when not in use, be stored in a place which may be accessed easily by the Responsible Person.

The Contractor shall provide **emergency luminaries** that can be fixed or portable to operate the Toll Plaza under emergency condition until the power is restored to the Toll Plaza or to a specific area. The luminaries shall provide sufficient luminance (LUX) for the Contractor to safely operate the Toll Plaza or specific area until the power is restored. The Contractor shall provide a minimum of 25 LUX vertical and horizontal in the toll booth to service the road User and 50 LUX vertical and horizontal in the control building. The Contractor may need to install or provide more than one luminary to obtain the minimum illumination for a specific area.

Dry-cell battery operated **amber flashing units** suitable for hazard warning and sufficiently bright to be conspicuously visible up to a distance of 250m during the hours of darkness, in numbers sufficient for the bullnose of each toll island plus reserves. The unit shall have bi-directional lenses, be of robust construction using impact resistant materials, and shall have the flashing light mounted on the battery compartment required to power the light.

Reflective safety equipment for personnel working in the toll lanes and/or directing traffic or assisting road Users in the lanes.

(i) Employees working in the toll lanes cleaning inter alia toll booths, barriers:
Dayglow orange safety vest with three (3) yellow reflective chevrons on the front and back of the vest that also extend around the side of the vest.

(ii) Employees working in the roadway in front of the toll lanes or in the lanes assisting road Users with disabled vehicles or with the completion of documentation such as invoices:

Dayglow orange safety vest with three (3) yellow reflective chevrons on the front and back of the vest that also extend around the side of the vest.

Contractor's personnel working in the toll lanes or on the roadway directing traffic and/or any other person visiting or inspecting the lane area:

Dayglow safety vest as specified above, plus;

Dayglow orange safety sleeves with three transverse yellow reflective stripes extending around the sleeve; and

Two three cell torches.

Stop-watch, a hundredth of a second stopwatch and an alarm clock that can be set accurately to one minute of an hour.

Lane Open/Closed Signs, are to be free-standing and resistant to gusting winds up to 120km/hr. The sign is to be reversible, with one side indicating "Lane closed" by means of an R3 traffic sign, and the other side indicating "Lane open" by means of an R405/6 traffic sign.

The Contractor shall provide all necessary equipment relating to fire extinguishers as per the requirements of the applicable Authority."

Median Barriers to be installed at Grasmere Toll Plazas.

Vaal, Verkeerdevelei and Brandfort Mainline Toll Plazas are equipped with median barriers on either side of the Toll Plaza lane area.

These barriers act as a safety measure to prevent motorist from entering a toll lane which is operating in the opposite direction to the motorist direction of travel, and thereby preventing possible head-on collisions with the traffic arriving at the Toll Plaza and are from the other direction.

The existing barriers consist of the "Blue Key Guide Curb LN60 and the Leitboy IV delineator" or similar product, installed in the manner described below.

The last twenty (20) meters of barriers, furthest from the Toll Plaza lane area, are to be fixed to the road surface and the balance of the barriers are to be loose in order to move the barriers to allow/prevent traffic entering a reversible toll lane when the direction is changed.

PRODUCT TYPE	DESCRIPTION
Guide Curb LN60 or similar	1000 x 270, yellow in colour, interlocked with adjacent unit.
End piece A	440 x 270, yellow in colour, interlocked with adjacent unit.
End piece B	440 x 270, yellow in colour, interlocked with adjacent unit.
Leitboy IV or similar delineator	Fitted with three (3) meter class III red and white chevron prismatic material. Delineators are to be located every three (3) meters.
Reflective arch yellow with four (4) cat eyes	Located every three (3) meters.

The barriers on the control building entrance gate side of the Toll Plaza must have a minimum gap of five (5) meters, to allow vehicles to enter the Toll Plaza building area.

These barriers will form part of the Employer's Equipment and shall be managed and maintained by the Contractor and returned to the Employer at end to the Operation Service Period.

The extent of the barriers is shown on drawings that are included in Part C26 of Volume 4.

PS5.5 Contractor's Business Continuity Plan Responsibilities

The Contractor is to provide a Business Continuity Plan which must be included in the list of documents to be provided during the establishment period.

PS6 OPERATIONS PERIOD – TRANSACTION MANAGEMENT AND PROCESSING

PS6.1.1.3

The Vehicle Classification Structure that has been published in the latest Government Gazette is as follows:

CLASS	TYPE OF VEHICLE	DESCRIPTION
1	Light	Light vehicle are motor vehicles, other than heavy vehicles, with or without a trailer and including motorcycles, motor tricycles and motor cars.
2	Medium Heavy	Medium heavy are heavy vehicles with two (2) axles.
3	Large Heavy	Large heavy are heavy vehicles with three (3) or four (4) axles.
4	Extra Large Heavy	Extra-large heavy are heavy vehicles with five (5) or more axles.

The Contractor is to note that the Employer is considering and may add an additional toll class for motorcycles to the existing vehicle classification structure during the Operation Service Period.

Replace clause 6.2.2.1 with the following:

"6.2.2.1 The Contractor shall supply, install and commission an appropriate digital video grabbing system (VGS) with a camera in each Toll Lane, and as specified in the Standard Specifications for Operations and Maintenance of CTROM Projects: Toll Systems (Volume 2 Book 4a). The system shall be compliant and operational no later than 3 (three) months after the Commencement Date. The Contractor shall Operate and Maintain the system for the Operation Service Period.

- 6.2.2.2 The Contractor shall use the VGS to manage reportable incidents that occur at the Toll Plaza. The VGS shall provide the Employer and Employer Representative with an audit tool to verify operational activities of the Contractor.
- 6.2.2.3 For Toll Lanes that operate Manual Mode, the Contractor shall ensure that the VGS records on a continuous basis for those lanes.
- 6.2.2.4 The Contractor shall record digital images continuously on a storage device.
- 6.2.2.5 A back up of the triggered Incidents and linked images shall be performed on a weekly basis.
- 6.2.2.6 The Contractor shall ensure that the Employer and Employer Representative shall have full access to this data if so required.
- 6.2.2.7 The VGS and ANPR lane camera shall include the following functions:
- Record video from selected cameras on NVR that are time synchronised with the MIS/BOS
 - Provide ANPR cameras licence data and text in real-time to the TCC
 - Provide incident images to the BOS requested by the BOS Incident Control System
 - Provide VGS status information to the BOS health monitoring system (BOS level incident generation)
 - Links the following to images, including Transaction Framing:
 - BOS transactions
 - BOS incidents
 - Vehicle number plate and ANPR data
 - Video motion, over the AVC area, that are not associated with BOS transactions in closed and open lanes
 - Queue analytics
 - BOS /VGS interface, including Transaction Framing: The interface shall include
 - BOS timeslice/hourly audit summaries which shall be used by VGS to manage the video import process e.g. trigger import when all data for a specific timeslice is available
 - BOS transactions and Incidents: Import all transactions and incidents. VGS events (passages) shall be created for each transaction. Additional VGS events shall be created for motion that do not match an existing BOS transaction. VGS shall use the AVC first axle and the ETC tag detected incident and/or light curtain (or other sensor input) as a reference point in Transaction Framing process
 - Transaction audit trail data will be imported and displayed by VGS as part of the VGS event
 - Updates to transaction data will be reflected by VGS and highlighted to auditors
 - Vehicle number plate data captured per transaction by VGS
 - Perform ANPR on images during the video import and add ANPR data to VGS event
 - Time synchronization interface to ensure that the times on the VGS, including NVR's, are within 200 milliseconds of the BOS and TCC times
 - Feedback to BOS that includes:
 - VGS status for
 - Server
 - NVR
 - Camera
 - Importer
 - Time sync interface
 - VGS software versions and configuration data
 - Provide an audit interface that allows the auditor to:
 - Run queries for a combination of the following:
 - Date and time ranges, including times relative to a specific reference point
 - Selected lanes and or plazas
 - Method and means of payment e.g., cash, credit card, violation or Tag
 - Exceptions linked to BOS incidents or VGS exception generated from an analysis of the BOS data and NVR video. These exceptions include but are not limited to (Selection of all, only selected or NOT selected or No Exceptions):

Class discrepancies, positive and negative
 Abnormal passage: Run through, roll-back, vehicle standing, reverse entry, reverse roll-back, wrong direction, excessive axles (>10)
 Number plate discrepancies: Account, registered TCH VLN and card mismatches
 Exempt/Credit granted voucher: Check the number plates, captured during incident control for a voucher, against the ANPR value
 Card/Tag abuse: Usage exceptions, pass back
 Collector exceptions: Cancel classification, MVC timeout, Simulate button pressed, cancelled classification, cancelled validation (system or collector)
 Equipment exceptions: Software restarts for lane or AVC, AVC sequence error, Panel door open (AVC or LC)
 Exceptions detected by VGS: Video without transaction, Transaction without video, Number plate mismatch, possible tailgater and pass back.
 Tag, card and transaction numbers
 Road user group e.g., nominal, free passage or local users
 Vehicle number plate
 Vehicle class including MVC, AVC, SVC
 AVC status message-based query including type and number of axles
 Card source e.g., SCR, Plaza or ETC
 Shifts and collectors
 Classifications, including axle types, and Class discrepancies (SVC, MVC and AVC)
 Transaction source (VGS, lane or plaza)
 Audit status
 Highlight and allow the auditor to view an audit trail of changes to a transaction e.g., inserted voucher number, class or MOP changes and supervisor comments
 Exception cause allocation
 Make and record audit inputs including:
 Assigning a cause and corresponding sub cause to exceptions detected by the toll system or VGS including Operator, road user, VGS, Toll System or Operational.
 Input text comments to explain exception
 Option to flag exceptions,
 To be kept
 As severe
 Ignore i.e., false alarm
 Create additional exceptions or events (additional vehicle not accurately detected by the BOS)
 Assign video to BOS manually created transactions. Match manually created data with Video without Transaction event e.g., if the transaction is created after VGS imported the BOS data.
 Log auditor inputs and make the audit inputs visible per event for higher level auditors
 Select the appropriate audit action, and the completion status of actions, based on the findings of the exception audit
 Allow the batch auditing of certain types of exceptions. For some types of audits batch auditing shall not be allowed.
 Generate reports, including:
 Export CSV data and tabular formatted Excel spreadsheet for queried events and reports
 Detail exception report for queried events and exceptions
 Audit state report
 Traffic reports
 Accuracy reports, including AVC class and count accuracy. Include functionality to handle and audit raised axles
 ANPR accuracy
 Identifier defaulters report
 Fraud investigation report
 Export a data pack based on query and including images.
 NVR image export based on selected cameras and periods.
 BOS Incident and transaction-based query and audit tool. This include displaying incident related images and retrieved images to cover the gaps between retrieved transaction and incident images. This tool is used to view and audit

activities and passages around certain reported incidents e.g., panel door open or AVC critical mode.
 View data and image status
 Write data, images and video to media
 VGS camera status viewer
 Include maintenance functions i.e. Back-up and archive
 VGS user manual
 Queue audit functionality. This includes generating audit events for potential queues based on traffic flow rates (parameter driven)

PS7 OPERATIONS PERIOD – FINANCIAL MANAGEMENT

PS7.1.5.2 User Account Charges

Contractor Magnetic Card issue and replacement	R 54,00
Provision of one detailed transaction listing per account per month via e-mail	Free of charge
Provision of detailed transaction listing hardcopy (per month)	R 10,00
Posting of statements and Tax Invoices via e-mail (per month)	Free of charge
Posting of statements and TAX invoices via surface/air mail	R 20,00
Provision of a copy TAX invoice	R 5,00

Add the following subclause:

PS7.1.5.3

The above User Account Charges might be adjusted by the Employer during the Operation Service Period.

PS7.1.5.4

All the remaining Local Employer User Accounts, employing ISO Mag-stripes as identifiers are to be migrated to the Employer Central User Accounts via the TCH, employing the SANRAL tags as vehicle identifiers. The Contractor is to finalise the migration of all Local User accounts within six (6) months from the Commencement Date of the Operations Service Period. The Contractor is to liaise with the local account holders individually to facilitate timeous migration to Employer Central Account (TCH). Any Pre-Paid User Account balance is to be refunded to the Account holder but preferably transferred to the User TCH Account.

The Employer tag and account management shall be managed in accordance with the TCH and Customer Service Centre policies and procedures, as amended during the Operation Service Period.

All charges include VAT.

PS7.1.7 Exempt User's Management

The Contractor shall accept exemptions granted to the following Exempt Users:

South African National Defence Force (SANDF).
 South African Police Services (SAPS).

Historic monthly data for all the Exempt Users for the existing Toll Plazas are contained in) Part C20 of Volume 4.

PS7.1.11 Discount

The Discount types that have been published in the latest Government Gazette for the existing Toll Plaza/s on *the N1 South and R30 Toll Roads* are:

Local User discount at Verkeerdevlei Mainline, Grasmere Mainline, Grasmere Local, Grasmere Remote Ramps (North and South) and Brandfort Mainline

Local Public Transport Operator discount at Verkeerdevlei Mainline and Brandfort Mainline Toll Plazas.

Frequent User discount at Verkeerdevlei Mainline, Grasmere Mainline, Grasmere Local, Grasmere Remote Ramps and Brandfort Mainline Toll Plazas.

PS7.1.11.4 Local User Discounts

The current Local User tariffs are applicable to all classes to the registered bona fide residents, employers or employees located within an approved local user area for Verkeerdevlei Mainline, Grasmere Mainline, Grasmere Local Ramps, Grasmere Remote Ramps and Brandfort Mainline Toll Plaza(s).

The current Local User tariff are as follows:

TOLL PLAZAS	APPROVED LOCAL USER AREA	CLASS 1	CLASS 2	CLASS 3	CLASS 4
Verkeerdevlei	Verkeerdevlei	R19.10	R38.00	R58.00	R77.00
Gasmere					
Mainline	Evaton	R3.50	n/a	n/a	n/a
	Sebokeng				
	Vanderbiljpark				
Local and remote ramps	Ennerdale	R2.10	n/a	n/a	n/a
	Lenasia South				
	Brandfort Mainline Area A	R5.10	R10.00	R16.00	R22.00
R30/R730/R34	Brandfort Mainline Area B	R10.10	R20.00	R31.00	R43.00
	Brandfort Mainline Area C	R20.30	R41.00	R61.00	R86.00

The details of Local User tariff are included in a typical information flier included in Part C15 of Volume 4.

The historic monthly data for the Local Users discounts is included in Part C20 of Volume 4.

PS7.1.11.5 Local Public Transport Operator Discounts

The current Local Public Transport Contractor tariffs are applicable to Class 1 to the registered bona fida Local Public Transport Contractors operating with an approved Local User Area for Verkeerdevlei Mainline and Brandfort Mainline Toll Plazas. The current Local Public Transport Contractor tariff are as follows:

TOLL PLAZAS	APPROVED LOCAL USER AREA	CLASS 1	CLASS 2	CLASS 3	CLASS 4
Verkeerdevlei	Verkeerdevlei	R19.20	n/a	n/a	n/a
R30/R730/R34	Brandfort Mainline Area A, B, C	R9.50	n/a	n/a	n/a

The details of Local Public Transport Operator Tariffs are included in a typical flyer included in Part C15 of Volume 4.

The historic monthly data for local Public Transport discounts is included in Part C20 of Volume 4.

Currently there are no Local Public Transport Operator tariffs at any of the other Toll Plazas on the N1 South Toll Road.

PS7.1.11.6 Frequent User Discounts

The Frequent User Discounts are currently only available at the Verkeerdevlei Mainline, Grasmere Mainline and Brandfort Mainline toll plazas and applicable to toll Class 1 vehicles only for Grasmere mainline and Toll Classes 1, 2 and 4 for Brandfort Mainline and Verkeerdevlei Mainline Toll Plazas.

Currently there are no local Public Transport Operator tariffs at any of the existing Toll Plaza(s)

The Frequent User may deposit money into a pre-paid account based on the user expected usage or register a valid credit card (Master and Visa) or a valid Fleet Management card as a Frequent User Card or a tag.

The details of Frequent User Discount scheme are included in a typical information flier included in) Part C15 of Volume 4.

The discount will be applied, according to the total number of passages completed over a period of one (1) calendar month.

The Frequent User Discounts currently applicable at Verkeerdevlei Mainline, Grasmere Mainline and Brandfort Mainline Toll plazas on the N1 South and R30 Toll Road are as follows:

For 20 to 39 trips per single card – 20% discount on the total number of trips
For 40 or more trips per single card – 40% discount on the total number of trips

The historic monthly data for the frequent User discount is contained in Part C20 of Volume 4.

The Employer is considering changing the current Frequent User Discount structure to be similar to the Gauteng Open Road Tolling discount structure. At this stage, it is envisaged that there will be a minimum three (3) discount “steps” such as:

From 0 to 10 trips – full tariff.
From 11 to 20 trips – 10% discount.
From 21 to 30 trips – 20% discount.
Etc.

Should this new Frequent User Discount structure be implemented during the Operation Service Period, the Contractor shall either be compensated for any shortfall, or shall reimburse the Employer for any excess based on a monetary difference between the tendered discount amounts and the actual revised discount amounts through a Works Authorisation and processed through the monthly payment certificate.

The Contractor is required to take over all existing pre-paid accounts. The Contractor at the Commencement Date of the Operation Service Period will be paid the sum of all existing pre-paid Frequent User Account balances from the Employer. Likewise, at the end of the Contract, the Contractor will be required to pay over to the Employer the sum of all existing Frequent User Account balances. The Contractor is to note that the balance of the pre-paid Frequent User Account balances at end of each month will be adjusted in the payment model monthly in the payment model

PS7.1.14 Links to the Banks

PS7.1.14.1(b)

A copy of the existing Merchant Agreements for the approved banks are included in Part C12 of Volume 4.

The Contractor is to note that the toll system is generating and submitting “rolled-down” (individual) transactions to the various banks each working day and payment is made to the Employer joint account three (3) days later.

The Employer joint accounts for all the existing Toll Plazas are held with ABSA Bank and the Contractor will be responsible for all related bank charges, where provision has not been made for in the Schedule of Payments/Cost Matrix.”

PS7.1.15 Payments Received and Transfer to the banks

PS7.1.15.8

Details of the safe facilities at the existing Toll Plazas are as follows:

TOLL PLAZA CONTROL BUILDING	SAFE DETAILS AND LOCATION		
	CASH UP ROOM	ADMINISTRATION OFFICE	SUPERVISOR' OFFICE
Verkeerdevlei Mainline	Chubb (Category II) with dual key and password check. Chute type depositing facility where monies will be stored until banked.		1. C No 7474 (Vault). 2. Chubb Safe Category 2 (small safe).
Vaal Mainline	Chubb (Category III) with time delay, retainer key and chute type depositing facility where monies will be sorted until banked.	Strong Room/Archive Safe.	2 x Day Safe.
Grasmere Mainline	(Category IV) with time delay, retainer key and chute type depositing facility where monies will be sorted until banked. Day Safe: Serial No CR3812	Strong Room/Archive Safe - Manufacturer; Austin Safe Co. (Pty) LTD Serial No - 88.1250.	Chubb Strong Room with dual key and password check.
Brandfort Mainline	Category III type door with a 4-Wheel keyless combination lock with dial check lock and 2 x 8 level key locks and dilate type deposit where monies can be stored until banked.		Small Chubb Safe "inside Chubb Strong Room" with dual key and password check.

The Contractor is expected to take note, during pre-arranged Toll Plazas inspections, of the existing safe facilities provided at the existing Toll Plazas during the tender period.

PS7.2.2 No-Payment Policy

Historic monthly No-Payment and run-through violation data for the existing Toll Plazas are contained in Part C20 of Volume 4.

PS10 OPERATIONS PERIOD – TRAFFIC MANAGEMENT**PS10.1 Provision of Available Traffic Data****PS10.1.1.1 (a) Traffic Data for Existing Toll Roads**

The following information has been included in Volume 4:

MIS hourly traffic per Toll Class per Virtual Plaza.

Historic daily AVC, MIS, TEL1 and TEL2 traffic per toll class per virtual plaza.

Daily traffic for the alternative route, recorded by TEL stations.

Hourly traffic for the alternative route, recorded by the TEL stations.

Average monthly daily traffic data per toll class processed by each Virtual Toll Plaza and alternative route.

PS10.3 Queue Length Specification

PS10.3.4.1

Delete this clause and replace with the following:

“The Contractor shall contact the Employer as stated in subclause 10.3.4.3 before implementing Queue Line 2 “open boom” procedure.”

PS10.3.4.2

Delete the sentence “... a line defined ..., as described above,” and replace with “a line 500m or any other distance designated by the Employer, from the Toll Plaza lane bullnoses,”

PS10.3.4.3(e)(ii)

All references made to “DVSS” must be deleted and replaced with “VGS”.

PS10.3.4.3(f)

All references made to “DVSS” must be deleted and replaced with “VGS”.

PS10.3.5.1 and PS19.3.5.2

Delete these subclauses and replace with the following:

“The location mutual Queue Line 2 shall be a line 500m or any other distance designated by the Employer, from the Toll Plaza lane bullnoses.”

PS10.4 Digital Queue Length Monitoring System (QLS)

PS10.4.1.1

All references made to “DVSS” must be deleted and replaced with “QLS”.

PS10.4.1.2

All references made to “DVSS” must be deleted and replaced with “QLS”.

PS10.4.1.3

All references made to “DVSS” must be deleted and replaced with “QLS”.

PS10.4.1.5

The second line to be modified to read as follows:

“... the resulting penalties will be levied monthly.”

PS10.4.1.6

All references made to “DVSS” must be deleted and replaced with “QLS”.

PS12 OPERATIONS PERIOD – TAG MANAGEMENT**PS12.2.1 Minimum Tag stock levels**

The Contractor is to take over the current stock of tags at the Toll Plazas and must ensure that the following minimum tag levels, including brackets for light and heavy vehicles, brackets for motorbikes are maintained for the duration of the Operation Service Period:

Verkeerdevlei Mainline	-	300 tags (complete)
Vaal Mainline	-	50 tags (complete)
Grasmere Mainline	-	300 tags (complete)
Brandfort Mainline	-	300 tags (complete)

The minimum tag and peripheral stock levels may be adjusted by the Employer during the Operation Service Period.

PS13 EQUIPMENT FUNCTIONALITY, INTERFACES AND AGREEMENTS**PS13.1.1**

Add the following:

“The Contractor shall assure full technical responsibility for the design, supply, installation, integration, testing, operation, maintenance and support of the tolling system as required in The Standard Specification for Operations and Maintenance of CTROM projects: Operations (Volume 2 Book 2a), The Standard Specifications for Operation and Maintenance of CTROM projects: Toll System (Volume 2 book 4a) and Standard Specifications for Operations and Maintenance of CTROM projects: Electronic Toll Collection (Volume 2 book 5). The Contractor to ensure that the tolling system and all peripheral services functions as required at all times.

The Contractor to ensure that the performance requirements and Operational Business Rules are adhered to as described in the Standard Specifications for Operations and Maintenance of CTROM Projects (Volume 2 Book 6a and 8a) respectively.”

PS13.2.2.1 Contractor (TA) – TCH Interface

Add the following:

“The interfaces between the Toll Authority (N1 South and R30 Toll Roads) and the TCH has been successfully implemented to serve the base requirements for processing tag transactions on all the existing Toll Plazas from the Commencement Date of the Operation Service Period.

The N1 South TCH payment gateway, the module that handles the interface between the TCH and the Toll System, is currently hosted off-site by *Vodacom Business*. The Contractor shall implement the TCH payment gateway in the Server room at the *Grasmere (or alternative more appropriate plaza)* plaza. The Contractor shall ensure the necessary interfaces, links, firewalls, configurations, and hardware to accommodate the Payment gateway. The Contractor shall ensure that the primary and secondary links capacity between the Nx x/y and the TCH can accommodate the direct link between the Payment Gateway and the TCH.

The N1 South and R30 toll plazas currently use on wireless WAN connections to interconnect and provide external access. The aim is to use the fibre running along the N1 South, to connect the all the N1 South plazas to an Operation centre at Grasmere plaza (or alternative more appropriate plaza). A wireless WAN will be required to link the Bradford Plaza to the Operation Centre. The aim is to establish a fibre link between the N1 South and the TCH, utilising the Liquid and GORT networks. This will require the connection of the Liquid N1 South network to the GORT network at the SANRAL offices. The Contractor shall implement the necessary interfaces, links, firewalls, configurations, and hardware to accommodate

the establish this fibre connection as the primary network between N1 South and TCH, The Contractor shall provide the TCH Contractor with the required configuration and information and completing the commissioning process of the primary TCH link via the fibre link.

The interface between the Customer Service Centre (CSC) installed in the Administration Office on each of the existing Toll Plazas on the N1 South and R30 Toll Roads and the TCH has been successfully implemented and the Contractor is to operate these CSC stations from Commencement Date of the Operation Service Period.”

PS13.2.3.1 Contractor (TA) – TCH

Add the following”

“The Contractor shall comply to the TA/TCH a Service Level Agreement (SLA) with the Operator of the TCH of which a copy of the latest draft SLA is included in [Part C12 of Volume 4](#).

The Contractor is to note, that the Employer is currently in the procurement process to appoint a new Operator for the TCH and the Contractor may need to sign a new SLA with the new appointed TCH Operator, if required.

PS13.2.3.3 Merchant Agreements with Banks

A description of the current toll system and a description of the current ISO Bank Card system and associated procedures are provided in [Part C10 and C11 of Volume 4](#) respectively.

The Contractor shall accept Master and Visa cards and these transactions must be processed by FNB or any other Bank, that may be appointed by the Employer during the Operation Service Period.

The Contractor shall accept all the Fleet Cards issued by the Fleet Card Association and the transactions must be processed by the relevant approved Fleetbank, such as:

Stannic.

First Auto.

Bankfin.

Nedfleet.

Zimele.

Any other/new fleet card introduced by the members of the Fleet Card Association.

Copies of the existing Merchant Agreements signed between the Employer and FNB and with the fleet Banks are included in [Part C12 of Volume 4](#).

The Contractor is to note that the Employer is currently reviewing the existing Merchant Agreements with Banks and may change during the Operation Service Period.

In the event of there being differences between the Merchant Agreement and the Contract requirements, the Merchant Agreement shall take precedence.

The Contractor shall not be required to accept or process Diner Club Cards or American Express Charge Cards.

The Contractor to note that should the motorist encounter difficulty to conclude a toll transaction by means of the standard payment options, such motorist shall be allowed to pay for toll tariffs by means of any ISO Credit or Debit Card accepted by the mobile speed point at each Mainline Toll Plaza on the N1 South and R30 Toll Roads. The existing mobile speed point equipment at each Mainline Toll Plaza is provided by the current Employer’s Banker, ABSA.

Add the following Clause:

“PS13.2.3.5 EMV Integrated Circuit Card Requirements

“It is envisaged that chip card technology may be implemented during the Operations Service Period by the banks. To allow for payment system interoperability, all payment systems will have to comply with the “EMV Integrated Circuit Card” specifications. This requirement shall be dealt with as a new requirement

in terms of Volume 2 Book 4a. The new requirement process shall be used to ensure that all systems if supplied and installed, comply with EMV specifications for payment systems. Relevant details on specifications and implementation dates can be obtained from the following website: www.emvco.com

The Contractor shall be responsible for the cost of software and hardware modification to comply with the relevant EMVCO requirements. The Contractor shall install two EMV compatible contactless card readers per lane fitted outside each booth, just before the payment window. The bottom reader shall be at a level accessible from the driver seat of a light vehicle. The top reader shall be installed at a height accessible from the driver seat of a class 4 heavy vehicle. The two readers shall be positioned to optimise the driver access for most types of vehicles. The card reader units shall be designed for outside use and have at least IP 65 rating.

The reader shall be equipped with clear status LEDs to indicate, power on (white), success full read (orange), successful payment/Boom open (green) and unsuccessful payment/card rejection(red).

A Provisional sum is allowed in the Schedule of Payments/Cost Matrix for this purpose. If triggered the Contractor shall implement the EMV requirements to ensure compliance to the relevant EMV specifications.”

PS14 ASSET MANAGEMENT

PS14.3.2 Damage to Employer’s Facilities (Excluding Toll and Communication Systems)

The first sentence of this Sub-clause to be modified to read as follows:

“PS14.3.2.1 recorded by the Contractor in terms of Clause 14.3.5, all depending....”

PS14.3.2.3 Urgent Repair

Add the following subclauses:

- (c) “The Contractor shall obtain quotations for the Works from specialists who are SMME (BE), registered with South African Revenue Services (SARS) as VAT Vendors and a Letter of Good Standing to be provided.
- (d) The Contractor shall proceed with urgent repairs and notify the Employer and provide motivation in the event that the Contractor cannot meet the requirements under (c).”

The values referred to in Clauses 14.3.2.3(a) and (b) shall be R250,000 (two hundred and fifty thousand Rand) for each Clause.

PS14.3.2.4 Repair other than Urgent Repair

Add the following subclauses:

- (c) “The Contractor shall obtain quotations for the work from specialists who are SMME (BE), registered with South African Revenue Services (SARS) as VAT Vendors and a Letter of Good Standing to be provided.
- (d) The Contractor shall notify the Employer and provide motivation in the event that the Contractor cannot meet the requirements under (c).”

The values referred to in Clauses 14.3.2.4(a) and (b) shall be R250 000 (Two hundred and fifty thousand Rand) for each Clause.

PS14.3.5 Recording and Reports of Damage

The second sentence of Sub-clause to be modified to read as follows:

“PS14.3.5.3.....Supply any of the information specified in Clause 14.3.5.3 above, the Contractor”

PS14.4.1 General Maintenance Requirements

The typical checklist and the scoring system to evaluate the Contractors obligations in terms of General Maintenance are contained in Part C23 of Volume 4.

PS14.4.4.8 Spares and replacement parts

Add the following sub-clauses:

“(b) The Contractor shall supply a complete batch of spares as part of the system implementation, when the system is roll-out to all lanes, which shall be maintained for the duration of the Operation Service period. The initial batch of spares shall form part of the hardware verification

A full batch of spares shall form part of the handover requirements at the end of the Contract.

The Contractor shall maintain the following minimum, or higher, spares levels per workshop:

- 1) Complete set of lane peripherals: One complete spare unit for each type of peripheral, including but not limited to a Boom, OHLS, ETC beacon, TCT, VDU, receipt printer, set of light curtains, set of AVC sensors, siren, booth camera, side view camera, ANPR camera etc.
- 2) Components: One complete replacement unit for every 10 units or part thereof e.g., four hard drives for a 12-lane plaza. Comments includes mother boards, CPU's, serial cards, RAM units, intercom slaves, sirens, traffic light heads, proximity detectors, door switches etc.
- 3) Boom arms: Two spare boom arms for every 10 lanes or part thereof.
- 4) Consumables and additional spares required to ensure a high service level

(c) The Contractor shall supply, install and maintain a Lane Test Rig in the workshop. The Test Rig shall be used for testing components and scenarios by the maintenance technician. The Test Rig shall;

- 1) Be installed in the maintenance workshop and shall consist of a full set of lane equipment, loaded with the correct approved and certified software and settings;
- 2) Where possible and practical, the various components of the Test Rig shall be mounted against the workshop wall;
- 3) Include all the components required to simulate one of the existing Mixed ETC lanes, including:
 - a) Lane Controller
 - i) Complete lane controller, back plate and components, excluding the lane controller enclosure
 - ii) Door switch
 - iii) TCT and swipe card reader
 - iv) Video display unit
 - v) Receipt printer
 - vi) Barcode scanner
 - vii) Battery low detector
 - viii) Network switch
 - ix) Exit boom
 - x) ETC Beacon
 - xi) Traffic light
 - xii) UFD
 - xiii) ANPR camera and ANPR presence detector
 - xiv) Test Tag and cards
 - xv) AVC sensor simulator
 - b) Complete AVC, back plate and components, excluding the AVC box and sensors
 - c) AVC/TCC UPS, with limited battery back-up
 - d) Evaluation, test and verification utilities
- 4) May exclude;
 - a) VGS cameras
 - b) AVC sensors
 - c) Boom arm
- 5) The Test rig shall be maintained by the Contractor and shall not use it as spares to replace faulty equipment.”

PS14.4.4.14 Tolling System availability

Add the following sub-clause:

PS14.4.4.15 Support and maintenance levels

- “(a) **1st line Support and maintenance**: Means the logging and notification of a maintenance incident and the rectification of issues by low level interventions, that exclude modification of the configuration or changes to the system. 1st Line support will identify issues and escalate such issues to higher levels of support staff.
- i) Hardware 1st Line support and maintenance (“1st Line HW support and maintenance”) requires site presence and includes, inter alia.
- (1) Maintenance:
- Daily inspection of the system,
 - Ensuring that all lanes are operating in normal mode,
 - Ensuring that all AVC are operating in normal mode,
 - Ensure that complete AVC data is submitted via the DCS to ITIS,
 - Identifying components and sensors that need to be replaced as part of routine maintenance,
 - Cleaning and realigning and resetting of components/devices, and
 - Maintenance of the workshop, spares, Test Rig, and tools,
 - Order spares to ensure adequate spares are always available.
- (2) Support:
- 1st response to reported issues or issues detected during maintenance inspection.
 - Fault finding and analysis,
 - Resubmit ITIS, if data problems exists,
 - Restarting/rebooting systems, and
 - Replacing components with spare units.
- ii) Software 1st Line support and maintenance (“1st Line SW support and maintenance”) requires site or remote presence and includes, inter alia.
- (1) Maintenance:
- Daily inspection and monitoring of the system processes to ensure that all aspects are running at optimal levels.
 - Ensure that all data is received from all lane,
 - Monitoring problem and resolve problem data.
 - Ensure that all ETC transactions is transmitted to TCH,
 - Ensure that all Toll system/AVC/lane configurations, parameters, tariffs, validation lists, balances and hotlists are up to date. Report issues to 2nd Line software support.
- (2) Support:
- Fault finding and analysis,
 - Restarting/rebooting systems or processes.
- (b) **2nd line Support and maintenance**, means the rectification of issues referred to the 2nd line support by 1st line support, reported by the Contractor or detected by 2nd line maintenance. 2nd Line support include configuration changes to the system. Only items that require system change will be escalated by the 2nd line support to 3rd Line support, all other issues will be addressed by second line support.

Hardware 2nd Line support and maintenance (“2nd Line HW support and maintenance”) relies on HO staff and includes, inter alia.

Maintenance:

Route wide site inspections to evaluate equipment statuses and calibration. This will include inter alia.

reading zones evaluation, processing speed evaluation, loop megger tests, LED intensities, camera quality and alignment, sensor statuses, workstation, and server performance assessment,

Evaluate, and replace if necessary, underperforming components and sensors identified by 2nd Line Software maintenance or accuracy reports.

Routine replacement of components and sensors as part of routine maintenance,

Workshop and site technician assessment, including stock level verification,

Assist with the deployment of system updates.

Generate the required KPI reports

Support:

Address issues referred to it by 1st Line support.

Correct issues that result in data transmission errors between lane (AVC and TCC) and plaza (BOS, DCS, ICS, VGS) and plaza (BOS and DCS) and external entities (TCH, Banks, SANRAL MIS and ITIS)

Address communication and network issues.

Software 2nd Line support and maintenance ("2nd Line SW support and maintenance") is normally performed remotely and includes, inter alia.

Maintenance:

Perform statistical analysis of Toll System data to detect underperforming components or sensors. This shall include inter alia,

AVC data to identify sensor issues.

Card processing data to identify faulty SCR heads.

ETC processing speed in mixed ETC lane to detect hardware or alignment issues,

ETC failure rates in Dedicated ETC lane to detect hardware or alignment issues,

AVC and TCC resets and incidents to determine possible

Log the findings of the statistical assessment via the support request system (Help Desk) to ensure that it is addressed by 1st or 2nd Line support and maintenance.

Deploy Operating System, Application Software and Antivirus/Security updates.

Ensure that all versions and configurations are correct. Log deviations via the support request system (Help Desk) to ensure that it is addressed 2nd Line SW support.

Support:

Fault finding and analysis for items referred to it by 1st Line software support,

Restarting/rebooting systems or processes.

Generate required KPI reports.

Evaluate TCH rejections and raise support request TCH to address unfair rejections.

Evaluate Bank charge backs and

Correct all incorrect versions and configurations

- (c) 3rd line Support and maintenance, means the specialised support or maintenance required to adjust, rectify, configure, correct, or improve the system, when 2nd line support cannot provide the required support. 3rd Line SW support relates to system software changes and the deployment of such changes.

Hardware 3rd Line support and maintenance ("3rd Line HW support and maintenance") relies on external specialists and includes, inter alia.

Maintenance:

Routine maintenance provided by the specialist supplier in terms of the hardware support agreement,

Support:

Specialist support provided by the specialist supplier for issues that cannot be resolved without specialist assistance.

Software 3rd Line support and maintenance ("3rd Line SW support and maintenance") is normally performed remotely and includes, inter alia.

Maintenance:

System updates required by obsolescence.

Support:

Development, testing (DTEC and SAT), deployment and commissioning (SAT) of system upgrades required to rectify defects,

Development, testing (DTEC and SAT), deployment and commissioning (SAT) of system upgrades related to new requirements and/or system enhancements.

Comply with the Escrow requirements in terms of Escrow agreement, including the update of escrow deposits as specified.

Comply with the Disaster Recovery Plan requirements, including depositing the DRP with the Escrow Agent in terms of the Escrow agreement. “

PS15 GENERAL**PS15.1.2 Electricity**

Included in Part C25 of Volume 4, is information indicating the historic costs from the various Service/Utility Providers, contact details (where available).

PS15.1.2.1

The Supply of electricity to the existing Toll Plazas are provided by the following providers:

TOLL PLAZAS	SERVICE PROVIDER	EMERGENCY POWER GENERATOR
Verkeerdevlei Mainline	ESKOM	200 kVA
Vaal Mainline	ESKOM	100 kVA
Grasmere Mainline and Local Ramps	City Power*	200 kVA, second rental generator as backup
Grasmere Remote Ramps	Grasmere Mainline	Rental used as supply from mainline Toll Plaza was disrupted due to cable theft
Brandfort Toll Plaza	ESKOM	250 kVA

No power supply from Johannesburg City Power due to the constant theft and vandalism from the Informal Settlement adjacent to the Control Building.

The existing Toll Plazas has a standby generator and the details of which, are summarised in the following table:

TOLL PLAZAS	GENERATOR TYPE	ALTERNATOR	HOURLY METER READINGS
Verkeerdevlei Mainline	Scania Motor D9 92	Marelli Motori	1 521
Vaal Mainline	ADE Mercedes Benz	Marelli Motori	8 037
Grasmere Mainline and Local Ramps	Cummins		10 370
Grasmere Remote Ramps	Rental	Rental	Rental
Brandfort Mainline	Volvo Penta D20C250	Marelli Motori	620

The existing Toll Plazas have Uninterruptable Power Supply (UPS) units and the details of which are summarised in the following table:

TOLL PLAZAS	UNINTERRUPTABLE POWER SUPPLY (UPS)	STATUS
Verkeerdevlei Mainline	1 x 30 KVA Meissner MP3030 MK2	Satisfactory
Vaal Mainline	2 x 10 kVA Eaton	New
Grasmere Mainline and Local Ramps	1 x 30 kVA Meissner MP1030 MK1	Satisfactory
Grasmere Remote Ramps	2 x 4 kVA Dura Power DP 1000	Poor not working
Brandfort Mainline	2 x 30 kVA Elen	Poor not working

Add a new Clause:

“PS15.1.2.5 Interruption of the supply of electricity due to load shedding.

Due to the current power supply crisis in South Africa, load shedding could become a more frequent occurrence. The Contractor is to include for all additional costs incurred due to the possible increase of load shedding.”

PS15.1.2.2 Supply of fuel

Included in Part C25 of Volume 4 is information indicating the Services/Utility Providers and the amounts spent for the period July 2020 to June 2022.

The diesel tanks capacity at the existing Toll Plazas are the following:

TOLL PLAZAS	DIESEL STORAGE		MOUNTING	STATUS
	DAY TANK	BULK TANK		
Verkeerdevlei Mainline	400l	4500l	Below ground	Water drainage to be addressed or above ground to be installed
Vaal Mainline	250l	2000l	Above ground with bund wall	Satisfactory
Grasmere Mainline, Local and Remote Ramps	400l	2000l	Above ground with bund wall	Good
Brandfort Mainline	400l	2000l	Above ground with bund wall	Diesel allowed to drain to grease/oil trap via stormwater system

PS15.1.3 Water, Sewerage and other Municipal Levies

Included in Part C25 of Volume 4 is information indicating the Service/Utility Providers and contact details (where available) and the amounts spent for the period July 2020 to June 2022.

SUPPLY OF POTABLE WATER		
TOLL PLAZAS	SERVICE PROVIDER	WATER STORAGE TANK
Verkeerdevlei Mainline	Borehole	16000l
Vaal Mainline	Borehole	5000l

SUPPLY OF POTABLE WATER		
TOLL PLAZAS	SERVICE PROVIDER	WATER STORAGE TANK
Grasmere Mainline, Local and Remote Ramps	Borehole	5000l
Brandfort Mainline	Borehole	9000l

SEWAGE AND WASTEWATER DISPOSAL	
TOLL PLAZAS	SERVICE PROVIDER
Verkeerdevlei Mainline	Self-maintained septic tank and French drain
Vaal Mainline	Self-maintained septic tank and French drain
Grasmere Mainline	Self-maintained septic tank and French drain
Grasmere Remote Ramp	Self-maintained septic tank and French drain on each Ramp
Brandfort Mainline	Self-maintained septic tank and French drain

PS15.3 Marketing

The Employer marketing strategies will be provided once it is defined, and the Contractor shall participate in the Employers initiatives assist the Employer to achieve the target/market share.

PS15.4 Safety and security

Add the following new Subclauses to this subsection:

“PS15.4.1.3.

The Contractor is to ensure that the Toll Plaza concrete apron area (including tapers), is kept clear at all times of parked vehicles, people, hawkers, loiterers and the like.

The minimum-security requirements at the existing Toll Plazas are:

- Verkeerdevlei Mainline: Panic buttons in lanes and Control Room linked to an armed response. In addition, armed response supervisor to make at least two (2) Ad hoc visits to the Toll Plaza per night.
- Vaal Mainline: One armed guard between 18h00 and 06h00 plus panic buttons in lanes and Control Room linked to an armed response. In addition, armed response supervisor to make at least two (2) Ad hoc visits to the Toll Plaza per night.
- Grasmere Mainline: One armed guard between 18h00 and 06h00 plus panic buttons in lanes and Control Room linked to an armed response. In addition, armed response supervisor to make at least two (2) Ad hoc visits to the Toll Plaza per night.
- Brandfort Mainline: One armed guard between 18h00 and 06h00 plus panic buttons in lanes and Control Room linked to an armed response. In addition, armed response supervisor to make at least two (2) Ad hoc visits to the Toll Plaza per night.”

The Contractor shall interface the external or internal control room under item B4013 with the Control Room managing the armed response to attend to any positive and confirmed vandalised or theft activity reported by the security cameras. The Contractor shall submit a monthly report on response times and action taken to secure the Employers assets. The Contractor shall carry further damage to the Employer's assets due to the Contractor failing to secure the area as determined by the Employer's Representative.

PS17 PROJECT COMPLETION AND HAND BACK**PS17.1.1.3**

The completion date for this contract shall be 31 May 2029.

PS18 REPORTING

Delete Table 18-1 and replace with the following table:

Table 18-1: Report Register

No.	Report Name	Purpose	Minimum Information	Frequency
1. TRAFFIC REPORTS				
	Hourly, Daily and Monthly Traffic Report, (per traffic direction and all directions).	Reports on the hourly, daily and monthly traffic per Vehicle Class.	Total traffic per Vehicle Class per hour, day and month per lane, Toll Plaza / Tolling Point. Total traffic for all Toll Plazas / Tolling Points. Reporting generated from Back Office System.	Monthly (on daily and monthly traffic. Hourly traffic only on request. Exact combination of reporting to be submitted to be instructed by Employer).
2. TRANSACTION PROCESSING REPORTS				
	Transaction tariff report	To supply the latest tariff structure.	Tariffs per Vehicle Class. Reporting generated from Back Office System.	Bi-Annually
	Discount structure report	To supply the latest discount structures.	Toll Plaza / ORT Discount structure per Vehicle Class. Reporting generated from Back Office System.	Bi-Annually
	Transaction Record Details	To resolve queries on a Transaction Record and the relevant images.	Transaction Record information. Image information (if available). Reporting generated from Back Office System.	Ad Hoc
	Class discrepancy acknowledgements	To monitor the acknowledgements of discrepancies.	Unacknowledged discrepancies. Bulk acknowledged discrepancies. Manual acknowledged discrepancies. Discrepancies automatically acknowledged by the system.	Ad Hoc

No.	Report Name	Purpose	Minimum Information	Frequency
			Reporting generated from Back Office System.	
3. FINANCIAL REPORTS				
	Discount / exempt report	To supply information on Discount and Exempt Transactions.	Discounted Transaction Records and the associated nominal and discounted Toll Tariffs. Exempt Transaction Records and the associated Toll Tariffs. Reporting generated from Back Office System.	Monthly
b)	Account Status	Reports on accounts per account type.	Total number of accounts. New accounts for past month. Accounts terminated. Status of accounts in terms of balances (above thresholds, below thresholds). Reporting generated from Back Office System and TCH System.	Monthly
c)	Payment trends	To report on trends of usage of payment options and payment mechanisms.	Users per payment option and payment mechanism. Reporting generated from Back Office System.	Monthly
4. AUDIT TRAILS				
	Audit Trails	To monitor additions and changes to data.	Original data. Changed data. User identification of system user who was responsible for the addition / change of the data. Reporting generated from Back Office System.	Ad Hoc
	Access Control	To monitor access to the system.	System user who logged in/logged out. Date and time of login/logout. Reporting generated from Back Office System.	Bi-monthly

No.	Report Name	Purpose	Minimum Information	Frequency
	Version Control Lists	To monitor the versions installed on the system.	Module name/number. Version number. Compilation date of module. Reporting generated from Back Office System.	Ad Hoc
	Day/Month Closures	To determine the status of the day and/or month.	Current system status for the day/month. Reporting generated from Back Office System.	On closure of the day/month Ad Hoc
5. SYSTEM MAINTENANCE REPORTS				
a)	AVC Accuracies	Reports on the overall accuracies of the AVC when comparing the AVC class to the Actual Class.	AVC accuracy per lane / Tolling Point. AVC accuracy for all lanes / Tolling Points. Reporting generated from Back Office System.	Monthly
	MTBF	Reports on the calculated MTBFs (based on the up time) for all the major subsystems.	MTBF of the sub-systems. Reporting generated from Back Office System.	Monthly
	System Availability	Reports on the calculated availability (based on the duration of the downtime) for all the major subsystems, per subsystem and/or lane/Tolling Point.	Time the system is in use. Time spent on maintenance. Down-time. Reporting generated from Back Office System.	Monthly
	Equipment Failures Report	Reports on the equipment failures.	Equipment failures per lane/ Tolling Point and subsystem during a selected period. Reporting generated from Back Office System.	Monthly
	Incident report	Reports on incidents that occurred on the system.	Incident type. Date and time when incident occurred. Corresponding Transaction Record (if available). Summarized incident information per lane / Tolling Point.	Ad Hoc

No.	Report Name	Purpose	Minimum Information	Frequency
			Reporting generated from Back Office System.	
	Response and Repair Times	To report on the incident response and repair time.	Time Incident occurred. Time when it was acknowledged. Time when it was resolved / repaired (If applicable). Reporting generated from Back Office System.	Monthly
	Dashboard	To report on information as supplied by the dashboard Software applications.	Depends on the dashboard Software application. Reporting generated from Back Office System.	Ad Hoc
	VGS Availability	To report on the availability of the VGS System.	Daily availability checks. Daily checks consolidated in monthly report. Check camera views. Check auto reporting. Check incident creation. Check remote availability for Employer.	Monthly
	QLS Availability	To report on the availability of the QLS System.	Daily availability checks. Daily checks consolidated in monthly report. Check camera views. Check auto reporting. Check incident creation. Check remote availability for Employer.	Monthly
	VGS Accuracy	To report the accuracy of the VGS system.	Check trigger accuracy. Check camera availability. Check incident and image storage. Check back-up availability. Check image quality daily. Consolidate monthly checks in monthly reports.	Monthly
6. OTHER MAINTENANCE REPORTS				

No.	Report Name	Purpose	Minimum Information	Frequency
	Upgrade Reports	To report on upgrades of system or equipment.	System and hardware upgrade information. Reporting generated from Back Office System and manually.	Monthly
	Problem Data Reports	To report on any data losses, data corruption, data problems.	Transaction Record and payment data lost. Corrupt Transaction Record and payment data. Other data problems. Reporting generated from Back Office System.	Monthly
	Support Reports	To report on all support and maintenance actions.	Number of support requests. Support request actions. Problem resolved status. Reporting from the support Help Desk.	Monthly
	Stock and Spares Reports	To report on stock and spares levels.	Tags in stock. Spares levels along the route. Reporting from the Asset Management System.	Monthly
	SCADA Accuracy and Availability Report	To report on the Accuracy of the SCADA System Reporting and availability thereof.	Check generator for battery state, charge state, generator running state, water jacket status, fuel level, etc. Check Eskom/UPS/Generator availability and active statuses. Check UPS supply status system health inventor status, battery condition status, UPS room temperature. Check for borehole condition and running options. Check that historical reporting is available. Server room temperature. Verified daily and reported monthly.	Monthly

7. ACCOUNTING AND CONTRACTUAL

No.	Report Name	Purpose	Minimum Information	Frequency
	Financial Statements	To report on the financial status of the Contractor.	The Contractor shall supply the Employer within ninety (90) days of the end of the operating year the annual audited financial report and accounts of the Contractor as per the GAAP.	
	Contractual Reporting	To report on contractual issues.	<p>The Contractor shall notify the Employer prior to taking any action which would result in any change in:</p> <p>Management and organisational structure;</p> <p>Change in appointment of Chief Executive Officer, Chief Finance Officer or any other senior technical staff of the Contractor;</p> <p>Contracts to be executed by the Contractor for the purpose of implementing the Agreement;</p> <p>Change in fiscal year; and</p> <p>Change in Memorandum and Articles of Association or the shareholders agreement of the Contractor;</p> <p>Any change shall require consent from the Employer as such a change may not alter the shareholder composition in terms of the tendered black economic empowerment content within the original Tender as well as the associated overall financial position of the Tenderer;</p> <p>Manually created report.</p>	
8. ELECTRICAL AND MECHANICAL				
	General Electrical Equipment Report	To report on electrical issues.	<p>The report shall include but not be limited to the following minimum inspection and testing requirements:</p> <p>Inspect all distribution boards.</p> <p>Test all earth leakage units.</p> <p>Inspect wiring.</p> <p>Labelling.</p> <p>Legend cards.</p>	Every 2 years

No.	Report Name	Purpose	Minimum Information	Frequency
			Generate manually from inspections.	
	Generator Report	To report on the electrical and mechanical status of all the standby generators.	<p>Generator status.</p> <p>Generator room condition.</p> <p>Generator test results.</p> <p>Oil sample test results by an approved lubrication analyst laboratory.</p> <p>Availability of spares and the supplier's details.</p> <p>Dummy load test.</p> <p>(Mobile dummy load to be provided by Contractor if no dummy load on site). The plaza electrical load shall not be used as test load during testing.</p> <p>A copy of the generator lock book for the period of the report.</p> <p>Rotation testing of the movable generator (if relevant). The movable generator to be tested at several sites so that the movable generator and change over system can be tested at each site once a year.</p> <p>Generate manually from inspections.</p>	6 Monthly
	UPS Report	To report on the status of all the UPS's.	<p>The UPS status i.e. all available voltages frequencies, currents and alarm conditions. Any data recoded by the UPS to be included in the UPS report. The Contractor to obtain the required communication device from the manufacturer to extract data if required at their own cost.</p> <p>The condition of the UPS rooms i.e. cleanliness of the room, room temperature, etc.</p> <p>UPS load test. The load test will be done over a period of 30min with readings every 5 minutes. The results shall be plotted on a graph to estimate the</p>	2 Monthly

No.	Report Name	Purpose	Minimum Information	Frequency
			<p>total battery standby time.</p> <p>The Contractor shall also execute an impedance test on each battery and report the value.</p> <p>A copy of the UPS logbook for the period of the report.</p> <p>Generate manually from inspections.</p>	
	Earthing and Lightning Protection Status Report	To report on the earthing and lightning protection.	<p>As-built based drawing indicating the test points with the test values obtained at the earth node.</p> <p>Each earth node on the drawing shall be numbered that can be referred back to a comprehensive test report.</p> <p>A comprehensive test report that shall be updated with every earthing test and submitted to the Employer every six months.</p> <p>The earthing nodes shall be tested as indicated on the as-built drawings with the base values on the as-built drawings as reference. Any changes in the earthing values will be investigated and corrective action motivated by the Contractor with reference to the SANS regulation.</p> <p>The comprehensive test report shall also include a soil resistivity test taken on the day of the earthing test.</p> <p>The final earthing report to be approved by the Employer with the option to add or change the report when required.</p> <p>All surge arrestors shall be inspected, and the status reported.</p>	6 Monthly

No.	Report Name	Purpose	Minimum Information	Frequency
			Generate manually from inspections.	
	Corrosion Protection Report	To report on the corrosion status of the facilities, i.e. steel structures, roofs etc.	<p>Discuss the corrosion status of the facilities, (e.g. water reservoir, fencing, building elements, poles and masts, structural steelwork, etc)</p> <p>Recommendations regarding the paint systems required to protect the assets.</p> <p>Provide a program to attend to the corrosion problems identified in the corrosion report.</p> <p>The report shall be compiled by a competent registered corrosion specialist to the Employer.</p> <p>Generate manually from inspections.</p>	3 Yearly
	Handyman Report	To report on all damaged and failed equipment and the corrective action taken.	<p>All damaged and failed equipment i.e. taps doors, windows locks, paint, cracks, etc.</p> <p>Corrective action and an estimated completion date with a program if necessary or as requested by the Operational Manager.</p> <p>Generate manually from inspections.</p>	Monthly
	Heating Ventilation and Air Conditioning Report	To discuss the status of the HVAC equipment and maintenance carried out.	<p>The report shall discuss the status of the HVAC equipment and maintenance carried out.</p> <p>The Contractor shall also provide corrective action and an estimated program on the repairs to the Employer on problems identified in the HVAC report.</p> <p>Generate manually from inspections.</p>	Monthly
	Fire Detection System Report.	To report on the status of the fire detection system.	<p>Status of the fire detection system.</p> <p>Action taken to restore any problem or alarm condition.</p>	Ad Hoc

No.	Report Name	Purpose	Minimum Information	Frequency
			Generate manually from inspections.	
	Security and Access Control Report	To report on the status of the security and access control system.	<p>The status of the security and access control system.</p> <p>Action taken to restore any problem or alarm condition.</p> <p>The alarms and access control system reports to be extracted and added to the Contractors security and access control report.</p> <p>A corrective action and program to attend to problems identified in the security and access control report.</p> <p>Generate manually from inspections.</p>	Ad Hoc
	Route Patrol Reports	To report on the Route Patrol Service.	<p>Consolidated report on frequency of patrols.</p> <p>Reporting on daily activities.</p> <p>Verification of incidents.</p> <p>Daily reporting on equipment.</p> <p>Vehicle roadworthy reporting.</p>	Monthly
9. PERFORMANCE MEASUREMENT REPORTS				
	Performance Measurement Report	<p>To report on all the KPIs that is applicable in the Contract in accordance with The Standard Specifications for Operations and Maintenance of CTROM Projects: Performance Measurement (Volume 2 Book 6a).</p> <p>This report serves as input in the performance adjustments in the monthly payment certificate of the Contractor.</p>	<p>For each KPI, the Performance Measurement score shall be provided for the immediate previous month.</p> <p>The comparative previous 12 months scores shall also be provided.</p> <p>The report shall be supported by an Annexure containing the measurements and calculations to determine the KPI scores.</p>	Monthly
10. TOLL SYSTEM PROGRESS REPORT				
	Progress Report	To report on the progress of the Toll	As specified in Project Document Volume 3.	To be determined by the Employer's Representative

No.	Report Name	Purpose	Minimum Information	Frequency
		System during the Design-Build period.		

Delete table 18-2 and replace with the following table:

Table 182: Conventional Toll Plaza Additional Report Register

No.	Report Name	Purpose	Minimum Information	Frequency
1. TRAFFIC REPORTS				
a)	Hourly, Daily and Monthly Traffic Report, (per traffic direction and all directions)	Reports on the hourly, daily and monthly Traffic per Vehicle Class.	Total traffic per Vehicle Class per hour, day and month per Lane, Toll Plaza. Total traffic for all Toll Plazas. Reporting generated from Back Office System.	Monthly (on daily and monthly traffic. Hourly traffic only on request. Exact combination of reporting to be submitted to be instructed by Employer).
TRANSACTION PROCESSING REPORTS				
3. FINANCIAL REPORTS				
	Daily Payments	Reports on payments received on local Customer Accounts.	Payments received per calendar day for account registering, recharges etc, including cash, Bank Issued Card transactions, Bank Debit Card transactions, Smart Card, etc received at each Toll Plaza and in total. Reporting generated from the Back-Office System.	Monthly
	Revenue Banked	Reports on Revenue banked.	Revenue banked daily, indicating cumulative difference between Revenue banked and Revenue received at all Toll Plazas. Reporting generated from the Back-Office System.	Monthly
	Cash-up Reports	To report on cash-ups performed on the system.	Reconciliation of income declared versus income expected by the system. Reporting generated from the Back-Office System.	Monthly
4. AUDIT TRAILS				
	Validation Lists Retrieved	To audit the movement of the Validation List(s) from the banks.	Listing of: Validation List(s) identification number /name. Time retrieved from the banks. Time transferred to the lanes. Reporting generated from Back Office System.	Ad Hoc

Delete table 18-3 and replace with the following table:

Table 183: ORT Additional Report Register

No.	Report Name	Purpose	Minimum Information	Frequency
1. TRAFFIC REPORTS				
	Hourly, Daily and Monthly Traffic Report, (per traffic direction and all directions)	Reports on the hourly, daily and monthly Traffic per Vehicle Class.	Total traffic per Vehicle Class per hour, day and month per Tolling Point. Total traffic for all Tolling Points. Reporting generated from Back Office System.	Monthly (on daily and monthly traffic. Hourly traffic only on request. Exact combination of reporting to be submitted to be instructed by Employer).
2. TRANSACTION PROCESSING REPORTS				
	Back Office Transaction Record Reconciliation Report	Reports on Transaction Record reconciliation information per calendar day.	Transaction Records received from the RSS . Transaction Records transferred to the TCH System. Transaction Records to be processed, e.g. MNPR Transaction Records. Transaction Records of previous days transferred to the TCH system. Reporting from Back Office System.	Monthly
	Image Processing	Reports on the ANPR and MNPR processing statistics.	Percentage of automatic reads (ANPR process). Percentage of manual reads (MNPR process). Percentage of unsuccessful reads due to equipment error. Percentage of unsuccessful reads not due to equipment error. Reporting from Back Office System.	Ad Hoc
	MNPR process tracking	To report on the disposition codes of images during MNPR process, together with the MNPR processing statistics.	Successful processing. Unreadable. No Vehicle Licence Plate in image. Image too dark. Image too light. Reporting from Back Office System.	Ad Hoc
3. FINANCIAL REPORTS				
	Financial Reconciliation Report	To supply the financial reconciliation information of the Transaction Records as they	Transaction Records sent to the TCH and the associated nominal Toll Tariffs. Transaction Records sent to the TCH and the associated Discounted Toll Tariffs.	Monthly

No.	Report Name	Purpose	Minimum Information	Frequency
		are handed over to the TCH.	Transaction rejections. Transaction Record processing costs for transactions sent to the TCH. Reporting from Back Office System.	
	Payments banked	Reports on payments into Customer Accounts banked.	Payments banked daily, indicating cumulative difference between payments banked and payments received at all Point of Presence Service Centres. Reporting from the TCH System.	Monthly
	Transaction status	To determine the financial status of the Project in terms of transactions that were paid, violations, exempted, discounts etc.	Reconciliation of all transactions that were sent from the Back Office to the TCH Back Office with the updated transactions as received back from the TCH. Reporting from the TCH System.	Monthly
	Cash-up reports	To report on Cash-ups performed on the system.	Reconciliation of payments received at CS PoP's and banked versus payments expected by the system. Reporting from the Back Office and TCH System.	Monthly
4. AUDIT TRAILS				
	Validation Llists Retrieved	To audit the movement of the Validation List(s) from the TCH to the RSS.	Listing of: Validation list(s) identification number/name. Time retrieved from the TCH System. Time transferred to the RSS. Reporting from Back Office System.	Ad Hoc
	Data Transmission	To audit the movement of data from the Back Office to the TCH and vice versa.	Listing of: Date and time when data were transmitted to the TCH System. Date and time when data were retrieved from the TCH System. Reporting from Back Office System.	Ad Hoc

PS19 TOLL ROAD SERVICES

Modify this subclause to read as follows:

PS19.2 Road Incident Management Systems (RIMS)**PS19.2.1.1**

The Contractor shall participate on the existing RIMS which operate along the existing N1 South and R30 Toll Roads and the details are included in [Part C37 of Volume 4](#).

PS19.3 CUSTOMER CALL CENTRE**PS19.3.1 Introduction**

The Contractor may utilize the facilities at the existing Toll Plazas for this purpose. The Contractor is to note that there are no upgrades scheduled to the existing facilities for the duration of the Contract.

PS 19.3.3.2 Services to be provided include

Activating an action in respect of the appropriate response	-	5 minutes
Arrival at the scene with a patrol vehicle	-	30 minutes

PS19.4 ROUTINE SERVICE PATROL**PS19.4.1 General**

The Contractor shall perform the Routine Service Patrol along the N1 South Toll Road sections, from km 28.0 on Section N1-15 (Sydenham) to km 10.7 on Section N1-20 (Armada I/C), a distance of approximately 400 km.

The Contractor shall perform the Routine Service Patrol along the R30 Toll Road section from km 0.00 on section P55-1 (Glen Lyon I/C) to km 42.2 on section P36 (Brandfort), a distance approximately 192 km.

The Contractor shall patrol the N1 South and the R30 Toll Roads at least two (2) return trips every eight (8) hours. The return trip is defined from starting point, patrolling the entire route and returning to the starting point. The Contractor is required to provide one (1) vehicle per Toll Plaza section and these vehicles will be required to operate from the Verkeerdevlei Mainline, Vaal Mainline, Grasmere Mainline and Brandfort Mainline (R30) Toll Plazas.

PS19.4.1.8 Table 19-1: Minimum Patrol Vehicle Equipment

After this table add the following:

Table 19-2: Minimum Requirements for First Aid Kit

	FIRST AID EQUIPMENT	Size	No Off
1	Gauze Swabs - 100's		4
2	Swabs Sterile - 5's		2
3	Plastic Forceps		1
4	Safety Pins - 12's		1
5	First Aid Scissors	10 cm	1
6	Rescue Scissors	19 cm	1
7	Triangular Bandages - Non-Woven		5
8	Conforming Bandages	75 mm	6
9	Conforming Bandages	100 mm	10
10	Conforming Bandages	150 mm	6
11	Crepe Bandages	100 mm	6
12	Crepe Bandages	150 mm	2
13	Fabric Roll Plaster	25 mm x 3 m	1
14	Anti-Allergic Tape (Paper Plaster)	25 mm x 3 m	1
15	Box Waterproof Plasters - 20's various sizes		1
16	F.A.D.3	75 x 100 mm	4

	FIRST AID EQUIPMENT	Size	No Off
17	F.A.D.5	150 x 200 mm	4
18	Wooden Splints		4
19	Examination Gloves Nitrile Powder Free		1 Box (100)
20	Burn shield	20 x 20 cm	5
21	Burn shield	20 x 45 cm	6
22	Burn shield	60 x 45 cm	2
23	CPR (Respaid) Mouth Pieces		4
24	D-Germ Alcohol & Chlorhexidine Hand rub	500 ml	1
25	Red Medical Waste Bags	(Small)	20
26	Rescue/Space Blanket		1
27	Medical Jump bag		1

PS20 Annexure A1: Schedule of Assets

The table references to be modified as follows:

Delete Reference	New Reference
Table 20.1: Employer Fixed Assets	Table A1.1 Employer Fixed Assets
Table 20.2: Employer Equipment	Table A1.2 Employer Equipment
Table 20.3: Employer Documents	Table A1.3 Employer Documents
Table 20.4: Plant Assets	Table A2.1 Permanent Design-Build Assets – Plant
Table 20.5: Materials	Table A2.2 Permanent Design-Build Assets – Materials
Table 20.6: Contractors Documents	Table A2.3 Permanent Design-Build Assets – Contractors Documents

C3.2.3 PARTICULAR AMENDMENTS TO THE STANDARD SPECIFICATION FOR OPERATIONS AND MAINTENANCE OF CTROM PROJECTS: ELECTRICAL AND MECHANICAL EQUIPMENT (VOLUME 2 BOOK 3)

The number of each Clause in a Particular Specification in this section consists of the Prefix PS followed by a number corresponding to the number of the relevant Clause in the Standard Specification for the Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment (Volume 2 Book 3). The number of any new Clause which does not form part of any Clause in the Standard Specification for the Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment (Volume 2 Book 3), and which is included herein, is also prefixed by PS followed by a new number. Such new numbers follow on the last Clause used in the relevant section of the Standard Specification for the Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment (Volume 2 Book 3).

PS1.3 REGULATION AND STANDARDS

Add the following Clauses:

“PS1.3.1.12 NRS 097, Grid interconnection for embedded generation: Installations <100kW.”

“PS1.3.1.13 NRS 48, Electricity supply – Quality of supply.”

“PS1.3.1.14 SANS NRS 052-2-1, Test procedures for main components – Photovoltaic modules.”

“PS1.3.1.15 SANR 10142-3, Wiring of Premises - Embedded Generators and 4, The Wiring of Premises - Direct Current and Photovoltaic (still to be reloaded).”

“PS1.3.1.16 NRS 097 standards where applicable.”

PS1.16 Basic Power Arrangement

Add the following Clause:

“PS1.16.2 The Contractor shall consider IEC 60364-8-1 “Electrical energy efficiency within low-voltage electrical installations” when designing or planning the procurement and installation of new electrical material and equipment.”

PS3 EQUIPMENT TO BE USED IN SWITCHBOARDS

PS3.13 Indicating Instruments

Add the following Clauses:

PS3.13.7 Basic Specification for Power Meter.

PS3.13.7.1 DIN rail (preferred) or wall mounted power meter with CTs for useful measurements as per item E below, Data Communication and Multi tariffs.

PS3.13.7.2 The Power Meter shall be backlit and powered with auxiliary control power.

PS3.13.7.3 It shall provide measurement of the value for voltage for single-phase with neutral / three-phase with or without neutral network.

PS3.13.7.4 The Power Meter shall be associated with Current Transformers.

PS3.13.7.5 It must measure the values of: I, In, U, V, PQS, PF, Hz, Active/Reactive/Apparent Energy Import and Export, Power/Current demand, Present and Peak Demand, Min-Max and THD (up to 15th Harmonic).

- PS3.13.7.6 The meter shall have configurable and time-stamped alarms.
- PS3.13.7.7 The meter shall have a Modbus communication port.
- PS3.13.7.8 The Power Meter shall be equipped with a display for measurement and for configuration. All information shall be available from the display. It shall be possible to perform the setup via the display; no dip switches or other hardware adjustments shall be required for setup.
- PS3.13.7.9 The display shall be able to indicate Normal/Alarm situations.
- PS3.13.7.10 An error code for diagnosis shall be displayed in case of error.
- PS3.13.7.11 The Power Meter shall be of DIN Rail type to fit any standard distribution board without modification should spare space be available when installed on the DIN Rail.
- PS3.13.7.12 For Power Meters with CT measurement accuracy to comply with IEC 61557-12 (Performance measuring and monitoring devices).
- PS3.13.7.13 The Power Meter shall be IP40 front panel, IP20 casing.
- PS3.13.7.14 To ensure safety of goods and people, the installation category of the Power Meter shall be III, and the degree of pollution two (2).
- PS3.13.7.15 The meter shall be rated for an operating temperature range of -25°C to +55°C.
- PS3.13.7.16 The Power Meter shall be able to automatically provide data files with the values as per item E above to a server or location where the data can be downloaded already processed or in CSV file format for processing without third (3rd) party dependent intervention via GPRS. The SIM for the energy meter will be provided.
- PS3.13.7.17 The energy meter solution must have a data logging function, duration (period data can be stored) to be indicated based on a 15 minutes sample rate for Active/Reactive/Apparent power.
- PS3.13.7.18 The meter must be able to store a minimum of three (3) months of data.
- PS3.13.7.19 The meter shall be provided with a web server for remote viewing of the data. Remote viewing can be via Ethernet LAN or GPRS if possible.
- PS3.13.7.20 The energy meter installation shall be a complete solution from supply, installation to the setup of the meter. The setup and intervals of values stored to be agreed before the installation commence.
- PS3.13.7.21 The Contractor can propose alternative to any of the above items with motivation.

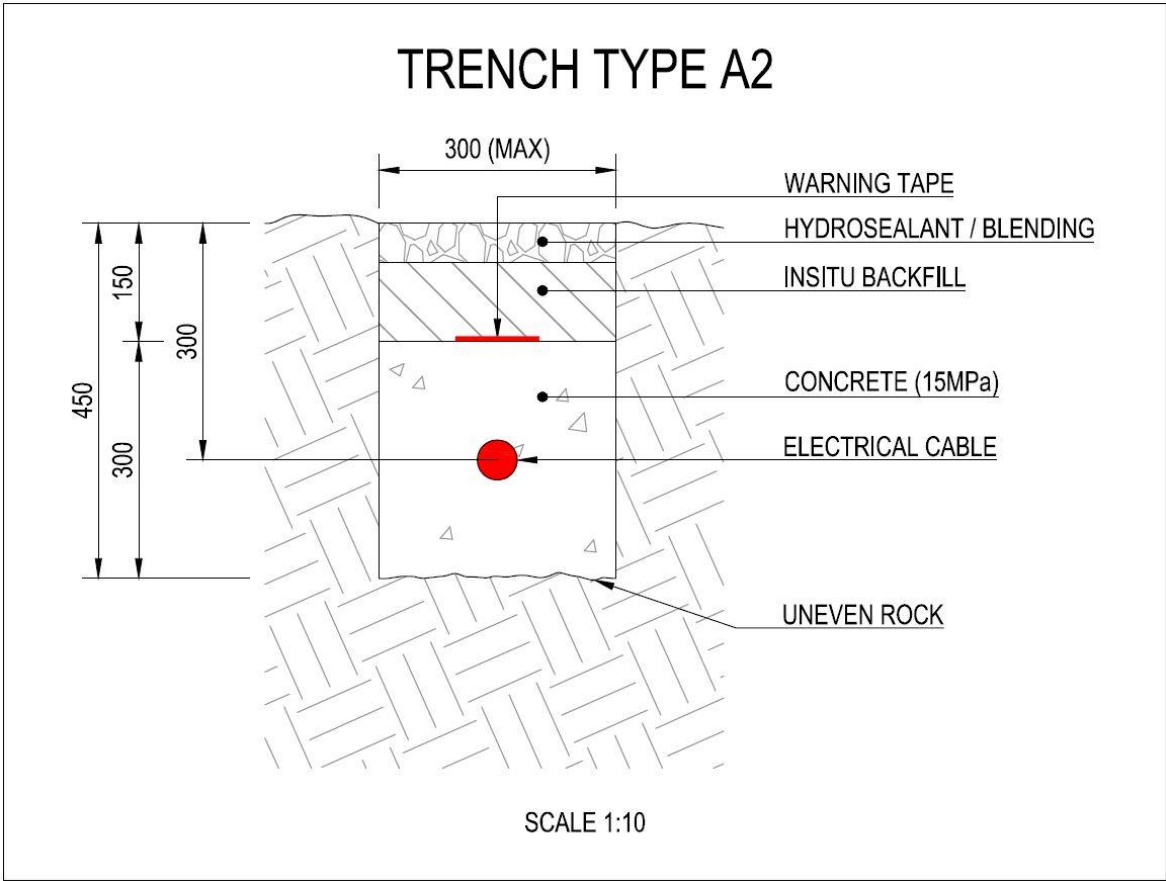
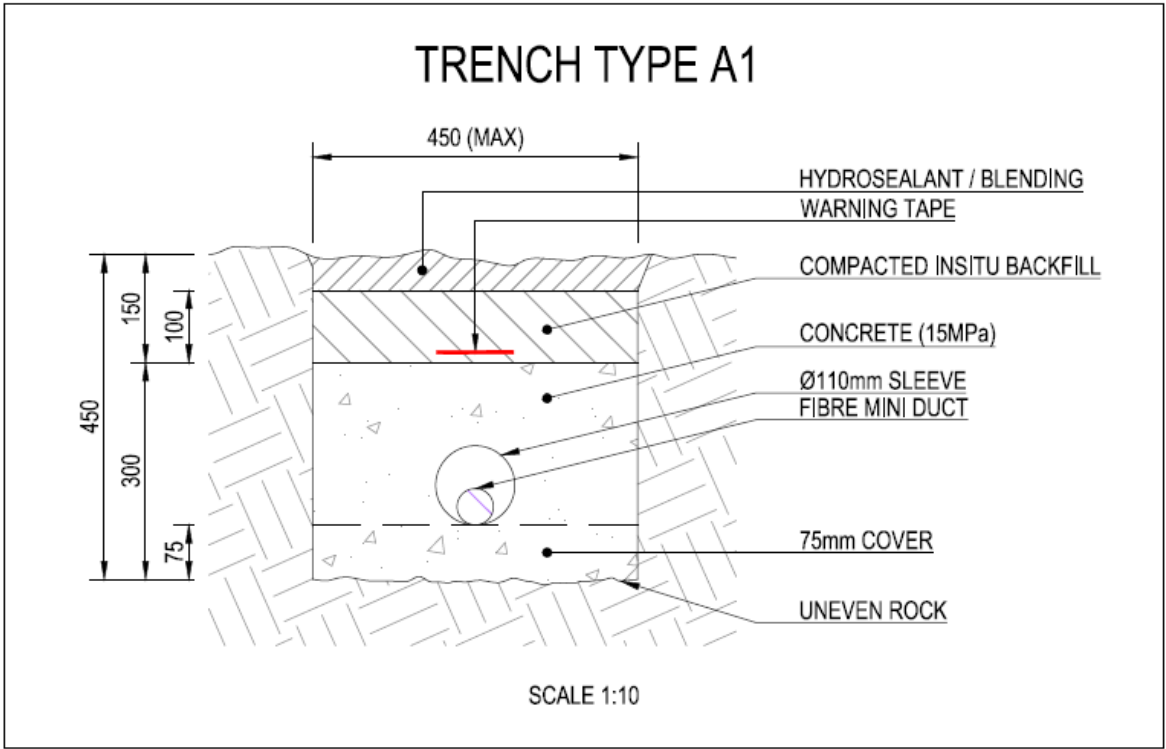
The Contractor to supply and install a power meter at each mainline and remote ramp toll plazas based on the above specification within three (3) months from the Commencement Date for the Operations Service Period. The Employer Representative shall have access to the data on the meter via the Contractors data network or GPRS other agreed operational procedure from the end of month four (4) after the Commencement Date for the Operations Service Period.

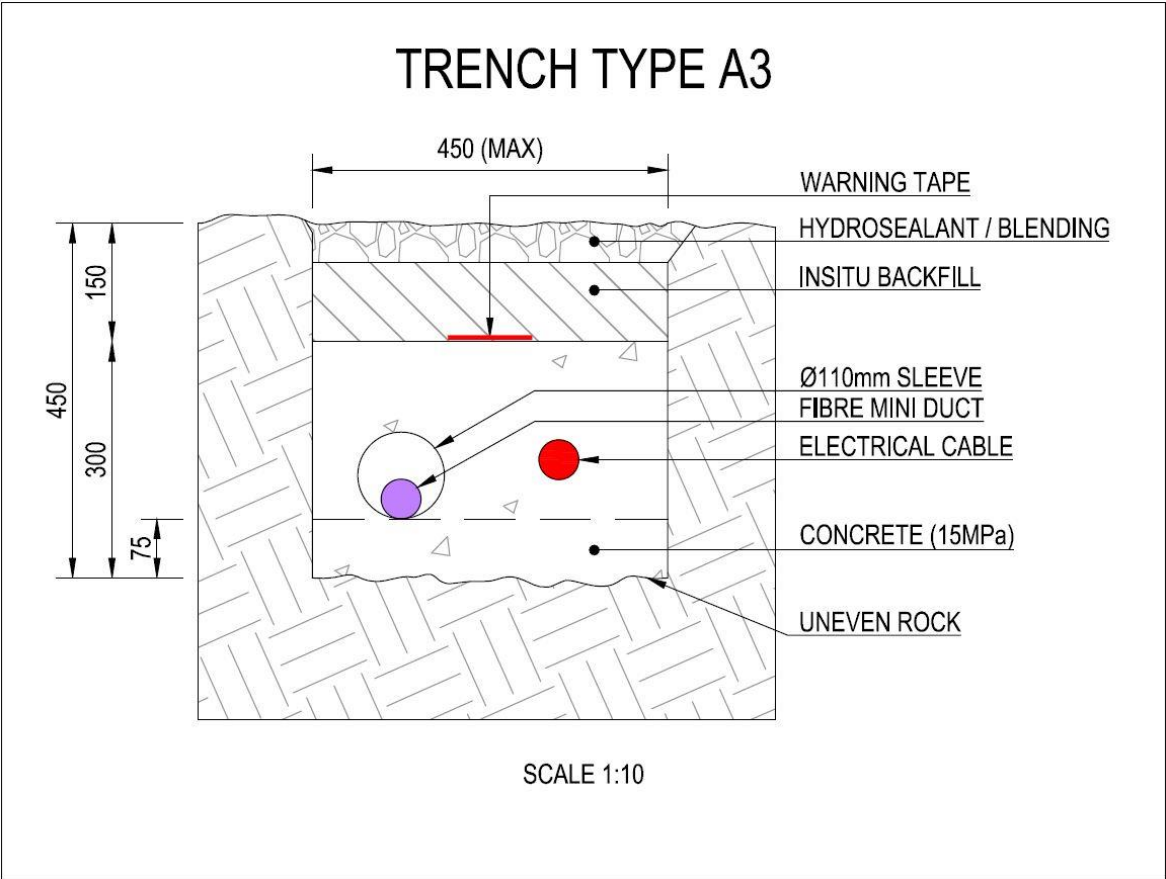
PS4.10.7 Trench Types

PS4.10.7.1 Types

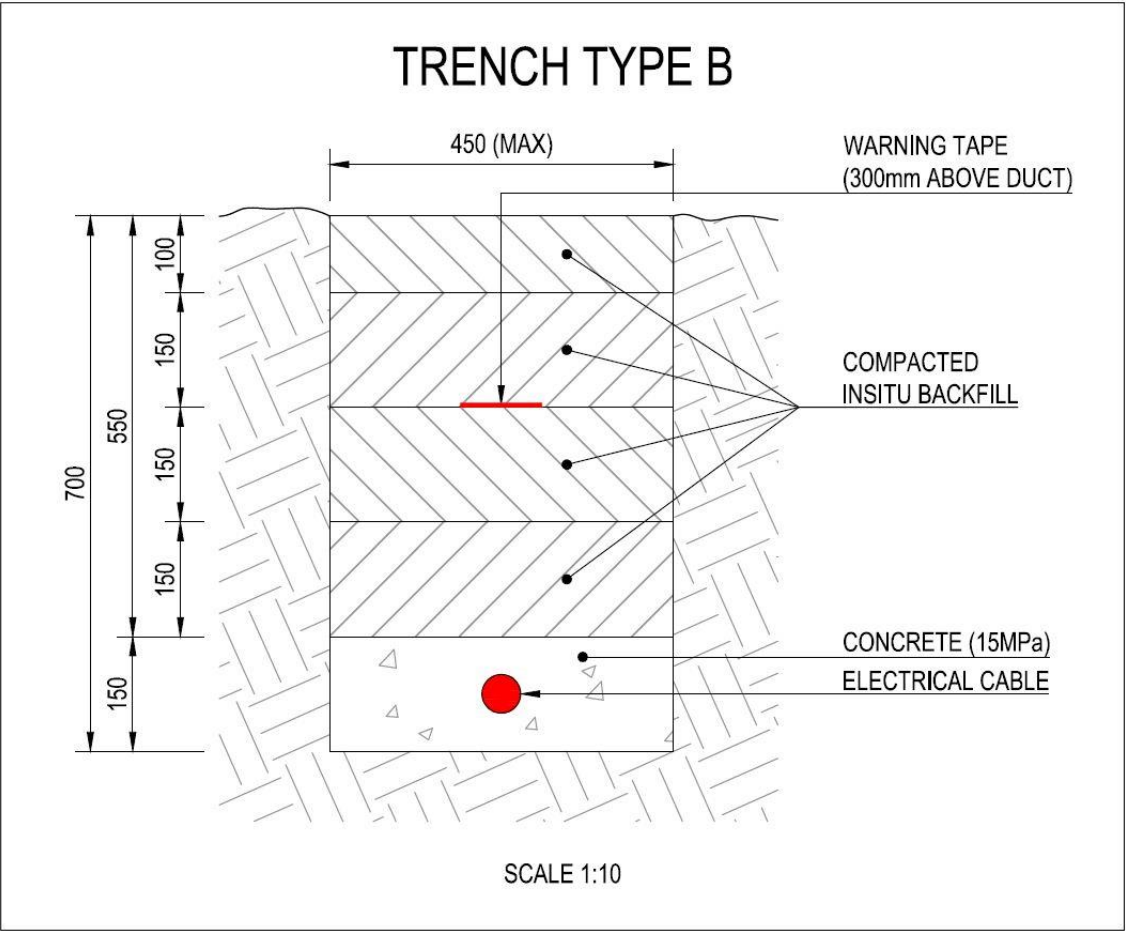
The Contractor shall install electrical and communication infrastructure based on the following trench details:

Trench A

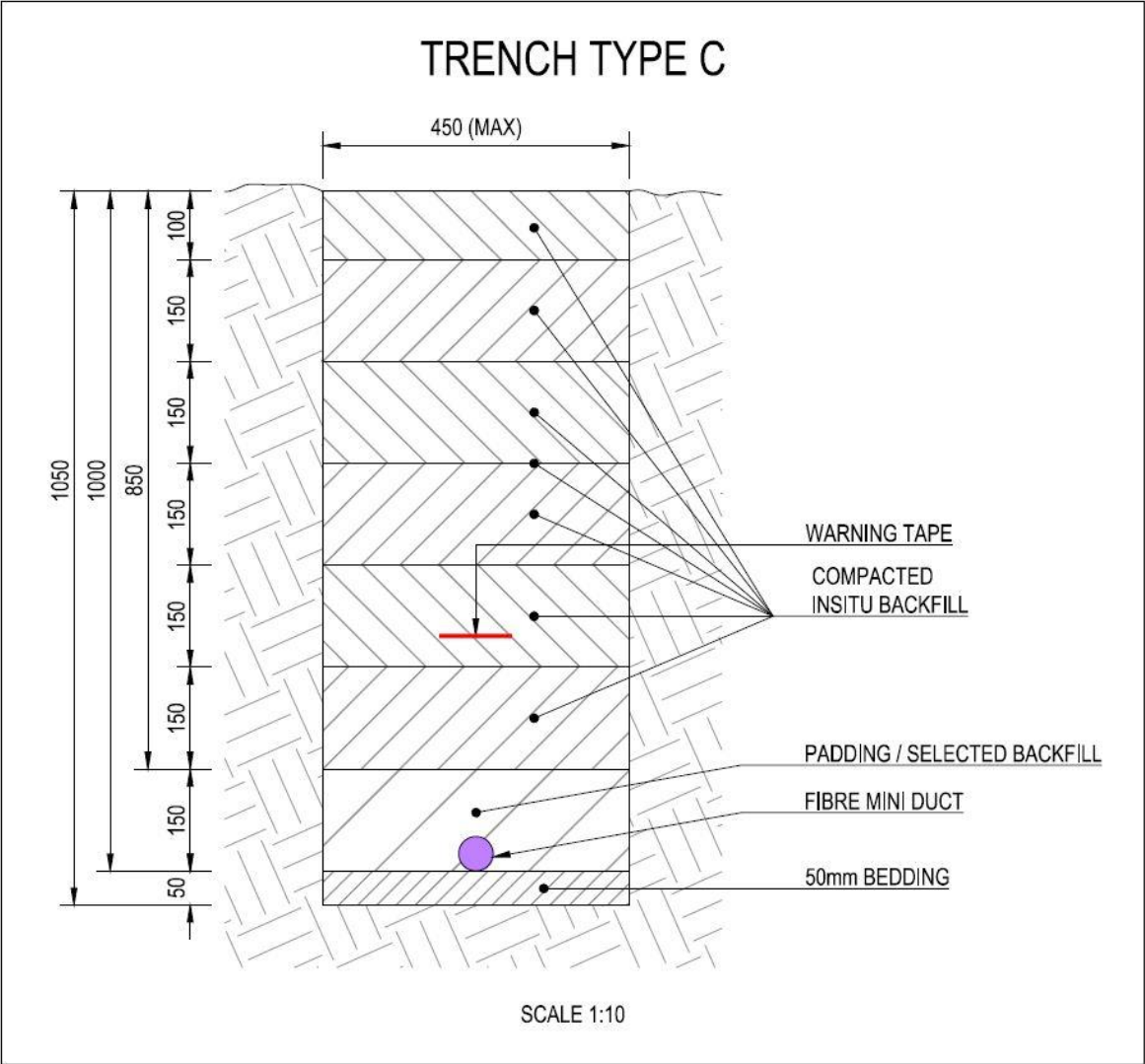




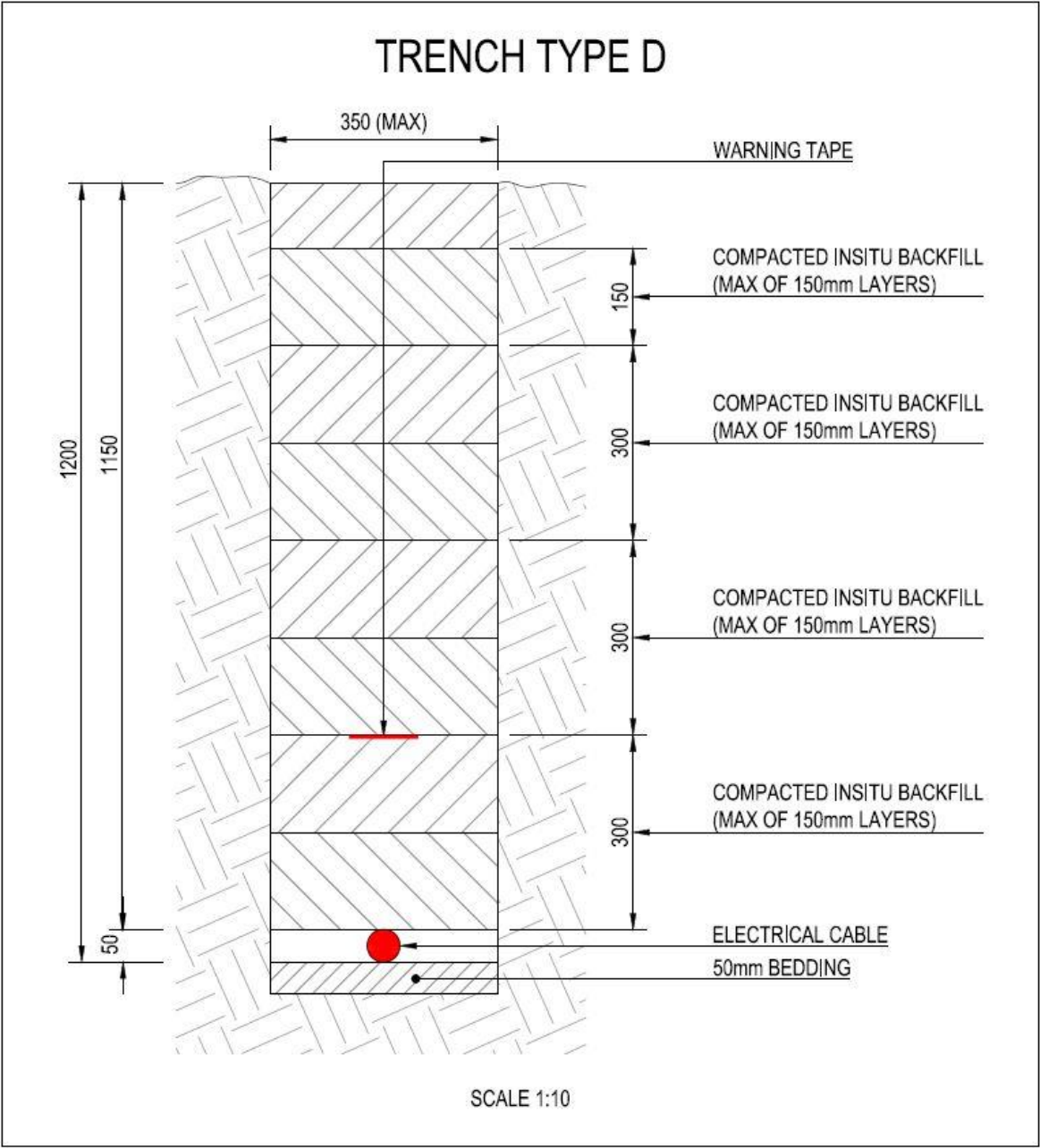
Trench B

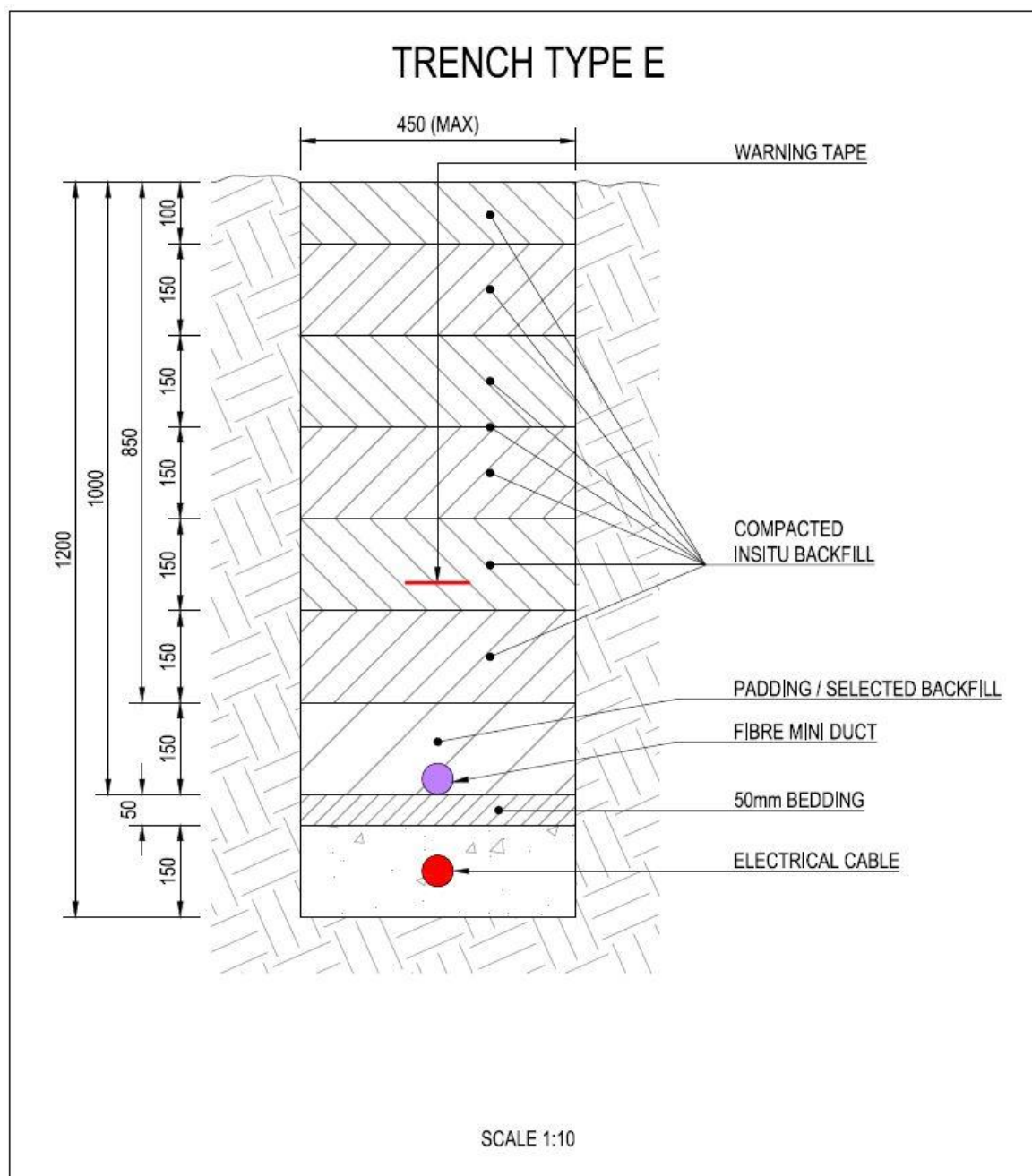


Trench C



Trench D



Trench E

Depending on the site conditions, the power meter shall be installed after the changeover switch to continuously measure the Toll Plaza parameters as approve by the Employer's Representative.

PS9 Luminaires**PS9.1 General**

Add the following new Sub-clauses:

PS9.1.13 The luminaires shall be manufactured by an ISO 9002 accredited company.

PS9.4 Technical Requirements of Luminaires**PS9.4.1 Technical Requirement****PS9.4.1.1 General**

Add the following new Sub-clauses:

- “PS9.4.1.1(e) All LED luminaires shall conform to LM-79 and LM-80 standards. Compliance testing certificate to be provided.”
- “PS9.4.1.1(f) All luminaires/lamps/LED modules shall bear the approval mark of the following:
SANS;
IEC;
ANSI;
CIE;
ENERGY STAR; or
IESNA.”
- “PS9.4.1.1 (g) The luminaire should fully conform to following specification:
IEC 62471-Photo-biological safety of lamps and lamp systems
EN 55015: 2006 and 2007- Limits and methods of radio disturbance characteristics of electrical lighting.
EN 61547:1995/a+1:2000-Equipment for general lighting purpose EMC immunity requirements.
EN 61000-3-2:2006-Limitation of harmonic current emission.
EN 61000-3-3:2008-Limitation of voltage fluctuation and flicker.”
- “PS9.4.1.1 (h) The luminaire shall be rated to operate at an ambient temperature of Ta -20°C to 35°C.”
- “PS9.4.1.1 (i) Luminaire valid test certificates shall be available and be provided to the Employer’s Representative or Employer, when requested.”
- “PS9.4.1.5 Control gear for luminaires.”

Add the following new Sub-clauses:

- “PS9.4.1.5 (f) The LED driver shall be designed to operate large array of high-power LEDs through current controlled output. The driver shall be suitable for normal 220V-240V 50Hz mains supply. The LED driver shall have efficiency of at least 90%.”
- “PS9.4.1.5 (g) The LED driver shall incorporate multiple control interfaces for dimming capability. It shall enable 1-10V DC interface dimming control. It shall also have a programmable feature to allow pre-programming of step dimming lighting levels based on the ON time.”
- “PS9.4.1.5 (h) The LED driver shall fully conform to following specifications:
EN61347-1 General and safety requirements.
EN61347-2-13- Particular requirements for DC or AC supplied electronic control gear for LED modules.
EN62384- DC or AC supplied electronic control gear for LED modules.”
- “PS9.4.1.5 (i) Only luminaires with aluminium housing shall be accepted and shall be manufactured from grade LM 6 (EN1706 AC-44100) (or higher) aluminium alloy.”
- “PS9.4.1.5 (j) Fixing devices, junctions, lips and the like shall be designed to shed water. Pockets and ledges in which condensation may accumulate shall be avoided.”
- “PS9.4.1.5 (k) LED luminaires will be incorporated with 10KA Class II surge protection and have applicable thermal protection devices applicable to the region of installation, such that should the ambient temperature of 35°C, the luminaire then either “switch-off” or lower its operating mode while remaining “switched-on”.
- “PS9.4.1.5 (l) Small components (such as toggle, clips, bolts, screws, nuts, washers) shall be manufactured of stainless steel (grade 304 or better).”
- “PS9.4.1.5 (m) Due attention shall be paid to the accessibility of parts and to other requirements necessary for efficient maintenance and cleaning.”

- “PS9.4.1.5 (n) The luminaire should have a minimum colour rendering index 9Ra) of 70+/- 10 and a colour temperature of up to 5700k for maximum efficiency. The LED shall have colour consistency within 5 SDCM (standard deviation of colour matching) as defined by McAdam. The colour temperature variation of the LEDS should be restricted as per ANSIC78.377A with CCT variation limiting within 500K for nominal CCT of 4000K.”
- “PS9.4.1.5 (o) The LED luminaire shall be designed for Lumen maintenance of L80 or 80% at the end of useful life at ambient temperature of -20°C to 35°C. The luminaire shall have a controlled steady state lumen output such that the initial and end of useful life lumen output are nearly identical although the LED's have degraded over time. The complete luminaire shall have a useful life of over 50000 burning hours. The luminaire including the driver will include a warranty of ten (10) years against manufacturing defects.”
- “PS9.4.1.5 (p) The Contractor shall provide road area lighting LED luminaires that are Lighting Management System (LMS) ready. The Luminaires shall be supplied with a standard 7 pin NEMA Socket. The Contractor shall supply the luminaires with a standard NEMA 7 pin photocell controller should the Employer decide not to implement the LMS System.”
- “PS9.4.1.5 (q) The Contractor shall provide LED luminaires to replace old HPS and fluorescent luminaires at all plazas. The Contractor shall be responsible to:

Take stock of the quantities of luminaires and exact location of masts/ poles per plaza
 Calculation of the lux levels and design of the new LED lighting required by SANRAL as per photo metric data of the proposed luminaire.
 Submitting Lux level calculations and photo metric data to the Engineer for approval.
 Supply and delivery of new LED streetlight luminaires.
 Installation, aiming and adjusting luminaires to achieve the correct lux level requirements.
 Taking lux level measurements and issue a report to the Engineer for approval.
 Certify in writing that the light levels comply with SANS 10098/2 2017 Amendment 1: The lighting of certain specific areas of streets and highways.
 The existing streetlight luminaires will be removed.

PS11 EARTHING AND LIGHTNING PROTECTION

Add the following new Sub-clauses:

PS11.3.5 Specific works

PS11.3.5.1 Inspections and actions

The Contractor shall check and test, on a monthly basis, all earthing and bonding and confirm that the Installation is sufficiently earthed as described in the specification. The Contractor shall repair the continuity of all bonding and earth continuity conductors as required.

The following minimum actions, but not limited to, are required:

Soil resistivity test: The results shall be analysed to determine if the existing lightning protection is sufficient to protect the installation
 Confirm if the number of down conductors and earth rods are sufficient
 Confirm if spacing of down conductors and earth rods are as per specification
 Checking of condition, mounting and connection of lightning protection finials
 Confirm condition and connection of down conductors to earth rods and earth mat.
 Connections of earthing inspection points
 Service and repairs of earth test point boxes
 Thorough test of the complete installation including all earth electrodes, and earth resistance

The Contractor shall check and confirm that surge protection devices are installed as required and that all surge protection devices are of the correct type and are correctly installed and connected.

Any non-compliance or repairs should be reported to the engineer. Repair work to distribution boards shall be done by the toll operator's own electrician as to not invalidate the CoC. The toll operator will issue a new CoC for repairs done to distribution boards.

PS11.3.5.2 Documentation and report

The Contractor shall do a proper survey and testing of the complete installation as set out in this specification. The contractor shall on completion of his survey, submit a comprehensive and detailed report of his findings and recommendations to the engineer. The report shall include all test results taken on site. The report shall list in detail all the repairs required with the associated cost.

The Contractor shall on completion of the repairs re-test the complete installation and submit the results to the engineer. A new CoC shall be issued.

The Contractor shall provide an updated drawing of the earthing and lightning protection system. Two hard copies of minimum A3 size shall be provided as well as in electronic format in AutoCAD.

PS15.5 Raising and lowering of luminaries

PS15.5.2 Trailing cable masts

Add the following new Sub-clauses:

“PS15.5.2.21 The raising and lowering gear complete with cabling, pulleys and luminairing shall be classified as Employer Fixed Assets and shall be maintained by the Contractor.”

“PS15.5.2.22 The Contractor shall provide tendered rates for the following poles/mast for asset replacement as instructed by the ER. The poles/masts shall be provided complete no extra cost will be allowed.”

TYPE A	DESCRIPTION
P1	10m Scissor mast including switchgear, earthing, luminaire mounting bracket/spigot for 1 x LED luminaire.
P1B	Mast base for 10m Scissor mast as per pole/mast manufacturer, Dynamic Cone Penetration (DCP) test, concrete test certificate and Engineer sign-off required after installation.
P2	12m Scissor mast including switchgear, earthing, luminaire mounting bracket/spigot for 1 x LED luminaire.
P2B	Mast base for 12m Scissor mast as per pole/mast manufacturer, DCP test concrete test certificate and Engineer sign-off required after installation.
P3	16m Scissor mast including switchgear, earthing, luminaire mounting bracket/spigot for 1 x LED luminaire.
P3B	Mast base for 16m Scissor mast as per pole/mast manufacturer, DCP test concrete test certificate and Engineer sign-off required after installation.
TYPE B	DESCRIPTION
P1	12m mid hinge mast including switchgear, earthing, luminaire mounting bracket/spigot
P1B	Mast base for 12m mid hinge mast as per pole/mast manufacturer, concrete test certificate and Engineer sign-off required after installation.
TYPE C	DESCRIPTION
P1	10m fixed mast including luminaire mounting bracket/spigot
P1B	Mast base for 10m fixed mast as per pole/mast manufacturer, DCP test, concrete test certificate and Engineer sign-off required after installation.

TYPE D	DESCRIPTION
P1	Fixed luminaire ring raising and lowering cables, pulleys and trailing cable, etc. to lower and raise the luminaire ring. The Contractor shall provide a daily rate to hire a suitable crane to service or replace the complete pulleys system and cables on the 25m mats at Grasmere Toll Plaza. The rate shall include traffic accommodation where required
P1T	The Contractor shall price a rate for technical/engineering services for item D-P1 above.
P1S	The Contractor shall price for a complete service kit (material) per 25m mast to complete the service of each mast.
TYPE D	DESCRIPTION
Transport	Allow for transport cost (rate per km) from the pole/mast manufacturer to the Toll Plaza.

PS16 UNINTERRUPTED POWER SUPPLY UP TO 50kVA

PS16.3 Technical Requirements

Delete these Sub-clauses and replace with the following:

“PS16.3.1.1 Technology: Modular UPS systems with a at least 3 x Plug and Play type hot swappable/hot plug power modules shall be provided. Two of the modules must be able to carry the required full load of the site with the third as “spare”. The load will be distributed through all three power modules equally when in full working condition.”

“PS16.3.1.3 Rectifier: Latest IGBT technology to be used or better”

“PS16.3.1.4 Low current distortion: Less than 5%”

“PS16.3.1.8 Efficiency: 94% full load (AC-AC)”

Add the following new Sub-clauses:

“PS16.3.1.15 Load Crest Factor: 3:1 Minimum (6:1 preferred)”

“PS16.3.1.16 Input current THDi <5%”

“PS16.3.1.17 Output voltage THDv <2% for linear load”

“PS16.3.1.18 Operating Temperature -10°C to +40°C”

“PS16.3.1.19 Humidity 95% max non-condensing”

PS16.4 Nature of UPS Load

Add the following new Clause:

“PS16.4.4 Volume 2 Book4a requires the installation of additional UPS systems for some Toll System components. The intension of these UPS systems is to provide the specific component with power during a power and must be a well-integrated part of the component that is low powered (<350W max) and energy efficient (>90% at 50% of rated current). Larger UPS systems (>350W) that is not an integrated part of the component design will only be considered if an engineering solution is provided for the Employers Representative approval that was designed and signed off by a professional registered electrical engineer. The engineering solution must take the main UPS installation into consideration.

PS17 AUTOMATIC DIESEL STANDBY GENERATOR UP TO 250KVA**PS17.1 Scope**

Add the following new Sub-Clause:

- “PS17.1.2 The generator size shall be based on the Toll Plaza load profile before the installation of a Small-Scale Embedded Generator (SSEG) but shall take into consideration any energy efficiency upgrades.”
- “PS17.1.3 The generator must be rated for continues power due to the current high risk in power failures on a regular basis for longer time periods or continuous operation.”
- “PS17.1.4 The Contractor shall supply and install a second continuous power generator at Grasmere mainline as primary power supply (replacing City Power the does not exist due to stolen infrastructure)”
- “PS17.1.5 The Contractor shall supply and install new generator controller modules that will be configured to “flip-flop” between the primary and secondary generators to share the load equally during a 24hr period. The Contractor shall provide a detail technical proposal on the operations of both generators for the ER approval before the Contractor can continue with the implementation.”

PS17.10 Bulk Fuel Tank

- “PS17.10.21 The Contractor shall supply and install a new bulk fuel tank at Grasmere Mainline Toll Plaza, with a diesel store capacity of 10000lts, and at Verkeerdevelei Mainline Toll Plaza, with a diesel store capacity of 2000lts, including stand, foundation and bund wall with diesel trap and all pipes and fittings, in accordance with SABS specifications and fire regulations.”
- “PS17.10.22 The Contractor shall submit a technical report and detail design on the complete tank design for the ER to approved.”
- “PS17.10.23 The location of the new tank will be agreed with the ER on site.”
- “PS17.32 Replace generator inspection report in V2B3 with the following:

GENERATOR SERVICE / INSPECTION REPORT			
Date		Site Name	
GENERATOR INFORMATION			
Engine Model		Alternator Model	
Serial No.		Serial No.	
KVA Rating (Max)	kVA	KVA Rating (Nom)	kVA
Commission Date		Previous Service Date	

CHECKS	x / ✓	ENGINE RUN CHECKS	x / ✓
Air Inlet Inspection		Simulate Low Oil Pressure	
Air Filter & Vacuum Indicator		Simulate High Engine Temperature	
Oil Filter		Simulate Low Water Level	
Oil Leak		Simulate Low Fuel	
Oil Level		Simulate Over/Under Freq	
Fuel Filter – Prim/Sec		Simulate Over/Under Voltage	
Fuel Leak		Simulate Start Attempts (Cranking)	
Fuel Water Trap		Check Governor Function	
Fuel Hoses		Check Charging Alt	
Fuel Transfer Pump (bulk-day)			
Radiator/Heat Exchanger		Check Coupling Noises	
Fan Cowl			
Coolant level, colour & clarity		CONTROL PANEL CHECKS	x / ✓
Jacket Water Heater “ON”		Mains Failure Test	
JWH Hoses (Replace Annually)		Check Change Over Timing	sec

Fan Belt Tension/Condition		Check on Load Run Period	
Battery Condition		Check Cooling Delay Unit Shut Down	sec
Battery Electrolyte Level		Check Panel Selector (Auto)	
Water Pump Condition		Check Fan/Motor Isolators	
Turbo Charger Condition			
Crankcase Breather		RECORD	
Canopy/Plant Room Condition		Frequency	Hz
Fresh Air Circulation in Gen Room		Kilowatt	kW
		Oil Pressure	KPa/PSI
RECORD		Fuel Pressure	KPa/PSI
Battery Voltage Standby (With utility power charging)	V	Engine Temperature	°C
Battery Voltage Standby (No utility charging)	V	Day Tank Fuel Level	%
Charging Current (Utility)			
Charging Current (Engine Alternator)	A	Bulk Tank Fuel Level	%
Hour Meter	Hr	Fuel Type	
	R	W	B
Max Demand Amps	A	A	A
On Load Current	A	A	A
Voltage	V	V	V

COMMENTS**SIGN-OFF**

NAME	DESIGNATION	ORGANISATION	ROLE	SIGNATURE
			Generator Specialist	
			Contractor	
			Employer's Representative	

PS18 SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)

Add the following new Sub-clause:

“PS18.1.9 Generator SCADA Implementation

The current alarm annunciator panels on the route are hard wired manual systems. It is required of the Contractor to replace all alarms and functions of the annunciator panels with a SCADA system replacement. It is required from the SCADA system to monitor, as a minimum, the following:

Monitoring of power meters inside the main distribution board:
Kw, kVA, pf, V and A per phase

Monitoring of circuit breaker status:
Open, close, trip

Monitoring of generator supply with alarms for generator faults:
Run, engine start failure, fuel level, kW, kVA, frequency, V and A per phase

Monitoring of UPS supply with alarms for UPS faults:
Bypass, battery low, kW, kVA, frequency, V and A per phase

Monitoring of temperature of

Control room
UPS room

Monitoring of borehole pumps
Flow rate
Pump running current
Tank level

The Contractor shall allow for the installation of the energy meter in the main distribution board and temperature sensors in the UPS and control room as well as level switches and flow meters for borehole pumps and water tanks.

If the current UPS systems can accommodate modules that are capable of communicating with a SCADA system via Ethernet or similar, the operator needs to implement such devices in order to interface it with the SCADA system in the control room.

If the current generator controllers are not capable of interfacing with the SCADA systems in the control rooms, then the operator will have to replace the generator controllers with suitable controllers in order to accommodate the SCADA interface requirements.

Please refer to the standard specification for electrical and mechanical work document for the relevant SCADA specifications for each application.

The SCADA system must be implemented as soon as possible, but not later than one (1) year from the Commencement Date of the Operations Service Period."

The Contractor may propose a similar off-the-shelf solution that will comply with the Employer's requirements and approved by the Employer's Representative and the Employer.

PS18.2 SCADA REMOTE ACCESS

Add the following new Sub-Clause:

'PS18.2.28 The Contractor shall provide reliable communication on site which will satisfy the requirements of the SCADA system communication to all connecting devices. The Employer and the Employer Representative must be able to log into the SCADA system remotely or through the Contractors data network.

PS18.3 Electric Fence

Add the following new Sub-Clause:

"PS18.3.2 The Contractor shall provide a complete electric fence (36 or 8 strand) for fence for Grasmere Mainline Toll Plaza to be installed with the new high security fence. Vehicle and pedestrian gates shall be included in the rate tendered."

PS18.6 CCTV

Add the following new Sub-Clause:

"PS18.6.2 The Contractor shall provide CCTV cameras with motion detection sensors and with analytics to monitor remote assets. High-risk assets may include but not be limited to, remote assets, road and area lighting, electrical infrastructure, water tower, remote ramps, security fence, containers, or any assets at high risk to vandalism and crime related activities as identified by the Contractor or by Employer's Representative. The video must be able to send notification(s) to a control room that must be acted on receipt of the notification.

Minimum specifications shall be as follows:

Camera:

Power supply – Lithium batteries with 12V battery low limit and average battery life of 4 years. Max current consumption 320mA.
 RF technology – Bidirectional RF. 868MHz operating frequency. Integrated antenna.
 Transmission security AES encryption algorithm.
 Video format - WMV or MPEG. Five (5) imaged per second with video length up to 12 seconds. Image size 320x240 or 640x480 pixels.
 Environmental - Operating temperature -25°C/+70°C in IP65 enclosure.
 Lens angle - 90°
 Infrared LED's- 12m night vision with passive infrared DSP.
 Tamper alarm – Tilt sensor.
 Housing – Polycarbonate UL94.
 Mounting kit- To be provided base on installation location.

Control Panel:

Power supply – Lithium batteries with 12V battery low limit and average battery life of 4 years.
 RF technology – Bidirectional RF. 868MHz operating frequency. Integrated antenna.
 Transmission security AES encryption algorithm.
 Communication type- 2G3G with an integrated antenna with an external antenna if required.
 Video format - WMV or MPEG. Five (5) imaged per second with video length up to 12 seconds. Image size 320x240 or 640x480 pixels.
 Environmental - Operating temperature -25°C/+70°C in IP65 enclosure.

Active monitoring

The Contractor shall provide a control area or use an external control room to monitor and report on unauthorised activities. The Contractor to ensure that Sim card(s), data and any Apps in order to fill full this monitoring function must be included."

PS 29 WALL AND SPLIT-TYPE AIR CONDITIONING

PS 29.1 General

PS 29.1.5 The Contractor shall replace all air conditioners that are older than fifteen (15) years from date of installation. The number of years of the existing air conditioners will be indicated on the asset register in Part C4 of Volume 4. The air conditioners older than fifteen (15) years must be replaced within three (3) months after the Commencement Date of the Operations Service Period, or after the fifteen (15) year period is reached during the Operation Service Period.

The Contractor shall provide for high-efficient air conditioner with minimum Energy Efficiency Ratio (EER) and Coefficient of Performance (COP) in the range A++ EER/COP >3.6. The Contractor shall also use 4th generation refrigerants (R32/HFC) with all newly installed air conditioners. All new installed air conditions shall be supplied with a SANS 54511-2 energy efficient label clearly indicating the energy efficiency rating.

In addition to the EER/COP performance, the Contractor shall provide the Employer's Representative with the Seasonal Energy Efficiency Ratio (SEER). The SEER for the air conditioners shall be the highest available value in the market at the time of installation.

All the air conditioners at Grasmere Mainline and Remote Ramps shall be replaced within six (6) months from the Commencement Date to reduce the energy consumption.

"PS29.1.6 The Contractor shall only install new inverter compressor technology that operates with an inverter to control the compressor motor speed to modulate cooling or heating capacities.

The air conditioner to be linked with an occupancy sensor that will switch the unit off when the booth or room is not occupied for a period."

PS 29.6 Ventilation and fresh air system

PS 29.6.1 The Contractor shall supply and install a new fresh air supply system at Grasmere and Vaal Mainline Toll Plazas. The fresh air shall generate a positive pressure inside the toll booth to prevent vehicle emissions entering the toll booth. The air will be introduced via the existing ducting where possible with special attention to prevent drafts to the toll collector. The air outlet in the booth to be ducted to the inlet of the booth air conditioner where possible. The old fresh air fan will be removed or upgrade. The ducting shall be free from air leaks and the air to the booths will be controlled via a variable speed drive (VSD) as the toll booths not occupied shall be switched off until occupied for a set period. Occupation sensor or similar to control the function shall be implemented.

The fresh air system upgrade shall comprise of the following:

Primary washable filters with aluminium coated filter frame via filter box hinged access panel. The filter box will have a weather cowl and louver to prevent rain entering the system.

Axial flows with one sound attenuation or air supply side.

Automatic Variable Speed Drive (VSD) to be added to increase or decrease the airflow based on the pressure system.

All air leaking in the system between the new fresh air fan and the toll booth to be fixed including replacing galvanised sheet metal ducting where required. Ducting shall be painted where required.

The ducting between the lane canopy and the toll booths including the post air heating system shall be upgraded/replaced including the interface with the toll booth occupancy sensor. The Contractor shall use current valves to control the re-heaters to improve the system energy efficiency.

New concrete base and security fence.

Modbus controller for interface with BMS/SCADA system.

The Contractor shall investigate the option to use gas to pre-heat the fresh air at the chiller handling unit or package unit. Should this option be viable the Contractor shall implement."

PS34 GENERAL MAINTENANCE

ROUTINE MAINTENANCE, CORRECTIVE MAINTENANCE AND BREAKDOWN MAINTENANCE

Replace the following Sub-Clause:

"PS34.3.6.1 Generator Routine Maintenance

Under normal operating conditions (generator running < 250hrs a year) the Contractor shall service the generator every 6 months and a copy to be stored on the SCADA or any other electronic approved maintenance management file system. See proforma under item 17.32. Under abnormal conditions the generator is running > 250hrs the generator shall be serviced every 500hrs or 6 months whichever comes earlier.

The generator services shall include as a minimum the Changing of the Oil & Fuel Filters and Air filters as mentioned in the Owner's Manual.

Checking / Topping up of Engine oil and Coolant in between the 500hrs Services"

PS35 GENERAL MAINTENANCE SCORING SYSTEM

Replace the table in Clause 35.1 with the following table:

General Maintenance Scoring Criteria		
Points Allocation	Guideline Criteria	Standard of Workmanship
10	Contractor performance above expectation. Typically replaced equipment above the original specification.	Generally, above required standard.
9	Contractor performed above expectation. Typically replaced equipment ahead of time with new similar quality equipment.	
8	Contractor performed above expectation. Typically maintained equipment properly, cleaned, mounted and maintained looks new.	
7	Maintenance on a good level. More done than just the bare minimum.	Generally, around the required standard
6	Maintenance performance on expected level, but slightly better than the bare minimum.	
5	This is the minimum expected level. Equipment maintained by doing the minimum.	
4	Maintenance performed at the minimum, just to keep it working.	
3	Maintenance performed is poor or it is working, but damaged. Some level of risk is present.	Generally, below the required standard
2	Equipment not working properly and/or badly damaged. Risk is present.	
1	Equipment is not working, is missing or poses a high risk on some level.	

PS37 PHOTOVOLTAIC SYSTEM (PV)/RENEWABLE ENERGY

The Contractor to note that it is the intention of the Employer to install a Small-Scale Embedded Generation (SSEG) or Off-Grid Embedded Generation (OGEG), in respect of a new photovoltaic (PV) system with battery and generator back-up that will be used to reduce energy consumption or to take the complete Toll Plaza off grid where required.

Grasmere Mainline and Ramps Toll Plaza shall be the first Toll Plazas that will be upgraded with a new PV system due to City Power infrastructure that was vandalised and non-existing

The main components of the PV system is proposed to consist of the following:

Photovoltaic panels from a tier 1 manufacturer shall be supplied and installed on the existing lane canopy structure, canopy structure shall be signed off by a structural engineer;

PV panes shall be provided with suitable optimisers that will serve as safety units to reduce high DC voltages to a safe voltage during fault conditions or for other purposes i.e. maintenance on the system. The units shall also be used to monitor the performance of each panel;

Lightweight aluminium mounting structure for the panels;

DC cabling and cable ways between equipment;

DC combiner boxes complete with intelligent controller for interface with optimises and PV management system, DC fuses, DC switches and DC surge protection;

Lightning protection for PV system;

Surge protection with remote monitoring function;

Cabling between combiner boxes and battery charging system;

Batteries for solar application with >15 years life cycle under the installed conditions at the Toll Plaza. OPzV type batteries shall be preferred, other battery technology may be proposed that complies with the contract requirements and installation restrictions;

To ensure that the charge controller/battery inverter prematurely start the generator under high load conditions on the batteries the battery charger/inverter shall be provided with current-compensation voltage threshold technology;

The battery inverter shall use the latest integrated algorithms to determine the state of battery charge;

The battery inverter shall integrate fully with the generator controller to ensure that the generator is efficiently used taking warm-up, cool down and minimum running time into consideration;

One or more ER approved inverters shall be supplied and installed at a location agreed with the ER. The inverter(s) capacity shall be sufficient for the maximum power demand of the Toll Plaza based on the data from the energy power meter and after any energy reduction measures were implemented. Inverters shall be type tested inverters in terms of NRS 097-2-1:2017, as amended;

Inverter supplying power into the local AC power infrastructure;

Intelligent interface between inverter or battery charger to control the power feed into the local power network between the different back-up systems.;

SANS 1507 PVC SWA PVC LV Cable between the Inverters and electrical infrastructure.

The SSEG or OGEG shall be signed off by a PrEng or PrTech (Electrical).

The Contractor shall be required to proof that the material and the PV installation complies with local and international standards and regulations during the detail design and commissioning phases.

The Table below provides information of the existing area available on the Toll Plaza lane canopy and plant building (Verkeerdevlei) for the installation of PV panels:

Toll Plaza lane canopy area	Mainline			Ramps		
	W	L	m ²	W	L	m ²
Grasmere	15.7	101	1585.7	13	13	169
Vaal	15.7	42.5	667.25			
Verkeerdevlei (plant building)	7.5	23	172.5			
Brandfort	21	37.8	793.8			

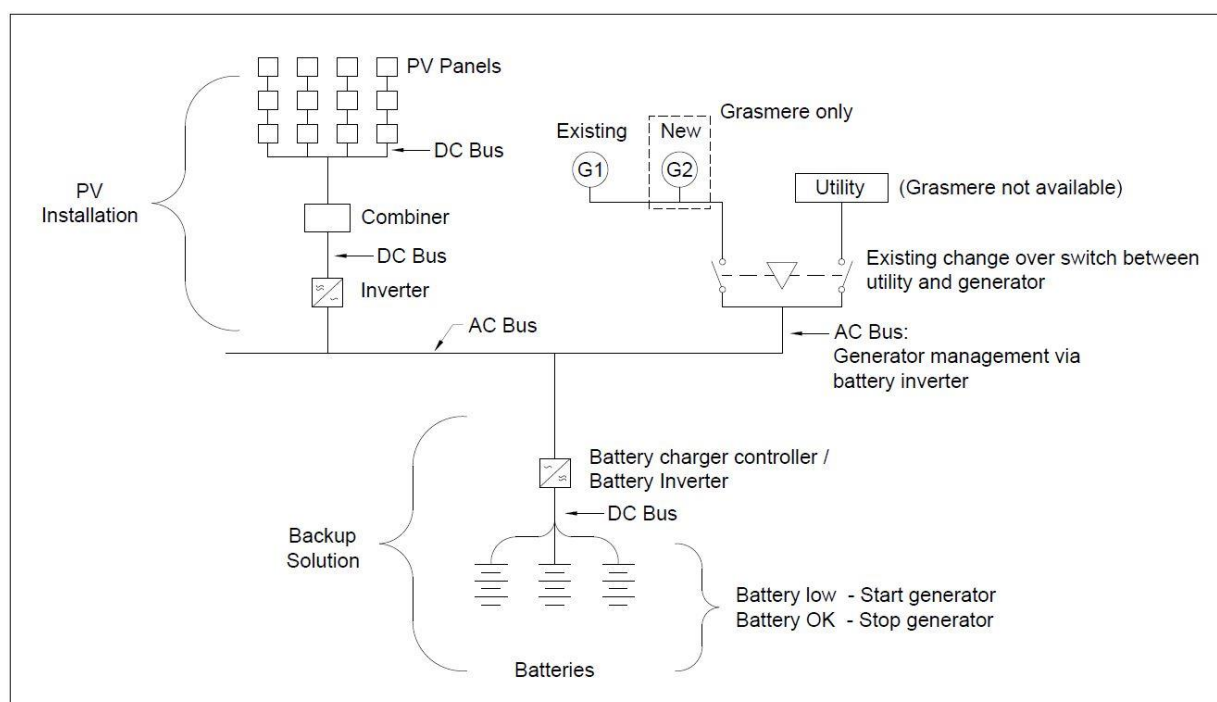
Toll Plaza lane canopy area	Mainline			Ramps		
	m ²	-m ²	=m ²	m ²	-m ²	=m ²
Grasmere	1585.7	20%	1268.56	169	20%	118.3
Vaal	667.25	20%	533.8			
Verkeerdevlei (plant building)	172.5	30%	120.75			
Brandfort	793.8	20%	635.04			

-m² maintenance area deducted

=m² estimated available area for panels

The Contractor shall provide a design for the PV and battery storage system, which shall be discussed with the Employer and the Employer's Representative.

Following the design and its approval, the Contractor shall provide a PV system for each Toll Plaza based on the high-level layout provided below:



The Contractor to note that the battery backup system may be excluded at some Toll Plaza as instructed by the Employer.

The Contractor shall maintain the PV system on a bi-monthly basis which will include but not be limited to cleaning panels, inspect mounting structure, cabling, cable connection, equipment, batteries, performance of the system. The interface with the generator shall also be tested.

The Contractor shall provide a complete and comprehensive maintenance PV plan to maintain the PV system to the ER for comments and approval. Maintenance payment will only be allowed based on the approved maintenance PV plan and confirmation through a detail report submitted on a bi-monthly basis.

The available energy consumption per Toll Plaza is included in Part C36 of Volume 4.

PS 38 ENERGY PERFORMANCE CERTIFICATE FOR BUILDINGS

The Contractor shall comply with the mandatory Legislation as published by the Minister of Mineral Resources and Energy under section 19(1)(b) of the National Energy Act. The notice was published on 8th December 2020 in notice 700 Government Gazette 43972 and stipulates that the Contractor is required to obtain the building's energy performance information according to SANS 1455.

The Contractor shall appoint an Accredited Inspection Body to audit each Toll Plaza and, once completed, submit the relevant supporting documents to SANAS for inclusion into the National Building Energy Performance Register. SANAS will issue a unique Energy Performance Certificate (EPC) number, and the Inspection Body will issue the EPC to the Contractor with a copy to SANAS.

Energy Performance Certificates are "snapshots" of a building's energy consumption (kWh/m²/year). The Contractor shall obtain an updated EPC after a significant building renovation or energy avoidance upgrade as instructed by the Employer Representative or by the Employer.

The EPC must be displayed in the Toll Plaza foyer/reception area and submitted to the South African National Energy Development Institute (SANEDI) every five (5) years.

The Contractor shall obtain the EPC within twelve (12) months from the Commencement Date.

PS 39 ENERGY EFFICIENCY UPGRADES

The Contractor shall upgrade the following assets at each Toll Plaza to avoid energy usage:

Solar geysers

Electric stove to be replaced with gas stove

Replace old technology lighting with new LED lighting.

PS 40 FIRE DETECTION AND SUPPRESSION SYSTEM

The Contractor shall provide a new fire detection system for Grasmere, Vaal and Verkeerdevlei toll Plazas that complies with the latest regulations and standards. The system call is complete with controller, smoke detector and cabling as per the Contractor detail design.

The system shall have one (1) addressable fire panel with LED indication for both fire and fault conditions and front panel user interface. The Contractor shall provide one or more smoke detectors in each room. The fire panel shall support Aritech 2000 and 900 series protocol with I/O programming and extensive maintenance features.

The minimum requirements of the system are listed below:

Power – Mains supply 230V with battery back-up (72-hour autonomy). The Contractor shall provide electricity at the panel location.

Loops – 4 (Class A/8 (Class B), <2km.

Inputs and Outputs – 4 x Relays.

Environment – IP 54, -5°C to +40°C.

Maintenance – The system should include a one-person maintenance function: programming service reminder, on-line diagnostics and statistics.

Devices- Up to 128 devices addresses per loop.

Detectors – Smoke and heat detectors according to the Contractors fire system design.

Cables and wireways – The Contractor shall provide all cables and wires and wireways for the cables and wires. Cables and wires shall be protected and secured the entire route.

The fire detection system shall meet legal requirements and adhere to SANS 10139/BS 5839.

C3.2.4 PARTICULAR AMENDMENTS TO THE STANDARD SPECIFICATION FOR OPERATIONS AND MAINTENANCE OF CTROM PROJECTS: TOLL SYSTEMS (VOLUME 2 BOOK 4a)

The number of each Clause in a Particular Specification in this section consists of the Prefix PS followed by a number corresponding to the number of the relevant Clause in the Standard Specification for the Operations and Maintenance of CTROM Projects: Toll System (Volume 2 Book 4a). The number of any new Clause which does not form part of any Clause in the Standard Specification for the Operations and Maintenance Projects: Toll System (Volume 2 Book 4a) and which is included herein, is also prefixed by PS followed by a new number. Such new numbers follow on the last Clause used in the relevant section of the Standard Specification for the Operations and Maintenance of CTROM Projects: Toll System (Volume 2 Book 4a).

PS1.1 GENERAL

Add the following clauses:

PS1.2 ROLES AND RESPONSIBILITIES

PS 1.2.1 The Contractor and Nominated Subcontractor (System Integrator) roles are:

The Contractor and the Nominated Subcontractor (System Integrator) roles are required for the duration Operations Service Period. The role of the Contractor and the Nominated Subcontractor (System Integrator) may be one Contractor or a Contractor with Subcontractors.

The role of the Nominated Subcontractor (System Integrator) for the Toll System, for the purposes of this Contract is separated. The Contractor, for the Subcontract for the design build, operations, and maintenance of the Toll System, will be appointed as a Nominated Subcontractor by the Contractor of the Operations and maintenance of Toll plazas.

PS 1.2.2 Contractor

The Contractor shall primarily be contracted for all operations and maintenance related to the CTROM Operations contract (inclusive of the Toll System equipment to be provided and maintained by the Nominated Subcontractor).

The Contractor shall be responsible for the maintenance of all Employer's Assets, Facilities and Equipment, as well as the Nominated subcontractor-provided Assets, Facilities and Equipment.

The Contractor shall ultimately be responsible for the management and control of the Nominated Subcontractor. The Contractor shall monitor, measure and report on the performance of the Nominated Subcontractor, to ensure that the Nominated Subcontractor delivers in terms of the Employer's Requirements. The Contractor shall be cognisant of the risk allocated in Part C3.2.6 Performance Measurement.

The Contractor shall be responsible to provide and maintain a Help Desk and Equipment Record System and will utilise these systems to allocate, monitor and report on maintenance tasks and tickets assigned to the Nominated Subcontractor, and monitor and report the availability of spares.

For the avoidance of doubt, the following aspects will be maintained by the Contractor, and not by the Nominated Subcontractor:

Road signs in dedicated ETC or Shesha lanes

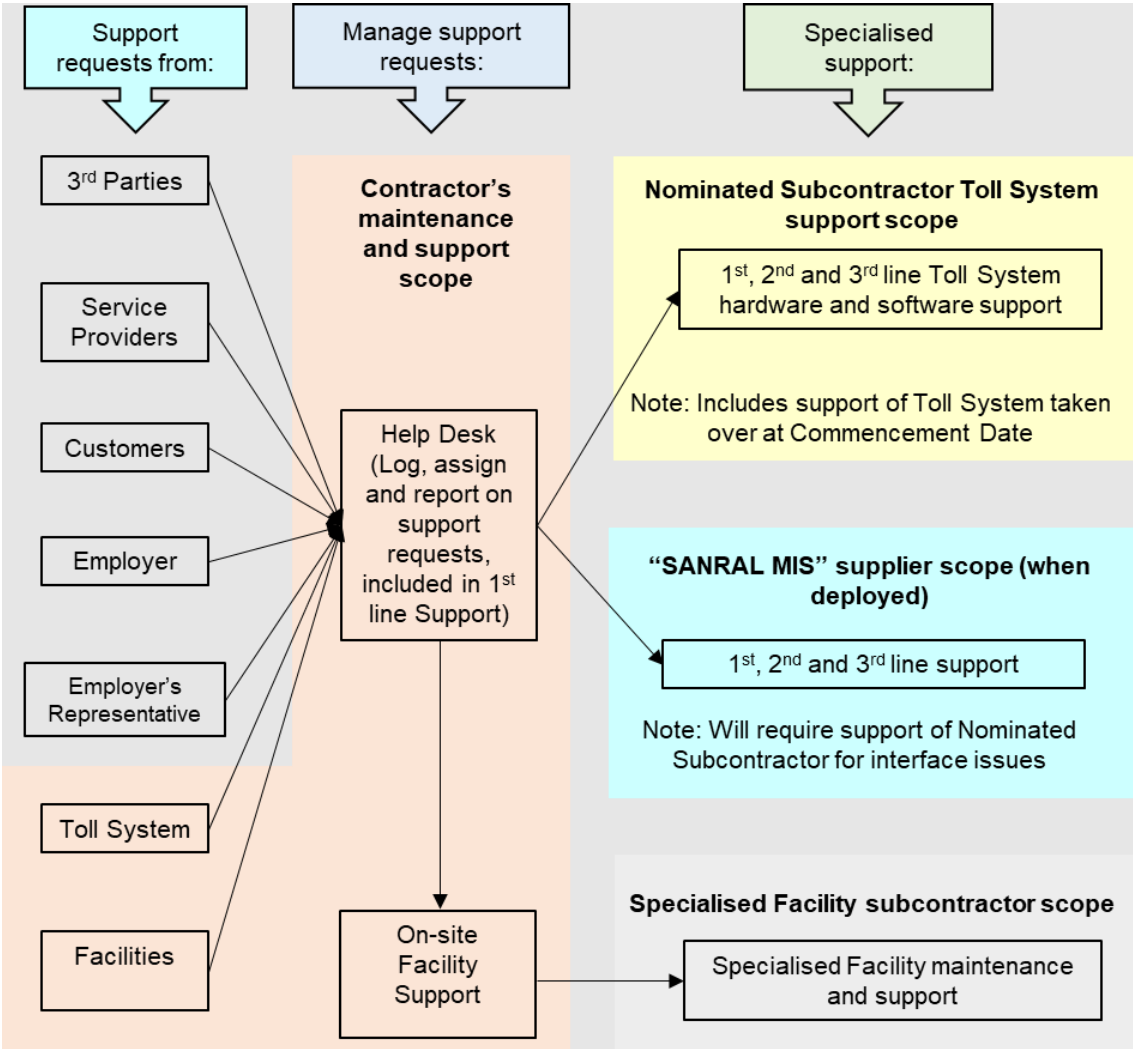
Electrical and Mechanical works in the toll plazas
Air conditioners, ventilation systems, toll booths, toll booth fixtures, and the like

PS 1.2.3 Nominated Subcontractor (System Integrator)

The Nominated Subcontractor shall primarily be responsible for the provision and maintenance of the Toll System (inclusive of the maintenance of the existing Toll System handed over at Commencement Date) and possibly parts of the SANRAL MIS.

The Nominated Subcontractor shall provide the necessary personnel, spares, Test rig, and tools to maintain the Toll System, inclusive of the required 1st, 2nd and 3rd line maintenance and Support activities.

The Nominated Subcontractor shall further establish an interface to the SANRAL MIS system and be required to cooperate fully with the new SANRAL MIS Contractor appointed by the Employer, if triggered, and to provide support to this contractor. Cooperation shall include, inter-alia, continuous liaison, information and documentation transfer (where required in terms of the Contract), etc.



The Nominated Subcontractor shall further be required to assist with the swap over to the SANRAL Toll System and be required to cooperate fully with the new SANRAL Toll System contractor appointed by the Employer, if triggered, and to provide support to this contractor. Cooperation shall include, inter-alia, continuous liaison, information, and documentation transfer (where required in terms of the Contract), etc.

PS 1.2.4 Joint Contractor and Nominated Subcontractor (System Integrator) roles

The Contractor shall design, execute, and complete the Works and operate the Works during the Operation Service Period. The Contractor shall ensure that the Toll System is fit for purpose.

The Contractor shall therefore be responsible for managing and ensuring the Nominated Subcontractor supplies and maintains the Toll System in accordance with the requirements. The Employer's Representative has no direct contractual role with the Nominated Subcontractor (SI). The Contractor will therefore ensure that any designs, documents, procedures, specifications, programs, proposals, and test results have been verified and that any issues are corrected before submitting such to the Employer's Representative. The Contractor shall also supervise and attend testing to ensure the veracity of tests and test results.

PS2 GENERAL REQUIREMENTS

PS2.1.9 ESCROW Agreement

For any software and/or software product, provided by the Contractor, the required Escrow agreement(s) shall be concluded during the Establishment Period and for initiation of any triggered Design-Build Section and/or subsection. After deposit of the Escrow package, it will be verified and certified by the Contractor prior to presenting the product as compliant to the ER. Upon compliant certification by the Contractor, the product or service will be verified by agents appointed by the Employer. Full or partial deposits shall be made after successful deployment of any new version or patch of any system software. At least one full deposit shall be scheduled for and executed every two (2) years for the duration of the Operation Service Period.

An existing deposit of the current Toll System was made with the escrow agent (Escrow Europe) as part of Escrow agreement that covers the Efkon/ TolLink Toll System Nationally. Full Verification of escrow deposit and Disaster Recovery Pack is in progress.

The Contractor shall setup and enter into an Escrow agreement with the Employer, the Nominated Subcontractor and the Escrow Agent. The Employer shall be the only beneficiary of the Escrow Agreement, and both the Employer and the Contractor shall be able to call on the release of the Escrow, when so provided for in the terms of the agreement.

The Contractor shall be required to ensure that an Escrow agreement, signed by the Contractor, the Nominated Subcontractor, Employer and the Escrow agent, is in place and that an escrow deposit is made and full verified, which includes compilation of source and testing of compiled executables, by the Escrow agent, within two months after the deployment of the Toll system to all lanes. The escrow package delivered by the Nominated Subcontractor shall include the relevant site executables and disaster recovery pack, which shall also be verified by the Escrow agent. The Escrow pack and DRP verification report shall be supplied within three months of the deployment of the Toll System to all lanes.

Add the following subclause:

PS2.1.11.3 Development Work Scheduling

The minimum calibration or maintenance free period shall be three (3) months.

Toll System Related Upgrade Installation and Certification

The Contractor shall compile a programme (Gantt chart), defining the Contractor's commitment. In order to comply with any triggered Design-Build Section or Subsection requirement during the contract period. This program shall include each component (software and hardware) developed, upgraded, tested, verification, corrective action, implemented and certified as compliant by the Employers Representative during the upgrade and installation commissioning and verification period.

During the Design-Build Period the Contractor is to provide agreed period progress reports which shall include the following:

Charts and detailed descriptions of progress, including each stage of design, for each Section,

Contractor's documents, procurement, manufacture, delivery to site, construction or replacement, erection, testing, commissioning, trial operation and provision of Operation Service;

Photographs showing the status of manufacture or replacement and of progress on the Site;

For the manufacture or replacement of each main item of Plant and Materials, the name of the manufacturer, manufacture location, percentage progress, and the actual or expected dates of:

- (i) commencement of manufacture,
- (ii) Contractor's inspections,
- (iii) tests, and
- (iv) shipment and arrival at the Site;

Records of Contractor's Personnel and Equipment;

Copies of quality assurance documents, test results and certificates of Materials;

List of Variations and Notices;

Safety statistics, including details of any hazardous incidents and activities;

Relating to environmental aspects and public relations; and

Comparisons of actual and planned progress, with details of any events or circumstances which may jeopardise the completion in accordance with the Contract, and the measures being (or to be) adopted to overcome delays.

The progress reports should be submitted to the Employer's Representative electronically and the first report shall cover the period up to the end of the first calendar month following the Commencement Date. Reports shall be submitted monthly thereafter, each within seven (7) days after the last day of the period to which it relates. Reporting on progress shall continue until the Contractor has received the Contract Completion Certificate.

PS2.3.1 Communication Infrastructure

The Contractor is to investigate the Wide Area Network (WAN) currently installed at all the existing Toll Plazas (Verkeerdevlei, Vaal, Grasmere and Brandfort) and upgrade and / or replace the existing WAN communication backbone also referred to as Primary Communication Network, from Back Office System to each toll lane/tolling point. Refer to Part C11 of Volume 4 for the summary of the description of toll system installed.

Note, the following shall apply, should any upgrades to the WAN be required:

The Contractor shall ensure that as a minimum CAT6 Cable is used within the boundaries of the buildings. Cable provided for any cameras or video servers between buildings shall be connected by means of Fibre Optic Cable or other technology as approved by Employer Representative which is not prone to damage caused by electrical or lighting surges. The Contractor is also to ensure that where CAT6 (or later high-speed derivatives) or coax cable is being used, such cabling be shielding and earthed at one end only or as instructed by the Contractor surge and lightning protection specialist.

Help Desk System & QLS

The Contractor shall have the Help Desk System, and QLS systems upgraded, replace, installed, implemented and tested to full compliance in this respect of the toll system by the end of the first month from the Operations Commencement Date.

The Contractor shall clarify any uncertainty regarding the requirements before the Commencement Date.

"PS2.4.2.5 Hardware Verification:

Replace (d) with the following:

- (d) As soon as the Contractor has received all the Hardware, workshop tools, Test rig and spares required for the project, the Contractor shall invite the Employer's Representative to verify the Equipment in order to ensure that it is available on time in accordance with the program submitted

by the Contractor. The Test Rig, workshop tools and workshop spares shall be allocated/packaged per workshop to assist with verification. The Hardware verification will only be deemed successful once this has been achieved, with only minor outstanding Hardware items. Verification shall be conducted at least 1 month prior to the scheduled start of Site deployment date of the system.

“PS2.7.2 Systems existing at the Commencement Date

A description of the current toll system, the description of the current ISO Bank Card system and associated procedures for the existing Toll Plazas are provided in Part C10 and Part C11 of Volume 4.

PS2.7.3.1 System upgrades

Table 5-1: System upgrades

Sections	Description	Implementation required. (The list of items highlighted here is not exhaustive)	Implementation period after the Commencement Date of the Operation Service Period or the trigger
Section 1	Existing compliance level: Functional Compliance with the 2010 CTROM requirements	<p>No new deployment required.</p> <p>The Contractor shall implement Establishment upgrades to items. The Contractor shall maintain a high level of the current system performance by appropriate routine and corrective maintenance processes.</p> <p>Design and Deploy a VGS, QLS and ANPR pilot for the Grasmere mainline north plaza (if triggered).</p>	6 months
Section 2	Keep existing compliance level: Functional Compliance with the 2010 CTROM requirements plus Establishment Upgrades.	<p>Establishment upgrades including but not limited to:</p> <p>Replacing all old and underperforming hardware, operating systems, and application software</p> <p>Move the TCH gateway from Vodacom business to a plaza on the N1S route (PS13.2.2.1).</p>	18 months.

Sections	<i>Description</i>	<i>Implementation required.</i> <i>(The list of items highlighted here is not exhaustive)</i>	<i>Implementation period after the Commencement Date of the Operation Service Period or the trigger</i>
Section 3	Section 3 be the supply of a new Toll System, including additional items detailed in V3B1.	<p>The new deployment shall include, but not be limited to:</p> <p>Replace hardware and deploying the new system. Hardware replaced during the establishment phase may be utilised.</p> <p>Additional Lane level in designated ETC lanes including:</p> <p>10 DETC lanes at Grasmere (4), Vaal (2), Verkeerdevelei (2) and Brandfort (2) plazas.</p> <p>ETC OHLS (e-sign) in Shesha and dedicated ETC lanes</p> <p>Lane and plaza network upgrades</p> <p>Supply a full complement of spares, tools and a test rig</p> <p>ANPR, including VLN presence detector in all lanes (if pilot is successful and if triggered).</p> <p>Health monitoring TCC, BOS, VGS and PGW.</p> <p>Configuration management for the Toll and VGS/QLS System.</p> <p>Deploy the Nx x/y OPS level server and the TCH payment gateway at the Server room at plaza. New payment gateway and OPS level server.</p> <p>Manage and implement a direct fibre connection,</p> <p>Upgrade all lane level UPS units and batteries.</p> <p>Add external EMV contactless card readers (light and heavy vehicles) to all mixed ETC lane (if triggered).</p> <p>Queue line 1 system for the mainline plaza, both directions</p> <p>PCI level 2 implementation and certification,</p> <p>Upgraded WAN, firewall and associated equipment.</p> <p>Implementation of the basic SANRAL MIS interface (as specified)</p>	18 month

Sections	Description	Implementation required. (The list of items highlighted here is not exhaustive)	Implementation period after the Commencement Date of the Operation Service Period or the trigger
		Assessment of the Toll System in terms of the SANRAL National Toll System requirements.	
Section 4	Section 4 shall be the deployment of the SANRAL MIS and shall include the full 2010 CTROM requirements, as amended by V3B1 and adjusted by the implementation of the SANRAL MIS.	<p>The Contractor shall design, tests and implement the necessary modifications and interfaces to accommodate the SANRAL MIS.</p> <p>The SANRAL MIS requirements, specifications and test application will be issued to the Contractor 6 months before the commencement of Level.</p>	<p>6 months</p> <p>This shall Include a six (6) week pilot phase during which operational testing shall be conducted for the SANRAL MIS.</p> <p>This shall include the time required by the Contractor to achieve revised compliance certification.</p>
Section 5	Section 5 shall be the deployment of the SANRAL Toll System and shall include the full 2010 CTROM requirements, as amended by V3B1 and adjusted by the implementation of the SANRAL toll system.	<p>The Contractor shall design, tests and implement the necessary modifications and interfaces to accommodate the SANRAL Toll System during parallel operations (Pilot phase and initial roll-out).</p> <p>The SANRAL Toll System requirements, specifications and test application will be issued to the Contractor 8 months before the commencement of Level.</p>	<p>8 months</p> <p>This shall Include a three (3) month pilot (Parallel operations) and trail operations phase during which operational testing shall be conducted for the SANRAL toll system.</p> <p>This shall include the time required by the Contractor to achieve revised compliance certification.</p>
Routine, performance, and End of Contract upgrades	The Contractor shall deploy upgrades to meet the 2010 CTROM requirements, as amended by V3B1. This may be adjusted by the implementation of the SANRAL toll system.	The Contractor shall design, tests and implement the necessary upgrades dictated by the routine, performance, software and Obsolescence requirements. This shall include detailed performance tests of the system.	Last 6 months of the Contract

Sections	Description	Implementation required. (The list of items highlighted here is not exhaustive)	Implementation period after the Commencement Date of the Operation Service Period or the trigger
		<p>The Contractor shall bring the workshop tools, critical spares, and test Rig up to the required levels ready for hand over.</p> <p>The Contractor shall prepare a pack with all documentation, licences and codes required to be handed over to the next Contractor.</p>	

PS2.7.3.2 Establishment Upgrades:

Add the following below (l):

- “(m) All servers older than 5 years, including DVR/NVR and associated storage,
- (n) All lane and AVC controller components, older than 5 years, including motherboards, CPU, RAM, serial cards, I/O cards, hard drives, PSU, and Lightning, surge, and overvoltage protectors.
- (o) All lane VDU's and Toll Collector terminals older than 5 years.
- (p) Upgrade all Microsoft OS to Windows 11, Windows server 19 or later and SQL server 2019 and replace incompatible hardware.
- (q) Replace all non-IP cameras, and associated network infrastructure, with POE IP cameras.

The Contractor shall ensure that the hardware provides an open platform that can accommodate virtualization, various operating systems and conform to open standards. All hardware shall be submitted to the ER for approval and distribution to SANRAL to confirm compatibility with the SANRAL MIS and SANRAL Toll System.”

PS3.3 Toll Lane Specific Hardware and Software Requirements

“PS3.3.2 Toll Collector Computer

“PS3.3.2.1

Delete: ” and shall be powder coated matt black on the inside to aid in heat absorption”.

“PS3.3.3 Toll Collection Terminal (TCT)

Add the following sub-Clause:

“PS3.3.3.3

Each TCC and peripheral equipment required to continue the operational tolling activities need to be powered by an independent Uninterrupted Power Supply (UPS) with sufficient reserve capacity to power the TCC and TCT for a minimum of four (4) hours in the event of a failure of the plaza UPS. The exit barrier(s), traffic lights and siren need not be powered this independent TCC UPS. Depending on the lane specific characteristic, the ER may consider and approve alternative battery backup solution combining the AVC, TCC, TCT and peripheral lane equipment of maximum three (3) toll lanes to a single power backup source. Failure of one (1) power backup source shall not result in all the toll lanes at any virtual toll plaza and fall state.

Ramp Toll Plazas with limited lane processing capacity shall be evaluated on a feasibility and security evaluation basis.”

“PS3.3.6

After the existing paragraph add the following:

“The panic button alarm functionality shall in no way be effected by any toll system failures, including LAN failures.”

“PS3.3.8 Toll Booth Surveillance Camera

This clause to be modified to read as follows:

“The Contractor shall install, operate and maintain a tamper proof dome or similar camera in each toll booth for surveillance purposes. The camera shall have a wide dynamic range capability in order to accommodate the glare through the toll booth windows. The continuous recording of this camera images shall be stored on the NVRs at 10fps and kept for a minimum period of three (3) months.”

“PS3.3.8.1

This clause to be modified to read as follows:

“The video and the audio recordings from the toll booth surveillance camera shall be accessible remotely by the Contractor and Employer’s Representative for post factor audit purposes on an Ad Hoc basis.”

Add the following new subclauses:

”PS3.3.10 Dedicated ETC Lane

The Dedicated ETC toll lane shall, as a minimum, comply with the following requirements:

Within the guidelines of the ETC specification as described in Volume 2 Book 5, a Dedicated ETC lane shall be operated without any toll collector management or intervention required. Under normal operational conditions, no manual vehicle classification shall take place in these lanes and the User shall be granted passage through the toll lane with the least obstruction or delay during and after validation of the tag credentials. The automated control shall prohibit unauthorised vehicle passage through such toll lanes.

The lay-out and pictograms to be used (Red-cross, green arrow and e-sign) will be finalised before or during the design phase (V2B4a clause 2.4.2.2)

Under abnormal vehicle processing conditions, the Employer’s Representative may require the Contractor to process non-tag vehicles through these Dedicated ETC lanes, requiring manual vehicle classification - see further requirements reference in this regard.

The Contractor shall ensure that:

- 1) Functionality is provided for a supervisor to take responsibility of transactions being processed. The functionality shall allow for the responsible Supervisor to remotely login and logout from the lane and to open and close the lane remotely by means of controlling the OHLS combination. The Supervisory staff shall be capable of opening the exit boom remotely in the event of an emergency. The same functionality shall be available from within the lane area, after gaining access to the secure cabinet containing the TCC and TCT equipment, similar than that found in a Mixed/Manual ETC Lane;
- 2) The TCC shall monitor the tag reader, other lane processes and peripherals components continuously. If any reader or peripheral component or process failure is detected the system shall report such status in real time to the Supervisory personnel. This shall include AVC error or fail conditions. Where the AVC is in any critical fault/error state simultaneously, the TCC shall evaluate the severity of any detected failure or failures in terms of the system's ability to maintain its accurate and correct functioning. In the event where the lane is not capable of performing to meet the minimum required integrity levels as required, the system will automatically change the OHLS state to a closed lane state. The OHLS will be turned to the RED "X" and the amber "e" turned off. The software shall automatically follow-up the error or fault state to ensure the Supervisor takes the required corrective action immediately and in order to address any vehicles which might be stuck in such toll lane. The Supervisor shall be capable to override the boom status to the open state in association with proper transaction audit controls and procedure ensuring complete recording of such passage, with no financial risk is passed to the Employer. The Supervisor shall be provided the required tools to resolve the problem in the lane remotely. In the event of a vehicle being present in the lane during the time of the failure, the operator shall ensure that the vehicle is processed using one of the following methods outlined in Subclause 6a) below, (Alternate tag transaction processing methods). The Contractor shall ensure that a legal and valid user, be granted a passage, with the least possible inconvenience caused to the motorist / User;
- 3) Tags are not read prematurely while another vehicle(s) is/are still passing through the lane. However, if such a scenario occurs the system shall be able to track, stack/queue and associate and link the correct tag and VLN information with the correct physical vehicle as recorded in the system transaction record. As each vehicle or vehicles passes through the Dedicated ETC Lane and the AVC area, removing such unique vehicle from the system transaction queue;
- 4) The Contractor shall ensure the accurate processing and associated AVC classification, of each vehicle, including vehicles being processed, in a queue, be accurately recorded and transmitted to the Back Office like any other transaction, when concluded. The Dedicated ETC toll lane/s shall be capable of processing any vehicle in accordance with the vehicle characteristics and associated vehicle classes, as published in the Government Gazette from time to time. For safety reasons it may be required that specific lanes be equipped with height restriction structures in order to avoid large heavy vehicles to enter such specific toll lanes. The presence of any such height or other restriction shall in no way alter any detection and classification requirements of the AVC;
- 5) The above is supported by the required logic on the TCC and AVC to accurately detect, classify and reconcile individual vehicle units and their associated axles when exiting the Dedicated ETC toll lane area. The system shall contain sufficient automated error handling in order to manage incoming and exiting vehicle transaction with discrepancies on an ongoing basis without human supervision or maintenance intervention;
- 6) The tag reader does not detect tags from adjacent toll lanes and the local DSRC message shall not interfere with the data communications in any adjacent lane/s. (The objective being the restriction of RF spillage);
- 7) If multiple tags exist in the same vehicle only one tag (or the first valid tag) is used to process the vehicle's passage transaction. Multiple tags detected needs to be reported to the supervisory staff in order to validate the period verifying that vehicle was not missed or additional transactions recorded, where these were not physical vehicles associated with the addition tag read;
- 8) While the TCC and AVC keeps track of vehicles passing through the lane in a forward direction, the system logic shall also take care of any vehicle (or part thereof) reversing out of the toll lane or driving into the active lane in a reverse direction. Given the close proximity of typically two axle counters in

the entry zone of the lane, the timing of axle and other vehicle presence signals should indicate whether, the vehicle, which was busy passing through this entry zone, was moving forward or in reverse direction. The system shall ensure that pending transactions be recorded, although “cancelled” as financial transactions, as and when systematically confirmed that it will not be financially processed, Buffers are cleared and all pass back timers removed as the vehicle units reverse out of the entry zone. This would imply that should an invalid tag-User enter the lane and valid tag-Users follow, the valid tags, will not enable the invalid Tag-User to pass through the lane and similarly, as vehicles reverse out of the lane, the valid Tag-Users will immediately be allowed to enter the same lane and be processed successfully after the invalid Tag-User was removed from the lane and system queue.

- 9) If an tag reader in the working state fails to read a tag due to a tag failure, or invalid tag, or false or failed tag, or no tag present, the vehicle is processed using one of the following methods outlined in Clause 6a) below (Alternative processing methods). The Supervisor shall notify the road user of the faulty or invalid tag and shall direct him to the next toll lane to conclude a non-tag toll passage transaction as well as to the nearest service centre where the problem can be rectified. This is performed through the messaging on the UFD, the Traffic Light not turning green and the intercom, where installed;
- 10) The tolling system shall record and automatically report all abnormal tag or other identifier processing (Payment Mechanism Identifiers) identified in order to force the Contractor to resolve the cause of transaction processing errors. The Contractor is to systematically follow-up problem transactions, account holders and problem identifiers in order to eliminate vehicle processing delays, causing a reduction in processing capacity;
- 11) All relevant video recordings and image material are captured and accurately associated/linked to the correct vehicle passing through the toll lane and the tag transaction record, as stated in volume 2 book 5, in addition to the standard manual transaction records. Quality front, side and number plate (ANPR camera) images are a requirement as per the TA/TCH interface “Request Image” function;
- 12) The Dedicated toll lane shall not facilitate the printing of receipts in the lane since all Users passing through these lanes would be registered Account holder Users who could obtain transaction details and TAX-Invoices via the Service Centres. The exception would be in the event when the toll lanes are manned, under the abnormal vehicle processing procedures;
- 13) The Road User does not have the ability to communicate with the remotely stationed Supervisor or with the service centre without leaving his/her vehicle. Road users are required to reverse out of the Dedicated ETC lane and seek assistance in a manned lane;
- 14) The manual processing of a tag transaction can be done remotely. This will require a live interface which will allow for the remote capturing of VLN data and verification against the TCH Validation List to conclude or reject such passage transaction. The Contractor shall ensure that such facility is active and available to remote supervisory personnel at all times, in order to facilitate the resolve of any problem in any lane without any delay;
- 15) The Supervisor has the ability to remotely view the vehicles license number plates from the front and the rear;
- 16) The Road User does not have the capability to scan his own tag in the lane without having to leave his vehicle, or move to a manned lane, to verify the tag and conclude the toll transaction in an alternative manner unless otherwise described in Volume 2 Book 5. ;
- 17) The Supervisor has the ability to remotely reset the lane if required and to clear all buffers, including queuing vehicle data buffers. If the reset of such is performed in the lane area directly on the TCC, such action shall be restricted to authorised personnel. Such activities shall be logged and monitored to ensure no vehicles pass through such lane while the system is not fully operational. Such facility is typically provided through a high-grade tamper proof security key switch;
- 18) The Dedicated ETC toll lane functionality and efficiency shall be verified by means of verifying the vehicle processing capability by processing mixed vehicle class combinations through the lane at a

speed of 60km/h and continued queuing conditions. This ability shall include the safe and accurate functioning of a high-speed exit boom/barrier, with the ability to open and close in 0.6 seconds. The exit boom/barrier will not be required to close on vehicles following too closely (tail gating), avoiding damage. However, the Contractor should install an additional traffic light, alarm bell and amber strobe light, upstream from the exit boom in order to warn and stop any User entering the Dedicated ETC toll lane where the passage transactions could not be processed successfully. The lane shall be required to accurately, separate, detect, queue, record, validate and exchange the required data elements, pass back the acknowledgement to the Tag (MMI Beep Message) and have the AVC classify and close off or conclude the passage transactions on a continuous basis as vehicles pass through the lane. The Contractor shall maintain a Dedicated ETC processing accuracy of better than 98% for all valid, at the time of the transaction, tags that enter the Dedicated ETC lane, verified via the registered VLN, measured over a sample size of 5 000 valid tags. The Contractor shall implement a Dedicated ETC lane monitoring and reporting tool that uses the ANPR cameras in zone one (1) and three (3) to identify ETC processing accuracy deterioration below 98% within three days. The monitoring tool shall also report on any un-characteristic (above the benchmark) increase, based on percentage of passages (moving average over a 3 to 5 day period), in the percentage of vehicles reversing out of the lane. Such an increase may be point to a possible hardware deterioration e.g. reader alignment or sensor calibration or blockage. Accuracy problems shall be reported to the lane health monitoring system. The dedicated lane monitoring tool shall also report excessive, more than 4 hours, down time (lane not open for traffic and/or not processing traffic) of dedicated lanes to the health monitoring tools;

- 19) The design capability of the complete Dedicated ETC toll lane shall be based on the required vehicle processing ability associated with an individual or stream of vehicles passing through the toll lane at 80km/h, without any failures detected. Although the system shall be required to operate at the above speed it might be required that the Contractor enforce speed reduction in such lane. Such forced speed reduction facility shall be made available by enabling the Contractor to configure the exit boom opening time or delay or alternatively a tag processing delay.
- 20) The Dedicated ETC toll lane functionality shall be capable of recording all the required transaction/data elements as required associated with any Violation or Run-Through passage, in order to activate the required follow-up actions in order to charge or prosecute such User through the appropriate channels, including the legal requirements. Also see VPC requirements for Opt-In contracts which may require different image recording requirements.”

NB: Cross Reference note: The Contractor shall, at all times, ensure that any User who approached a Dedicated ETC toll lane, be able to process a tag transaction through a toll lane immediately adjacent to the Dedicated ETC toll lane in the event of such lane failing. This requirement is a safety critical requirement and shall be adhered to at all times. It shall never be allowed that any User would need to cross any active or open toll lane when re-directed to another tag transaction processing toll lane. Failure to provide this service to the Users shall result in an immediate penalty for each vehicle required to any other that the adjacent toll lane. (Refer Volume 3 Book 1.) The reason for the above is to ensure that Users do not need to cross the Toll Plaza approach area in the event where any Dedicated ETC toll lane is closed to traffic.

Dedicated ETC toll lane equipment configuration guidelines. The typical Dedicated ETC toll lane consists of the following:

- 1) Longer civil lane than that employed for Manual or Mixed/Manual ETC toll lanes;
- 2) The lane is equipped with typically three (3) operational zones:
 - an entry detection, reader and transaction verification zone;
 - A central queuing zone and;
 - An exit, AVC and transaction reconciliation zone.
- 3) **The entry detection, reader and transaction verification zone (Zone 1):** This is a traffic calming and speed reduction zone which facilitate the initial vehicle presence detection, direction of travel and the axle count of the single vehicle unit. At the same time the DSRC communication is initiated and

concluded before the vehicle exits the reading zone. Typically, a double light curtain and double axle counter, directly under the light curtains provide the system with presence, direction and axle count data for each unit entering the zone. A DSRC reader is typically installed from the canopy to establish the correct reading zone around the sensors below at road pavement level.

- 4) **The central queuing zone (Zone 2):** This zone provides both vehicle storage capacity before reaching the exit boom/barrier as well as providing the vehicle sufficient room to safely stop before the exit barrier in the event of the vehicle passage being refused. This area is also employed to accommodate an additional traffic light, an electronic alarm bell/siren and strobe warning light/s. The traffic light goes green during successful transaction processing and the alarm bell plus strobe light remains off. However, in the event where a passage transaction is refused, this upstream traffic light will turn red, the strobe light flash to warn the User or users of a transaction which is being rejected or that of a vehicle ahead is being rejected. The UFD will also change reflecting the fault or error state with a meaningful error message or instruction. The exit barrier/boom will allow the valid transactions and associated vehicles to pass through the lane. The barrier will drop, if safe, to stop the rejected transaction passage vehicle. Typically, no monitoring of vehicle's presence or direction is performed in this area.
- 5) **The exit, AVC and reconciliation zone (Zone 3):** This zone consists of the exit barrier/boom, AVC, Traffic Light and UFD. Given the requirement to exactly separate individual vehicles, light curtains are typically employed to determine vehicle presence, direction and axle counters for direction. Accurate axle counts in this area is important in order to reconcile vehicles that entered the lane and those which exit the lane. The logic of the system should allow for the management of error handling and axle count differences. In order to provide some degree of redundancy, an additional DSRC reader is also installed in this area, identical to that of a standard Mixed toll lane. This allows the Contractor to convert such Dedicated ETC toll lane to a "standard" Mixed/Manual ETC toll lane (with or without vehicle queuing facility), should the entry beacon fail. ANPR cameras will be installed in zone 1 and 3 and will be triggered by the light curtain to ensure optimal ANPR capturing for vehicles entering and exiting the DETC lane. The ANPR value captured by the exit zone ANPR camera will be link and verified against the VLN of the associated tag user of the vehicle exiting the lane. The DETC lane will generate an incident to report cases where users without tags, users with invalid tags, or with valid tags with the wrong vehicle is exiting the DETC lane.
- 6) The reconciliation process also allows for the triggering of the alarm bell and strobe light/s in the event where vehicles enter the AVC area without a valid passage transaction being processed for the associated vehicle. Such events are managed in accordance with violation or Run-Through passage procedures since the Contractor remains responsible for toll income related to such Run-Through Violations.
- 7) All Dedicated ETC lanes on **N1S and R30 toll plazas shall be configured as** "Switchable ETC toll lanes" (The Contractor has may use the lane as a Dedicated ETC toll lane or as a Mixed/Manual ETC toll lane or as instructed by the ER or the Employer) it shall be required that the "Exit, reconciliation zone be installed exactly the same as that configuration used in Mixed/Manual ETC toll lanes, except for the deployment of light curtains or similar device which is capable of accurately detect and separate vehicle units. Whether a toll booth is installed or not, the Contractor could station a toll collector in the island area and instantly have additional vehicle processing capacity available, accommodating all other Payment Mechanisms. (Refer to Volume 3 Book 1 for further details and instructions)."

General

All Sensors installed in the Dedicated ETC toll lane carry the monitoring and redundancy requirements as applicable to other AVC sensors. However, the Contractor should take cognisance of the financial and penalty risks associated with the failure of any sensor in the Dedicated ETC toll lane. It is critical to implement multiple levels of redundancy to limit or eliminate system deterioration, downtime and restrict/limit maintenance. For safety and operational reasons maintenance should be restricted to off-peak periods when the Contractor is not at risk of being penalised for both downtime, Vehicle Processing requirements and/or possibly vehicle queues at the Toll Plaza.

The Contractor shall at all times ensure the correct and automated functioning of the combined OHLSSs. The Green Arrow and Red Cross shall be located to the left and the amber "e" on the right of the lane centre line, on the Toll Plaza canopy above such lane. For Dedicated ETC toll lane Operations ONLY the amber "e" shall be illuminated while such lane is open to tag passage transaction processing. In the event where the lane is operated as a Mixed/Manual ETC toll lane, both the Green Arrow and the amber "e" shall be illuminated while such lane is operational. While

any Mixed/Manual ETC or Dedicated ETC toll lane is in a fault state or in the closed state, ONLY the Red Cross shall be illuminated. Refer to Volume 2 Book 5 for pictograms of the OHLS's.

Alternative vehicle and transaction processing methodologies.

Notwithstanding the possible requirements to process tag transactions manually as noted elsewhere, the Dedicated ETC toll Lane shall facilitate the manual processing of tag transactions or other Payment Mechanisms in the event of a read or related failure. The lane shall be equipped with a secure non-ferritic, 304 stainless steel enclosure to accommodate a TCT for use in the event of abnormal processing conditions. The Contractor shall make it possible to process alternative Payment Mechanisms if the tag cannot be processed and/or the vehicle cannot be removed from the lane. It should be noted that such abnormal processing of passages needs to be limited and avoided at all times unless instructed by the ER or the Employers to do otherwise.

PS3.3.11 Dedicated ETC Toll Lane Equipment and Configuration Option

- a) Given the real time and active monitoring of the Dedicated ETC toll lane TCC by the Back Office System User Interface, and the real time monitoring of the AVC by the DCS, and the known error/failure rate of the serial communications between the conventional AVCs and TCCs, the Contractor is encouraged to run the Dedicated ETC TCC lane controller application and the AVC application on the same Controller, pending the approval of the Employer's Representative based on a sound technical proposal to maintain and guarantee 100% up-time and secure continuous error free vehicle processing capabilities by such Combined Lane Controller. Should such option be considered, the Lane Controller shall be required to maintain two (2) independent data communication channels, one from the TCC application to the Back Office and the other from the AVC application to the DCS.
- b) Dedicated ETC toll lanes are required to be Operated, in a reversible manner, without the loss of any management and control characteristics required. See required reversible lanes at Verkeerdevlei, Vaal, Grasmere and Brandfort Mainline Toll Plazas.
- c) It is required to provide the option to operate a "Switchable" Dedicated ETC toll lane as a Mixed/Manual toll lane. In this configuration the TCC in such lane will be located in a toll booth and the only difference to that of a permanent Mixed/Manual ETC toll lane shall be that these lanes shall be "Switchable" between processing tag transactions without toll collector intervention – no MVC Classification before processing the tag transaction. This opposed to the ability of the TCC to switch to the "Mixed/Manual toll lane" functionality, requiring the forced manual vehicle classification by the Toll Collector on duty, before the tag transaction could be processed. The lane in this "Mixed/Manual ETC Lane" state shall be capable of processing all other payment mechanisms as applicable in a standard Mixed/Manual ETC toll lane."
- d) The current "Tag-Only or Shesha" toll lanes, deployed at Grasmere, Vaal, Verkeerdevlei and Brandfort Toll Plazas do not meet the requirements and are the same configuration as Mixed/Manual ETC Toll Lanes with the exception of the use of an "Auto-class" function, allowing the toll lane to operate without any Toll Collector present, allowing tags to be processed automatically. Given the above, these lanes do not meet the vehicle/tag processing speed defined for Dedicated ETC toll lanes.

PS3.4.6 Ramp/Mainline Swapping

The ramp / mainline swapping functionality is required at e.g., Grasmere Mainline and Local Ramp Toll Plazas. This functionality has not been implemented to date and is not available to the Contractor.

Any additional cost for software and / or hardware that is required to meet this functionality must include in the Schedule of Payment/Cost Matrix. The Contractor is to note, that the Employer may only trigger ramp/mainline swapping functionality on one (1) direction in a Toll Plaza or both.

PS 3.4.8. Automatic Number plate recognition

Replace clause with:

"3.4.8.1 The Contractor shall implement ANPR in every lane.

The ANPR system shall be utilised whereby front Vehicle Licence Numbers images will be captured for each vehicle passage, in addition to the requirement for Scene Image/s captured by the VGS.

- 1) An additional ANPR camera will be required for Zone 1 of the DETC lanes. The Zone 1 camera will be used for the DETC entry detection and the Zone 2 for transaction reconciliation.
- 2) The VLN captured by the ANPR and ANPR confidence level shall be stored for every transaction. A VLN value of "No VLN" and a ANPR confidence level 0 shall be stored for all transactions for which, for whatever reason, no ANPR VLN is available.
- 3) The ANPR or OCR engine/s shall reside with the ANPR camera. Additional ANPR may be done centrally, at BOS level, to improve the ANPR accuracy.
- 4) The ANPR camera shall include infra-red illumination to allow for the accurate capturing of VLN under low light conditions.
- 5) The ANPR camera shall be linked to a trigger device. The trigger device shall consistently detect the arrival of a new vehicle and shall trigger when the VLN reaches the optimal ANPR capturing location. This shall ensure the accurate capturing of the VLN for vehicles at the pay-point or in the case of Mixed or Dedicated ETC lanes, the ETC reading zone. The detection device shall accurately trigger the ANPR camera even under high traffic conditions. The Contractor shall not consider trigger devices that cannot accurately separate vehicles.

3.4.8.2 The lane ANPR camera shall utilise advanced image processing techniques to enhance the ANPR process accuracy and that will minimise operator intervention. The ANPR process may use the VLN associated with registered identifiers, including Tags, Bank cards and TA cards, to improve the accuracy and speed of the ANPR process. The Contractor shall disclose the design, the algorithm/process used by the ANPR system when using registered VLN values to assist with determining the ANPR VLN to the ER, for approval.

3.4.8.3 The ANPR system shall capture Vehicle Licence Numbers images and process them to establish the VLN for every transaction. The image used by the ANPR camera/system to determine the VLN shall be kept at BOS level, accessible via user interface that allow easy search, retrieval and reporting (Hard or soft copy), along with the side and front view images as follows:

Item	Description	Images to be stored	Period to be stored measured from time of associated vehicle passage
1)	<p>VLN mismatches: Transaction where the registered VLN (TCH Validation list, local and frequent user account holder) and ANPR VLN do not match.</p> <p>The images associated with TCH validation list mismatches may be required to be transmitted to the TCH via the TCH interface, on request from the TCH.</p>	<p>VGS front view and side view images. The VGS images</p> <p>ANPR images used to determine VLN (Number plate and front view)</p>	6-month storage as part of the system active data
2)	Violation: This includes all passages for which no payments were received	<p>VGS front view and side view images. The VGS images.</p> <p>ANPR images used to determine VLN (Number plate and front view)</p>	6-month storage as part of the system active data
3)	Exempt / free passage Transaction	VGS front view and side view images. The VGS images ANPR images used to determine VLN (Number plate and front view)	6-month storage as part of the system active data

4)	ETC transactions	VGS front view and side view images. The VGS images ANPR images used to determine VLN (Number plate and front view)	6-month storage as part of the system active data
5)	All other transactions	ANPR images used to determine VLN (Number plate and front view)	2 weeks as part of the system active data

3.4.8.4 ANPR and/or OCR engine, shall automatically populate the front ANPR processed Vehicle Licence Number field of the Transaction Record (it is envisaged that the association of the Transaction Record will be performed at the toll collector computer) for all the transactions, and shall the ANPR confidence level.

3.4.8.5 The criteria for correctly mounted and designed South African Vehicle License Number (VLN) plates shall be in accordance with South African Legislation. Legislation on the construction and use of VLN plates can inter alia be found in the National Road Traffic Act 1996 (Act No. 93 of 1996) and the National Road Traffic Regulations (1999). Applicable specifications include SANS 1116-1 (SABS 1116-1) Parts 1 to 4 (Retro-reflective number plates for motor vehicles).

3.4.8.6 A VLN plate is classified as 'readable' for the purposes of performance measurement if it is readable to a human enumerator. The following are examples of plates that would not be classified as readable.

- (a) One or more characters obscured by a bulbar,
- (b) One or more characters obscured by dirt or mud,
- (c) A plate that is damaged such one or more characters cannot be enumerated, or
- (d) A plate that is missing, etc.

3.4.8.7 Consequently, cameras that are not in focus, tend to over-expose images, are misaligned, not triggered at the right moment, suffer from headlamp glare or the effects of weather or direct sunlight, vehicle queues, are not of sufficient quality and resolution, would not be sufficient grounds for a plate to be considered unreadable at the time of performance measurement.

3.4.8.8 The ANPR processes shall have the capability to interpret all existing and future VLN plate alphanumeric character sets and VLN plate formats for vehicles registered in South Africa.

3.4.8.9 The ANPR processes shall have the capability to interpret all existing VLN plate alphanumeric character sets for foreign vehicles, including vehicles registered in Zimbabwe, Eswatini, Mozambique, Botswana, Namibia and Lesotho. The ANPR process shall report a confidence level and whether the plate is national or foreign.

3.4.8.10 ANPR ACCURACY AND MONITORING

3.4.8.10.1 The ANPR system must facilitate, along with the image quality and OCR Software or OCR engine, an overall accuracy rate as listed below under all operating conditions, or if such accuracies are specified within the Standard Specifications for Operations and Maintenance of CTROM Projects: Performance Measurement (Volume 2 Book 6a), then according to those accuracies.

3.4.8.10.2 For the purpose of this specification, the following terms, and accuracies, based on a sample size of more than 10 000 passages (per lane or group of lanes) shall be defined as follows:

- a) "Trigger rate" is the proportion of vehicles (whether or not the Vehicle Licence Number is readable) that pass through the ANPR capture zone that result in a Vehicle Licence Number image i.e. the OCR result may be wrong but at least the Vehicle Licence Number is completely visible and the camera was not triggered falsely. The ANPR system shall in more than 99% of passages capture VLN images for vehicles traveling slower than 60 km/h.
- b) "Capture rate" is the proportion of vehicles with a readable Vehicle Licence Number that pass through the ANPR capture zone that result in a usable image i.e. the OCR result may be wrong

but at least the Vehicle Licence Number is completely visible, the camera was not triggered falsely and a human operator can read the Vehicle Licence Number. The ANPR system shall in more than 98% of passages capture VLN images for vehicles traveling slower than 60 km/h.

- c) "Correct read rate" is the proportion of vehicles that pass through the ANPR capture zone with a readable Vehicle Licence Number that is visible to a human operator and which was interpreted correctly by the OCR engine or ANPR process(es). The ANPR system shall in more than 98% of passages analyse the capture VLN images and determine the correct VLN for vehicles traveling slower than 60 km/h.
- d) "ANPR confidence level assignment" is the proportion of vehicles value that pass through the ANPR capture zone with a readable Vehicle Licence Number that is visible to a human operator, and which was interpreted by the OCR engine or ANPR process(es). The ANPR system shall in more than 85% of passages assign an ANPR confidence level of more than 80 (out of 100) for correctly assigned VLN numbers and a value below 40 (out of 100) for incorrectly assigned VLN numbers. The Confidence thresholds may be adjusted by the ER at the Employers discretion.

3.4.8.10.3 In addition, the TCC shall indicate the confidence level, a value between 0 and 100, for every transaction processed via the OCR engine(s) and ANPR system, and if this is below a minimum configurable threshold, and it is required for the type of user, then the Toll System shall allow an operator/System User to manually review and enter a Vehicle Licence Number.

Multiple OCR engines may be required to improve OCR confidence and reduce the number of images requiring manual review and/or verification.

The Contractor shall implement an ANPR, QLS and VGS Pilot project at Grasmere toll plaza to prove the ANPR and VGS functionality and accuracy before procuring ANPR hardware for any of the other toll plaza. Formal design approval and functional compliance certification in terms of V2B4a clause 2.4.1 and 2.4.2. The VGS, QLS and ANPR pilot shall cover all the Grasmere north bound mainline lanes (05MN to 09MN)."

PS 3.8.2.17 The Vehicle data message (AVC/TCC message type ID 2) format, TABLE 3-6: VEHICLE DATA MESSAGE. Item 12

Add the following item to the message mapping list (This shall also apply to Message type ID 6):

"* AVC vehicle axle-based class to be included with each message, first message in string: Vehicle class based on AVC classification including: 2L, 3L, 4L, 5L, 6L, 2H, 3H, 4H, 5H, 6H, 7H, 8H, 2M, 3M."

"• AVC classification data string to be included with each message, second message in string: As followed by the following information:

- i) Number of forward moving axles – F1 to F9. Example for a forward moving class 2 vehicle the message will be F2;
- ii) Number of backward moving axles – R1 to R9. Example for a forward moving class 2 vehicle the message will be R0;
- iii) Number of motorcycle wheels. Example for a class 2 vehicle the message will be M0;
- iv) Number of Light Vehicle axles. Example for a forward moving class 2 vehicle the message will be L1;
- v) Number or Heavy Vehicle axles. Example for a forward moving class 2 vehicle the message will be H1;

A few examples for clarity:

- 1) Forward moving 2L: ASF2R0M0L2H0
- 2) Forward moving 3H: ASF3R0M0L1H2
- 3) Forward moving 4H: ASF4R0M0L1H3
- 4) Forward moving 8H: ASF8R0M0L1H7
- 5) Forward moving motorcycle (2M): ASF2R0M2L0H0
- 6) Forward moving motorcycle with sidecar (3M): ASF2R0M3L0H0"

PS3.10 Video Grabbing System (VGS) (which includes cameras, VGS network and/or cabling and Power Supply)

Delete Clause 3.10.1.1 and replace with the following:

“PS3.10.1.1

The Contractor shall supply, install and maintain a VGS that equals or surpasses the minimum requirements set in this specification. The objective of this system is to serve as the primary, independent and stand-alone control and audit tool for the Employer and the Contractor to ensure that video audits are possible on a continuous basis in order to record and verify all events and abnormal conditions, i.e. class discrepancies, violations and system failures. The VGS NVR shall continuously record images (video stream), at a frame rate of at least twenty five (25) frames per second and must be able to record at WUXGA (1920 X 1200) but should be set a minimum resolution of SXGA+ unless otherwise instructed by the Employer Representative or as specified in the Project document (Volume 3), for the cameras connected to it to ensure that all passages through the toll lane is detected.”

The VGS system shall include transaction framing (Motion, ANPR, lane date linking), user interfaces, finding storage and reporting capabilities. These functionalities shall be optimized and refined functionality to enable the VGS Clerk to perform the following tasks monthly.

- 1) Count accuracy verification,
- 2) Technical violation assessment/audits, e.g. “Green light”, “Red light”, reverse entry, rollback and vehicle standing assessment,
- 3) Audit of VLN discrepancies for exempt, local and frequent users,
- 4) Run through and tailgater investigation,
- 5) Lane incidents and
- 6) Customer complaints”

PS3.10.1.12

This clause to be modified to read as follows:

“The VGS shall record images for all triggers generated by external or internal services, for a window period at set intervals as listed in Clause 3.11.1.4.”

PS5.4 Auditability

PS5.4.2 System Auditability

On the second sentence of Clause 5.4.2(k)(i) to be modified to read as follows:

“... daily basis, not later than forty-eight (48) hours after each calendar day, verify”

PS 5.4.14 CONFIGURATION CONTROL (ALSO PS 5.7.4.9)

Add:

“The system shall include automated processes, user interfaces and reports to detect discrepancies in the versions of software and settings. The system shall include versions control information as part of all executables and a separate process to verify software components and settings by comparing MD₅ hash values against for deployed components against the MD₅ hash values of the correct components.

The MD₅ hash values will be calculated from the file contents of the executable, script or configuration file.

The System shall include a user interface to report and track the versions for all the components of the system. This shall include:

- Subsystem description

- Component name
- Executable name or script file name or static configuration file name.
- Executable type or script type.
- Executable version (only relevant for executable files and DLL's)
- File size
- MD5 Hash Value
- Installation date
- Creation date
- Version update log
 - Previous versions
 - Version change dates

The above information shall be published by each sub-system on the network in the form of a web service (SOAP over HTTPS). The BOS shall collate all the version information from all the other subsystems.

The Toll System shall also include routine processes to monitor the accuracy of versions against the approved software version and settings sets. The process shall check the current system against the correct (tested and certified system), based on MD5 hash values generated for the current system deployment and checked against the stored hash values for the corrected (tested and certified system). Processes shall be implemented to correct and report incorrect versions and settings. All detected setting errors shall also be logged and reported as incidents to the supervisor. In cases of subsystems and lanes version verification shall be incorporated in the interfaces between the BOS and such system.

The DCS/AVC shall perform these functions as a separate module (Separate network), the other Toll sub-systems shall be monitored by the BOS.

The Contractor shall structure the sub-systems in such a way that each subsystem and its critical settings is grouped and stored in a manner that will allow hash values to be generated for all components and settings that affect the functionality of the system. Three sets of hash values, that cover executable and configuration, shall be generated:

- 1) Generic components: This hash value shall incorporate all generic components that are not affected by configuration details. This includes executables, DLL, scripts, database scripts and database configuration data exports. Any hash discrepancies shall be reported as executable version errors.
- 2) Static configuration: Static configuration that are lane or location specific. This includes .ini, dll, config files and database CSV exports for operating environment settings. Any hash discrepancies shall be reported as configuration errors.
- 3) Intermittently updated configuration: Configuration that are updated intermittently e.g. tariffs, discounts, messages, receipt lay-outs, timers etc. This includes .ini, dll, config files and database CSV exports for operating environment settings. Any hash discrepancies shall be reported as configuration errors.

The Contractor shall store hash values for each subsystem that shall include the following:

- 1) Application directory: This shall be a folder/location that contains all the subsystem static critical application software, including executables, scripts, binaries, DLL, .ini, table export scripts and the hash file generation scripts used to perform version verification. Any hash discrepancies shall be reported as executable version errors.
- 2) Database scripts exported into a text base format. Any hash discrepancies shall be reported as executable version errors.
- 3) Static operating environment configuration table structures exported into sql scripts and xsd schema files. Any hash discrepancies shall be reported as configuration errors.
- 4) Static operating environment configuration table contents exported as CSV files, ini files and XML files. Any hash discrepancies shall be reported as configuration errors.

The Contractor shall present a full design that incorporate the version management system for the ER's approval. All hash values shall be submitted to the ER prior to all SFAT and SAT tests with the appropriate tools and scripts for the ER to independently verify the accuracy of the version and configurations of any deployed subsystem. The ER may use another MD5 tool of his choice to verify the hash values.

The Contractor's SAT and SFAT procedures include a process to verify the accuracy of the version monitoring and control mechanism.

The version checking process will be automated to run at system restarts and at regular intervals (per hour or per shift). Any hash value discrepancies shall be reported to the BOS (or in the case of the AVC/DCS to the DCS) with the appropriate data to identify the problem area. The discrepancy reporting shall report configuration errors and executable version errors.

All hash values shall be store as part of the Disaster Recovery Pack (Clause 2.1.13) and escrow package (Clause 2.1.9)"

PS 5.4.5 Protection of the Toll Systems

Add the following after clause 5.4.5.3 (PCI DSS):

"The Contractor level shall comply to the PCI DSS requirements for a level 2 Merchant in line with the requirements of the SANRAL Master/Visa quiring bank prescriptions. The Contractor shall complete the assessment and certification process and the annual confirmation of compliance."

PS 5.7.4.2 Critical and Serious errors

Add the following after clause 5.7.4.2:

"The Contractor shall implement Lane and BOS incidents that evaluate incidents reported under clause 5.7.4.9. The BOS will bring the subsystem Serious and Critical Error Mode status to the Supervisors attention and will require acknowledgment by the Supervisor. The lane and subsystem status will only return to normal status once the problem that caused the Serious or Critical Error Mode status is corrected. The time to repair (start to end of a Serious or Critical Error Mode) and the vehicles processed during these abnormal periods will be report by the BOS as separate incidents which will be used to evaluate the KPI's associated with maintenance and availability (CT1, CT2, CT12, CT15) and failure related penalties (6.4.3, 6.4.4 and 6.5.6).

Subsystem Serious or Critical Error Mode will be reported to the BOS with a "start of serious (or critical) error mode" when the problem is detected, as specified under clause 5.7.4.5 and 5.7.4.9, by the subsystem or BOS and an "end of Serious Error mode (or Critical Error Mode)" incident when the BOS or subsystem detects, as specified under clause 5.7.4.5 and 5.7.4.9, that the fault status is cleared by the Contractor by replacing, resetting, repairing and/or correcting the offending item or error. Each start/end incident designation will be structured to identify the faulty subsystem and item/device.

The BOS system shall measure and report a Critical/Serious Error mode Time Exceeded incident where a subsystem or lane remain too long in Critical/Serious error mode. In instances where there are contiguously overlapping Critical/Serious Incidents the BOS shall calculate the Critical/Serious Error Mode time duration of this event using the time stamp of the first Critical/Serious Error Mode Incident as the start time of the Critical/Serious error mode event and the time stamp of the last Critical/Serious error Mode OK incident as the end time for the Critical/Serious Error Mode event, for the combination of all such critical Incidents as constitutes this contiguously overlapping set of Critical/Serious Error Mode time exceeded Incidents. The BOS will generate the Critical/Serious Error mode Time Exceeded Incident per lane and per subsystem. The Critical/Serious Error mode Time exceeded incident will be generated for every occurrence if the lane or subsystem remain in critical error mode period is longer than 4 (four) hours, or the value defined in the Project Document (Volume 3). Multiple Critical/Serious Error Mode time exceeded incidents is therefore possible for a single failure/error.

The BOS system shall measure and report a Critical Error mode Traffic Exceeded incident where more than 10 vehicles is processed in a lane that is in Critical Error Mode. Critical Error Mode shall exist for any period where different errors contiguously overlap. The BOS shall count passages for a lane the first Critical Error Mode error to the last Critical Error Mode OK incident. The BOS will generate the Critical Error Mode Traffic Exceeded Incident per lane. The Critical Error mode Traffic Exceeded incident will be generated for every occurrence where more than 10 passages is processed while the lane remain in Critical Error Mode. Multiple Critical Error Mode Traffic exceeded incidents is therefore possible for a single failure/error"

PS 5.7.4.9 System health monitoring**Add the following below the clause:**

“5.7.4.9 The system shall create incidents and record incidents on the BOS for, inter alia, the following conditions:

Lane related incidents
 Restarts or reboots;
 Software version changes, including dll changes;
 Incorrect software version;
 Lane settings change for, inter alia, tariff tables, discounts, UFD messages, .ini file changes;
 Incorrect lane settings for, inter alia, tariff tables, discounts, validation list, UFD messages, hotlist;
 Tag Reader failures;
 ANPR camera failures;
 VGS Camera failures;
 Lane Serious Error mode Start and End if the any of the following conditions exists and when it is cleared
 AVC communication failure;
 UFD failure;
 Receipt printer failure;
 VGS Camera failure;
 Lane local mode exists;
 Lane Controller door open.
 Lane Critical Error mode Start and End if the any of the following conditions exists and when it is cleared. Incidents created for affected lanes
 ETC beacon failure;
 More than two VGS cameras fail;
 Boom break away exists;
 Boom forced open;
 Plaza local area network failure;
 Lane UPS battery low;
 Lane UPS failure;
 Validation list older than 4 hrs base on the time the current validation list was received by the BOS;
 ANPR camera failure;
 Wrong software version;
 Wrong lane settings version.
 Failures of any other controller;

Back Office System;
 Lane linked Critical error mode time exceeded when critical error mode exists for more than 4 hours, or the value defined in the Project Document (Volume 3), for any lane or subsystem
 Lane linked Critical error mode traffic exceeded when more than 10 vehicles is processed in a lane that is in critical error mode
 Lane linked Serious error mode time exceeded when serious error mode exists for more than 24 hours, or the value defined in the Project Document (Volume 3), for any lane or subsystem
 BOS, VGS, QL1, QL2, TCH payment gateway (PGW) or QLS Serious Error mode Start and End if the any of the following conditions exists and when it is cleared
 Incorrect settings for BOS, VGS, QL1, QL2, TCH payment gateway (PGW) or QLS. This includes inter alia.
 Back-up settings
 Software version changes. This includes inter alia.
 BOS interface related software
 BOS reports changes
 Changes to function or report access level
 BOS to VGS importer failure
 BOS/ QL1 failure
 BOS Critical Error mode Start and End if the any of the following conditions, respectively, exists or it is cleared

Incorrect settings for BOS, VGS, QL1, QL2, TCH payment gateway (PGW) or QLS. This includes inter alia.
 Camera to lane mapping for recordings related to Table 3-10 (VGS actions)
 VGS/BOS interface settings
 Software version changes. This includes inter alia.
 BOS interface related software
 BOS server software changes
 VGS server changes
 VGS/BOS interface failure
 VGS failure
 Incident control failure
 Incident control image retrieval failure
 QL1 camera failure
 QL1 failure
 QL2 camera failure
 QL2 failure
 NVR failure
 TCH link failure
 Current BOS Validation list older than 4 hours

5.7.4.10 The System shall generate a BOS incident data and deliver it to the SANRAL MIS.”

PS 6.1.3 BACK OFFICE FOR CONVENTIONAL AND HYBRID TOLL PLAZAS

PS 6.1.3.1 The purpose of the Back Office System at Conventional Toll Plazas

Replace with the following:

“The purpose of the Back Office System at Conventional Toll Plazas is to:

- (a) Receive data from all the lanes, validate data to ensure correctness and completeness, and provide system tools to the plaza supervisory personnel to assist with the efficient management of the data and the plaza.
- (b) Allow manual input of additional data required for accurate transaction processing, including adding an Actual Class and Actual Vehicle Licence Number for transactions with class discrepancies or Vehicle number plate discrepancies. Allow for adding transaction information not captured in the lane, e.g. transactions processed during Manual Mode operations or data for undetected passages.
- (c) Verify and consolidate complete data received from each Toll Lane and RSS linked to each virtual plaza linked to the Back Office to process all data including additional payments received, or made at the Back Office level, allow for the employee cash-up and provide employee and period reconciliations (calendar day, operational day and or other shift periods).
- (d) Allow for local account maintenance, allocate Discounts, perform account maintenance functions, transfer data files to external systems, provide consolidated reconciliations, allow controlled system configuration and provide comprehensive reports on all activities. The Back Office System is also to facilitate the automated interaction with account holders. The system shall also manage the integrated verification interface to the approved financial institution providing Bank Card verification and transaction processing employing a Point-of-Sale (POS) unit.
- (e) Automate and manage functions required to accurately and completely capture the required information related to all vehicle passages.
- (f) Ensure system auditability.
- (g) Integrate, store and disperse data received from lanes, VGS, QLS, QL1 and other interfaced systems e.g., TCH.
- (h) Provide Operations Centre level to facilitate the configuration and performance control and management of multiple control centres and plazas on a route.

- (i) Capture audit trails and ensure auditability.
- (j) Meet TAX requirements.
- (k) Secure data and protect system processes.
- (l) Comply with applicable industry, statutory and regulatory requirements. “

PS 6.1.3.2 The Back Office System shall provide the functionality to:

Replace with the following:

“

Verify the completeness, continuity and authenticity of data received from the lanes continuously and on a scheduled basis;

Retain source data and add information required for data completeness;

Automatically transmit consistent data to higher levels and via interfaces;

Provide visibility of all the background processes and system configurations to allow the supervisory staff to manage the system and identify system problems;

Report and manage Incidents that occur at the plaza level or the lane level. This includes amongst others the VGS application, VGS cameras and primary recording devices,;

Receive operational lists and configurations and send the information to the lanes;

Allow for adequate redundancy and storage capacity, back-up and housekeeping facilities;

Manage Toll Revenue, e.g. Control cash Revenue via the cash-up, consolidated cash-up and cash banked functions;

Allow account registration and maintenance functions for local account holders;

Allocate Discount;

Create data files for transmission to external systems for further processing of electronic transactions;

Receive and compile operational lists and configurations and send the information to the lower levels.

Report on traffic, financial information, audit trails, data status, lane and hardware performance and maintenance.

Compile the final complete passage record, for transmission to the SANRAL MIS, that include all raw data, operational and processing amendments, incident/

User friendliness

The system shall be user friendly. User friendliness shall be measured against the following items:

Consistent screen, selection box and report layout.

Mouse and hot key functionality.

Default values and pick lists.

Calendar selection boxes.

Consistent error handling.

Warning if selection is out of range.

The application shall share workstations with other MS Office applications.

Allow multiple tasks to be performed by utilising tabs and multithreading.

Consolidation of all functions/applications into a single user interface.
Exception reporting.
User specific profile set-up.
Reports must be portable to formatted PDF, tabular CSV and Excel.
E-mail reports from BOS.
Report maintenance issues via e-mail and/or via the Employer's helpdesk system (interface to be designed).
Online help functions – User manuals in electronic format.

PS 6.2.5 MANUAL NUMBER PLATE RECOGNITION (MNPR) FOR OPT-IN TOLL AGENCIES

MNPR and the requirements of this clause and related requirements based on the availability of ANPR shall be required.

PS6.2.7 V-TOLL TRANSACTIONS (OPT-IN TOLL AGENCIES)

V-Toll shall not be required under this contract.

The Contractor and the toll system shall allow for two types of manually captured TCH transactions. Both type of transactions shall be flagged as manual transactions. Manual transaction creation and submission shall only be possible for valid tags, verified against the validation list at the time of creation.

Fully manual transaction: A transaction created in total based on the vehicles VLN or Tag number.

Partially manual transaction: A lane created transaction or run through violation, modified at plaza level based on the VLN or tag number.

PS6.2.8.2 Vehicle License Number Discrepancies (Opt-in Toll Agencies)

Replace this clause with:

“6.2.8.2 Vehicle Licence Number Discrepancies:

A Tag shall be dedicated to a specific vehicle with a unique vehicle Licence Number. A Tag is not transferable between vehicles.

The Back Office System shall provide a function to identify Vehicle Licence Number discrepancies for all Tag linked passages. (If a particular Tag is not eligible for Discount, Exempt or Free Passage, the Vehicle Licence Number need not be verified, unless these transactions are queried by the road user).

If the Vehicle Licence Number of the front licence plate differs from the rear licence plate number, the Vehicle Licence Number of the front licence plate shall be used (if available).

The Contractor shall for all tags associated with Discount, Exempt or Free Passage, compare the Vehicle Licence Number derived from the ANPR process with the Vehicle Licence Number in current the Validation List(s), also known as the registered Vehicle Licence Number. All mismatches, VLN Discrepancies, shall be visually verified and in cases where the ANPR was incorrect the correct MNPR will be entered.

The Back Office System shall keep track of the number of mismatches between the registered VLN and the VLN determined through the ANPR process through an automated or manual process.

All VLN Discrepancies, that were manually verified as actual discrepancies, and which are linked to Tags the eligible for Discount or Exempt or Free Passage transactions shall be dealt with in terms of the user conditions associated. If there is a continuous mismatch between the registered VLN and the VLN determined through the ANPR process and the mismatches can be verified, the Transaction Records shall be flagged as Vehicle Licence Number discrepancies to inform the TCH System that the road user is possibly abusing the Discount rules, so that the

TCH System can take further action, such as to inform the road user about the mismatches. The Contractor shall also take the appropriate actions to disqualify users with local user discounts. This shall include applying the nominal tariff to for transactions with verified VLN discrepancies.

The N1 South and R30 plazas currently have a local concession system that allow local users to receive discounts after swiping their Toll Authority card. The system then accepts payment as cash, or credit card, at a discounted tariff. The ANPR system shall be utilize ANPR at lane level to police all TA card transactions at lane level. The TCC shall for discounts that are linked to Toll Authority cards perform a VLN verification that compare the registered VLN against the ANPR VLN. In case of a VLN discrepancy the TCC shall prompt the Toll Collector to accept the ANPR value or enter the correct VLN, from the front view image displayed by TCC on the VDU. All VLN Discrepancies that were manually verified as actual discrepancies shall be dealt with in terms of the user conditions associated with the TA card. The TCC shall cancel the discount and revert the tariff to the nominal value if the TA card conditions of use require that only a specific vehicle (VLN) be used with the TA card. The TCC shall generate an incident to notify the supervisor and the Contractor shall take the necessary corrective steps.

If a road user continues to misuse the system, the Discount of a road user may be terminated. The Back Office System shall no longer apply the Discount to Transaction Records linked to the Tag Identifier or TA card.

“

PS7.4 The Employers Interface

PS7.4.4 Interface Definition: Predefined Data

Delete “Table 7-4” and replace with the following:

Table 7-4: Methods of Payment (Conventional /Hybrid Toll Plazas)

Payment Group	Possible Payment Mechanism applicable to the Payment Group (identified by)	Possible Discounts applicable to the Payment Type/Group	Payment Type
Cash	Cash Operator Card (Magnetic Stripe)	Nominal Tariff Local and Regional Discount	Cash
TCH Account (Pre- and Post-Paid Account Identifiers on the Green List but EXCLUDING any Exempt Vehicle Identifiers)	ETC Tag issued by the TCH VLN 3 rd Identifier	Nominal Tariff Frequent User Discount Local and Regional Discount Payment Mechanism Discount Time of day Discount Public Transport Discount	N/A
Pre Payment	Credit Cards	Nominal Tariff	Cash (Including debit orders, cheques, direct

Payment Group	Possible Payment Mechanism applicable to the Payment Group (identified by)	Possible Discounts applicable to the Payment Type/Group	Payment Type
	Fleet Cards Charge Cards Operator Card (Mag striped) Operator Card (Smart card) Smart Card issued by a Bank Bank Debit Cards	Frequent User Discount Local and Regional Discount Discretionary Discounts Heavy Vehicle Discounts	transfers, bank deposits etc.) Clearing of Bank Issued Card payments Other
Post Payment	Credit Cards (Registered and Un-registered Users) Fleet Cards Charge Cards Operator Card (Magnetic stripe) Operator Card (Smart card) Smart card issued by a Bank Bank Debit Cards	Nominal Tariff Frequent User Discount Local and Regional Discount Discretionary Discounts Heavy Vehicle discounts	Cash (Including debit orders, cheques, direct transfers, bank deposits etc.) Clearing of Bank Issued Card payments Other
Run-through Violation	Run Through Identifier	Nominal Tariff	Cash (Including debit orders, cheques, direct transfers, bank deposits etc.) Clearing of Bank Issued Card payments Other
Exempt Vehicles (SANDF) (SAPS) (Other) (For ETC Tags this shall be determined by the account type as indicated by means of the Validation List(s))	Credit Cards Fleet Cards Charge Cards Operator Card (Magnetic stripe) Operator Card (Smart card) Smart card issued by a Bank ETC Tag issued by the TCH (only Exempt Identifiers) Bank Debit Cards Official Warrant	100 % discount (Taxable Nominal Tariff Transaction in Toll Lane written off in Back Office with Credit Note).	Cash (Including debit orders, cheques, direct transfers, bank deposits etc.) Clearing of Bank Issued Card payments Credit Notes Other
No-Payment	No-Payment identifier	Nominal Tariff	Cash (Including debit orders, cheques, direct transfers, bank deposits etc.) Clearing of Bank Issued Card payments Other
Sundry items:	Credit Cards Fleet Cards		Cash (Including debit orders, cheques, direct

Payment Group	Possible Payment Mechanism applicable to the Payment Group (identified by)	Possible Discounts applicable to the Payment Type/Group	Payment Type
(Pre-paid User account deposits) (Surplus Revenue) (Over collections, Negative discrepancies etc) (Paid passage transactions for Violations, Exempts, No-Payments) (Other income for the Employer's account) (Other income for Contractor account including Contractor user account charges)	Charge Cards Operator Card (Magnetic stripe) Operator Card (smart card) Smart Card issued by a Bank ETC Tag issued by the TCH (only Exempt Identifiers) Bank Debit Cards User Account ID Other depending on transaction type.		transfers, bank deposits etc.) Clearing of Bank Issued Card payments Contractor account dt/ct Other

Delete "Table 7-5" and replace with the following:

Table 7-5: Payment Groups

Payment Group ID	Payment Group
01	Cash
02	Pre paid
03	Post paid
04	Run-through Violation
05	Exempt Vehicle
06	No Payment
07	Sundry: Pre-paid User account deposits
08	Sundry: Surplus Revenue (Over collections, Negative discrepancies etc)
09	Sundry: Paid passage transactions – Violations, Exempts, No-Payments
10	Sundry: Other income for the Employer's account
11	Sundry: Other income for Contractor account including Contractor user account charges
12	TCH Account (excl. Exempt Vehicle accounts)
13	Sundry Deposits – other
....
N	Payment Group _n

Delete "Table 7-6" and replace with the following:

Table 7-6: Payment Types

Payment Type ID	Payment Type
01	Cash
02	Bank Issued ISO Credit Card
03	Fleet Card
04	Charge Card
05	Contractor Account
06	Credit Notes
07	Debit Order
08	EFT
09	Employer Clearing House (TCH)
....
N	Payment Type _n

Delete “Table 7-7” and replace with the following:

Table 7-7: Payment Mechanisms

Payment Mechanism ID	Payment Mechanism name
00	Cash
01	ISO Credit Card – unregistered users
02	Fleet Card – unregistered users
03	Charge Card
04	ETC Tag
05	Operator Card
06	Smart Card
07	Operator Smart Card
08	Official Warrant
09	Run Through
10	No-Payment
11	Registered ISO Credit Card Users
12	Registered Fleet Credit Card Users
13	VLN
14	3 rd Identifier
....
N	Payment Mechanism _n

PS 7.4.4.4 Methods of Payment for ORT Type Application

Delete “Table 7-10” and replace with the following:

Table 7-10: Payment Mechanisms (ORT)

Payment Mechanism ID	Payment Mechanism name
04	ETC Tag

Payment Mechanism ID	Payment Mechanism name
08	Exempt Identifier (Tag / VLN / 3 rd Identifier)
09	Run Through
13	VLN
14	3 rd Identifier

PS 7.4.4.5 Discount types for Conventional and Conventional portions of Conventional/Hybrid Toll Plazas

Delete “Table 7-11” and replace with the following:

Table 7-11: Discount Types

Discount ID	Discount Name
00	Nominal
01	Heavy Vehicle Discount
02	Frequent User Discount
03	Local and Regional Discount
04	Contractor Account
05	Official SANDF Warrants
06	Official SAPS Warrants
07	Discretionary Discount
08	Payment Mechanism Discount
09	Time of Day Discount
10	Public Transport Discount
....
N	Discount _n

Delete “Table 7-13” and replace with the following:

Table 7-13: Vehicle Classes – Axle Based (Illustrative Information – Refer to Government Gazette for Vehicle Class Information)

ID	Name	Mapped Vehicle Classes
01	Toll Class 1	2 or more axle Light Vehicle
02	Toll Class 2	2 axle Heavy Vehicle
03	Toll Class 3	3 axle and 4 axle Heavy Vehicle
04	Toll Class 4	5 and more axle Heavy Vehicle
05	Toll Class 5 When triggered	Motorcycles

PS7.4.5 Interface Definition AVC/DCS and other Toll System Incidents/Fault Messages

Delete “Table 7-15” and replace with the following:

Table 7-15: Incident Messages (Conventional / Hybrid Toll Plazas)

ID	Name	Source/Comment	Reported to	Required /Optional
001	AVC reboot/restart	AVC/Recorded by AVC on during boot cycle and AVC application restart.	DCS/TCC/VGS/BOS/ITIS	Required
002	Serious start – AVC/DCS Communication fail	AVC/Detected by AVC when communication is lost with DCS. Trigger Serious Mode.	DCS/TCC/VGS/BOS/ITIS	Required
003	Serious end – AVC/DCS Communication OK	AVC/Detected by AVC when communication is restored with DCS	DCS/TCC/VGS/BOS/ITIS	Required
004	Roll-back	AVC/Defined elsewhere in the document	DCS/TCC/VGS/BOS/ITIS	Optional
005	Reverse entry	AVC/Defined elsewhere in the document	DCS/TCC/VGS/BOS/ITIS	Optional
006	Vehicle standing	AVC/Defined elsewhere in the document	DCS/TCC/VGS/BOS/ITIS	Required
007	Vehicle with more than 10 axles	AVC/Maximum number of axles detected by any of the axle counters. Configurable parameter.	DCS/TCC/VGS/BOS/ITIS	Required
008	AVC sensor type 1 - fail	AVC/Presence detector failure, detected after three passages	DCS/TCC/VGS/BOS/ITIS	Required
009	AVC sensor type 1 - OK	AVC/Presence detector reset, detected after three passages	DCS/TCC/VGS/BOS/ITIS	Required
010	AVC sensor type 2 - fail	AVC/Axle counter failure, detected after three passages	DCS/TCC/VGS/BOS/ITIS	Required
011	AVC sensor type 2 - OK	AVC/Axle counter reset, detected after three passages	DCS/TCC/VGS/BOS/ITIS	Required
012	AVC sensor type 3 - fail	AVC/Light/Heavy detector failure, detected after three passages	DCS/TCC/VGS/BOS/ITIS	Required
013	AVC sensor type 3 - OK	AVC/Light/Heavy detector reset, detected after three passages	DCS/TCC/VGS/BOS/ITIS	Required
014	AVC sensor type 4 - fail	AVC/Height detector failure, detected after three passages	DCS/TCC/VGS/BOS/ITIS	Required
015	AVC sensor type 4 - OK	AVC/Height detector reset, detected after three passages	DCS/TCC/VGS/BOS/ITIS	Required
016	Critical start - AVC panel door open	AVC/Detected by AVC on opening of door. Trigger Critical It is when associated with vehicle presence.	DCS/TCC/VGS/BOS/ITIS	Required
017	Critical end - AVC panel door close	AVC/Detected by AVC on closing of door	DCS/TCC/VGS/BOS/ITIS	Required
018	Serious start - AVC Stand-alone Data	AVC/Reported by AVC if vehicle passage/s were recorded while AVC was in stand-alone mode. Trigger Serious Mode.	DCS/ITIS/TCC/VGS/BOS	Required

019	Serious end - AVC Stand-alone Data	AVC/Reported by the AVC at the time when the AVC Stand-alone status is restored. The Incident is only reported if vehicles were recorded by the AVC during the AVC Sit is-alone period. Incidents 18 & 19 are, therefore, always paired.	DCS/ITIS/TCC/VGS/BOS	Required
020	Critical start – AVC Storage 90% full	AVC/AVC Data storage device (e.g. Hard drive or flash) disk 90% full. This status is to be checked at least, once every hour and reported when valid. Trigger Critical Mode.	DCS/TCC/IT IS/BOS	Required
021	Critical start – AVC-UPS Backup battery voltage low	AVC/AVC UPS battery voltage low. Minimum voltage before Incident is generated is described elsewhere. Trigger Critical Mode.	DCS/TCC/VGS/ITIS/BOS	Required
022	Critical end – AVC-UPS Backup battery voltage OK	AVC/AVC UPS battery voltage recovered above the voltage low threshold described above, ready for repeated standby period.	DCS/TCC/VGS/ITIS/BOS	Required
023	Serious start – TCC Communication fail	AVC/AVC/TCC communication failure detected and reported by the AVC and TCC. Trigger Serious Mode.	DCS/TCC/VGS/ITIS/BOS	Required
024	Serious end – TCC Communication OK	AVC/Communication restoration detected by AVC	DCS/TCC/VGS/ITIS/BOS	Required
025	Un-transmitted data deleted	AVC/AVC Data deleted by user or system before successfully transmitted to the DCS.	DCS/TCC/ITIS/BOS	Required
026	Plaza UPS power failed	AVC/Power to AVC fail (plaza UPS power)	DCS/TCC/VGS/ITIS/BOS	Required
027	Plaza UPS power OK	AVC/Power to AVC restored (plaza UPS power)	DCS/TCC/VGS/ITIS/BOS	Required
028	AVC User access – login	AVC/User accessed AVC (Software login)	DCS/TCC/ITIS/BOS	Required
029	AVC User access – logout	AVC/User access to AVC terminated (Software log-out)	DCS/TCC/ITIS/BOS	Required
030	Critical start – Sensor failure	AVC/Generated by the AVC when any two or more sensors fail during a vehicle passage. Trigger Critical Mode.	DCS/TCC/VGS/ITIS/BOS	Required
031	AVC time update	AVC/AVC time check / updated by User or time server via the TCC. Minimum, once every 24 hours for each AVC.	DCS/TCC/ITIS/BOS	Required
032	Lane IP address change	TCC/IP address changed by user	DCS/TCC/ITIS/BOS	Optional

033	Plaza IP address change	BO System/IP address changed by user	BOS/ITIS/BOS	Optional
034	AVC IP address change	AVC/IP address changed by user	DCS/TCC/VGS/ITIS/BOS	Required
035	Lane ID change	AVC and/or TCC/Lane ID changed by user	DCS/TCC/BOS/ITIS	Required
036	Reserved			-
037	AVC License expired	AVC/ In the event where any AVC is managed by means of any license and such licence expire.	DCS/TCC/BOS/ITIS	Required where applicable
038	AVC License updated	AVC/ In the event where any AVC related license is modified.–	DCS/TCC/BOS/ITIS	Required where applicable
039	AVC Data Storage Device reset	AVC/ In the event where the AVC storage device can be reset - be it manual / mechanically or electronically.	DCS/TCC/BOS	Required where applicable
040	AVC Data Storage Device error	AVC/ In the event where any AVC data storage error is detected, either by the system operating system or in the event where any read or write action failed, for whatever reason.	DCS/TCC/BOS	Required
041	Wrong Direction	AVC/Defined elsewhere in document. Also see reverse passage.	DCS/TCC/VGS/ITIS/BOS	Required
042	AVC Mode change	AVC/AVC switches between primary and pseudo lane-Ids (ramp/mainline swapping) Generate Incident when the lane is activated to process transactions for the pseudo lane AND generate the Incident for each passage processed in the pseudo state.	DCS/TCC/VGS/ITIS/BOS	Required if applicable.
043	Ramp/Mainline barrier	AVC/Incident generated when any vehicle is detected through the Ramp/Mainline barrier. The additional sensors installed in the barrier – typically between mainline and ramp.	DCS/TCC/VGS/ITIS/BOS	Required
044	Run-Through Violation	AVC/Incident generated when any vehicle pass through the AVC (in any direction) without any valid method of payment.	DCS/TCC/VGS/ITIS/BOS	Required
045	Critical end – Sensor failure	AVC/Generated by the AVC when two or more of the sensors are no longer faulty. After three consecutive passages without error.	DCS/TCC/ITIS/BOS	Required
046	Serious start – DCS/AVC comms fail	DCS /Generated by the DCS when a communication failure with the AVC is detected by the DCS. Trigger Serious Mode.	BOS/VGS/ITIS	Required

047	Serious End – DCS/AVC comms fail	DCS /Generated by the DCS when a communication failure with the AVC is restored	BOS/VGS/ITIS	Required
048	Critical error mode time exceeded	AVC or DCS/ The DCS will determine the critical error mode time duration of all critical AVC Incident events. In instances where there are contiguously overlapping critical Incidents (e.g. a subsequent AVC critical Incident event occurring prior to the resolution of a previous/current AVC critical Incident event being resolved) the DCS shall calculate the critical mode error time duration of this event using the time stamp of the first critical AVC Incident fail as the start time of the event and the time stamp of the last AVC critical Incident OK as the end time for the event, for the combination of all such critical Incidents as constitutes this contiguously overlapping set of AVC critical Incidents. The DCS will generate this Incident per AVC. It will be generated if the critical mode period is longer than 4 (four) hours, or the period as specified in the Project Document (Volume 3). This Incident will be generated continuously for every continuous 4 (four) hour period interval, or corresponding period interval specified in the Project Document (Volume 3), that the AVC remains in critical error mode	DCS/BOS/ITIS	Required
049	Critical error mode traffic exceeded	AVC or DCS/ The DCS will generate this Incident per AVC if the traffic processed whilst the AVC is in critical error mode exceeds 10 vehicles. Incident repeated after each tenth vehicle during the Critical Error mode period.	DCS/BOS/ITIS	Required

050	Serious mode error time exceeded	AVC or DCS/ The DCS will determine the AVC Serious mode error time durations of all critical AVC Incident events. In instances where there are contiguous or overlapping serious AVC Incidents (e.g. a subsequent AVC serious Incident event occurring prior to the resolution of a previous/current AVC serious Incident event being resolved) the DCS shall calculate the serious error mode time duration of this event using the time stamp of the first serious AVC Incident fail as the start time of the event and the time stamp of the last serious AVC Incident OK as the end time for the event, for the combination of all such serious Incidents constitute this contiguous or overlapping set of AVC critical Incidents. The DCS will generate this Incident per AVC. It will be generated if the serious mode period is longer than 24 (twenty-four) hours, or the period specified in the Project Document (Volume 3). This Incident will be generated continuously for every continuous 24 (twenty-four) hour period interval, or corresponding period interval specified in the Project Document (Volume 3), that the AVC remains in serious error mode.	DCS/BOS/ITIS	Required
051	AVC data missing – Critical error mode	DCS/ When compiling the AVC traffic and Incident/Fault log summaries for the previous calendar day (consolidation period), the DCS will check if hourly summaries (audit file) were received from all the AVCs (No less than 24 summaries (audit file periods) must be available for each AVC). The DCS will generate this Incident for every AVC where summaries for the complete consolidation period for that AVC have not been received.	DCS/BOS/ITIS	Required
052	DCS reboot	DCS/ The DCS shall generate this Incident when the DCS application/service is restarted. Incident is	BOS/ITIS	Required

		reported to ITIS via DCS Fault Log Data File since it is not Toll Lane related.		
053	ITIS data submission failure	DCS/ The DCS shall generate this Incident indicating any ITIS file submission error. This includes data and reply retrieval and submission errors.	BOS/ITIS	Required
054	Positive Discrepancy (PD)	AVC or BOS /The AVC shall generate this Incident in the event where the manual and or registered vehicle classification received from the TCC is a lower Vehicle Class than that detected by the AVC (Based on financial value). This Incident shall also be generated in the event where no manual or registered vehicle classification has been received from the TCC (e.g. Violation without manual classification or valid registered identifier present). Should the discrepancy be identified on the BOS level the BOS shall generate the incident. Also applicable to manually captured or verified transactions.	TCC/DCS/VGS/ITIS/BOS	Required
055	Negative discrepancy (ND)	AVC or BOS /The AVC shall generate this Incident in the event where the manual and or registered vehicle classification received from the TCC is a higher Vehicle Class than that detected by the AVC (Based on financial value). Should the discrepancy be identified on the BOS level the BOS shall generate the incident. Also applicable to manually captured or verified transactions.	TCC/DCS/VGS/ITIS/BOS	Required
056	Reversible Lane AVC pair – Active AVC	AVC/Incident generated by the active AVC in a reversible Lane, upon being activated for Vehicle processing. Also generated at the end of the hour to indicate current state of the AVC.	TCC/DCS/ITIS/BOS	Required, if applicable
057	Reversible Lane AVC pair – Dormant AVC	AVC/Incident generated by the dormant AVC in a reversible Lane upon being made 'inactive' for Vehicle processing. Also generated at the end of the hour to indicate current state of the AVC.	TCC/DCS/ITIS/BOS	Required, if applicable

058	Critical End – AVC Storage 90% Full	AVC/AVC Data storage device (e.g. Hard drive or flash) disk 90% full cleared.	DCS/TCC/ITIS/BOS	Required, if applicable
059	VGS Camera Failure.	NVR/DVR/VGS NVR/DVR or Server to record any failure of any VGS camera/s or signal from the VGS camera/s, which will cause this incident to be generated.	NVR/DVR/BOS/VGS/ITIS	Required
060	VGS Camera Failure OK	NVR/DVR/VGS NVR/DVR or Server to record the correction or restoration of the fault state reported under incident no. 59.	NVR/DVR/BOS/VGS/ITIS	Required
061	QLS Camera Failure	QLS/QLS NVR/DVR or Server to record any failure of any QLS camera or signal from the QLS camera/s, which will cause this incident to be generated.	NVR/DVR/BOS/VGS/ITIS	Required
062	QLS Camera Failure OK	QLS/QLS NVR/DVR or Server to record the correction or restoration of the fault state reported under incident no. 61.	NVR/DVR/BOS/VGS/ITIS	Required
063	Toll Booth Surveillance Camera Failure	TCC/ When the toll booth surveillance NVR/DVR detects any faults with a camera/s or the signal from the camera/s to the NVR/DVR or the TCC records the failure of the local TCC NVR/DVR, this incident will be generated.	TCC/BOS/VGS/ITIS	Required
064	Toll Booth Surveillance Camera Failure OK	TCC/When the TCC records the correction or restoration of the fault state reported under incident no. 63.	TCC/BOS/VGS/ITIS	Required
065	Paper Low	TCC/Detected by the TCC when the Receipt printer paper is low.	TCC/BOS/ITIS	
066	Paper Empty	TCC/Detected by the TCC when the printer paper is empty.	TCC/BOS/ITIS	Required
067	Printer Communications Failure	TCC/Detected by the TCC when the TCC fails to receive a confirmation signal that the print information sent to the printer has been printed successfully.	TCC/BOS/ITIS	
068	Load Shift	TCC (or AVC)/When the load shift sensor detects rotation of more than 15° the incident shall be generated. Real time messaging to ER and Enforcement Agency as instructed by ER.	(DCS)/TCC/BOS/VGS/ITIS (Enforcement Authority when triggered)	Required
069	Height Sensor 4.2m	AVC/When a vehicle with a height exceeding 4.2m but less or equal to 4.8m is detected during any vehicle passage.	DCS/TCC/BOS/VGS/ITIS Enforcement Authority	Required if Triggered

070	Height Sensor 4.7m	AVC/When a vehicle with a height exceeding 4.7m is detected during any vehicle passage. Real time messaging to ER and Enforcement Agency as instructed by ER.	DCS/TCC/BOS/VGS/ITIS (Enforcement Authority when triggered)	Required
071	Exit Barrier Breakaway	TCC (or AVC)/When the breakaway sensor(s) is activated as a result of the exit barrier arm being broken away from its normal locked state. Report to DCS if barrier control is performed by AVC.	(DCS)/TCC/BOS/VGS/ITIS	Required
072	Exit Barrier Force Vertical	TCC (or AVC)/When the exit barrier arm is forced open vertically. Report to DCS if barrier control is performed by AVC.	(DCS)/TCC/BOS/VGS/ITIS	Required
073	Extra Wide Sensors active	AVC/AVC shall generate if any sensor or combination of sensors are activated from the extra wide area of the AVC area indicating the presence of any object in that area.	DCS/TCC/BOS/VGS/ITIS	Required
074	Transaction Timeout	TCC/TCC transaction failed to conclude with valid AVC classification message. Systematic procedure employed to conclude TCC transaction.	TCC/BOS/VGS/ITIS	Required
075	VOSI Vehicle detected	TCC When the VOSI is detected as per the set criteria. Real time messaging to ER and Enforcement Agency as instructed by ER.	TCC/VGS/BOS/ITIS (Enforcement Authority when triggered)	Required
076	ETC Run- Through Violation	TCC/TCC generate incident when any vehicle pass through the ETC Reading zone (in any direction) without any valid method of payment (Payment Mechanism) attached to such passage transaction. (Incident is not generated where valid transactions are processed, with other payment mechanisms, other than ETC). (V2B5cl:5.3.4.5).	DCS/TCC/BOS/VGS/ITIS	Required
077	ETC Vehicle Rollback	AVC or TCC/ TCC or AVC will generate the incident in the event where any vehicle rolls back through the ETC reading zone. This incident serves to monitor vehicle queuing in Dedicated ETC Toll Lanes where vehicle separation is monitored by a dual light curtain in the lane entry zone. (V2B5cl:5.3.4.5).	DCS/TCC/BOS/ITIS	Required for Dedicated ETC Toll Lanes

078	ETC Vehicle Standing	AVC or TCC/ AVC or TCC generate incident in the event where any vehicle remains standing in the ETC reading zone or vehicle fails to exit the Toll Lane. (V2B5cl:5.3.4.5).	DCS/TCC/BOS/ITIS	Required for ETC enabled Toll Lanes.
079	ETC Vehicle Re-Entry	TCC or BOS/TCC or BOS generate incident when an ETC transaction with (VLN and/or PAN as applicable per application) has been completed or partially completed with a vehicle and the vehicle has moved out of the tolling zone for a period of sufficient length that the Tolling System will try generate a second transaction upon the vehicle re-entering the zone (not applicable to recurrent valid transactions at the same Toll Plaza). Could also be used in the event where valid queued vehicles are to be passed through a toll lane due to an earlier queuing error. (V2B5cl:5.3.4.5).	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes
080	ETC Invalid Identifier	TCC/TCC generate in the event when a vehicle with an invalid Identifier (such as an invalid or fraudulent Tag as described below in V2B5cl:5.3.4.5 d) and/or with an unrecognisable VLN etc. as applicable per application) passes through a Toll Plaza without providing a valid method of payment. (V2B5cl:5.3.4.5).	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes
081	ETC Identifier Discrepancy - Class	TCC or BOS/TCC or BOS generate in the event when a vehicle with a registered identifier (E-Tag or other like ISO Mag-Stripe card) shows any discrepancy to the registered details of the user's account. (V2B5cl:5.3.4.5).	BOS/VGS/ITIS	Required
082	ETC/Identifier Discrepancy - Front VLN	TCC or BOS/TCC or BOS generate in the event when a vehicle with a registered identifier (E-Tag or other like ISO Mag-Stripe card) shows a front VLN discrepancy to that registered to the user's account. (V2B5cl:5.3.4.5).	BOS/VGS/ITIS	Required

083	ETC/Identifier Discrepancy - Rear VLN	TCC or BOS/TCC or BOS generate in the event when a vehicle with a registered identifier (E-Tag or other like ISO Mag-Stripe card) shows a rear VLN discrepancy to that registered to the roar user's account. (V2B5cl:5.3.4.5).	BOS/VGS/ITIS	Optional
084	ETC Identifier Discrepancy - PAN	TCC or BOS/TCC or BOS generate the incidents when an Invalid PersonalAccountNumber (PAN) or issuer number is detected when compare to the available registered users (including validation list from the TCH). (V2B5cl:5.3.4.5.d.i).	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes
085	ETC Identifier Discrepancy - Issuer ID	TCC or BOS/TCC or BOS generate the incidents when an Invalid Issuer Identifier (IssuerIdentifier subset of the ContractProvider Attribute). (V2B5cl:5.3.4.5.d.ii)	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes
086	ETC Identifier Discrepancy - Tag Expired	TCC/TCC generate the incident when an expired Identifier is recorded. See Tag validity (PaymentMeansExpiryDate). (V2B5cl:5.3.4.5.d.iii)	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes
087	ETC/Identifier Discrepancy - Identifier Redlisted	TCC/TCC generate the incident when an identifier (E-Tag or other like ISO Mag-Stripe card) is redlisted (or hotlisted). See (V2B5cl:5.3.4.5.d.iv).	BOS/VGS/ITIS	Required
088	ETC data exceptions - BST	TCC/TCC generate the incident when an ETC identifier is read and results in an exception: a) Tag does not respond to BST - (V2B5cl:5.3.4.5.d.v – see CI 6.6.1a)	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes
089	ETC data exceptions - Corrupt VST	TCC/TCC generate the incident when an ETC identifier is read and results in an exception: b) Tag return corrupt VST - (V2B5cl:5.3.4.5.d.v – see CI 6.6.1b)	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes
090	ETC data exceptions - GET.response	TCC/TCC generate the incident when an ETC identifier is read and results in an exception: a) GET.respnse not received or GET_STAMPED.response not received (V2B5cl:5.3.4.5.d.v – see CI 6.6.1c)	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes

091	ETC data exceptions – SET response	TCC/TCC generate the incident when an ETC identifier is read and results in an exception: a) SET.response not received - (V2B5cl:5.3.4.5.d.v – see CI 6.6.1h)	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes
092	ETC - Account Low Balance	TCC or BOS/TCC or BOS generate the incident when an ETC identifier is flagged with low balance account indicator. (V2B5cl:5.3.4.5.d.vi).	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes
093	ETC - Tag Transaction Aborted	TCC or BOS/TCC or BOS generate the incident when an ETC identifier based transaction is aborted for whatever reason. (V2B5cl:5.3.4.5.d.viii).	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes
094	ETC - Multiple Tags	TCC/TCC generate the incident in the event where multiple tags are read and queued without associating vehicles to each tag read. (V2B5cl:5.3.4.5). This includes multiple tags in one vehicle.	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes
095	Release Vehicle from Queue	TCC or BOS/TCC or BOS to generate this incident where the TCC or BOS pass a command to the TCC to open an exit boom/barrier in order to allow any vehicle to proceed without processing a normal financial transaction. These incidents shall typically be associated with a VLN transaction or the Contractor granting the motorist credit due to some lane processing failure. (V2B5cl:5.3.4.5)	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes
096	Image Capturing Requirement fail	BOS/ The BOS generates this incident in the event where the VGS or other image recording device fail to provide the required image material to verify the presence of a specific vehicle or the quality is of such nature that accurate verification of any event was not possible. (V2B5cl:5.3.4.5)	BOS/VGS/ITIS	Required for all ETC enabled Toll Lanes
097	Reserved			
098	Reserved			
099	Reserved			
100	Reserved			
101	Reserved			
10x	Reserved			

10x	Reserved			
10x	Reserved			
n	n th Incident	N th incident-Incidents to be mapped, unique to each toll system required where deviations were approved.		As required

PS7.4.6 Transmitted Data

Clause 7.4.6.2(a) add the following requirements to table 7-17:

File Type	Frequency	Interface deadlines for file transmission purposes	Type of Application
All recorded DCS Incident/Fault Log Data	Daily, the next calendar day	Within four (4) hours after midnight, the end of previous calendar day	Conventional
Validated Corrected DCS Incident/Fault Log data	Daily the next calendar day	Within twenty-four (24) hours after midnight, the end of the previous calendar day	Conventional

PS7.4.6.7 DCS Incident/faults Log Data Transmission Format for Conventional Tolling Applications:

Delete this Clause and replace with the following:

“DCS Incident/Faults Log Data Transmission Format for Conventional Tolling Applications:

This file will contain summarised DCS Fault Log data rolled-up per hour for each applicable incident and be named according to the naming convention below. Data transmitted via this DCS-Fault log file shall only contain incidents relating to the applicable DCS activities and not AVC/Lane related incidents. The file shall contain incident reference summaries of the DCS incidents only – refer to Table 7-15. Incidents generated by the DCS on behalf of any specific lane AVC which carries a specific Lane-ID will thus not be included in the DCS Fault Log File but included in the standard AVC Incidents/Faults Log File as per Clause 7.4.6.6 above. DCS incident/faults log data records with zero (0) counts shall be included in the file for each hour of the calendar day.

File Naming:

Example: 001_2002_04_13.dfl

Table 7-22: DCS Incident / Faults Log Data Transmission Format

Description	Length	Sample
Predefined Control Centre ID	3	001
Spacer	1	_ (Underscore)
Operating Date: yyyy_mm_dd	10	2002_04_13
File extension .dfl: First data file .dfr: Retransmitted file	4	.dfl

File Content

Example: 001|20100423|1|15|99AA|0|049|3|1245|

Table 7-23: DCS Incident / Faults Log Data Transmission Format

Field	Field name	Req.	Data Type	Format	Sample
Field	Field name	Req.	Date Type	Format	
1	Predefined Control Centre ID	Yes	Number	999	001
2	Operating Date (yyyymmdd)	Yes	Number	99999999	20100423
3	Validated 0: Un-validated 1: Validated-Correct – No AVC transaction, incidents or audit files sequence numbers missing from any lane. 2: Validated-Incorrect – Any data discrepancy found based on the criteria in Validation status, 1 above.	Yes	Number	9	1
Field	Field name	Req.	Data Type	Format	Sample
Field	Field name	Req.	Date Type	Format	
4	Hour (00-23)	Yes	Number	99	15
5	Lane ID (constant: 99AA)	Yes	Char (4)	99AA	99AA
6	AVC status mode: 7: Always use default state '7' in each record.	Yes	Number	9	7
7	DCS Incident ID (Only incidents applicable to DCS actions)	Yes	Number	999	052
8	DCS Critical Error Count (not applicable – default = 0)	Yes	Number	Long	0
9	DCS Incident count for the Hour	Yes	Number	Long	1245

Description	Length	Sample
Predefined Virtual Toll Plaza ID	3	001
Spacer	1	_ (Underscore)
Date & hour : yyyy_mm_dd	10	2002_04_13
File extension .dfl: First data file .dfr: Retransmitted file	4	.dfl

PS 7.5 BACK OFFICE SYSTEM AND TRAFFIC ANALYSIS SYSTEM INTERFACE

This interface shall not be required.

PS SECTION 9. RELEVANT VPC SYSTEM SPECIFICATIONS

The Contractor shall not be required to comply with the requirements of this section.

PS10.2 Axle-Based AVC Verification for Conventional/Hybrid Toll Plaza**PS10.2.1.8 Sample sizes for AVC Accuracy Calculations**

The minimum traffic sample sizes and maximum allowable sampling margins of error per toll lane for the initial AVC Accuracy Certification are specified as follows:

Designated Sample Lanes	Toll Class 1 Classification	Toll Class 2 Classification	Toll Class 3 Classification	Toll Class 4 Classification	Overall Count
Confidence Level	95%	95%	95%	95%	99%
Minimum Traffic Sample (n)	86,556	3,330	2,415	10,419	11 000
Maximum Error Margin (d)	0.042%	0.740%	0.782%	0.191%	0.078%

The Contractor shall ensure that all necessary measures, including inter alia selective toll lane usage in a Virtual Toll Plaza, are implemented to ensure that the minimum vehicle throughput levels are processed in each designated sample toll lane during the initial accuracy certification period.

The minimum sample sizes and maximum allowable sampling margins of error per Control Centre, for the Post Initial AVC accuracy Certification (continuous AVC Classification) are specified as follows:

Verkeerdevelei Control Centre	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	157,778	11,653	8,922	58,938
Maximum Error Margin (d)	0.031%	0.396%	0.407%	0.080%

Vaal Control Centre	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	177,956	12,512	10,352	49,689
Maximum Error Margin (d)	0.029%	0.382%	0.377%	0.087%

Grasmere Control Centre	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	806,394	19,357	11,987	34,634
Maximum Error Margin (d)	0.014%	0.307%	0.351%	0.105%

Brandfort Control Centre	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	127,376	5,307	4,157	9,561
Maximum Error Margin (d)	0.035%	0.586%	0.596%	0.199%

These values represent the minimum traffic samples that must be met over the accuracy monitoring period. As indicated in Volume 2 Book 4(a), the AVC Accuracy will be based on the total traffic throughput over the specified accuracy monitoring period per AVC accuracy category. If the total traffic throughput is less than these minimum traffic sample sizes, the accuracy monitoring period may be extended or an alternate minimum sample size determined using the formulas indicated, for the AVC accuracy category in question. This shall be at the discretion of the Employer Representative.

The minimum sample sizes and maximum allowable sampling margins of error per Virtual Toll Plaza for the Post Initial AVC accuracy Certification (continuous AVC classification), are specified as follows:

Verkeerdevlei Mainline (North)	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	236,787	17,712	13,239	87,732
Maximum Error margin (d)	0.025%	0.321%	0.334%	0.066%
Verkeerdevlei Mainline (South)	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	236,547	17,247	13,527	89,082
Maximum Error margin (d)	0.025%	0.325%	0.330%	0.065%
Vaal Mainline (North)	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	265,002	19,002	15,630	75,609
Maximum Error margin (d)	0.024%	0.310%	0.307%	0.071%
Vaal Mainline (South)	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	268,866	18,534	15,426	73,458
Maximum Error margin (d)	0.024%	0.314%	0.309%	0.072%
Grasmere Mainline (North)	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	558,138	21,837	14,154	48,510
Maximum Error margin (d)	0.017%	0.289%	0.323%	0.089%
Grasmere Mainline (South)	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	558,012	21,213	13,893	45,939
Maximum Error margin (d)	0.017%	0.293%	0.326%	0.091%
Grasmere Local (North)	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	558,294	4,737	2,814	1,569
Maximum Error margin (d)	0.017%	0.621%	0.724%	0.492%
Grasmere Local (South)	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	581,913	5,094	2,787	1,863
Maximum Error margin (d)	0.016%	0.599%	0.728%	0.452%
Grasmere Remote (North)	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	79,317	2,622	1,155	2,835
Maximum Error margin (d)	0.044%	0.834%	1.130%	0.366%

Grasmere Remote (South)	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	83,508	2,568	1,158	3,186
Maximum Error margin (d)	0.043%	0.843%	1.129%	0.346%
Brandfort Mainline (North)	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	188,337	7,974	6,111	14,268
Maximum Error margin (d)	0.029%	0.478%	0.491%	0.163%
Brandfort Mainline (South)	Toll Class 1	Toll Class 2	Toll Class 3	Toll Class 4
Confidence Level	95%	95%	95%	95%
Minimum Traffic Sample (n)	193,791	7,947	6,360	14,415
Maximum Error margin (d)	0.028%	0.479%	0.482%	0.162%

These values represent the minimum traffic samples that must be met over the accuracy monitoring period. As indicated in Volume 2 Book 4(a), the AVC Accuracy will be based on the total traffic throughput over the specified accuracy monitoring period per AVC accuracy category. If the total traffic throughput is less than these minimum traffic sample sizes, the accuracy monitoring period may be extended or an alternate minimum sample size determined using the formulas indicated, for the AVC accuracy category in question. This shall be at the discretion of the Employers Representative.

The minimum sample sizes and maximum allowable sampling margins of error per Toll Lane or Virtual Plaza for continuous AVC overall count accuracy, are specified as follows:

Lane or virtual plaza	Overall AVC Count
Confidence Level	99%
Minimum Traffic Sample (n)	11 000
Maximum Error margin (d)	0.078%

These values represent the minimum traffic samples that must be met over the accuracy monitoring period. If the total traffic throughput is less than these minimum traffic sample sizes, the accuracy monitoring period may be extended or an alternate minimum sample size determined using the formulas indicated, for the AVC accuracy category in question. This shall be at the discretion of the Employers Representative.

PS10.2.1.10

This paragraph to be modified to read as follows:

"The AVC classification accuracy against which the accuracy requirement specified in Clause 10.2.1.1 shall be compared with for certification/penalty/incentive purposes, shall be the Measured AVC accuracy value plus the margin of error (d) based on sample size (n) over the Accuracy Monitoring Period, as follows:

AVC Classification Accuracy = (Measured AVC Classification Accuracy (AVCM) = Margin of error (d).

PS10.2.1.17

This clause to be deleted and replaced with the following:

"For AVC Count Accuracy measurement purposes, the AVC Count error shall be total number of vehicles passages either not detected or incorrectly counted as AVC vehicles passages. This equates to the total number of "undercounts" plus the total number of "over counts" divided by the total number of actual verified and true vehicle passages which as passed over or through the AVC sensors, over the AVC Monitoring Period."

PS10.2.1.18

This clause to be deleted and replaced with the following:

“Total Count Error therefore equals the Absolute Sum value of both “Under Counting” and “Over Counting.” “Over Counting” and “Under Counting” does not offset each other, but both append to the Total Count Error:

Count Error = ABS (“Over Counting”) + ABS (“Under Counting”).”

PS 10.2.1.20 The AVC count accuracy verification procedure

Add:

“10.2.1.20. a) The Contractor and Employer’s Representative shall use the VGS, enhanced by the implementation of lane level ANPR, to verify and certify the AVC Count Accuracy and to report AVC count accuracy on a monthly basis.

For Initial AVC Count Accuracy verification, the Contractor shall use the data from the ANPR, VGS, DVSS and the AVC to report the AVC count accuracy per lane.

The Contractor shall identify and record the AVC count errors in the lane selected to verify count accuracy, using the VGS. The Contractor shall achieve this by auditing possible undetected passages, using the VGS. The Contractors VGS auditor will evaluate each event using the ANPR, side view, front view, and booth camera video recording and flag each over (multiple reporting of a single passage) and under (undetected passage) count for one lane a number of passages exceeding the specified sample size. The VGS shall retain the auditors’ findings and allow a post audit review of such findings. AVC Count errors shall include transactions generated incorrectly (non-existing passage or multiple passages belonging to the same vehicle) by the AVC and transactions missed by the AVC. The events audited by the Contractor, utilising the VGS shall include but not be limited to:

Run throughs,

Irregular vehicle movements reported by the AVC, including, roll-back, reverse entry, vehicle standing and reverse roll-back,

Light vehicles with more than 3 axles,

Passages with more than 8 axles, and

Video motion-based passage for which no vehicles were registered by the AVC.

The Contractor shall use the findings of the count accuracy verification, described above, to find similar AVC errors for all lanes. The Contractor shall, based on detected AVC count errors, identify AVC related error messages and conditions that are linked to AVC count errors in all lanes. The Contractor shall use such findings to identify AVC count error in every lane and capture the audit findings for each event on the VGS. The VGS auditors’ findings shall be retained on the VGS and the related video for 6 months. The Contractor shall, for all lanes, use the results of the error identification to:

Detect and record the total traffic by adding undetected vehicle passages and deducting incorrectly generated passages from the total AVC traffic. The Contractor shall create missing transactions on the BOS system at the correct time and with the correct visually verified classification. The AVC class for the created transactions shall be “NC”.

Combine the daily traffic and count errors values for the evaluation period and calculate the AVC count accuracy for all lanes.

The Contractor shall keep records of the audit findings during the verification process and list the details of all hours investigated and the allocation of errors and differences. The Contractor shall at the end of the evaluation periods generate an initial AVC count accuracy verification report that include all the details of the events audited and the event details of each individual AVC error recorded.”

“10.2.1.20. b) For Post Initial AVC Count Accuracy verification the Contractor shall use the VGS, identified messages/events and conditions detected during the initial verification period to record and report the AVC count accuracy for each virtual plaza for the month:

The Contractor shall for every calendar day for the month, record total traffic and AVC count errors. The Contractor shall detect and record the total AVC count errors in all lanes. The Contractor shall, based on previously detected AVC count errors, identify AVC related error messages and conditions linked to AVC count errors, and use the VGS to evaluate the side view camera video recording for all such AVC error messages and conditions and record every identified AVC count error. The VGS

auditors' findings shall be retained on the VGS and the related video for 6 months. The Contractor shall create transactions on the BOS system at the correct time and with the correct visually verified classification for all transactions not detected by the AVC. The AVC class for the created transactions shall be "NC".

Detect and record the total traffic by adding undetected vehicle passages and deducting incorrectly generated passages from the total AVC traffic per virtual plaza.

Combine the daily traffic and count errors values per virtual plaza for the month and calculate the AVC count accuracy.

The Contractor shall keep records of the audit findings during the verification process and list the details of all hours investigated and the allocation of errors and differences. The Contractor shall report the AVC count accuracy monthly as specified (KPI 3d)."

C3.2.5 PARTICULAR AMENDMENTS TO THE STANDARD SPECIFICATION FOR OPERATIONS AND MAINTENANCE: ELECTRONIC TOLL COLLECTION (VOLUME 2 BOOK 5)

The number of each Clause in particular specifications in this section consists of the prefix PS followed by a number corresponding to the number of the relevant Clause in the Standard Specification for the Operations and Maintenance: Electronic Toll Collection (Volume 2 Book 5). The number of any new Clause which does not form part of any Clause in the Standard Specification for the Operations and Maintenance: Electronic Toll Collection (Volume 2 Book 5), and which is included herein, is also prefixed by PS followed by a new number. Such new numbers follow on the last Clause used in the relevant section of the Standard Specification for the Operations and Maintenance: Electronic Toll Collection (Volume 2 Book 5).

PS 2.1 Purpose and Scope

The Contractor is to note that Dedicated ETC toll lanes has been installed, Verkeerdevlei mainline (two (2) lanes), Vaal mainline (two (2) lanes), Grasmere mainline (two (2) lanes) and Brandfort mainline (two (2) lanes) in terms of the requirements in the Standard Specifications for the Operations and Maintenance of CTROM Projects: Toll systems (Volume 2 Book 4a) and in the Standard Specification for Operation and Maintenance of CTROM Projects: Electronic Toll System Collector (ETC) (Volume 2 Book 5).

The eight (8) Dedicated ETC toll lanes and will be accepting, processing, submitting and reconciling tag transactions from the Commencement Date of the Operations Service Period.

The remainder of the toll lanes for all the Toll Plazas on the N1 South and R30 Toll Road are mixed Manual/ETC toll lanes and will be accepting, processing, submitting and reconciling tag transactions from the Commencement Date of the Operations Service Period.

The Contractor must ensure that the upgrade/new toll system meets the following requirements

It is a requirement for the Contractor to ensure that:

The toll system makes provision for the integration of a tag reader, and associated interface software, required in any Lane, in order to implement Mixed/Manual or Dedicated ETC Lane functionality;

The toll system is capable of accepting electronic tag as a valid Payment Mechanism and is capable of meeting all the requirements as specified in the Contract relating to the processing of such transactions from toll lane level to the Back Office System, as well as the transmission of transaction records from the Back Office to the Transaction Clearing House (TCH);

The toll system is capable of accurately detecting, classifying, processing transaction records and provides sufficient information to accurately conclude vehicle passage transactions from the Mixed/Manual ETC and from the Dedicated ETC toll lanes.

The Contractor shall provide, install, integrate and maintain high speed toll lane exit boom barriers, restricting passage to any vehicle type across the entire width of all toll lanes, if not already installed in all toll lanes from the Commencement Date. Automated exit booms shall be controlled by the TCC and shall incorporate a safety device/s safeguarding against the closure of any such barrier during a vehicle passage over or through the AVC sensors, damaging any vehicle. Separation of vehicles shall be accomplished by means of such booms in the Mixed/Manual ETC and Dedicated ETC toll lanes. The Dedicated ETC toll lanes shall also incorporate additional vehicle separation and axle counting devices to accurately determine vehicle position identification and vehicle flow through the Dedicated ETC toll lane;

The toll system caters for the recording of the Manual Collector Vehicle classification (MVC), the tag vehicle class (EVC), the Automatic Vehicle Classification System (AVC) vehicle class as well as the verified and corrected vehicle class (SVC).

In Mixed/Manual and Dedicated ETC Lanes, the following:

The TCC shall have an output signal ready, in addition to the existing OHLS green arrow signal, in order to switch the ETC overhead mounted lane sign (ETC OHLS). It shall be required that the lane control be

maintained by the toll collector and that the tag transaction in such toll lanes not be processed without an MVC captured on the toll system. A passage transaction without an MVC class shall be considered to constitute a violation passage or Run-Through.

The toll system is capable of interfacing with the required ETC Equipment and interfaces that comply with the relevant standards in Clause 9.2.1 of the Standard Specification for Operations and Maintenance: Electronic Toll Collection (ETC). In terms of tags, the Contractor shall demonstrate that the toll system can interface to all of the Employers approved "Pre-Qualified" tags. A list of such pre-qualified tags is available on request.

The ETC requirements will, in its entirety or part thereof, be triggered by Employers for implementation. The following is noted:

The toll system is capable of accepting, processing and clearing tag transactions as specified in the Standard Specification for Operations and Maintenance: Electronic Toll Collection (ETC) and attention is drawn to Clause 5.3 of the Standard Specification for Operations and Maintenance: Electronic Toll Collection (ETC): Responsibilities of the Toll Agency. The Contractor toll system shall, however, maintain the functionality for accounts that are honoured by means of an ISO bank credit card which shall be honoured via the existing bank interface described elsewhere.

It shall not be required that the Contractor prove interoperability by using two (2) different tag readers from two un-related suppliers. The Contractor shall however demonstrate that the toll system shall successfully accept and process toll transactions from all the Prequalified Tag suppliers, or from all the different tags issued by the TCH.

If the TCH is commissioned before and operational by the Commencement Date, then the Nominated Subcontractor's toll system, in this case, the phase specified within Clause 3.4 of the Standard Specification for Operations and Maintenance: Electronic Toll Collection (ETC): Interoperability of ETC systems deployed before the TCH, will not be applicable.

The Contractor shall only be remunerated for the cost relating to the procurement and installation and successful commissioning of ETC related equipment and functionality on a proven cost-plus mark-up basis if and when the Employer decides to continue with the implementation of ETC outside those options described in the Schedule of Payments/Cost Matrix. This shall include but not limited to the procurement and installation of:

Signage, OHLS and User Fare Displays not described in the Contract;

The development of specific requirements of the phase specified within Clause 3.4 of the Standard Specification for Operations and Maintenance: Electronic Toll Collection (ETC).

The Contractor shall carry all costs relating to any other software modifications, upgrades and enhancements to the toll system required for the implementation of ETC, not specifically excluded above.

The Contractor shall carry all costs relating to the administration of tags.

Requirements specific relating to the Functional Compliance requirements of the toll system. The Nominated Subcontractor shall provide the necessary procedures, configuration, equipment and test vehicles to test and verify the correct and compliance functioning of the following:

Upon request, the Contractor shall receive from Employer, as a minimum five (5), sample tags from every "Prequalified" Tag supplier (to serve as test transaction test input data), together with five (5) legacy tags which shall be sourced from the Bakwena Platinum Corridor Concessionaire (BPCC). This shall mean that the compliance test shall consist of the capturing of fictitious tag Reader/interface data into the toll lane computer to simulate the tag communication (bi-directional) process.

As with the rest of the toll system, the Contractor shall bear all costs relating to the compliance testing of all ETC requirements.

PS 8.5 INFORMATION TO ROAD USERS

Replace subclause 8.5.2 (Before a Toll Plaza) with the following:

The Contractor shall provide a “Tags Accepted” road sign of 2.14 by 1.2 m in the approach to the Toll Plaza, as per the following image.

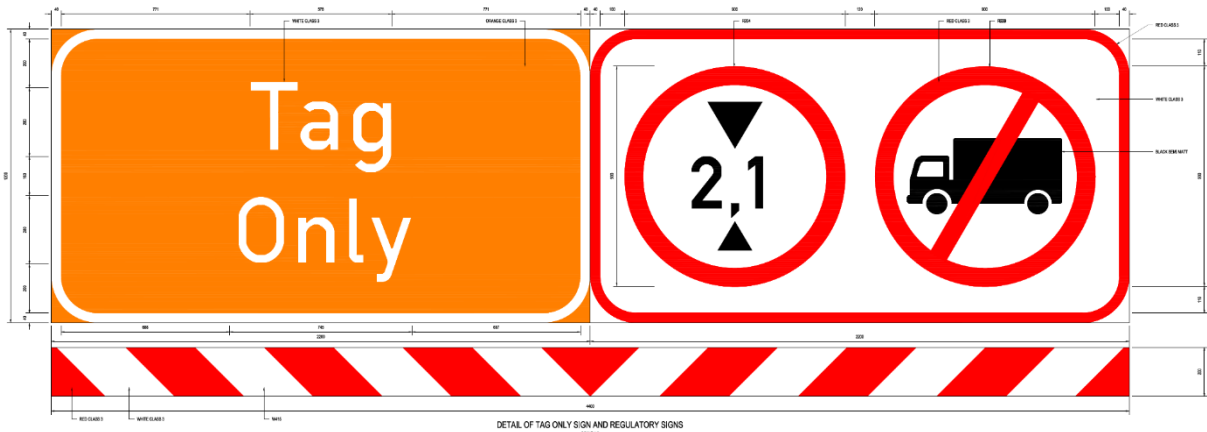


The Contractor shall provide a “HEAVY VEHICLES KEEP LEFT” road sign of 3.656 by 1.2 m in the approach to the Toll Plaza, as per the following image.



Replace subclause 8.5.3 (At the Toll Plaza selecting the correct lane)

The Contractor shall provide two road signs of 2.2 by 1.2 m each, together with a chevron sign at the bottom on a lane height restrictor for dedicated ETC lanes, as per the following image.



The Contractor shall provide 2 “Shesha” road signs of 0.938 by 0.720 m on both sides of the entrance to the Shesha Lane, as per the following image.



PS 8.6 FIXED SIGNS ON THE TOLL PLAZA CANOPY

Delete clause 8.6 (FIXED SIGNS ON THE TOLL PLAZA CANOPY).

PS 8.7 CHANGEABLE MESSAGE SIGNS

Delete clause 8.7 (CHANGEABLE MESSAGE SIGNS).

PS 8.8 OVERHEAD LANE SIGNS

Delete subclause 8.8.4, add replace it with:

“8.8.4 The green arrow and red cross sign in Figure 8-11, shall be used to indicated if a mixed ETC lane open (green arrow) and closed state (red cross)”

At the end of subclause 8.8.5, add the following:

“8.8.6 The specifications of the ETC OHLS shall be:

- a) An amber colour in the 590 to 610 nm range wavelength
- b) Display the letter “e”, which design, and font type needs to be approved by the Employer at first
- c) The same size as the green arrow and red cross OHLS, mounted next to each other and aligned horizontally
- d) Constructed from a matrix of high brightness surface mount LEDs designed for outdoor use with a IP65 rating as a minimum
- e) Use less than 50 watts from a 240 Volt ac supply
- f) Switchable from the Lane Controller to indicate a dedicated, mixed or closed ETC lane configuration
- g) Automatically dimmable in low light conditions
- h) Mounted on the approaching edge of the Toll Plaza Canopy above the centreline of each Lane facing the direction of the approaching traffic
- i) Visible at least 500m from the toll plaza

- j) Have a wide viewing angle so that it is still visible just before the entrance to the Toll Lane
- k) Have a high MTBF of more than 60 000 hours
- l) Have suitable lightning protection

C3.2.6 PARTICULAR AMENDMENTS TO THE STANDARD SPECIFICATIONS FOR OPERATIONS AND MAINTENANCE OF CTROM PROJECTS: PERFORMANCE MEASUREMENT (VOLUME 2 BOOK 6a)

The number of each Clause in a Particular Specifications in this section consists of the Prefix PS followed by a number corresponding to the number of the relevant Clause in the Standard Specification for the Operations and Maintenance: Performance Measurement (Volume 2 Book 6a). The number of any new Clause which does not form part of any Clause in the Standard Specification for the Operations and Maintenance: Performance Measurement (Volume 2 Book 6a), and which is included herein, is also prefixed by PS followed by a new number. Such new numbers follow on the last Clause used in the relevant section of the Standard Specification for the Operations and Maintenance: Performance Measurement (Volume 2 Book 6a).

PS3 PERFORMANCE MEASUREMENT

PS3.1.2: Key Performance Indicators

“PS3.1.2.3

The third line of this subclause to be modified to read as follows:

“... Employer may submit a request to the Performance Review Committee to introduce ...”

At the end of the subclause, adding the following:

“...being delivered. A National Performance Review (NPRC) Committee will be held at least twice (2) a year to align all CTROM Performance Measurement Models. A member or members from the Contractor shall attend these meetings.”

“PS3.1.2.6

The subclause 3.1.2.6 to be deleted and replaced with the following:

“Unless otherwise mutually agreed between the Parties, this Performance Management Regime shall be reviewed by the Performance Review Committee when required or at least every four (4) months from the Commencement Date of Operations Services Period. The first Performance Review Committee meeting must be held within four (4) months from the Commencement Date of the Operations Service Period in order to finalise reports and report formats for input to the Performance Measurement Model.”

“PS3.1.2.9

This subclause to be modified to read as follows:

“The derivation of the Performance scores is a multi-stage process that shall be derived from operational processes and timely reporting from the Nominated Subcontractor’s Toll System to the Contractor, Employer’s Representative and the Employer at prescribed intervals.”

PS3.2.2: Aggregation of Performance Scores

“PS3.2.2.2

Delete subclause 3.2.2.2 and replace with the following:

The total Performance Scores for all critical success factors shall be summed to derive the total Performance Score per Control Centre per month.”

Add the following clause:

PS3.2.4: Example of Calculating KPI

PS3.2.4.5

The first bullet to be modified to read as follows:

- “Lane grouping A with accuracy of 99.3% and lane grouping B with an accuracy of 99.99% for the month.”

PS3.2.4.10

The Clause to be modified to read as follows:

“The total score for Control Centre is $-105 + 2.7 = -102.3$ ”.

PS3.2.4.11

Replace the table under this Clause with the following:

Critical Success Factor	Performance Areas	KPI Number	KPI Name	SCORE
Public Awareness and Understanding	Customer Relations	CT5	Uninterrupted Electricity Supply	0.0
		CT6b	Call abandon rate, including IVR calls held pending transfer to a Call centre Operator	0.0
		CT6c	Call queuing time, including IVR calls held pending transfer o an Operator	-10.0
		CT6d	Call Centre Level of Service (LOS) - Proportion of calls blocked in peak demand period	-20.0
		CT10	Charging and charge reconciliation processes - accuracy	0.0
		CT11	Customer Satisfaction	20.0
		CT13	ETC Transaction Records submitted to TCH – timeliness	50.0
		CT14	Account Registration Processing - accuracy	0.0
			SUB-TOTAL FOR CUSTOMER RELATIONS:	40.0
	Marketing Support	CT18	Tactical marketing programme Level of Service (LOS)	10.0
			SUB-TOTAL FOR MARKETING SUPPORT:	10.0
	Channel Availability	CT6a	Call Centre service availability, including IVR services	120.0
		CT9	POP Customer Services Facilities - availability	0.0
			SUB-TOTAL FOR CHANNEL AVAILABILITY:	120.0

Critical Success Factor	Performance Areas	KPI Number	KPI Name	SCORE
			TOTAL FOR PUBLIC AWARENESS AND UNDERSTANDING:	170.0
Revenue Maximisation	Charging Effectiveness	CT4a	Daily AVC Data Transmission – Un-validated	-15.0
		CT4b	Daily AVC Data Transmission – Validated	-20.0
		CT4c	Daily MIS Data Transmission	-40.0
		CT4d	Monthly MIS Data Transmission	-10.0
		CT4e	Monthly MIS Income Data Transmission	-100.0
			SUB-TOTAL FOR CHARGING EFFECTIVENESS:	-185.0
	Charging Accuracy	CT3c	Automatic Vehicle Classification Accuracy – Axle-based	2.0
		CT3d	AVC Count	4.0
			SUB-TOTAL FOR CHARGING ACCURACY:	6.0
			TOTAL FOR REVENUE MAXIMISATION:	-179.0
Operational Performance	Quality Control	CT16	Maintenance	-40.0
		CT17	Transactions acceptable to TCH and VPC - proportion	0.0
			SUB-TOTAL FOR QUALITY CONTROL:	-40.0
	Effectiveness	CT1a	Repair Time Compliance – Severity Level 1 Fixed Assets	0.0
		CT1b	Repair Time Compliance – Severity Level 2 Fixed Assets	0.0
		CT1c	Repair Time Compliance – AVC	-20.0
		CT1d	Repair Time Compliance – Severity Level 1 Semi-Fixed Assets	0.0
		CT1e	Repair Time Compliance – Severity Level 2 Semi-Fixed Assets	0.0
			SUB-TOTAL FOR EFFECTIVENESS:	-20.0
			TOTAL FOR OPERATIONAL PERFORMANCE:	-60.0
System Health	Service Availability	CT2	SCADA Service Availability	0.0
		CT3a	AVC Availability – (Critical Errors)	0.0
		CT3b	AVC Availability – (Serious Errors)	0.0
		CT12	ETC lane availability	-50.0
		CT15	QLS –availability	0.0

Critical Success Factor	Performance Areas	KPI Number	KPI Name	SCORE
			SUB-TOTAL FOR SERVICE AVAILABILITY:	-50.0
			TOTAL FOR SYSTEM HEALTH:	-50.0
Cooperative Relationships	Reporting	CT8a	Compliance with Employer's reporting requirements – Critical Reports	0.0
		CT8b	Compliance with Employer's reporting requirements – Non-Critical Reports	0.0
			SUB-TOTAL FOR REPORTING:	0.0
	Governance	CT19	Contract Management Performance	10.0
			SUB-TOTAL FOR GOVERNANCE:	10.0
			TOTAL FOR COOPERATIVE RELATIONSHIPS:	10.0
			GRAND TOTAL:	-109.0

PS3.2.4.13

Modify this subclause to read as follows:

"The Total Score for the Control Centre in the example is -109 points."

PS3.3.2: Reporting Requirement**PS3.3.2.2**

This subclause to be deleted and replaced with the following:

"The Employer's Representative shall be responsible to produce the Performance Measurement Model once per month, based on the Contractor's performance and information provided. The Performance Measurement Model shall also include all the Section 6 penalties in this model. Together with the Performance Measure Model the ER shall also provide a penalty balance sheet which shall also reflect deductions made to the Contractor's Certificate."

PS3.3.2.4

This subclause to be deleted and replaced with the following:

"To ensure that the provision of services by the Contractor are managed effectively from the Commencement of Operations Services, Performance Review meeting, held as the Performance Review Committee, shall be convened by Employer's Representative as and when required and agreed between the parties, but not less than every four (4) months."

PS3.3.2.5:

This subclause to be deleted and replaced with the following:

"The Employer's Representative shall produce the performance report by ten (10) working days after the Contractor has submitted all the required reporting, as stipulated in the Standard Specifications for Operations and Maintenance of CTROM projects: General (Volume 2 Book 2a)" or as otherwise instructed by the Employer Representative to satisfy the input requirements to the Performance Measurement Model."

PS.3.3.2.6

This subclause to be deleted.

PS3.3.2.7:

Ten (10) business days.

PS3.3.2.8(a)

This subclause to be deleted and replaced with the following:

“For the purposes of performance measurement, the Performance Review Committee will include the following:

- (a) The Employer’s Executive (or delegated senior official);
- (b) The Employer’s Representative (can include another delegated member);
- (c) The Contractor’s Representative (can include another delegated member);
- (d) Auditing Body, as and when required by the Employer (to provide benchmarking and advice on performance issues)”

PS4.1 Key Performance Indicators

The weightings and specifications to be modified to read as follows:

Ref	Name	Score weighting, target service levels and other specifications				
		Specifications, target service levels and calculation procedures	Scores per increment for Service Level Bands			
			Above target ('r')	Band 1 ('x')	Band 2 ('y')	Band 3 ('z')
CT1a	Repair Time Compliance – Severity Level 1 - Employer Facilities	-	0.0	-1.5	-3.0	-15.0
CT1b	Repair Time Compliance – Severity Level 2 - Employer Facilities	-	0.0	-0.8	-1.5	-7.5
CT1c	Repair Time Compliance – AVC and TCC	-	0.0	-1.8	-2.5	-15.0
CT1d	Repair Time Compliance – Severity Level 1 Permanent Design Built Assets	-	0.0	-1.0	-2.0	-10.0
CT1e	Repair Time Compliance – Severity Level 2 Permanent Design Built Assets	-	0.0	-0.8	-1.5	-7.5
CT2a	SCADA Availability	95%	0.0	-0.8	-1.5	-15.0
CT2b	VGS Availability (Critical Errors)	95%	0.0	-3.0	-5.0	-15.0
CT2c	QLS Availability (Critical Errors)	-	0.0	-3.0	-5.0	-15.0
CT2d	QL1 Availability (Critical Errors)	-	0.0	-3.0	-5.0	-15.0
CT2e	QL2 Availability (Critical	-	0.0	-3.0	-5.0	-15.0

Ref	Name	Score weighting, target service levels and other specifications				
		Specifications, target service levels and calculation procedures	Scores per increment for Service Level Bands			
			Above target ('r')	Band 1 ('x')	Band 2 ('y')	Band 3 ('z')
	Errors)					
CT2f	BOS Availability (Critical Errors)	-	0.0	-3.0	-5.0	-15.0
CT2g	PGW Availability (Critical Errors)	-	0.0	-3.0	-5.0	-15.0
CT3a	AVC Availability (Critical Errors)	-	0.0	-5.0	-10.0	-35.0
CT3b	AVC Availability (Serious Errors)	-	0.0	-3.0	-5.0	-15.0
CT3c	Automatic Vehicle Classification for Class 1	-	0.03	-0.25	-0.75	-5.0
CT3c	Automatic Vehicle Classification for Class 2	-	0.03	-0.25	-0.75	-8.0
CT3c	Automatic Vehicle Classification for Class 3	-	0.06	-0.25	-0.75	-5.0
CT3c	Automatic Vehicle Classification for Class 4	-	0.06	-0.25	-0.75	-5.0
CT3d	AVC Count	-	0.15	-1.0	-2.0	-10.0
CT4a	Daily AVC Data Transmission – Un-validated	-	0.0	-5.0	-10.0	-40.0
CT4b	Daily AVC Data Transmission – Validated	-	0.0	-8.0	-18.0	-50.0
CT4c	Daily Back-Office Data Transmission	-	0.0	-8.0	-18.0	-50.0
CT4d	Monthly Back-Office Data Transmission	-	0.0	-12.0	-18.0	-60.0
CT4e	Monthly Back-Office Income Data Transmission	-	0.0	-12.0	-18.0	-60.0
CT6a	Call Centre service availability, including IVR services	If there is not direct one-to-one relationship between Route Call Centres and Control Centres, the average monthly score across all Route Call Centres shall be applicable to each Control Centre.	0.5	-1.0	-1.5	-10.0
CT6c	Route Call Centre call queuing time, including IVR calls held pending transfer to an operator	-	N/A	-0.2	-0.5	-10
CT8a	Compliance with Employer's	-	-	-	-	-

Ref	Name	Score weighting, target service levels and other specifications				
		Specifications, target service levels and calculation procedures	Scores per increment for Service Level Bands			
			Above target ('r')	Band 1 ('x')	Band 2 ('y')	Band 3 ('z')
	reporting requirements – Critical Reports					
	Hourly, Daily & Monthly Traffic Report	Report submission within contractual allowable time	0	-5.0	-10.0	-60.0
	Discount / Exempt Report	Report submission within contractual allowable time	0	-4.0	-8.0	-40.0
	Account Status	Report submission within contractual allowable time	0	-3.0	-5.0	-30.0
	Payment Trends	Report submission within contractual allowable time	0	-3.0	-5.0	-30.0
	Day/Month Closures	Report submission within contractual allowable time	0	-4.0	-8.0	-40.0
	AVC Accuracies	Report submission within contractual allowable time	0	-4.0	-8.0	-40.0
	System Availability	Report submission within contractual allowable time	0	-3.0	-6.0	-35.0
	Equipment failures	Report submission within contractual allowable time	0	-3.0	-5.0	-30.0
	Response & Repair times	Report submission within contractual allowable time	0	-3.0	-6.0	-35.0
	Problem Data	Report submission within contractual allowable time	0	-3.0	-6.0	-35.0
	Support Reports	Report submission within contractual allowable time	0	-3.0	-5.0	-30.0
	Stock & Spares	Report submission within contractual allowable time	0	-3.0	-5.0	-30.0
	Performance Measurement Report	Report submission within contractual allowable time	0	-4.0	-8.0	-40.0
	KPI 11	Report submission within contractual allowable time	0	-4.0	-8.0	-40.0
	KPI 19	Report submission within contractual	0	-4.0	-8.0	-40.0

Ref	Name	Score weighting, target service levels and other specifications				
		Specifications, target service levels and calculation procedures	Scores per increment for Service Level Bands			
			Above target ('r')	Band 1 ('x')	Band 2 ('y')	Band 3 ('z')
		allowable time				
CT8b	Compliance with Employer's reporting requirements – Non-Critical Reports	-	-	-	-	-
	Transaction Tariff report	Report submission within contractual allowable time	0	-1.0	-2.0	-10.0
	Discount Structure Report	Report submission within contractual allowable time	0	-1.0	-2.0	-10.0
	Transaction details report	Report submission within contractual allowable time	0	-2.0	-3.0	-15
	Class discrepancy acknowledgement	Report submission within contractual allowable time	0	-2.0	-3.0	-15
	Access Control	Report submission within contractual allowable time	0	-2.0	-4.0	-20.0
	Version Control	Report submission within contractual allowable time	0	-2.0	-3.0	-15
	MTBF	Report submission within contractual allowable time	0	-2.0	-4.0	-20.0
	Incident Report	Report submission within contractual allowable time	0	-2.0	-4.0	-20.0
	Dashboard Report	Report submission within contractual allowable time	0	-2.0	-3.0	-15
	Upgrade Reports	Report submission within contractual allowable time	0	-2.0	-3.0	-15
	Contractual Reporting	Report submission within contractual allowable time	0	-3.0	-6.0	-30.0
	Generator	Report submission within contractual allowable time	0	-2.0	-4.0	-20.0
	UPS	Report submission within contractual allowable time	0	-2.0	-4.0	-20.0
	Earthing& Lighting Protection	Report submission within contractual	0	-2.0	-4.0	-20.0

Ref	Name	Score weighting, target service levels and other specifications				
		Specifications, target service levels and calculation procedures	Scores per increment for Service Level Bands			
			Above target ('r')	Band 1 ('x')	Band 2 ('y')	Band 3 ('z')
		allowable time				
	Corrosion Protection	Report submission within contractual allowable time	0	-2.0	-4.0	-20.0
CT9	POP Customer Service Facilities - availability	If there is not direct one-to-one relationship between POP Customer Service Facility and Control Centres, the average monthly score across all POP Customer Service Facilities shall be applicable to each Control Centre.	1	-1	-1.5	-8
CT10	Charging and charge reconciliation processes - accuracy	At least 99.99% of ETC Transactions should be reconciled correctly (0.01% incorrectly) Where the accuracies per Control Centre are not available, the overall accuracy shall be applicable to each Control Centre.	0	-2	-5	-50
CT11	Customer Satisfaction	If separate scores cannot be associated to each Control Centre, the overall score shall be applied to each Control Centre.	1.5	-1.5	-2.5	-15
CT12	ETC lane availability	ETC Lanes should be available for at least 98% of the time in a day.	0	-1.5	-3	-15
CT13	ETC Transaction Records submitted to TCH – timeliness.	Measurement of KPI to commence when both commencement of ETC tolling as taken place and the ETC transaction market share for the Control Centre is 50% or more for three consecutive months. This KPI aims to incentive close to real	0.8	0.0	0.0	0.0

Ref	Name	Score weighting, target service levels and other specifications				
		Specifications, target service levels and calculation procedures	Scores per increment for Service Level Bands			
			Above target ('r')	Band 1 ('x')	Band 2 ('y')	Band 3 ('z')
		time transaction forwarding to the TCH. The incentive will be applicable when 85% or more of ETC transactions per Control Centre are forwarded to the TCH within 2 hours ('n' = 2 hours)				
CT14	Account Registration Processing - accuracy	97.5% accuracy	0	-1	-2	-10
CT15	QLS –availability	The QLS should be available for at least 99.7% of the time in a month.	0	-0.25	-0.5	-10
CT16	Maintenance	n/a	2	-3	-10	-30
CT18	Tactical marketing programme Level of Service (LOS)	If separate scores cannot be associated to each Control Centre, the overall score shall be applied to each Control Centre for the duration of a measurement period.	1	-1	-2.5	-15
CT20	Route Patrol Qualification		10.0	-5.0	-10.0	-15.0
CT21	Fresh Air Supply Management		0.0	-3.0	-4.0	-12.0

Table 4-1:

Replace the relevant columns as shown below for “CT16” only with the contents shown here:

	Target Service Level	Band 1	Band 2	Band 3
CT16	> 55% ('r' pts per 1.0%)	45% to < 50% ('x' pts per 1.0%)	40% to < 45% ('y' pts per 1.0%)	< 40% ('z' pts per flat rate)

Table 4-1: Add the following to the table under the relevant KPI numbers:

CT2b	Service Availability	VGS Availability (Critical Errors)	The number of occurrences that the VGS downtime, related to Critical Mode, in a VGS exceeds the time specified in Volume 2 Book 4a during a month.	Commencement of Operations Services	Zero occurrences	1 to 10 ('x' pts per occurrence)	11 to 20 ('y' pts per occurrence)	More than 20 ('z' pts flat rate)	CTROM limits 20 occurrences
CT2c	Service Availability	QLS Availability (Critical Errors)	The number of occurrences that the QLS downtime, related to Critical Mode, in a QLS exceeds the time specified in Volume 2 Book 4a during a month.	Commencement of Operations Services	Zero occurrences	1 to 10 ('x' pts per occurrence)	11 to 20 ('y' pts per occurrence)	More than 20 ('z' pts flat rate)	CTROM limits 20 occurrences
CT2d	Service Availability	QL1 Availability (Critical Errors)	The number of occurrences that the QL1 downtime, related to Critical Mode, in a QL1 exceeds the time specified in Volume 2 Book 4a during a month.	Commencement of Operations Services	Zero occurrences	1 to 10 ('x' pts per occurrence)	11 to 20 ('y' pts per occurrence)	More than 20 ('z' pts flat rate)	CTROM limits 20 occurrences
CT2e	Service Availability	QL2 Availability (Critical Errors)	The number of occurrences that the QL2 downtime, related to Critical Mode, in a QL2 exceeds the time specified in Volume 2 Book 4a during a month.	Commencement of Operations Services	Zero occurrences	1 to 10 ('x' pts per occurrence)	11 to 20 ('y' pts per occurrence)	More than 20 ('z' pts flat rate)	CTROM limits 20 occurrences
CT2f	Service Availability	Back Office Availability (Critical Errors)	The number of occurrences that the BOS downtime, related to Critical Mode, in a BOS exceeds the time specified in Volume 2 Book 4a during a month.	Commencement of Operations Services	Zero occurrences	1 to 10 ('x' pts per occurrence)	11 to 20 ('y' pts per occurrence)	More than 20 ('z' pts flat rate)	CTROM limits 20 occurrences

CT2g	Service Availability	PGW Availability (Critical Errors)	The number of occurrences that the PGW downtime, related to Critical Mode, in a PGW exceeds the time specified in Volume 2 Book 4a during a month.	Commencement of Operations Services	Zero occurrences	1 to 10 ('x' pts per occurrence)	11 to 20 ('y' pts per occurrence)	More than 20 ('z' pts flat rate)	CTROM limits 20 occurrences
CT20	Quality Control	Route Patrol Personnel Qualifications	This KPI Measures the number of people not suitable qualified to perform the duties of Route Patrol Officers. The minimum qualification requirements are dictated in Volume 2 Book 2a, under Clause 19.4.1.6 of the contract	Commencement of Operations Services	All Officers suitable qualified and certified	2 to 4 ('x' pts per occurrence)	4 to 6 ('y' pts per occurrence)	6 to 10 ('z' pts per occurrence)	
CT21	Quality Control	Fresh Air Management	The Fresh-air Penalty System ensures that the system is maintained properly, and operational procedures are enforced to ensure a healthy working environment. Fresh-Air pump off, or not working for longer than allowable time = 20 pts. Heater element not working = 3 pts per lane. Obstructions in air vents = 5 pts per lane. Additional heater in lane = 5pts per lane.	Commencement of Operations Services	Zero occurrences	1 to 10 pts ('x' pts per point)	11 to 24 pts ('y' pts per point)	More than 25 pts ('z' pts flat rate)	

PS4.1 Additional Detail Relating to KPI's

“PS4.1.3 2: Availability of SCADA

Change the heading Description from “2: Availability of SCADA” to “Availability KPI's”

“PS4.1.3.1

Change the current PS4.1.3.1 Clause to PS4.1.3.1.1

Add Heading PS4.1.3.1 called “2a: Availability of SCADA.”

Add the following new subclause:

“PS4.1.3.1.2

The Contractor shall define a measuring tool for this KPI and submit to the Employer's Representative before the first Performance Review Committee meeting for approval, unless such measuring tool is already included in the project information document (Volume 4).”

Add Heading PS4.1.3.2 called “2b: VGS availability”

Add the following new subclause:

“PS4.1.3.2.1

This KPI shall be applied if the VGS downtime, related to Critical Error Mode, for the VGS system exceeds the maximum time limit as specified. This KPI shall be applied for every continuous maximum specified period that the VGS remained in critical error mode.

The Contractor shall apply to the Employer's Representative for approval for planned VGS downtime due to maintenance which will exceed the above periods.

Downtime which will exceed the above periods shall be excluded from the performance measurement if the VGS downtime was pre-approved by the Employer's Representative.”

Add Heading PS4.1.3.3 called “2c: QLS availability.”

Add the following new subclause:

“PS4.1.3.3.1

This KPI shall be applied if the QLS downtime, related to Critical Error Mode, for the QLS system exceeds the maximum time limit as specified. This KPI shall be applied for every continuous maximum specified period that the QLS remained in critical error mode.

The Contractor shall apply to the Employer's Representative for approval for planned QLS downtime due to maintenance which will exceed the above periods.

Downtime which will exceed the above periods shall be excluded from the performance measurement if the QLS downtime was pre-approved by the Employer's Representative.”

Add Heading PS4.1.3.4 called “2d: QL1 availability”

Add the following new subclause:

“PS4.1.3.4.1

This KPI shall be applied if the QL1 downtime, related to Critical Error Mode, for the QL1 system exceeds the maximum time limit as specified. This KPI shall be applied for every continuous maximum specified period that the QL1 remained in critical error mode.

The Contractor shall apply to the Employer's Representative for approval for planned QL1 downtime due to maintenance which will exceed the above periods.

Downtime which will exceed the above periods shall be excluded from the performance measurement if the QL1 downtime was pre-approved by the Employer's Representative."

Add Heading PS4.1.3.5 called "2e: QL2 availability."

Add the following new subclause:

"PS4.1.3.5.1

This KPI shall be applied if the QL2 downtime, related to Critical Error Mode, for the QL2 system exceeds the maximum time limit as specified. This KPI shall be applied for every continuous maximum specified period that the QL2 remained in critical error mode.

The Contractor shall apply to the Employer's Representative for approval for planned QL2 downtime due to maintenance which will exceed the above periods.

Downtime which will exceed the above periods shall be excluded from the performance measurement if the QL2 downtime was pre-approved by the Employer's Representative.

Add Heading PS4.1.3.6 called "2f: Back Office availability."

Add the following new subclause:

"PS4.1.3.6.1

This KPI shall be applied if the BOS downtime, related to Critical Error Mode, for the BOS system exceeds the maximum time limit as specified. This KPI shall be applied for every continuous maximum specified period that the BOS remained in critical error mode.

The Contractor shall apply to the Employer's Representative for approval for planned BOS downtime due to maintenance which will exceed the above periods.

Downtime which will exceed the above periods shall be excluded from the performance measurement if the BOS downtime was pre-approved by the Employer's Representative.

Add Heading PS4.1.3.7 called "2g: PGW availability"

Add the following new subclause:

"PS4.1.3.7.1

This KPI shall be applied in the event that the PGW downtime, related to Critical Error Mode, for the PGW system exceeds the maximum time limit as specified. This KPI shall be applied for every continuous maximum specified period that the PGW remained in critical error mode.

The Contractor shall apply to the Employer's Representative for approval for planned PGW downtime due to maintenance which will exceed the above periods.

Downtime which will exceed the above periods shall be excluded from the performance measurement if the PGW downtime was pre-approved by the Employer's Representative

PS4.1.13 5: Uninterrupted Electricity Supply

This subclause to be deleted (see subclause 6.9.3.1 and subclause 6.9.3.2 of the Standard Specifications for Operations and Maintenance of CTROM Projects: Performance Measurement (Volume 2 Book 6a).

PS4.1.15 6c: Call Queuing Time

This subclause to be deleted.

Add the following subclause:

PS4.1.16.8

Any reports which are measured elsewhere as a separate performance item, such as the Corrosion Report, which has its own penalty associated in section 6, should not be measured again in CT8a and CT8b, to avoid the duplication of penalties.

PS4.1.23 15: QLS Availability

Add the following new subclause:

“PS4.1.23.3

The Contractor shall define a measuring tool for this KPI and submit to the Employer's Representative before the first Performance Review Committee meeting for approval, unless such measuring tool is already included in the Project Information Document (Volume 4).”

Add the following new subclasses:

“PS 4.1.27 20: Route Patrol Personnel Qualifications

PS 4.1.27.1 This KPI measures the training of the route patrol personnel as par subclause 19.4 Volume 2 Book 2.

PS 4.1.27.2 The Contractor shall provide a monthly report listing of all Route Patrol personnel and indicating the Compliance to the requirements for each personnel. The Contractor to provide copies of Certification for each personnel.”

“PS 4.1.28 21: Fresh Air Supply – Management System

PS 4.1.28.1 This KPI measures the level of maintenance and the level of usage of the Fresh Air Supply system to ensure a healthy operating environment of the Contractor's staff.”

PS 4.1.28.2 a) Fresh Air Supply pump switch off or not operation for longer than the allowable time equates to twenty (20) points.
Each heater element that is not functional, three (3) points to be added.
Each obstruction found in the air vent, five (5) points added per obstruction.
Stand-alone heaters found in toll booths or lane area, five (5) points added per heater.”

PS6 PENALTIES

PS6.2 Project Commencement: Handover and Provisions of Documents

PS6.2.1.1

0.15% (point one five percent).

PS6.2.1.2

0,15% (point one five percent).

PS6.3 Operations Period – Financial Management

PS6.3.1

5% (five percent).

PS6.3.2

5% (five percent).

PS6.4 Operations Period – Traffic Management

PS6.4.1

2% (two percent).

PS6.4.2

1% (one percent).

PS6.4.3

0.5% (point five percent).

PS6.4.4

1% (one percent)

PS6.5 Equipment Functionality

PS6.5.1

0.5% (point five percent).

PS6.5.2

0.25% (point two five percent).

PS6.5.3

0.1% (point one percent).

PS6.5.4.1

0.5% (point five percent).

Add the following Clause:

“PS6.5.4.2

Add clause PS6.5.4.2 with the following wording:

“Over and above 6,5,4,1 an additional penalty shall be levied for operation in Manual Mode for a period of more than 1 (one) hour for each event of non-compliance.”

0.5% (point five percent).

PS6.5.5

1% (one percent).

PS6.5.6

0.5% (point five percent).

PS6.5.7

1% (one percent).

PS6.5.8

1% (one percent).

PS6.5.9

1% (one percent).

PS6.5.10

3% (three percent).

All reference made in the Clauses 6.5.10.1 to 6.5.10.7 to “Clause 6.8.6” must be deleted and replace with “Clause 6.5.10.”

Add the following subclause:

“PS6.5.10.8

Delete this Clause and replace with the following:

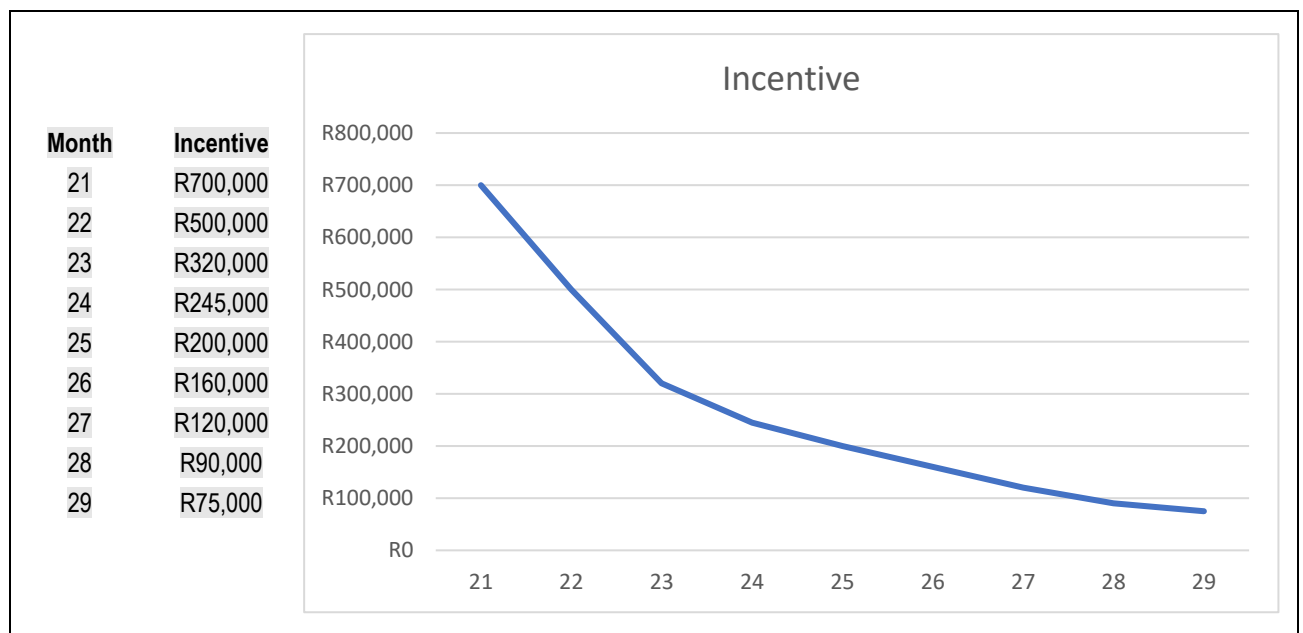
“In the event that the Contractor fails to achieve full system compliance for the toll system upgrades/replacements by the deadline indicated in the Project Document (Volume 3), the Contractor shall pay a penalty each day in line with the table below, according to the compliance level achieved up to that point, until the Toll System has been certified by the Employer's Representative as fully compliant to the agreement. The penalty shall be capped at ten percent (10%) of the design build value per control centre at base date value.”

	No Milestones	Functional Spec	Hardware FAT	Software FAT	Functional Compliance	FC + Rollout	Provisional Compliance	Full System Compliance
* Penalty Value	*R5000	*R5000	*R5000	*R5000	*R4000	*R2500	*R1000	*R0
% of Full Penalty	100%	100%	100%	100%	80% per item	50% per item	20% per item	0%

“PS6.5.10.9

Delete this clause and replace with the following:

“In the event that the Contractor does achieve full System Compliance on the Toll System, and is certified by the Employers Representative as compliant with the conditions of the agreement, prior to the deadline indicated in the Project Document (Volume 3), the Contractor shall receive an incentive payment for design build completion prior to the deadline date according to the following table, depending on the month of completion:”



PS6.6 Damage to assets

PS6.6.1

The reference made to “Clause 13.2.5” must be deleted and replaced with “Clause 14.3.5”.

0.15% (point one five percent)

PS6.7 Asset Management – Asset Management System

PS6.7.1

The reference made to “Clause 14.4” must be deleted and replaced with “Clause 14.5”.

PS6.7.1.1

0.15% (point one five percent)

PS6.7.1.2

0.15% (point one five percent)

PS6.8 Asset management – Electrical and Mechanical Maintenance

PS6.8.1

0.25% (point two five percent)

PS6.8.2.1

Add clause PS6.8.2.1 with the following wording:

“In the event that between 10% (ten percent) and 20% (twenty percent) of the lighting mast luminaires are not functional at any Toll Plaza, the Contractor shall pay a penalty for each event of non-compliance”

0.25% (point two five percent)

PS6.8.2.2

Add clause PS6.8.2.2 with the following wording:

“In the event that more than 20% (twenty percent) of the lighting mast luminaires are not functional at any Toll Plaza, the Contractor shall pay a penalty for each event of non-compliance.”

0.5% (point five percent)

PS6.8.3

2,5% (two-point five percent)

PS6.8.4

0,25% (point two five percent)

PS6.9 General – Utilities, Services and Levies

PS6.9.1

Add heading for PS6.9.1 – “Electricity Interruption”

Replace the description of PS6.9.1 with the following:

"In the event of Eskom or Municipal reticulation problems, Account Management problems, Diesel Generator or UPS problems, where such problems lead to power interruptions to the Toll Plaza, the Contractor shall pay a penalty. Without prejudice to any other remedy which the Employer may have, either in this agreement, or in law, the Employer shall be entitled to call on the Performance Security"

0.2% (point two percent)

PS6.9.2

Add heading for PS6.9.2 – "Provision of Services"

Replace the description of PS6.9.2 with the following:

"In the event of non-compliance by the Contractor of its obligations pursuant to Clause 15.1 of the Standard Specifications for Operations and Maintenance for CTROM projects: General – Volume 2 Book 2(a), (excluding for the respect of electricity supply), the Contractor shall pay for each event of non-compliance)"

0.2% (point two percent)

PS6.9.3

Add heading for PS6.9.3 – "Toll Lane Backup Power"

Replace the description of PS6.9.3 with the following:

"In the event of an interruption in the UPS or emergency electricity supply to the Toll Lanes and related equipment (which excludes the Toll Plaza UPS and Generator), the Contractor shall pay the following penalty:"

PS6.9.3.1

Replace the description of PS6.9.3.1 with the following:"

"For interruptions where the emergency power to the Toll Lanes and related equipment fails within the last hour of the contractual requirement (already lasted 3 hours but did not make 4 hours as required).

0.5% (point five percent)

PS6.9.3.2

Replace the description of PS6.9.3.2 with the following:"

"For interruptions where the emergency power to the Toll Lanes and related equipment fails before the last hour of the contractual requirement (lasted less than 3 hours)."

1% (one percent)

PS6.10 General Safety and Security

PS6.10.1

Remove clause PS6.10.1 and split into two clauses as follows:

PS6.10.1.1

Add the following to PS6.10.1.1:

"In the event that the Contractor does not comply with its obligations specified in Clause 15.4.1 of the Standard Specifications for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a), the Contractor shall pay a penalty for each event of non-compliance"

0.25% (point two five percent)

PS6.10.1.2

Add the following to PS6.10.1.2:

“In the event that the Contractor does not comply with its obligations specified in Clause 15.4.2 of the Standard Specifications for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a), the Contractor shall pay a penalty for each event of non-compliance”

0.25% (point two five percent)

PS6.10.2

0.25% (point two five percent)

PS6.11 General – Quality Assurance

PS6.11.1

0.5% (point five percent)

Add the following new subclause:

“PS6.11.2

In the event that the Contractor fails to adhere to an instruction from the Employer's Representative as depicted in Clause 3.3 of the Conditions of Contract, the Contractor shall pay a penalty for each event of non-compliance on a monthly basis until resolved.

0.25% (point two five percent)

PS6.13 Toll Road Services – Road Incident Management Systems

PS6.13.1

0.1% (point one percent)

PS6.14 Toll Road Services – Customer Call Centres

Delete PS6.14.1.1 and split into the following two clauses:

PS6.14.1.1.1

Add the following description to PS6.14.1.1.1:

“If the Contractor does not comply to the frequency of Route Service Patrols as specified in the Standard Specifications for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a) then the Contractor shall pay a penalty for each day of non-compliance”

0.5% (point five percent)

PS6.14.1.1.2

Add the following description to PS6.14.1.1.2:

“If the Contractor does not comply to the number of Patrol Vehicles as specified in the Standard Specifications for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a) then the Contractor shall pay a penalty for each day of non-compliance”

0.25% (point two five percent)

PS6.14.1.2

Replace PS6.4.1.2 with the following:

"If the Contractor does not comply with activities listed in Clause 19.4 of the Standard Specifications for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a), then the Contractor shall pay a penalty for each activity that have not been performed continuously."

0.1% per activity (point one percent)

PS6.14.1.3

1.0% (one percent)

Delete PS6.14.1.4 and split into the following three clauses:

PS6.14.1.4.1

Add the following to PS6.14.1.4.1:

"If the Contractor does not comply with the minimum required vehicle fittings in Clause 19.4 of the Standard Specification for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a), then the Contractor shall pay a penalty for each day of non-compliance

0.33% (point three percent)

PS6.14.1.4.2

Add the following to PS6.14.1.4.2:

"If the Contractor does not comply with the minimum required personnel equipment in Clause 19.4 of the Standard Specification for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a), then the Contractor shall pay a penalty for each day of non-compliance

0.33% (point three percent)

PS6.14.1.4.3

Add the following to PS6.14.1.4.3:

"If the Contractor does not comply with the minimum required vehicle equipment in Clause 19.4 of the Standard Specification for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a), then the Contractor shall pay a penalty for each day of non-compliance

0.33% (point three percent)

PS6.15.1

0.15% (point one five percent)

C3.2.7 PARTICULAR AMENDMENTS TO THE STANDARD SPECIFICATIONS FOR OPERATIONS AND MAINTENANCE OF CTROM PROJECTS: PAYMENT METHODOLOGY AND DESCRIPTION OF PAYMENT ITEMS (VOLUME 2 BOOK 7A)

The number of each Clause as a Particular Specification in this section consists of the Prefix PS followed by a number corresponding to the number of the relevant Clause in the Standard Specifications for Operations and Maintenance of CTROM Projects: Payment Methodology and Description of Payment Items (Volume 2 Book 7a). The number of any new Clause which does not form part of any Clause in the Standard Specifications for Operations and Maintenance of CTROM Projects: Payment Methodology and Description of Payment Items (Volume 2 Book 7a), and which is included herein, is also prefixed by PS followed by a new number. Such new numbers follow on the last Clause used in the relevant section of the Standard Specifications for Operations and Maintenance of CTROM Projects: Payment Methodology and Description of Payment Items (Volume 2 Book 7a).

PART A – PAYMENT METHODOLOGY

PS3.4 Toll System payment items linked to Milestone Testing

Delete the “Table 1.1 milestone dependant items before lane expansion/reversible lane creation” and replace with the following table:

MILESTONE DEPENDANT ITEMS BEFORE LANE EXPANSION / REVERSIBLE LANE CREATION								
Payment Item	Milestone Description vs Toll System Component	Functional Specification	Hardware Verification	Combined Software Factory Acceptance Test (SFAT)	Functional Compliance (FC)	ETC Functionality	Provisional Compliance (PC)	System Compliance
B-2001	Provision of Toll System Software and Hardware: Back-Office System.	10%	20%	15%	15%	10%	15%	15 % of the total of the Payment Items
B-2002	Provision of Toll System Software and Hardware: Video Grabbing System (VGS)	10%	20%	15%	15%	10%	15%	
B-2003	Provision of Toll System Software and Hardware: Queue Length Monitoring System (QLS)	10%	20%	15%	15%	10%	15%	
B-2004	Provision of Toll System Software and Hardware: Data Concentrator System (DCS)	10%	20%	15%	15%	10%	15%	
B-2005	Provision of Toll System Software and Hardware: Provision of Back Office Servers storage hardware and archive system complete	10%	20%	15%	15%	10%	15%	
B-2006	Additional software and licences complete	10%	20%	15%	15%	10%	15%	
B-2008	LAN and Network Connections. Provision and installation of network to all workstations, printers, etc.	10%	20%	15%	15%	10%	15%	
B-2011	Provisions for Toll System Software and Hardware: Interface with TCH.	10%	20%	15%	15%	10%	15%	
B-3001	Provision of Toll System Software and Hardware: AVC System for Mixed Manual/ETC Lanes and/or Dedicated ETC Lanes.	10%	20%	15%	15%	10%	15%	
B-3002	Provision of Toll System Software and Hardware: Mixed Manual /ETC Lanes for single direction Lanes	10%	20%	15%	15%	10%	15%	

MILESTONE DEPENDANT ITEMS BEFORE LANE EXPANSION / REVERSIBLE LANE CREATION								
Payment Item	Milestone Description vs Toll System Component	Functional Specification	Hardware Verification	Combined Software Factory Acceptance Test (SFAT)	Functional Compliance (FC)	ETC Functionality	Provisional Compliance (PC)	System Compliance
B-3003	Provision of Toll System Software and Hardware: Dedicated ETC Lanes	10%	20%	15%	15%	10%	15%	
B-3006	Provision of Toll System Software and Hardware: Implementation of Queue Length Cameras.	10%	20%	15%	15%	10%	15%	
B-3007	Provision of Toll System Software and Hardware: Implementation of VGS	10%	20%	15%	15%	10%	15%	
B-3008	Provision of Documentation	10%	20%	15%	15%	10%	15%	

PS4.5 Provision in Opex for Income Cost

PS4.5.4

The historic values of Run-through Violations, Exempt User passages, Local User Discounts, Frequent User Discounts and No-Payment transactions for the existing Toll Plazas on N1 South and R30 Toll Roads are provided in Part C20 of Volume 4.

PS4.6 Adjustment of Contractor Payments as a Result of Zero Traffic Conditions

PS4.6.3

80% (eighty percent)

PS5 ADJUSTMENT OF CONTRACTOR'S MONTHLY PAYMENT TO PROVIDE FOR TOLL INCOME LOSS RESULTING FROM TRAFFIC VOLUMES LOSS

PS5.3 Data Sources

The TEL Services Provider needs to comply with the specifications, as set out in TMH 3 – Traffic Monitoring Services and TMH 4 – Traffic Data Format, included in Part C18 of Volume 4.

The Service Provider's Site Investigation Reports and Certification Certificates will be made available to the Contractor on request.

PS5.3.6

Historic data from AVC, MIS, TEL1 and TEL2 are included in Part C16 of Volume 4.

PART B – SECTION 1: PREAMBLE TO THE SCHEDULE OF PAYMENTS

PS1.9 Contract Price Adjustment

PS1.9.8

This Clause to be modified to read as follows:

“Consumer Price Index for all expenditure groups: Table B for Urban Areas (Base date December 2021 = 100) as published ...”

PART B – SECTION 2: DESCRIPTION OF PAYMENT ITEMS – A SERIES: OPERATION SERVICE

A - 1000 GENERAL CONTRACTOR'S OBLIGATIONS

Replace Item No A-1001 with the following:

Item No	Description	Unit
A-1001	Contractor's General Obligations for the Duration of the Operations Service Period	Month
A-1001-a	Contractors General Obligations for the duration of the Operations Service Period - Section 1	Month
A-1001-b	Contractors General Obligations for the duration of the Operations Service Period - Section 2	Month

This item is to make provision for all the Contractors' General Obligations in accordance with clause 10.1 of FIDIC Conditions of Contract for Design, Build and Operate Projects. (2008) (Volume 1 Book 1).

The tendered rate shall include full compensation to the Contractor to meet and to maintain all the General Obligations, in accordance with clause 10.1 of FIDIC General Conditions of Contract for the Design, Build and Operate Project (Volume 1 Book 1) (2008), must also include compensation for all Head Office cost not covered in the payment items listed in the Schedule of Payments (Cost Matrix). The Tendered Rate shall also include for the Contractor's profit not built into the individual payment items.

The unit of measurement shall be a month of the Operation Service Period during which the Contractor actually provided Head Office overheads required for the execution of the Contract. The Payment will be made to the Contractor for a month of the Operation Service Period during which it provided the Head Office overheads described above.

Costing needs to be made separately for each section of the contract, as defined in Part C1.2.2 Part A: Particular Conditions: Contract Data.

Replace Item No A-1013 with the following:

Item No	Description	Unit
A-1013	Escrow for commissioning System application software (not toll system related)	Month

In terms of this item, the Contractor shall comply with the requirements related to the provision of an Escrow agreement and the compliance to the requirements of the Standard Specifications for Operations and Maintenance of CTROM Projects: Toll Systems (Volume 2 Book 4a).

The tendered rate shall include for compliance to the deposition of all non-Toll System related software in Escrow and for the ongoing maintenance of the Escrow agreement as well as for the frequent depositing and verification of software to comply with the requirements to deposit the software in Escrow annually or with the implementation of any new software. (Note that the deposition of software related to the commissioned Toll System forms part of the scope of work of the Nominated Subcontractor and is addressed in the Nominated Subcontractor's contract.)

The tendered rate shall include for full compensation for the provision of an approved and agreed Escrow agreement and the delivery of the complete software into Escrow. This tendered rate for under the above item shall include for full compensation for the actions required to conclude an approved and agreed Escrow agreement and the initial deposition of all software, including testing and verification activities.

The unit of measurement shall be month for the provision of Escrow and ongoing and annual Escrow requirements.

Payment shall be made to the Contractor on a monthly basis based on the tendered rate on the Schedule of Payments/Cost Matrix for the duration of the Operation Service Period.

Add the following New Payment Items:

Item No	Description	Unit
A-1014	Updating Integrated Transport Information System (ITIS) Modules	Month

In terms of this Item, the Contractor is to price for updating the various Integrated Transport Information System (ITIS) modules described in Clause C3.1.8 of the Project Document (Volume 3).

The tendered rate shall represent full compensation for the Contractor to provide person(s) to gather the relevant information and data in order to update the Employer various ITIS modules.

The unit of measurement shall be a month of the Operation Service period during which the Contractor has updated the Employer various ITIS modules.

The payment will be made to the Contractor for a month of the Operation Service period during which the Contractor has updated the Employer various ITIS Modules.

Item No	Description	Unit
A-1015	Liaison with Service Providers	Month

In terms of this item, the Contractor is to price for all liaison and interaction activities with the Service Provider for the Contract for the upgrade and refurbishment of Toll Plaza Canopies and minor repairs at all the Toll Plaza buildings on N1 South and R30 Toll Roads as listed in the table of Clause C3.1.5 of the Project Document (Volume 3).

The tendered rate shall include for all costs incurred by the Contractor including personnel and transport costs to liaise and to interact with the Service Provider during the Contract for the Upgrade and Refurbishment of Toll Plaza Canopies and minor repairs at all Toll Plaza buildings.

The unit of measurement shall be a month (pro rata for part of the month) of the Operations Service Period during which the Contractor fulfils the liaison and interaction functions with the Service Provider(s).

The Payment will be made to the Contractor for a month (pro rata for part of the month) of the Operation Service period during which the Contractor has fulfilled the liaison and interaction functions with the Service Provider(s).

Item No	Description	Unit
A-1016	Mentoring Targeted Enterprise (New Entrant-Developing Operator)	Month
A-1016a	Identify and train Targeted Enterprise (New Entrant-Developing Operator)	Month
A-1016b	Oversee of Targeted Enterprise (New Entrant-Developing Operator) management of Toll Plaza	Month

In terms of Item A-1016a, the Contractor is to price for identifying, establishing and implementing monitoring and training program, to develop a Targeted Enterprise (TE) (New Entrant-Developing Operator) to be able to Operate and Maintain a Toll Plaza on their own.

The tendered rate shall include all the costs incurred by the Contractor to:

Identify and select a suitable Targeted Enterprise (TE) (New Entrant-Developing Operator) to develop and implement a mentoring and training program of all the Operations and Maintenance Levels/Sections of the Toll Plaza, such as but not limited to toll plaza operations, maintenance of Toll Plaza facilities, development of Operations and Maintenance Procedures/Manual, Management of Resources and Labour, Contract Management, Financial Management, Risk Management, Environmental Management, Health and Safety, Procurement Management (including tendering) and any other areas required to ensure the TE (New Entrant-Developing Operator) is ready for the Operation and Maintenance of a Toll Plaza.

The unit of measurement shall be a month (or pro-rata for part of the month) from when the Contractor implements the duties and the activities indicated in the approved program.

Payment will be made for the month (or pro rata for part of the month) for which the Contractor has provided services, executed tasks and/or achieved milestones indicated in the approved program.

In terms of Item A-1016b, the Contractor is to manage and supervise the TE (New Entrant-Developing Operator) management of all aspects of operations and maintenance of one (1) Toll Plaza identified by the Contractor and approved by the Employer on the N1 South or R30 Toll Roads.

The tendered rate shall include for all the costs incurred by the Contractor to manage and supervise the TE ((New Entrant-Developing Operator), including the management of perceived additional risks incurred during the period where the TE (New Entrant-Developing Operator) operates and maintains the selected toll plaza on their own.

The unit of measurement shall be a month (or pro rata of the month) from when the Contractor's provides the Supervision and Management Services.

The payment will be made to the Contractor for a month (or pro rata for part of the month) for which the Contractor provide this management and supervision services.

Item No	Description	Unit
A-1017	Extra over costs for the supervision of the Nominated Subcontractor	Month

In terms of this payment item, the Contractor shall price for the Supervision of the Nominated Subcontractor responsible for the design, build, operation and maintenance of the toll system.

The tendered rate shall represent full compensation to the Contractor for the Supervision of the Nominated Subcontractor. This tendered rate shall include for, but not be limited to, additional staff to manage and supervise the Nominated Subcontractor responsibilities and Contractor Risks in terms of the Project Document (Volume 3) or any other perceived costs due to the Supervision of the Nominated Subcontractor for the duration of the Contract period.

The unit of measurement for items A-1017, shall be a month of the Contract period during which the Contractor complied with requirements for the Supervision of the Nominated Subcontractor. The payment will be done to the Contractor for a month or pro-rata month of the Contract Period that Contractor supervised and managed the Nominated Subcontractor.

A - 2000 PROVISION OF STAFF AND LABOUR

Delete payment Item A-2011 and replace with the following new payment items:

Item No	Description	Unit
A-2011-a	Extra over or saving of Operational costs if dedicated ETC lanes are implemented (1 lane/direction) (If triggered)	Month
A-2011-b	Extra over or saving of Operational costs if dedicated ETC lanes are implemented (2 lanes/direction) (If triggered)	Month
A-2011-c	Extra over or saving of Operational costs if dedicated ETC lanes are implemented (3 lanes/direction) (If triggered)	Month

In terms of this item the Contractor shall price for any additional costs or cost savings that the Contractor may incur should the Employer “trigger” the operation of the Dedicated ETC lanes at the plaza. The Dedicated ETC lanes can be “triggered” in phases and should be priced accordingly.

The tendered rate is to include for all additional costs or cost savings that the Contractor may incur should the Employer “trigger” the operation of Dedicated ETC lanes at the plaza and priced accordingly. If the Contractor incur additional costs to operate and manage the Dedicated ETC lane, such as, runners in the lanes, back-office transaction verification, formulating and sending transaction files to the National TCH from the plaza, then the Contractor must price as additional costs in Schedule of Payments/Cost Matrix. Should the Contractor find that a saving is possible, i.e. require less toll collectors, the implemented back office system is automated, etc, should the Employer “trigger” the operation of a Dedicated ETC lane, then the Contractor prices a negative value reflecting the saving amount in the Schedule of Payments/Cost Matrix.

The payment to the Contractor will be done monthly based on the monthly tendered rate in the Schedule of Payments/Cost Matrix.

Delete payment A2015 and replace with the following new payment item A2015:

Item No	Description	Unit
A-2015	Call handling function: In-house handling of calls from the public during Operation Period (if triggered)	
A-2015-a	One call handler	Month
A-2015-b	Two call handlers	Month
A-2015-c	Three call handlers	month

After this payment item has been triggered, payment of only the relevant sub item will take place each month. The unit of measurement shall be monthly per call handler(s) of incoming calls from the public in respect of Electronic Toll Collection (ETC) transactions and road-related incidents or reports. In the case of ETC transaction, calls will include applications for certain project specific discounts such as a possible ETC linked local user discount system and possible discounts for certain public transport vehicles groups such as taxis as well as queries about Exempt Vehicle status that may require using toll tag. The Contractor will also be required to receive and answer calls from the public regarding road-related incidents or reports or road conditions which he/she, in turn, needs to forward to the relevant Government agencies or departments.

The tendered rate shall represent full compensation to the Contractor for the operation of the Customer Service Call centre for the duration of the contract including but not limited to the provision of the required number of suitable skilled staff, as required, the performance of the Customer Call Centre activities and adherence to call centre manning hours as specified in Clause 19 of the Standard Specifications for

Operations and Maintenance for CTROM Projects: General – (Volume 2 Book 2a) and other related Clauses and requirements specified in the contract document.

The tendered rate shall include for full compensation for all human and other resources, processes and activities to ensure that each call received from the public is handled professionally and courteously.

Item No	Description	Unit
A-2017	Quality Control Officer	Month

In terms of this item, the Contractor is to appoint a Quality Control Officer to perform, on behalf of the Contractor, the required checks, inspections and measurement against requirements, after the installation of the Toll System (or components of the Toll System), or after the installation of new, or upgrade of any existing Employer's Facilities or Permanent design-build assets, to confirm quality of installations and to safeguard the Contractor against any of the key performance indicators or penalties as described in Volume 2 Book 6a.

The Contractor shall comply with all employment requirements for labour as specified in Clause 6 of the FIDIC General Conditions of Contract for Design, Build and Operate Projects – Volume 1 Book 1 (2008) and with the requirements specified in Clause 3.4 of the Project Document (Volume 3).

The tendered rate shall represent full compensation to the Contractor to comply with all employment requirements for that are specified in Clause 6 of the FIDIC General Conditions of Contract for Design, Build and Operate Projects – Volume 1 Book 1 (2008) and with requirements specified in Clause C3.4 of the Project Document (Volume 3) for the duration of the Contract. The tendered rate shall include for all the costs incurred by the Contractor for the employment of above position to execute all obligations specified in the Contract. It shall also include for all the cost related to leave, annual bonus, UIF, overtime/relief support, incentives, Provident Fund, skills levy, COID and any other company costs for this category of staff (as applicable).

The unit of measurement shall be a month of the Operation Service Period.

Item No	Description	Unit
A-2023	VGS Clerk	Month

In terms of this item, the Contractor shall comply with all employment requirements for VGS Clerk as specified in Clause 6 of the FIDIC General Conditions of Contract for Design, Build and Operate Projects – Volume 1 Book 1 (2008) and with the requirements specified in Clause C3.4 of the Project Document (Volume 3).

The VGS Clerk shall perform the following monthly audit functions and generate audit reports;

- 1) Count accuracy verification (AVC count accuracy report per Control centre),
- 2) Technical violation assessment/audits, e.g. "Green light", "Red light", reverse entry, rollback and vehicle standing assessment,
- 3) Audit of VLN discrepancies for exempt, local and frequent users,
- 4) Run through and tailgater investigation,
- 5) Lane incidents and Customer complaints

The tendered rate shall represent full compensation to the Contractor to comply with all employment requirements for VGS Clerk that are specified in Clause 6 of the FIDIC General Conditions of Contract for Design, Build and Operate Projects – Volume 1 Book 1 (2008) and with requirements specified in Clause C3.4 of the Project Document (Volume 3) for the duration of the Contract. The tendered rate shall include for all the costs incurred by the Contractor for the employment of Shift Supervisors to execute all obligations specified in the Contract. It shall also include for all the cost related to leave, annual bonus, UIF, overtime/relief support, incentives, Provident Fund, skills levy, COID and any other company costs for this category of staff.

The unit of measurement shall be a month of the Operation Service Period.

A-3000 FINANCIAL FEES AND RISK

Add the following new payment Item:

Item No	Description	Unit
A-3009	Risk of Loss or Damage of Tags	per 100 tags per month

It is required that the Contractor shall take the full risk for all losses that may be incurred as a result of either the loss or damage of any Tag(s) in the possession of the Contractor. For this purpose, the risk of losses related to both the initial purchase price of a Tag and the value of trips actually undertaken by means of a lost, stolen or damaged Tag has to be covered by this payment item. It should, therefore, be noted that, if the encoded value on a lost, stolen or damaged Tag is not used, the Contractor will not be responsible for the risk. The current purchase price of a Tag is provided in the Project Document Volume 3. The price of the risk of the loss or damage of Tags will be measured per 100 tags per month.

A-4000 UTILITIES, SERVICES AND LEVIES

The following payment Item to be modified to read as follows:

Item No	Description	Unit
A-4001	Cost for the supply of electricity	Provisional Sum

The last paragraph to be modified to read as follow:

“The payment to the Contractor will be made monthly based on actually invoices from the Service Provider for the duration of the Operation Service Period”

A-5000 MAINTENANCE OF PROJECT ASSETS

Add the following new payment items:

Item No.	Description	Unit
A-5105	Shesha lane signs	
A-5105a)	Maintenance of Shesha lane signs	Month
A-5105b)	Replacement of Shesha lane signs	No.

In terms of Item A-5105a, the Contractor is to price for all the requirements to maintain the existing Dedicated ETC/SHESHA LANE signs for the duration of the Operation Service Period.

The tendered rate shall include for all cost incurred by the Contractor to maintain the existing Dedicated ETC/SHESHA lane signs. These costs included, but not limited to, labour, transport, materials and any other costs incurred by the Contractor in order to maintain these signs to a good presentable standard.

The unit of measurement shall be a month (or pro rata for part of the month) for the maintenance of the existing signs for the Dedicated ETC/Shesha lanes for the duration of the Operation Service Period.

The payment will be made monthly (or pro rata for part of the month) for the period for which the Contractor has provided for the maintenance of the existing Dedicated ETC/Shesha lanes signs.

In terms of Item A-5105b, the Contractor is required to price for the replacement of new Dedicated ETC/Shesha lane signs, when instructed by the Employer's Representative or the Employer.

The tendered rate shall include for all the costs incurred by the Contractor to replace the old Dedicated ETC/Shesha lanes signs with the new signs. These costs include for but not limited to, procurement of new signs, transport, installation (including labour) of the new Dedicated ETC/Shesha lanes and for the

removal and disposal of the old damaged signs to an accredited site, and any other costs related to the replacement of the new Dedicated ETC/Shesha lane signs incurred by the Contractor.

The unit measurement shall be the number of each Dedicated ETC/Shesha lane sign that is replaced.

The payment will be made after the new Dedicated ETC/Shesha lane sign is installed successfully in terms of the Employer's Representative satisfaction and the old damaged sign has been disposed of into an accredited site.

Item No.	Description	Unit
A-5106	Median Barriers	
A-5106a)	Maintenance of Median Barriers	Month
A-5106b)	Replacement of Median Barriers	Metres

In terms of Item A-5106a, the Contractor is to price for requirements to maintain the installed Median Barriers for the duration of the Operation Service Period.

The tendered rate shall include for all costs incurred by the Contractor to maintain the existing median barriers. These costs include but no limited to labour, transport, materials and any other costs incurred by the Contractor in order to maintain the median barriers to a good presentable standard.

The unit of measurement shall be a month (or pro rata for part of a month) for the maintenance of the median barriers for the duration of the Operation Service Period.

Payment will be made monthly (or pro rata part of the month) for the period for which the Contractor has provided the maintenance of the median barriers.

In terms of Item A5105b, the Contractor is required to price for the replacement of new median barriers, when instructed by the Employer's Representative or by the Employer.

The tendered rate shall include for all the costs incurred by the Contractor to replace the old damaged median barriers with new median barriers. These costs include but not limited to, the procurement of the new median barriers, transport, installation (including labour) for the new median barriers and for the disposal of the old damaged median barriers to an accredited site and any other costs related to the replacement of new median barriers incurred by the Contractor.

The unit of measurement shall be metre of new median barrier that is installed.

Payment will be made after the new median barriers are installed successfully to the Employer's Representative satisfaction and the old damaged barriers has been disposed of into an accredited site.

Item No.	Description	Unit
A-5107	Impact Attenuators	Month

In terms of Item A-5107, the Contractor is to price for all the requirements to maintain and repair the existing Impact Attenuators for the duration of the Operation Service Period.

The tendered rate shall include for all cost incurred by the Contractor to maintain and repair the existing Impact Attenuators. These costs include, but are not limited to, labour, transport, materials and any other costs incurred by the Contractor in order to maintain these Impact Attenuators to the service provider's standards.

The unit of measurement shall be a month (or pro rata for part of the month) for the maintenance and repairs of the existing Impact Attenuators for the duration of the Operation Service Period.

The payment will be made monthly (or pro rata for part of the month) for the period for which the Contractor has provided for the maintenance and repairs of the existing Impact Attenuators.

Item No.	Description	Unit
A-5208	Provision for New Impact Attenuator System (if triggered)	Lump Sum

The tendered rate under this item, is for the provision of a New Impact Attenuator System in terms of the specifications in the Project Document (Volume 3).

The tendered rate shall include for full compensation for the supply and installation of the New Impact Attenuator System. The tendered rate shall also compensate for the provision of traffic accommodation during the installation of this Impact Attenuator System. The tendered rate shall also include for all the cost related to the removal and the disposing of the existing drum impact attenuator system to suitable accredited dumping site.

Payment will be made to the Contractor once the New Impact Attenuator is successfully installed in all the lanes to the approval of the Employer's Representative and once the Contractor provided a compliance certificate from an accredited disposing site for the disposing of the drum impact attenuator system.

Item No.	Description	Unit
A-5209	Provision for E+M Specialist for maintenance of the SCADA system	Month

In terms of this item, the Contractor shall comply with the requirements related to SCADA system maintenance as specified in Volume 2 Book 2a Standard Specifications for Operations and Maintenance of CTROM Projects: General.

The management of the Employers Equipment after Defects Liability Period has lapsed, shall be performed by the Contractor. The tendered rate shall include for all costs, overhead charges and profits to manage and administer the specialist maintenance services during this period in accordance with Standard Specifications for Operations and Maintenance of CTROM Projects: General (Volume 2 Book 2a). The management shall include, amongst others, frequent inspections, checks, and notifications to the supplier of the Employers Equipment at the various facilities.

The unit of measurement shall be month for the provision of SCADA system maintenance. Payment will be made to the Contractor on a monthly basis based on the tendered rate in the Schedule of Payments/ Cost Matrix for the duration of the Operation Service Period but commencing only after successful commissioning of the SCADA system.

A-5300 TOLL SYSTEM MAINTENANCE

Delete the following payment items:

- A-5301 Toll System Software Support
- A-5302 Toll System Equipment and Hardware Maintenance
- A-5303 Toll System Maintenance and Support: QLS
- A-5304 Toll System Maintenance and Support: VGS
- A-5305 Toll System Maintenance and support Customer Service workstations & related equipment

A-7000 SAFETY AND SECURITY

The following payment Item to be modified to read as follows:

Item No.	Description	Unit
A-7003	Support, installation and maintenance of fire suppression system in sever room(s) and UPS room	Month

The second paragraph to be modified to read as follows:

"The monthly tendered rate under this item in server room(s), UPS Room(s) and generator room of the Control Centre shall include for full compensation for the support and routine maintenance of the system,

similar to the fire extinguisher schedule or to the system suppliers' recommendation and routine or other service maintenance for the duration of the operation service period.

Add the following new Payment Items:

Item No.	Description	Unit
A-7004	Provision of Security Services	
A-7004-a	Provision of Security Services	Month
A-7004-b	One (1) extra armed guard	Shift
A-7004-c	Two (2) extra armed guards	Shift
A-7004-d	Three (3) extra armed guards	Shift

In terms of Item A-7004-a, the Contractor is to price for all the requirements for the provision of security services as described in Clause PS15.4.1.3 of the Project Document (Volume 3) for the duration of the Operation Service Period.

The tendered rate shall include for all the costs incurred by the Contractor to meet all requirements for the provision of Security Services. These costs include but are not limited to the procurement of services, labour, transport, materials, management and any other costs incurred by the Contractor to provide security services.

The unit of measurement is monthly (or pro rata for part of the month) that the Contractor provides the security services.

Payment will be made for the month (or pro rata for part of the month) that the Contractor has provided security services.

In terms of Items A-7004-b to d, the Contractor is required to price for the requirements to provide additional security guards, when instructed by the Employer's Representative or the Employer.

The tendered rate shall include all the costs incurred by the Contractor to provide additional security guards. The costs shall include for but not limited to labour, transport, materials, management and any other costs incurred by the Contractor to provide additional security guards.

The unit of measurement shall be shift that the Contractor provides additional security guards.

Payment will be made for each shift that the Contractor has provided additional security guards.

A-10000 PROVISIONAL SUMS

Delete the following Payment Item A-1009b:

Item No.	Description	Unit
A-10009-b	Overhead charges and profit in respect of the above-mentioned item	Percentage (%)

Add the following new Payment Item:

Item No.	Description	Unit
A-10012a	Nominated Subcontract Operational Works and Services (including Provisional Sums and allowances in the Nominated Subcontract, but excluding if triggered items listed below)	Prov Sum
A-10012b	Overhead charges and profit in respect of the above-mentioned item	Percentage (%)

The Provisional sum provided under sub-item A-10012-a will be used to pay the Nominated Subcontractor operational costs in terms of the Nominated Subcontractor agreement and as approved by the Employer and/or Employer Representative. The Provisional Sum provided under sub item a) will cover the full value of the operational work performed under the Toll System Nominated Subcontract.

The Provisional sum shall be expended in accordance with the provisions of Clause 13.5 [Provisional Sums] of Volume 1, Book 1, the "FIDIC Conditions of contract for Design, Build and Operate Projects."

The percentage tendered under sub-item A-10012-b for overhead charges, and profit shall be applied to the actual expenditure in terms of sub-item A-10012a. This percentage shall allow for any costs associated with payment towards the Nominated Subcontractor, and for any provision for profit not yet covered in cost Item No. A-1017. The Contractor's monthly statement shall detail any deductions applied by the Contractor and costs recovered from the Nominated Subcontractor.

PART B – SECTION 3: DESCRIPTION OF PAYMENT ITEMS – B SERIES: DESIGN-BUILD

Add the following new payment items:

B-1000 CONTRACTOR'S ESTABLISHMENT

Delete the following payment items:

B-1001-a Contractors General Obligations and Establishment at Contract Commencement date for the Design Build period - fixed obligations for Design Build and Operations

B-1001-b Contractors General Obligations and Establishment at Contract Commencement date for the Design Build period - Time Related obligations for Design Build and Operations

B-1002-b Allowance for person- hours for variations -Senior Hardware and/or Software Engineer (100 hours)

B-1002-c Allowance for person- hours for variations -Junior Hardware and/or Software Engineer (100 hours)

B-1002-d Allowance for person- hours for variations -Installation and/or Training Manager (100 hours)

B-1002-e Allowance for person- hours for variations -Installer (100 hours)

B-2000 TOLL SYSTEM - PLAZA/ CONTROL CENTRE LEVEL: CONVENTIONAL PLAZAS/ HYBRID PLAZA, AND CONVENTIONAL PART OF A

Delete the following payment items:

B-2001 Provision of Toll System Software and Hardware: Back Office System (if triggered)

B-2002 Provision of Toll System Software and Hardware: VGS (if triggered)

B-2003 Provision of Toll System Software and Hardware: QLS (if triggered)

B-2004 Provision of Toll System Software and Hardware: DCS (if triggered)

B-2005 Provision of Toll System Software and Hardware: Archive System (if triggered)

B-2006-a Additional Software and licences complete not listed in item B-2006-b (if triggered)

B-2006-b Additional Software and licences for Microsoft Products/ Oracle RDBMS and SAP (if triggered)

B-2008 LAN and Network Connections- Provision and Installation of GB/s network for all workstations, printer (if triggered)

B-2009 Detection System for vehicles of Special Interest (VOSI) (if triggered)

B-2010 Detection System for vehicles Exceeding the Legal Vehicle Height (if triggered)

Add the following payment items:

Item No	Description	Unit
B-2013-a	VGS, QLS and ANPR pilot parallel operations	Lump Sum

The Contractor shall implement a VGS, QLS and ANPR pilot at the Grasmere Mainline North Pilot for testing of enhanced Video Grabbing System (VGS) Software, Queue Length System (QLS) Software, TCC software, incident control software and server level ANPR software that support automatic VLN verification and VGS audit functionality, and include server hardware, network equipment, cameras and dedicated ANPR cameras in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Toll Systems (Volume 2 Book 4a) and Volume 3 book 1.

The Lump Sum tendered by the Contractor for under item B-2013-a, is for the additional costs related to but not limited to testing, training, operational and other costs to ensure that the operational performance and control is maintained during the deployment and pilot testing and the assessment of the VGS, QLS and ANPR pilot. The Contracts VGS Clerk shall be trained during the Pilot project and perform the prescribed VGS audit work on the Pilot System as part of the Trail operations of the VGS workstation and underlying VGS, QLS and ANPR implementation.

Item No	Description	Unit
B-2014-i	Additional operational costs during the SANRAL Toll system pilot deployment and testing.	Lump Sum

Item No	Description	Unit
B-2014-j	Additional operational costs during the SANRAL Toll system deployment, replacing another Toll System.	Lump Sum

The Employer may decide to deploy the SANRAL Toll System on the route. The deployment will take part in two phases. A pilot deployment at a selected site will be used to prepare for the roll-out to the rest of the route. The Nominated Subcontractor and the SANRAL Toll System Nominated Subcontractor (3rd party) shall be responsible for the deployment, testing, trial parallel operations and trial operations, commissioning and test on completion, of the SANRAL Toll System for the pilot deployment and the roll-out of the SANRAL Toll System on the route.

The Lump Sum tendered under item B-2014-i, shall include full compensation for the testing, trial parallel operations and trial operations, commissioning and test on completion, of the Toll System at the Grasmere Toll plaza. The Contractor shall provide the additional personnel, management, support and resources during the pilot operations to minimize the impact of the pilot testing on the plaza operations. The Contractor shall during the parallel pilot perform tests, include full Functional Compliance tests, that include the month end process. The Contractor shall produce a Compliance Tests report to verify compliance of the SANRAL Toll System with Employer's requirements and identify any defects and inefficiencies. The Contractor shall, where required, adjust their operational procedures and issue revise documentation to optimize the operational processes, reporting, control and management.

The Lump Sum tendered under item B-2014-j, shall include full compensation for the testing, trial operations, commissioning and test on completion, of the Toll System at the remainder of the N1S Toll plazas. The Contractor shall procure and implement the necessary additional processes, software, hardware and equipment to facilitate the change to the SANRAL Toll System, without impacting on the performance and operations. The Contractor shall ensure that personnel and resources is provided during the training, pilot operations to minimize the impact of the pilot testing on the Operator and plaza operations.

Item No	Description	Unit
B-2016-f	Additional operational costs during the Pilot testing in conjunction with the SANRAL MIS interface (if triggered).	Lump Sum
B-2016-g	Additional operational during deployment, configuration, testing and commissioning of the SANRAL MIS interface on the route (if triggered).	Lump Sum

The Nominated Subcontractor shall be responsible for the design, approval of the design, development, testing and documentation of a basic interface to the SANRAL MIS. The basic interface is specified in Part C3 Volume 2 Book4a PS 7.8. The Nominated Subcontractor shall be responsible for monthly maintenance and support of the basic interface to the SANRAL MIS.

The Lump Sum tendered under item B-2014-f shall include full compensation for the additional operational costs associated with the deployment, configuration, testing, commissioning of the Basic SANRAL MIS interface on the route.

The Nominated Subcontractor shall be responsible for the design, approval of the design, development, testing and documentation of a full interface to the SANRAL MIS. The Nominated Subcontractor shall perform pilot testing of the SANRAL MIS interface in accordance with a test procedure developed by the Contractor and approved by the Employer. The Nominated Subcontractor configure, deploy, test, commission the SANRAL MIS interface on the route.

The Lump Sum tendered under item B-2014-g shall include full compensation for the additional operational costs associated with the deployment, configuration, testing, commissioning of the Full SANRAL MIS interface on the route.

B3000 TOLL SYSTEM – LANE AREA RELATED

Delete the following payment items:

- B-3001 Provision of Toll System Software and Hardware: AVC Systems for mixed/ manual/ ETC lanes and/or Dedicated ETC lanes (if triggered)
- B-3002 Provision of Toll System Software and Hardware: Mixed Manual / ETC lanes for single direction (if triggered)
- B-3003 Provision of Toll System Software and Hardware: Dedicated ETC lanes (if triggered)
- B-3004 Provision of Toll System Software and Hardware: Changing a mixed Manual ETC lane to a dedicated ETC Lane (if triggered)
- B-3005 Provision of Toll System Software and Hardware: Implementation of reversible Dedicated ETC Toll Lanes (if triggered)
- B-3006 Provision of Toll System Software and Hardware: QLS (if triggered)
- B-3007 Provision of Toll System Software and Hardware: VGS (if triggered)
- B-3008 Provision of Documentation (if triggered)
- B-3009 Provision of Toll System Software and Hardware: AVC Systems for Mixed/ Manual/ ETC Lanes and/ or Dedicated ETC lanes (if triggered)
- B-3010 Provision of Toll System Software and Hardware: Ramp/Mainline Swapping (if triggered)
- B-3011 Provision of Toll System Software and Hardware: Mixed Manual/ETC lanes for single direction (if triggered)
- B-3012 Provision of Toll System Software and Hardware: For lane which can switch between Dedicated ETC mode and Mixed Manual /ETC lane Mode (if triggered)
- B-3013 Provision of Toll System Software and Hardware: AVC Systems for mixed/ manual/ ETC lanes and/or Dedicated ETC lanes - Additional new lanes (if triggered)
- B-3014 Provision of Toll System Software and Hardware: Mixed/ manual/ ETC lanes and/or Dedicated ETC lanes - Additional single direction new lanes (if triggered)
- B-3015 Provision of Toll System Software and Hardware: Automatic Number Plate Recognition (ANPR)(If triggered)

B4000 ELECTRICAL AND MECHANICAL SYSTEMS

The following payment items to be modified to read as follows:

Item No	Description	Unit
B4001	Uninterruptable Power Supply (UPS) units.:	
	Static	
B4001-a	a) 5kVA	No.
B4001-b	b) 20kVA	No.
B4001-c	c) 30kVA	No.
	Modular	
B4001-d	d) 20kVA	No.
B4001-e	e) 30kVA	No.
B4001-f	f) 40kVA	No.
B4001-g	g) 60kVA	No.
B4001-h	UPS delivery to site	Km

The tendered rate under this item, is for the provision of a new Uninterruptable Power Supply (UPS) units in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause C3.2.3.

The rate tendered under the above item shall include for full compensation for the supply, installation, factory and on-site testing including commissioning of the new UPS including but not limited to, hardware,

software, batteries, cabling, installation, Contractor's internal testing with test report and earthing. The Contractor shall submit an ECOC for the installation with the commissioning and as-built documentation that will include the factory and onsite testing results.

The rate tendered under item B4001-h shall include full compensation for the delivery of the UPS to site including toll fees, labour, crane truck, diesel fuel and all other cost to deliver the UPS to site and position the UPS in the correct location as agreed with the Employer's Representative.

Payment shall be made to the Contractor after the Contractor has successfully delivered, installed, tested and commissioned the new UPS and witnessed by the Employers Representative.

Item No	Description	Unit
B4002	Electrical: Supply and installation	Prov Sum

The Prov Sum tendered for under this item, is for the provision and/or upgrade of all the electrical installations in the Toll Plaza buildings, in the toll lanes and toll booths in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

The Prov Sum tendered under the above item shall include for full compensation for the supply, delivery to site, installation, site testing including commissioning of the electrical system including but not limited to, hardware, software, cabling, material, equipment, switch gear, installation, Contractor's internal testing with test report. The Contractor shall submit an ECOC for the installation with the commissioning and as-built documentation.

Payment shall be made to the Contractor after the Contractor has successfully delivered, installed, tested the electrical installation witnessed by the Employers Representative.

Item No	Description	Unit
B4003	Air-conditioning and ventilation upgrade	Lump Sum
B4003-a	Air-conditioning and Ventilation upgrade - Grasmere Mainline Toll Plaza	Lump Sum
B4003-b	Air-conditioning and Ventilation upgrade - Vaal Mainline Toll Plaza	Lump Sum
B4003-c	Investigate gas pre-heating for fresh air supply system.	Lump Sum
B4003-d	Implement gas solution under item B4003-c.	No.
B4003-e	2.5kW (9000 BTU) cooling midwall split air conditioner with EER/COP >3.6	No.
B4003-f	3.6kW (12000 BTU) cooling midwall split air conditioner with EER/COP >3.6	No.
B4003-g	5.4kW (18000 BTU) cooling midwall split air conditioner with EER/COP >3.6	No.
B4003-h	6.9kW (24000 BTU) cooling midwall split air conditioner with EER/COP >3.6	Lump Sum

The Lump Sum tendered for under these items a and b is for the provision and/or upgrade of the existing fresh air ventilation system for the toll booth at Grasmere and Vaal Toll Plazas in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

It shall be the Contractors responsibility to survey the existing fresh air system at Grasmere and Vaal mainline Toll Plaza during tender stage to establish the current condition of the systems and the requirements to upgrade the installation to a fully functional system that is energy efficient, operational and mechanical fit for purpose in terms of the OHS act.

The Lump Sum tendered under the above items shall include full compensation for the site survey, detail design, complying with OHS requirements, supply, delivery to site, installation, site testing, including commissioning the electrical system. Including but not limited to hardware, software, cabling, material, equipment, switchgear, installation, interface with booth occupancy sensor to control the booth preheater through a current valve unit, Contractor's internal testing with a test report. The Contractor shall submit an ECOC for the installation with the commissioning and as-built documentation.

Payment shall be made to the Contractor after the Contractor has successfully delivered, installed, tested and commissioning the new fresh air ventilation system and witnessed by the Employers Representative.

The tendered rate for under items B4003 e to g, is for the supply of new cooling mid wall split air conditioner that complies with the latest standards and regulations to replace the existing units in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 3 Book 2 as amended under Sub-clause 3.2.3 of Volume 3.

The tendered rate shall include for full compensation for the supply, delivery to site, installation testing and commissioning of the cooling mid wall split air conditioner.

Payment shall be made subject to the successful delivery, installation and commissioning by the Contractor and followed by the testing and approval by the Employer's Representative.

Add the following new payment items:

Item No	Description	Unit
B4004-a	D1 Lighting design – Toll Plaza Road and Area lighting	No.
B4004-b	D2 Lighting design – Lane canopy area including toll booths	No.
B4004-c	D3 Lighting design – Building element I.e. Control building, plant building	No.

The Lump Sum tendered for under this item, is for the detailed lighting design to comply with SANS 10098 and in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered under the above item shall include for full compensation for the site survey, detail road and area lighting design by a lighting designer/company that shall include, detailed design drawings and detailed report to the Employer's Representative for review and approval based on the latest LED luminaires technology that will comply with the above standards by using the existing poles and masts infrastructure on site.

Payment shall be made to the Contractor after the Contractor has submitted the detail design drawings and report to the satisfaction and approval of the Employer's Representative. No payment will be released if the report is not to the Employer's Representative approval.

Item No	Description	Unit
B4005-a	Replacement of outdated luminaires with new energy-efficient LED technology luminaires	Prov Sum
B4005-b	Replacement of outdated luminaires with new energy-efficient LED technology luminaires - Overhead charges and profit in respect of B-4005-a (.)	%

The Prov Sum tendered for under this item, is for the supply and installation of new LED luminaires that complies with the latest standards and regulations to replace the existing luminaires based on the Contractor detail design provided under item B-4004. The Contractor shall submit proof of compliance with standards before the luminaires shall be considered for installation by the Employers Representative, in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical

and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3 and Sub-Clause C3.1.12.

The rate tendered under the above items shall include for full compensation for the supply, delivery to site, installation testing and commissioning of the new LED luminaires technology that will comply with local and international standards. It will also include for the disposal of any old luminaires that were replaced during the works.

Item No	Description	Unit
B4006-a	LMS1 controller, LUCO P7 CM or similar to any of above replacement LED luminaires	No.
B4006-b	LMS2 controller, DALI or similar to any of above replacement LED luminaires	No.
B4006-c	Ctrl Supply and install occupancy sensor to control area/room/office/booth as instructed by the ER	No.

The rate tendered under item B4006-a for under this item, is for the supply and installation of a LUCP P7 luminaire controller to be installed on the road and area lighting luminaires should the Employer approve the installation of the Lighting Management System (LMS) to be installed per Toll Plaza as per amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered under item B4006-b for under this item, is for the supply and installation of a DALI controller to be installed on the road and area lighting luminaires should the Employer approve the installation of the Lighting Management System (LMS) to be installed per Toll Plaza as per amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered under item B4006-c for under this item, is for the supply and installation of a occupancy sensor to be installed per location i.e. admin office, boardroom, control room, booth, etc.

The rate tendered under the above items shall include full compensation for the supply, transport to site, installation, testing and the commissioning of each luminaire controller.

Payment shall be made subject to successful delivery, implementation and commissioning by the Contractor and following successful testing and approval by the Employer's Representative.

Item No	Description	Unit
B4007-a	Segment controller(s) (if required) for interface between luminaires and local control and web interface	No.
B4007-b	Lighting Management System (LMS) yearly license fee	Year

The rate tendered under item B4007-a, is for the supply and installation of a LMS segment controller (if required) to be installed on the road and area lighting luminaires should the Employer approve the installation of the Lighting Management System (LMS) per Toll Plaza as per amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered under the above items shall include for full compensation for the supply, transport to site, installation, setup, configuration, interfacing with the Toll Plaza network for internet access (if required), testing and the commissioning of the luminaires LMS controller.

The rate tendered under item B4007-b, is for the LMS software or access to the web browser to allow full access to all the luminaires and administrator functions for the Toll road area lighting installation.

The rate tendered under the above items shall include for full compensation for the license for a period of one year.

Payment shall be made subject to successful delivery, implementation and commissioning by the Contractor and following successful testing and approval by the Employer's Representative.

Item No	Description	Unit
B4008-a	A P1, 10m Scissor mast including switchgear, earthing, luminaire mounting bracket/spigot for 1 x LED luminaire.	No.
B4008-b	A P1B, Mast base for 10m Scissor mast as per pole/mast manufacturer, concrete test certificate and Engineer sign-off required after installation.	No.
B4008-c	A P2, 12m Scissor mast including switchgear, earthing, luminaire mounting bracket/spigot for 1 x LED luminaire.	No.
B4008-d	A P2B, Mast base for 12m Scissor mast as per pole/mast manufacturer, concrete test certificate and Engineer sign-off required after installation.	No.
B4008-e	A P3, 16m Scissor mast including switchgear, earthing, luminaire mounting bracket/spigot for 1 x LED luminaire.	No.
B4008-f	A P3B, Mast base for 16m Scissor mast as per pole/mast manufacturer, concrete test certificate and Engineer sign-off required after installation.	No.
B4008-g	B P1, 12m mid hinge mast including switchgear, earthing, luminaire mounting bracket/spigot.	No.
B4008-h	B P1B, Mast base for 12m mid hinge mast as per pole/mast manufacturer, concrete test certificate and Engineer sign-off required after installation.	No.
B4008-i	C P1, 16m fixed mast including luminaire mounting bracket/spigot.	No.
B4008-j	C P1B, Mast base for 10m fixed mast as per pole/mast manufacturer, concrete test certificate and Engineer sign-off required after installation.	No.
B4008-k	D P1, Fixed luminaire ring raising and lowering cables, pulleys and trailing cable, etc. to lower and raise the luminaire ring. The Contractor shall provide a daily rate to hire a suitable crane to service or replace the complete pulleys system and cables on the 25m mats at (Note to compiler: insert relevant and project specific information) e.g., Grasmere Toll Plaza. The rate shall include traffic accommodation where required.	Day
B4008-l	D P1T, The Contractor shall price a rate for technical/engineering services for item D-P1 above.	hrs.
B4008-m	D P1S, The Contractor shall price for a complete service kit (material) per 25m mast to complete the service of each mast.	No.
B4008-n	E, Allow for transport cost (truck with crane) (rate per km) from the pole/mast manufacturer to the Toll Plaza.	km

The rates tendered for under items B4008-a to j, is for the supply and installation of poles/masts in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3.

The rate tendered under the above items shall include full compensation for the supply, installation testing and commissioning of the new pole/mast. The Contractor shall provide all structural certificates and test reports on concrete cubes submitted for testing.

The rate tendered under item B4008-j, shall include for full compensation for the rental of a suitable crane to allow the Contractor to replace the luminaire ring pulleys, brackets cabling to completely upgrade the mast lowering and raising mechanism on the masts at Toll Plaza.

The rate tendered under item B4008-l, shall include full compensation for contracting technical/engineering services to assist with the luminaire ring refurbishment of the pulleys, brackets and cabling.

The rate tendered under item B4001-n, shall include full compensation for the transport cost of the crane. Payment shall be made subject to successful delivery, installation, implementation and commissioning by the Contractor and following successful testing and approval by the Employer's Representative.

Item No	Description	Unit
B4009	Power meter	No.

The rate tendered for under this item, is for the provision of a new power meter for each Toll Plaza, in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered under the above item shall include full compensation for the supply, delivery to site, installation, site testing including commissioning of the power meter including but not limited to, hardware, software, cabling, material, equipment, switch gear, fuses VT's and CT's and all other material to complete the installation. The Contractor shall provide the Employer's Representative with remotes access to the power meter data through the Contractors data network or other approved communication network without any additional communication or service cost.

Payment shall be made subject to successful delivery, installation, implementation, testing and commissioning by the Contractor and following successful testing and approval by the Employer's Representative.

Item No	Description	Unit
B4010-a	Diesel Generator 12kVA	No.
B4010-b	Diesel Generator 20kVA	No.
B4010-c	Diesel Generator 46kVA	No.
B4010-d	Diesel Generator 100kVA	No.
B4010-e	Diesel Generator 150kVA	No.
B4010-f	Diesel Generator 200kVA	No.
B4010-g	Generator Routine Service @ 500hrs or 6 months	No.
B4010-h	Grasmere mainline Toll Plaza second generator interface and setup	Lump Sum
B4010-i	Supply any of the above rated generators with secure vandal proof, weatherproof and soundproof (below 65dB) shipping or similar container/enclosure	No.

The rate tendered under this item, is for the provision of a new continues prime power diesel generator to be provided to any toll plazas as per the Employer's Representatives instruction, in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered under the above item shall include for full compensation for the supply, installation, site testing including commissioning of the generator including but not limited to, hardware, software, cabling, material, equipment, switch gear, all other material not specifically mentioned to complete the installation. The Cost to deliver the generator to site will be as per the km rate tendered under item B4001-h (UPS delivery).

The rate tendered under item B4010-g above shall include for full compensation for the complete and detailed service of the emergency generator every 500hrs or 6 months whichever comes earlier, in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3..

The Lump Sum tendered under item B4010-h above shall include for full compensation for the full and complete interface setup between the generators (controllers) at Grasmere mainline Toll Plaza to manage the Toll Plaza load between the primary and secondary generators. The Lump Sum shall include the interface cabling and wireways between the generators to a maximum of 50m.

Payment shall be made subject to successful delivery, installation, implementation, testing and commissioning by the Contractor and following successful testing and approval by the Employer's Representative.

Item No	Description	Unit
B4011-a	Diesel Bulk Storage Tank 2000lts, above ground	No.
B4011-b	2000lts support	No.
B4011-c	2000lts bund wall	Lump Sum
B4011-d	2000lts pipes and fittings (allow 50m from generator)	m
B4011-e	2000lts design cost	Lump Sum
B4011-f	2000lts project management	Lump Sum
B4011-g	Real time diesel fuel level sensor for SCADA/BMS or other approved monitoring system	No.
B4011-h	Diesel Bulk Storage Tank 10000lts, above ground	No.
B4011-i	10000lts support	No.
B4011-j	10000lts bund wall	Lump Sum
B4011-k	10000lts pipes and fittings (allow 50m from generator)	m
B4011-l	10000lts design cost	Lump Sum
B4011-m	10000lts project management	Lump Sum
B4011-n	Real time diesel fuel level sensor for SCADA/BMS or other approved monitoring system	No.

The rate tendered under this item, is for the provision of a new 2000lts and 10000lts above ground diesel storage tank for Verkeerdevlei and Grasmere Mainline Toll Plaza respectively, in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered under the above items a to n shall include for full compensation for the site survey, Design, transport, supply, site supervision installation, site testing including commissioning all required certificates for the complete above ground bulk diesel storage tanks including but not limited to, hardware, software, cabling, real time diesel fuel level sensor including data cabling to closest network cabinet, material, equipment, switch gear, all other material not specifically mentioned to complete the installation.. The installation shall comply with all regulations, standards and by-laws.

The Contractor shall allow for the real time diesel fuel level sensor interface (setup and configuration) with the SCADA/BMS or other approved monitoring system under the SCADA interface requirements.

Payment shall be made subject to successful delivery, installation, implementation, testing and commissioning submitting all as-built information that will include test certificates by the Contractor and witnessed, inspected and approval by the Employer's Representative.

Item No	Description	Unit
B4012-a	Energizer with Modbus communication interface for SCADA/BMS or other approved monitoring system.	No.
B4012-b	36 Strand electric fence complete	m
B4012-c	8 Strand electric fence complete	m

The rate tendered for under this item, is for the provision of a new electric fence, in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered under items a to c shall include for full compensation for the design, coordination with fence contractor, supply, delivery installation, site testing including commissioning COC and all other material to complete the installation. Rates tendered for items b and c shall include a minimum of 2 x pedestrian and 2 x vehicle gates per Toll Plaza. The Contractor shall also allow for 50m of data cabling (mylar screened cable or similar) to the closest network cabinet to allow communication back to the monitoring system.

The Contractor shall allow for the energizer interface (setup and configuration) with the SCADA/BMS or other approved monitoring system under the SCADA interface requirements.

Payment shall be made subject to successful delivery, installation, implementation, testing and commissioning submitting all as-built information that will include test certificates (COC) by the Contractor and witnessed, inspected and approval by the Employer's Representative.

Item No	Description	Unit
B4013-a	CCTV security cameras	No.
B4013-b	Monitoring cameras internally or externally	Month

The rate tendered for under item a, shall be for the provision of new security cameras to monitor remote areas to assist with the prevention of theft and vandalism, in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered for under item b, shall be for the continues or part time monitoring of the security cameras based on the technology used by the Contractor. The Contractor shall store all incidents and provide a detail report on a monthly basis on all incidents reported and action taken.

The rate tendered under the above item shall include full compensation for the design, supply, delivery to site, installation, software, hardware, data communication site testing including commissioning

Payment of item a shall be made subject to successful delivery, installation, implementation, testing and commissioning by the Contractor, witness and approval by the Employer's Representative.

Payment of item b shall be made subject to the submission of the approved and complete monthly incident report. The report shall include statistical data to allow the Employer's Representative to compare data from different months and establish a base line, etc.

Item No	Description	Unit
B4014-a	SCADA solution software and licenses per Toll Plaza	No.
B4014-b	Mylar or similar cabling including cable support system	m
B4014-c	SCADA Computer complete including storage (minimum one 1-year data) per Toll Plaza	No.
B4014-d	SCADA software setup and configuration per integrated system as listed below (1 to 9)	No.
B4014-e	PLC interface between devices and computer	No.
B4014-f	GMS module to send SMSs to the Contractor and ER and to access the system as secondary communication.	No.

The rate tendered for under this item, is for the provision of a new complete SCADA/BMS or other approved monitoring system for each Toll Plaza, in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered under the above item shall include for full compensation for the design supply, delivery to site, installation, setup, configuration, site testing including commissioning of the SCADA/BMS or other approved monitoring system including but not limited to, hardware, software, licenses, cabling, cabling support system, material, equipment, switch gear, fuses controllers, PLC's and all other material to complete the installation. The Contractor shall provide the Employer's Representative with remotes access to the SCADA/BMS or other approved monitoring system data through the Contractors data network or other approved communication network without any additional communication or service cost.

The SCADA/BMS or other approved monitoring and data capturing system shall include interfacing with the following systems on site:

Generator controllers;
Bulk diesel fuel level sensor;
UPS system;
Electric fence;
Fresh air supply systems
Power meter;
Water reservoir;
Photovoltaic system;
Temperature sensors in the UPS/server/battery rooms

Payment shall be made subject to successful delivery, installation, implementation, testing and commissioning by the Contractor and following successful testing and approval by the Employer's Representative. Payment of the final 20% will only be released after the as-built drawings and information have been submitted and approved by the Employer's Representative.

Item No	Description	Unit
B4015	Photovoltaic (PV) Solution	
B4015-a	PV and battery storage system detail design	Lump Sum
B4015-b	Supply and installation of PV and battery storage system	Prov Sum
B4015-c	Supply and installation of PV and battery storage system - Overhead charges and profit in respect of B-4015-b (.%)	%
B4015-d	Monthly maintenance	month

The rate tendered for under this item, is for the provision of a new complete PV with battery storage and backup system for each Toll Plaza, in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3. Item not specifically mentioned shall be included in the above rates to provide a complete and compliant SSEG or OGEG PV System.

The rate tendered under the above item B4015-a shall include for full compensation for the site survey, detail design and drawing up of specifications and bill of quantities for the PV with battery storage and backup system.

Item B4015-b provides for the supply, delivery to site, installation, Project Management, equipment hire, ECOC, site testing including commissioning of the PV with battery storage and backup system including but not limited to, hardware, software, cabling, cable support system, material, equipment, switch gear, fuses, controllers, inverters, connectors, batteries and all other material, including consumables to complete the installation.

The Contractor shall provide the Employer's Representative with remote access to the PV and battery inverters data through the Contractors data network or other approved communication network or interface without any additional communication or service cost. The Contractor shall allow for primary and secondary communication solution.

In addition to the above the following shall be included in the rates tendered:

- (1) PV and battery storage detail design – shall include site survey for the installation of all the equipment as required to complete the installation. The detail design shall include a report from a Pr Eng (structural engineer) confirming that the canopy can be used for the PV panel and other equipment that will be installed based on the Contractors proposed PV design.
- (2) PV Panels – the Contractor shall use the lane area canopy as the primary location for the PV panels installation except for Verkeerdevlei as the canopy structure does not allow for the installation of PV panels. The plant building at Verkeerdevlei Toll Plaza shall be used for the installation of the panels. All rates shall take the location of the PV panels into consideration.
- (3) Batteries – the Contractor shall price for OPzV technology batteries as the preferred option with the option to also provide for other battery technology as an alternative. The Contractor shall price for different capacity batteries per site should it be required.
- (4) PV DC cabling (red & Black) – shall be limited to 6mm² with larger size DC cabling to be used where required due to cable lengths.
- (5) Maintenance PV with battery storage and backup system – the Contractor shall price for the maintenance to be done on a monthly basis in accordance with the technology installed by the Contractor. The Contractor shall provide a detailed maintenance plan with report(s) to the Employers Representative for comments and approval before the plans and report(s) be implemented. The Contractor shall implement any changes to the maintenance plan and reports as instructed by the Employer's Representative during the commissioning phase or during the Contract period if found that the current maintenance plan is not sufficient.

Payment shall be made subject to successful delivery, installation, implementation, testing and commissioning by the Contractor and following successful testing and approval by the Employer's Representative. Payment of the final 20% will only be released after the as-built drawings and information was submitted and approved by the Employer's Representative.

Item No	Description	Unit
	Trenching	
B4016-a	Type A (hand trenched)	m
B4016-b	Type B (hand trenched)	m
B4016-c	Type C (hand trenched)	m
B4016-d	Type D (hand trenched)	m
B4016-e	Type E (hand trenched)	m
	Bedding and Backfill	
B4016-f	Type A (backfill in minimum layers of 150mm)	m
B4016-g	Type B (backfill in minimum layers of 150mm)	m
B4016-h	Type C (backfill in minimum layers of 150mm)	m
B4016-i	Type D (backfill in minimum layers of 150mm)	m
B4016-j	Type E (backfill in minimum layers of 150mm)	m

The rate tendered for under this item, is for trenching and back filling of trenches when required, in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered under the above item shall include full compensation for all traveling, labour and material equipment concrete, concrete tests and compaction tests to complete the installation.

Payment shall be made subject to successful inspection of the trench after the Contractor invited that Employer's Representative to inspect the trench and then after the Employer's Representative inspected the bedding and backfilling process based on the trench type. The Employer's Representative must also confirm the total number of meters of trenching claimed.

Item No	Description	Unit
	PVC SWA PVC 600/1000V SANS 1507 4 core cable	
B4017-a	16mm ² Cu	m
B4017-b	25mm ² Cu	m
B4017-c	35mm ² Cu	m
B4017-d	95mm ² Cu	m
B4017-e	35mm ² Al	m
	PVC SWA PVC 600/1000V SANS 1507 3 core cable	
B4017-f	4mm ² Cu	m
B4017-g	6mm ² Cu	m
B4017-h	16mm ² Cu	m
B4017-i	25mm ² Cu	m
B4017-j	35mm ² Cu	m
	BCEW	

B4017-k	6mm ² Cu	m
B4017-l	10mm ² Cu	m
B4017-m	16mm ² Cu	m
B4017-n	25mm ² Cu	m
B4017-o	35mm ² Cu	m

The rate tendered for under this item, is for the provision of a new SANS 1507 multicore PVC insulated cables, in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered under the above item shall include full compensation for the supply, delivery to site, installation, site testing, ECOC includes commissioning of the electrical cable.

Payment shall be made subject to successful delivery, installation, implementation, testing and commissioning by the Contractor and following successful testing and approval by the Employer's Representative. The Employer's Representative must also confirm the final measured cable length claimed.

Item No	Description	Unit
	PVC SWA PVC 600/1000V SANS 4 core cable termination	
B4018-a	16mm ² Cu	No.
B4018-b	25mm ² Cu	No.
B4018-c	35mm ² Cu	No.
B4018-d	50mm ² Cu	No.
B4018-e	35mm ² Al	No.
	PVC SWA PVC 600/1000V SANS 3 core cable terminations	
B4018-f	4mm ² Cu	No.
B4018-g	6mm ² Cu	No.
B4018-h	16mm ² Cu	No.
B4018-i	25mm ² Cu	No.
B4018-j	35mm ² Cu	No.
	BCEW	
B4018-k	6mm ² Cu	No.
B4018-l	10mm ² Cu	No.
B4018-m	16mm ² Cu	No.
B4018-n	25mm ² Cu	No.
B4018-o	35mm ² Cu	No.

The rate tendered for under this item, is for the provision of a new SANS 1507 multicore PVC insulated cables, in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered under the above item shall include full compensation for the supply, delivery to site, installation, site testing, ECOC including commissioning of the electrical cable.

Payment shall be made subject to successful delivery, installation, implementation, testing and commissioning by the Contractor and following successful testing and approval by the Employer's

Representative. The Employer's Representative must also confirm the final measured cable length claimed.

Item No	Description	Unit
	PVC SWA PVC 600/1000V SANS 4 core cable joints	
B4019-a	16mm ² Cu	No.
B4019-b	25mm ² Cu	No.
B4019-c	35mm ² Cu	No.
B4019-d	50mm ² Cu	No.
B4019-e	35mm ² Al	No.

The rate tendered for under this item, is for the provision of a new SANS 1507 multicore PVC insulated cables, in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

The rate tendered under the above item shall include full compensation for the supply, delivery to site, installation, site testing, ECOC includes commissioning of the electrical cable.

Payment shall be made subject to successful delivery, installation, implementation, testing and commissioning by the Contractor and following successful testing and approval by the Employer's Representative. The Employer's Representative must also confirm the final measured cable length claimed.

Item No	Description	Unit
	Energy Performance Certificate (EPC) for Buildings	
B4020-a	Grasmere Mainline Toll Plaza Energy Performance Certificate (EPC) for Buildings (If triggered)	Lump Sum
B4020-b	Vaal Mainline Toll Plaza Energy Performance Certificate (EPC) for Buildings (If triggered)	Lump Sum
B4020-c	Verkeerdevelei Mainline Toll Plaza Energy Performance Certificate (EPC) for Buildings (If triggered)	Lump Sum
B4020-d	Brandfort Mainline Toll Plaza Energy Performance Certificate (EPC) for Buildings (If triggered)	Lump Sum
B4020-e	Update EPC per Toll Plaza as instructed by the ER or Employer (If triggered)	Lump Sum

The rate tendered for under this item, is for the provision of an Energy Performance Certificate in terms of SANS 1544. The Contractor shall provide the EPC within 12 months from commencement date. The rate tendered under the above item shall include for full compensation for the appointing of an Accredited Inspection Body, inspections, audits, submission of documentation to SANAS/SANEDI and other stakeholders as may be required.

Payment shall be made subject to the display and submission of the Energy Performance Certificate (EPC) per Toll Plaza.

Item No	Description	Unit
	Natural Gas installation and other energy avoidance upgrades at the Toll Plazas (if triggered items)	
B4021-a	Gas installation. Design, supply, installation, 2 x 48 kg bottles, gas meter, cage, testing and certification in accordance with regulations and standards for gas installation. (if triggered)	No.
B4021-b	Gas hob. Design, supply, and installation new gas hob to replace the existing electrical hob. Hob shall be connected to the installation mentioned under item B4021-a (if triggered)	No.
B4021-c	Supply and install new 150L solar geyser complete. Installation will only be triggered if geyser is required. (if triggered)	No.

The rate tendered for under item a shall be for the design, supply, installation, testing, commissioning, and valid Compliance of Certification of a gas installation according to the latest regulations and standards.

Payment of item a shall be made based on the valid compliance certificate and final inspection by the Employer's Representative.

The rate tendered for under item b shall be for the supply, installation, testing and commissioning of the appliances. Payment of item b shall be made based on the final inspection by the Employer's Representative.

The rate tendered for under item c shall be for the design, supply, installation, testing, commissioning, and valid plumbing Certificate of Certification of a gas installation according to the latest regulations and standards.

Payment of item c shall be made based on the valid compliance certificate and final inspection by the Employer's Representative.

Item No	Description	Unit
	Fire Detection and suppression system complete	
B4022-a	Fire detection system complete.	Lump Sum
B4022-b	Fire suppression and extinguishing system complete.	Lump Sum

The rate tendered for under item a shall be for providing a new fire detection system, in terms of the latest regulations and standards, including SANS 10139, SANS 50054, SANS 530 and SANS 7240.

The rate tendered under item a shall include the detail design, supply, installation, testing and commissioning of the fire detection system for the control building and other building, i.e. Generator room, storeroom, etc., not part of the control building.

The rate tendered under the above item shall include full compensation for the control panel, detectors wiring, wireways communication, mounting brackets, battery replacement, software, software licenses to provide a complete and functional system.

Payment of item a shall be made subject to successful delivery, installation, implementation, testing and commissioning by the Contractor, witness, and approval by the Employer's Representative.

The rate tendered under item b shall include the investigation, report on requirements to provide sufficient and adequate fire suppression or extinguishers for high-risk areas. The items shall consist of the detail design, supply, installation, testing and commissioning of the fire suppression and extinguishers for high-risk areas.

Payment of item b shall be made subject to successful delivery, installation, implementation, testing and commissioning by the Contractor, witness, and approval by the Employer's Representative.

Item No	Description	Unit
	Fire Detection and suppression system complete	
B4023-a	Earthing and lightning protection survey and reporting	Lump Sum
B4023-b	Earthing and lightning repairs	Prov Sum
B4023-c	Earthing and lightning repairs - Overhead charges and profit in respect of B-4023-b (.)	%
B4023-d	Re-test and submission of results	Lump Sum

The Lump Sum tendered for under this item, is for the provision of a SCADA system in terms of the Standard Specifications for Operations and Maintenance of CTROM Projects: Electrical and Mechanical Equipment Volume 2 Book 3 as amended under Volume 3 Sub-Clause 3.2.3.

The Lump Sum tendered for the above item B4023-a shall include for full compensation for the survey and testing of the complete installations at the Toll Plazas, and the compilation of a comprehensive report of the findings with recommendations, and a bill of quantities for the repairs to be done.

The Provisional Sum for the above item B4023-b shall include for full compensation for all the required repairs, as identified in B4023-a.

The Lump Sum for the above item B4023-d shall include for full compensation for the re-testing of the complete installations at the Toll Plazas, and the submission of results with a summary of the findings.

Payment shall be made upon submission of the reports, or upon successful completion of all repairs.

B6000 – PROVISIONAL SUMS PAYMENTS

Add the following new payment items:

Item No	Description	Unit
B-6009	Supply of EMVCO compliant hardware and software	
	(a) Supply of EMVCO compliance hardware and software	Prov Sum
	(b) Overhead charges and profit in respect of above-mentioned item	Percentage (%)

The Provisional Sum provided under sub item a) will cover the costs of the supply of EMVCO compliant hardware and software

The Provisional Sum shall be expended in accordance with the provisions of Clause 13.5 [Provisional Sums] of Volume 1 Book 1, the "FIDIC Conditions of Contract for Design, Build and Operate Projects", to pay for the supply of EMVCO Compliant Hardware and Software.

The percentage tendered under sub-item b) for overhead charges and profit shall be applied to the actual expenditure in terms of sub item a) and shall cover the Contractors procurement and management of quotations and the management of execution of supply of EMVCO compliant hardware and software.

Item No	Description	Unit
B-6010	Provision of Civil Works to convert mixed manual/ETC lanes and mixed card/ETC lanes to dedicated ETC lanes (including signage)	
	(a) Provision of civil works to convert mixed manual/ETC lanes and mixed card/ETC lanes to dedicated ETC lanes (including signage)	Prov Sum
	(b) Overhead charges and profit in respect of above-mentioned item	Percentage (%)

The Provisional Sum provided under sub item a) will cover the costs for the provision of civil works to convert to mixed manual/ETC lanes and mixed card/ETC lanes to dedicated ETC lanes (including signage).

The Provisional Sum shall be expended in accordance with the provisions of Clause 13.5 (Provisional Sums) of Volume 1 Book 1, the “FIDIC Conditions of Contract for Design, Build and Operate Projects”, to pay for the provision of civil works to convert to mixed manual/ETC lanes and mixed card/ETC lanes to dedicated ETC lanes (including signage).

The percentage tendered under sub-item b) for overhead charges and profit shall be applied to the actual expenditure in terms of sub item a) and shall cover the Contractor's procurement and management of quotations and the management of execution for the provision of civil works to convert mixed manual/ETC lanes and mixed card/ETC lanes to dedicated ETC lanes (including signage).

Item No	Description	Unit
B-6011	Provision for the upgrade of the plaza to the new SANRAL Brand	
	(a) Provision for the upgrade of the plaza to the new SANRAL Brand	Prov Sum
	(b) Overhead charges and profit in respect of above-mentioned item	Percentage (%)

The Provisional Sum provided under sub item a) will cover the costs for the upgrade of the plaza to the new SANRAL Brand.

The Provisional Sum shall be expended in accordance with the provisions of Clause 13.5 [Provisional Sums] of Volume 1 Book 1, the “FIDIC Conditions of Contract for Design, Build and Operate Projects”, to pay for the upgrade of plaza to the new SANRAL Brand.

The percentage tendered under sub-item b) for overhead charges and profit shall be applied to the actual expenditure in terms of sub item a) and shall cover the Contractors procurement and management of quotations and the management of execution of for the upgrade of plaza to the new SANRAL Brand.

Item No	Description	Unit
B-6012	Provision for the Upgrade / Replacement of Existing Electrical Equipment(s) to Energy Saving Equipment(s)	
	(a) Provision for the Upgrade / Replacement of Electrical Equipment to Energy Saving Equipment(s)	Prov Sum
	(b) Overhead charges and profit in respect of above-mentioned item	Percentage (%)

The Provisional Sum provided under sub item a) will cover for the quotation or tender amount for the Upgrade / Replacement of existing Electrical Equipment(s) to Energy Saving Equipment(s).

The Provisional Sum shall be expended in accordance with the provisions of clause 13.5 (Provisional Sums) of Volume 1 Book 1, The “FIDIC Conditions of Contract for Design, Build and Operate Projects, to pay for any Upgrade(s) / Replacement(s) of Electrical Equipment to Energy Saving Equipment.

The percentage of tendered under sub item b) for the overhead charges and profit shall be applied to actual expenditure in terms of sun item a) and shall cover for Contractor Costs related to management and payment during the execution of any Upgrade(s) / Replacement(s) of Electrical Equipment to Energy Saving Equipment(s).

Item No	Description	Unit
B-6013	Provision for the Upgrade to Security Toll Booths	
	(a) Provision for the Upgrade to Security Toll Booths	Prov Sum
	(b) Overhead charges and profit in respect of above-mentioned item	Percentage (%)

The Provision and Sum provided under sub item a) will cover for the quotation or tender amount for the Upgrade of existing toll booths to Security type of toll booths.

The Provisional Sum shall be expended in accordance with the provisions of clause 13.5 (Provisional Sums) of Volume 1 Book 1, The "FIDIC Conditions of Contract for Design, Build and Operate Projects, to pay for the Upgrade to Security of existing Toll booths

The percentage of tendered under sub item b) for the overhead charges and profit shall be applied to actual expenditure in terms of sun item a) and shall cover for Contractor Costs related to management and payment during the execution of the upgrade of existing toll booths to Security type toll booths.

Item No.	Description	Unit
B-6014	Nominated Subcontract DB Works and Services	
	(a) Nominated Subcontract DB Works and Services (including Provisional Sums and allowances in the Nominated Subcontract, but excluding any if triggered items listed elsewhere)	Prov Sum
	(b) Overhead charges and profit in respect of the above-mentioned item	Percentage (%)

The Provisional sum provided under sub-item a) will be used to pay the Nominated Subcontractor DB costs in terms of the Nominated Subcontractor agreement and as approved by the Employer and/or Employer Representative. The Provisional Sum provided under sub item a) will cover the full value of the DB work performed under the Toll System Nominated Subcontract.

The Provisional Sum shall be expended in accordance with the provisions of Clause 13.5 (Provisional Sums) of Volume 1 Book 1, the "FIDIC Conditions of Contract for Design, Build and Operate Projects", to pay the Nominated Subcontractor in terms of the Subclause 13.5.b of Volume 1 Book 1.

The percentage tendered under sub-item b) for overhead charges and profit shall be applied to the actual expenditure in terms of sub item a) and shall cover the Contractor's management of the Nominated Subcontractor. The Contractor shall produce the monthly Nominated Subcontractor invoice and the Contractor's monthly statement of payments to the Nominated Subcontractor, as substantiation for any payments under this item. The Contractor's monthly statement shall detail any deductions applied by the Contractor and costs recovered from the Nominated Subcontractor.

C3.2.8 PARTICULAR AMENDMENTS TO THE STANDARD SPECIFICATIONS FOR OPERATIONS AND MAINTENANCE OF CTROM PROJECTS: ETC INTEROPERABILITY BUSINESS RULES (VOLUME 2 BOOK 8a)

The number of each Clause as a Particular Specification in section consist of the Prefix PS followed by a number corresponding to the number of the relevant Clause in the Standard Specifications for Operations and Maintenance of CTROM Projects: Etc Interoperability – Business Rules (Volume 2 Book 8a). The number of any new Clause which does not form part of any Clause in the Standard Specifications for Operations and Maintenance of CTROM Projects: ETC Interoperability – Business Rules (Volume 2 Book 8a) and which is included herein, is also prefixed by PS followed by a number. Such new numbers follow on the last Clause used in the relevant section of the Standard Specifications for Operations and Maintenance of CTROM Projects: Etc Interoperability Business Rules (Volume 2 Book 8a).

There are no changes to any Clauses in the Standard Specifications for Operations and Maintenance of CTROM Projects: ETC Interoperability – Business Rules (Volume 2 Book 8a).

PS1.1 Business Rules

PS1.1.2

The 9th line onwards to be modified to read as follows:

“.../Concession Contract. The third is applicable to the VPC and will not be discussed in this document.”

PS1.2 Business Processes

Alter subclause 1.2.2 add the following new subclause:

“PS1.2.3

For the purpose of this document, the following definitions will apply for the Transfer and Acceptance of transactions:

The Transfer of Acceptance of Transactions on a **non-recourse** basis means the transfer of all rights and obligations under the Transactions Records by the Toll Agency (The Transferor) and the corresponding acceptance of these rights and obligations by the TCH (The Transferee), where the Transferor **is not liable** for any default, loss or defect relating to the Transaction Records in terms of which the rights and obligations are transferred.

The Transfer of Acceptance of transactions on a **recourse** basis means the transfer of all rights and obligations under the Transaction Record by the Toll Agency (the Transferor) and the corresponding acceptance of these rights and obligations by the TCH (The Transferee), where the Transferor **may be held liable** for any default, loss or defect relating to the Transaction Record in terms of which the rights and obligations are transferred.”

The subclause 1.2.3 to be modified to read as follows:

“PS1.2.4

For an Opt-in Toll Agency, the TCH will accept and pay for all compliant and complete Transaction Records (as far as possible for the TCH to verify) transferred on a non-recourse basis. The TCH will accept and pay for Transaction Records generated by vehicles associated with a customer account transferred on a non-recourse basis.

Transaction not associated with a customer account will still be accepted by TCH on behalf of VPC under a “back-to-back” arrangement for all compliant Transaction Records. VPC will make payment for the transfer of these transactions that takes place on non-recourse basis.”

The subclause 1.2.4 to be modified to read as follows:

“PS1.2.5

For an opt Out Toll Agency the VPC element of the transaction accepted and paid for all other compliant transactions transferred on a non-recourse basis will not apply.”

The subclause 1.2.5 to be modified to read PS1.2.6

The subclause 1.2.6 to be modified to read PS1.2.7

The subclause 1.2.7 to be modified to read PS1.2.8

The subclause 1.2.8 to be modified to read as follows:

“PS1.2.9

In addition to the above, the processing fee will be upwardly adjusted for transactions received outside the period specified for the transfer and acceptance of transactions on the non-recourse basis and the specification in TA Business Rule 103. The higher processing fee will be applied to all transactions received outside of the period specified for the Transfer and Acceptance of transactions on the non-recourse basis but are still processed by the TCH at the Toll Agency’s own risk.”

PS1.3 Layout of this Document

PS1.3.2

The 4th line to be modified to read as follows:

“... to another entity, render a service (including transfer and acceptance of transactions on non-recourse basis) and charge a processing fee ...”

PS2.1 INTER ENTITY RELATIONSHIPS

PS2.1.6

At the end of subclause 2.1.6 add the following:

“The purpose of the steering committee will be to coordinate the interaction/interface between the contractor, the TCH and Toll Agencies or Concessionaires – all under the guidance of SANRAL related to the roll-out of ETC on Concessionaires and CTROM routes and the interfacing and integration to the TCH. The items discussed in the steering committee will include, inter alia (1) The processing fee model (2) The implementation agreements (3) Marketing planning (4) Integrated roll-out programs (5) Operational matters (6) System integration matters (7) Commercial Matters (8) Legal matters (9) Financial Matters.”

PS2.1.12

The 1st line of this subclause 2.1.12 to be modified to read as follows:

“The TCH entity will accept transactions transferred from a Toll Agency on a non-recourse basis and pay for each Transaction”

PS2.1.13

The 1st sentence of subclause 2.1.13 to be modified to read as follows:

“For Opt-in Toll Agencies, the TCH will also accept the transfer of transactions on a non-recourse basis on behalf of the VPC for compliant Transaction Records sent to it but will reject non-compliant transactions. VPC will pay for the transfer of these transactions on a non-recourse basis. The VPC will levy ...”

PS2.1.15

The 2nd line of subclause 2.1.15 to be modified to read as follows:

“... collection process fails, the violation will be passed for processing according to the legal requirement (AARTO or CPA). When a violation passes ...”

PS3 KEY BUSINESS RULES

PS3.3 Transfer of transactions on a non-recourse basis accepted by the TCH and payment for this transfer to the Toll Agency from TCH

PS3.3.1

The 2nd line of subclause 3.3.1 to be modified to read as follows:

“... is based is the concept of transfer and acceptance of transactions on a non-recourse basis. A Toll Agency is being ...”

The 4th line of subclause 3.3.1 to be modified to read as follows:

“... TCH entity. The TA agrees to this because the TCH entity or for Opt-In Toll Agencies. The VPC entity, undertakes to accept the transfer of transactions on a non-recourse basis and pay the appropriate toll ...”

PS3.3.2

The 2nd line of subclause 3.3.2 to be modified to read as follows:

“... as discussed later, because of the acceptance and payment for the transfer of transactions on a non-recourse basis, there will be a natural tendency for ...”

PS3.3.4

Subclause 3.3.4 to be modified to read as follows:

“ It is necessary to define fairly specifically the terms under which the TCH entity will accept and make payment for the transfer of transactions on a non-recourse basis, and this must be considered in the light of the checks that the TCH System can reasonably conduct. The acceptance and payment for the transfer of transactions on a non-recourse basis is incorporated into the following Key Business Rule:”

PS3.3.4 Key Business Rule 2(b)

The 1st line of this subclause to be modified to read as follows:

“For conventional electronic toll collection, the TCH entity shall accept transactions transferred on non-recourse basis and make payment to Toll Agencies ...”

The 4th line of this subclause to be modified to read as follows:

“...Agencies. For an Opt-In Toll Agency, the acceptance of transactions transferred on a non-recourse basis and subsequent payment will be extended as...”

The 3rd line of the second paragraph of this subclause to be modified to read as follows:

“... otherwise it will be rejected, and the Toll Agency informed. In addition, it must satisfy one of ...”

PS3.3.10

The 1st line of this subclause to be modified to read as follows:

“Related to payments and acceptance of transactions transferred on a non-recourse basis is the frequency ...”

PS3.3.10 Key Business Rule 4

This clause to be deleted and replaced with the following:

“**Key Business Rule 4.** The normal cycle for invoicing for toll transactions and inter Entity account settlement in relation to payment due shall not exceed seven working days.

The normal cycle for invoicing of processing fee shall be daily to coincide with the processing on the TCH, but the settlement of the processing fees shall be monthly.”

PS4 BUSINESS RULES FOR TOLL AGENCY

PS4.2.3 TA Business Rule 101

The 1st line of this subclause to be modified to read as follows:

“ The Actual Class will default either to the MVC class (in mixed/manual lanes), or AVC class (when the collector class is not included in the transaction from a mixed/manual), or the AVC class when the AVC classification is available for dedicated lanes, or the registered ...”

PS4.2.5

The 1st line of this subclause to be modified to read as follows:

“Activity 4.2.4a) is associated with the potential of acceptance and payment of transactions transferred on a non-recourse basis at the TCH or VPC ...”

PS4.2.6

The 7th line of this subclause to be modified to read as follows:

“In the case of a Catastrophic Event, special permission ...”

PS4.2.6 TA Business Rule 103(b)

The 3rd bullet of this subclause to be modified to read as follows:

“ The remaining 10% of the Transaction Records not later than 5 days after the date and time of the Chargeable Event that generated them (The transfer of these transactions on a recourse basis will be accepted and the TCH will endeavour to process them. If these transactions can be allocated to a valid account before the end of the grace period, payment will be made by the TCH, if not, the transactions will be rejected by the TCH.”

PS4.2.6 TA Business Rule 104(b)

The 3rd line of this subclause to be modified to read as follows:

“... the tolling point and under no circumstances, other than the approved Catastrophic Event, shall they be sent later than 5 days after ...”

PS4.2.6 TA Business Rule 105(b)

The 1st line of the 1st paragraph of this subclause to be modified to read as follows:

“For conventional electronic toll collection, the acceptance of the transfer of Transactions Records sent ...”

The last line of the 1st paragraph of this subclause to be modified to read as follows:

“... Chargeable Event that generated them, shall be on a non-recourse basis.”

The 1st and 2nd lines of the 2nd paragraph of this subclause to be modified to read as follows:

“For both open and conventional electronic toll collection, the acceptance of transfer of transactions records sent to the TCH later than 24 hours after the date and time of the Chargeable Event shall be on a recourse basis and the TCH shall ...”

Delete the 4th paragraph of this subclause and replace with the following:

“The acceptance of the transfer of transaction records linked to post-paid account where the payment means is specified as ‘credit card’ and received after 24 hours but not later than 25 days will be on a recourse basis (as 45 days are specified in the Acquiring Bank Agreement and time should be allowed for the TCH to process the transactions received).”

This new subclause to be inserted after subclause PS4.2.6 TA Business Rule 105(b):

“PS4.2.7

For the purpose of this document, a Catastrophic Event means an event or occurrence that is the type of event which is not part of normal operations and results in the situation where the Transaction Records from the Toll Agency require transfer and acceptance for processing outside the normal business rules. The risk and the obligation shall be divided according to the following categories:

Category 1: If the event is not under the control of both the TA and the TCH;

The transfer and acceptance of Transaction Records shall be on a recourse basis. The risk would be in the Transaction Records not recovered from the Customers, e.g.: the transaction which could not be assigned to a Customer account before the end of the grace period or when a Customer disputes the transaction after it was assigned to his/her account.

Where the event is because of a third party, not under the control of either party, the risk shall be shared since the obligation is not directly trace-able to the Toll Agency or the Transaction Clearing House.

The TCH shall record and report on Transaction Records not processed and processed due to a Catastrophic Event. The process to record losses due to transactions disputed after it was assigned to an account will be done outside the system as part of the Toll Agency’s dispute approval and resolution process.

Category 2: If the event is under the control of the TA;

The transfer and acceptance of Transaction Records shall be on a recourse basis. The risk would be in the Transaction Records not recovered from the Customers, e.g.: the transaction which could not be assigned to a Customer account before the end of the grace period or when a Customer disputes the transaction after it was assigned to his/her account.

Where the event is because of a failure of a process under the control of the Toll Agency, the risk and subsequent loss shall be for the Toll Agency.

The TCH shall record and report on Transaction Records not processed and processed due to a Catastrophic Event. The process to record losses due to transactions disputed after it was assigned to an account will be done outside the system as part of the Toll Agency’s dispute approval and resolution process.

Category 3: If the event is under the control of the TCH.

The transfer and acceptance of Transaction Records shall be on a non-recourse basis.

The risk would be in the transactions processed and transferred on a non-recourse basis but not recovered from the Customers.

Since the event is because of a failure of a process under the control of the TCH, the risk and subsequent loss shall be for the TCH.

The TCH shall record and report on Transaction Records not recovered (i.e.: Transaction records accepted and transferred on a non-recourse basis but not assigned to a Customer Account).

PS4.2.7.1 A Catastrophic Event on the side of the Toll Agency may result in (but not be limited to) the following conditions:

Transactions not being sent by the Toll Agency in the specified time (addressed in TA Business Rule 106); or

Validation lists not being updated by the Toll Agency in the specified time (the risk of the rejection of these transactions by the TCH remains with the Toll Agency).

PS4.2.7.2 A Catastrophic Event on the side of the Transaction Clearing House may result in (but not be limited to) the following conditions:

Transactions not being accepted by the TCH even though the Toll Agency attempted to send them in the specified time (addressed in TA Business Rule 106); or

Validation lists not being available from the TCH at the specified intervals (addressed in TA Business Rule 112 and TCH Business Rule 204).

PS4.2.7.3 The process to declare a Catastrophic Event and to trigger the special processing rules would include the following:

If the Catastrophic event is on the side of the Toll Agency,

The Toll Agency needs to notify SANRAL, the IE, the ER and the TCH Operator of the Catastrophic Event. The notification should include a specification of the affected toll plaza, the period of the catastrophic event i.e., start date and time and end date and time. (The cause of the Catastrophic event should be provided as soon as it is known and will be required before the risk of the loss in income is determined.);

The IE and the ER will make a recommendation and SANRAL will approve the application for the declaration of the Catastrophic Event and notify the TCH Operator and the Toll Agency that the event was approved.

The TCH Operator will configure the system with the information to allow for acceptance of the transactions and notify the Toll Agency that transactions can be sent. Where possible, the period for transfer and acceptance of the Transaction Records from the Catastrophic Event will be configured to occur outside the period for transfer and acceptance of Transaction Records on a recourse basis to ensure that the validation rules for Transaction Records from the Catastrophic Event do not conflict with

the general validation rules. If not possible to wait for the recourse period to pass, the processing and classification rules for a Catastrophic Event will take priority over the general validation rules;

The TCH will attempt to process the Transaction Records.

If the Catastrophic event is on the side of the TCH system,

The Toll Agency / Agencies will not be able to send Transaction Records and the status of the Transaction Records will remain “unsent” on the Toll Agency system;

The TCH Operator need to notify SANRAL, the IE, the ER and the Toll Agency / Toll Agencies. (The cause of the Catastrophic event should be provided as soon as it is known and will be required before the risk of the loss in income is determined.)

The ER will make a recommendation and SANRAL will approve the application for the declaration of the Catastrophic Event and notify the TCH Operator and the Toll Agency/ Toll Agencies that the event was approved.

The TCH system error needs to be rectified and it will be communicated to the Toll Agency;

After the TCH Catastrophic Event has been rectified, the TCH system will be configured for the Catastrophic Event. Depending on the requirement, the TCH will change the general validation rules, i.e.:

The time-period for transfer and acceptance of Transaction Records on a non-recourse basis; and/or

The time-period for transfer and acceptance of Transaction Records on a recourse basis; and/or

The time-period allowed for the update of the validation lists (Indicated in TA Business Rule 112).

Where possible, the period for transfer and acceptance of the Transaction Records from the Catastrophic Event will be configured to occur outside the period for transfer and acceptance of Transaction Records on a recourse basis to ensure that the validation rules for Transaction Records from the Catastrophic Event do not conflict with the general validation rules. If not possible to wait for the recourse

period to pass, the processing and classification rules for a Catastrophic Event will take priority over the general validation rules;

The Toll Agency will be able to send the transactions to the TCH;

The TCH will accept the transactions and process the transactions.

PS4.2.7.4 The results of the processing of Transaction Records under the Catastrophic Event will be recorded and reported. The report will include the value (loss) of Transaction Records not assigned to valid accounts, but this value will not be the final loss;

PS4.2.7.5 The final loss will include the risk of Customers not paying due to late processing (e.g. fleet banks or vehicle rental and lease companies “rejecting” transactions) or with Customers disputing the transactions during the period allowed for queries as specified in the Terms and Conditions. The final loss of transactions which were successfully processed (assigned to accounts) on TCH will only be quantifiable after payment received from the Customers and/or after transactions are queried by the Customers and credit notes are processed.

PS4.2.7.6 The final loss will therefore be evaluated and determined outside of the system and included in a special “Catastrophic Event” report with the indication of the final loss and where such loss should reside and if necessary, what inter-entity invoicing is required. The compilation of the final report and the inter-entity invoicing shall be a manual process outside of the TCH system.

PS4.2.7.7 With regards to the transfer and acceptance of Transaction Records from the Toll Agency to the Transaction Clearing House, the following rules will apply:”

This subclause to replace TA Business Rule 106 in subclause PS4.2.6

“TA Business Rule 106.

For the transfer and acceptance of Transaction Records from the Toll Agency to the Transaction Clearing House:

For open road toll collection, the Transaction Records sent to the TCH after 24 hours after the *date and time of* the Chargeable Event that generated them shall not be accepted and processed unless approved as being included in a Catastrophic Event that prevented the Toll Agency from sending the transaction to the TCH. The TCH shall record and report on Transaction Records not processed, and Transaction Records processed after expiry due to a Catastrophic Event.

For conventional electronic toll collection, the Transaction Records sent to the TCH after 5 days after the date and time of the Chargeable Event that generated them and not linked to a card payment, shall not be accepted and processed unless approved as being included in a Catastrophic Event that prevented the Toll Agency from sending the transaction to the TCH. The TCH shall record and report on Transaction Records not processed,

and Transaction Records processed after expiry due to a Catastrophic Event.

In the event that the TCH has a technical or communication error that prevents timeous transfer and acceptance of transactions from the Toll Agency, the Catastrophic event procedure will be followed and the TCH will process all transactions after the prescribed time when the TCH communication has been restored.”

PS4.2.8

“Clause PS4.2.8 and TA Business Rule 107 is not applicable to the conventional electronic toll collection where ANPR (or similar technology) functionality is not implemented”.

The 1st line of the 2nd paragraph of this subclause to be modified to reads as follows:

“For Toll Agencies where ANPR or similar technologies is implemented, the Toll Agency must ensure that the Customer use the Tag in the registered vehicle as...”

Renumber all subclauses 4.2.7 to 4.2.8.

PS4.2.9

The 1st paragraph of this subclause 4.2.8 to be renumbered 4.2.9 and modified to read as follows:

“Clause PS4.2.9 and TA Business Rule 108 is not fully applicable at the conventional electronic toll collection where ANPR (or similar technology) functionality is not implemented.”

The 1st line of the 2nd paragraph of this subclause to be modified to reads as follows:

“For Toll Agencies where ANPR or similar technology is implemented, the Toll Agency most also ensure that the Evidential Record is sent with the Transaction ...”

PS4.2.10

The 1st paragraph of this subclause 4.2.9 to be renumbered 4.2.10 and be modified to read as follows:

“Clause PS4.2.10 and TA Business Rule 109 is not fully applicable to the conventional electronic toll collection where ANPR (or similar technology) functionality is not implemented. This subclause only applies to the picture required for a class discrepancy.”

PS4.4 Distribution of Validation Lists

PS4.4.3 TA Business Rule 112

At the end of this subclause add the following:

“(c) In a Catastrophic Event where the TCH have a technical or communication error that prevents the timeous distribution of the validation lists, the TCH will update the time allowed for the update of the validation list from 4 hours to the time-period determined by the length of the TCH Catastrophic Event.”

PS5 BUSINESS RULES FOR THE TCH

PS5.1 Interface to the Toll Agency

PS5.1.1

The 1st line of this subclause to be modified to read as follows:

“ In formulating the rules for the Toll Agency and for the acceptance of transactions transferred on a non-recourse basis, it has been ...”

PS5.1.3

This subclause to be modified to read as follows:

“For the “Tag in a Bag”, initially the Tag will not be on the green or the red list since the Vehicle Licence Number and the vehicle class will be unknown. The ORT Toll Agency with the required ANPR equipment will add the Vehicle Licence Number and class in the transaction record when it is first detected. This will enable TCH to add an account with the additional information ...”

PS5.1.4 TCH Business Rule 201

The 4th line of the 5th paragraph of this subclause to be modified to read as follows:

“... responsibility in relation to its acceptance and payment for transactions transferred on a non-recourse basis for the period until the Green List is...”

PS5.1.7

The 2nd line of this subclause to be modified to read as follows:

“... Transaction Record meets the requirements for acceptance of transactions transferred on a non-recourse basis. It may also be ...”

PS5.2 Interface to Customer

PS5.2.4 TCH Business Rule 220

This subclause to be modified to read as follows:

“Transaction Records from Opt-in Toll Agencies or transactions transferred on a recourse basis from Opt-out Toll Agency may cause a general suspense account while the TCH seeks to obtain an account top-up from the customer. Transaction Records accepted from an Opt-out Toll Agency and transferred on a non-recourse basis and TCH fees will always be assigned to a pre-paid customer account and shall result in a temporary negative balance. The TCH shall seek to obtain an account top-up from the customer or recover the outstanding amount via the VPC by sending the outstanding balance for enforcement.”

PS5.3 Interface to VPC

PS5.3.1

The 1st paragraph of this subclause to be modified to read as follows:

“ The business arrangements between the TCH and the VPC are primarily dictated by the payment based on the acceptance of transaction transferred on a non-recourse basis that is provided by the VPC. The appropriate Business Rules are:”

PS5.3.1 TCH Business Rule 238

This subclause to be deleted and replaced with the following:

“TCH Business Rule 238. Not applicable.”

PS5.3.1 TCH Business Rule 239

This subclause to be deleted and replaced with the following:

"TCH Business **Rule 239**. Not applicable."

PS5.3.1 TCH Business Rule 240

This subclause to be deleted and replaced with the following:

"TCH Business **Rule 240**. Not applicable."

PS5.3.1 TCH Business Rule 241

This subclause to be deleted and replaced with the following:

"TCH Business **Rule 241**. Not applicable."

PS5.3.1 TCH Business Rule 242

This subclause to be deleted and replaced with the following:

"TCH Business **Rule 242**. Not applicable."

PART C3.3: ENVIRONMENTAL MANAGEMENT PLAN (SECTION C)

PART C3.3 (SECTION C): ENVIRONMENTAL MANAGEMENT PLAN

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C1001 SCOPE

The South African National Roads Agency SOC Limited (SANRAL) recognises environmental management as a key component of road infrastructure development and as part of its Environmental Sustainability Framework has developed this Environmental Management Plan (EMP) as a tool for continual improvement in environmental performance.

This EMP prescribes the methods by which proper environmental controls are to be implemented by the Contractor for construction and maintenance projects. 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 "Conditions of Contract for Design, Build and Operate Projects" (2008), published by the Fédération Internationale des Ingénieurs-Conseils, (FIDIC).

The provisions of this EMP are binding on the Contractor during the life of the contract. They are to be read in conjunction with all the documents that comprise the suite of documents for this contract, particularly the conditions of any environmental authorisation and associated site-specific Environmental Management Programme (EMPr). In the event that any conflict occurs between the terms of the EMP and the project specifications or environmental authorisation, the terms herein shall be subordinate.

The EMP is a dynamic document subject to similar influences and changes as are brought by variations to the provisions of the project specification. Any changes to the EMP and/or environmental authorisation cannot occur without being submitted to SANRAL who will manage the process of amending the EMP.

The EMP identifies the following:

- Relevant parties and their responsibilities;
- Construction activities that will impact on the environment;
- Specifications with which the Contractor shall comply in order to protect the environment from the identified impacts; and
- Actions that shall be taken in the event of non-compliance.

C1002 Definitions

Alien Vegetation: undesirable plant growth which includes but is not limited to all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA), 1983 and the National Environmental Management: Biodiversity Act (Act No. 10 of 2004). Other vegetation deemed to be alien are those plant species that show the potential to occupy in number, any area within the defined construction area and which are declared to be undesirable.

Construction Activity: any action taken by the Contractor, his sub-contractors, suppliers or personnel during the construction process as defined in the contract documents.

Environment: the surroundings within which the contract exists and comprises land, water, atmosphere, micro-organisms, plant and animal life (including humans) in any part or combination thereof as well as any physical, chemical, aesthetic or cultural inter-relationship among and between them.

Environmental Aspect: any component of a contractor's construction activity that is likely to interact with the environment.

Environmental authorisation: a written statement from a Competent Authority, with the general and specific conditions and the EMPr recording its approval of an application for a planned undertaking that triggers listed activities in the Environmental Impact Assessment (EIA) regulations of the National Environmental Management Act (NEMA).

Environmental Impact: any change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.

Environmental Impact Assessment (EIA): a systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes basic assessment and scoping and environmental impact reporting.

Environmental Management Plan: An Environmental Management Plan (EMP) is an environmental management tool used to ensure that adverse impacts of the construction and operation and decommissioning of a project are prevented and/or minimised, and that the positive benefits are enhanced.

Environmental Management Programme (EMPr): A project-specific Environmental Management Plan approved by a competent authority through an environmental impact assessment process.

Road Reserve: a corridor of land, defined by co-ordinates and/or proclamation, within which the road, including access intersections or interchanges, is situated. A road reserve may, or may not, be bounded by a fence.

Site; the site is defined in the FIDIC Conditions of Contract and in the scope of works. It is bound by the limits of construction as shown in the drawings or the title of the project and extends to also include the following:

- Areas outside the construction zones where accommodation of traffic is placed;
- All borrowpits defined in the applications approved by the Department of Mineral Resources (DMR);
- All haul roads constructed by the Contractor for purposes of access;
- Any non-adjacent sites specified in the contract documentation;
- The Contractor's and his subcontractors' camp sites.

For the purposes of this EMP, the site includes areas outside of, but adjacent to, the road reserve that may be affected by construction activities.

Spoil material: is material that is unsuitable for construction of the road pavement and for which no other useful purpose can be found in additional works on the project (e.g. for the provision of protection berms). Such material requires spoiling at convenient areas to be identified by the Engineer and/or Contractor within the Site. Spoil material does not require removal to a designated landfill site unless it contains identifiable hazardous contaminants.

C1003 LEGAL REQUIREMENTS

(a) General

Construction shall be according to the best industry practices, as identified in the project documents. This EMP, which forms an integral part of the contract documents, informs the Contractor as to his duties in the fulfilment of the project objectives, with particular reference to the prevention and mitigation of environmental impacts caused by construction activities associated with the project. The Contractor should note that obligations imposed by the EMP are legally binding in terms of this contract. In the event that any rights and obligations contained in this EMP contradict those specified in the standard or project specifications then the latter shall prevail.

(b) Statutory and other applicable legislation

The Contractor is deemed to have made himself conversant with all legislation pertaining to the environment, including provincial and local government ordinances, which may be applicable to the contract.

Major environmental legislation, as amended from time to time, includes but is not limited to the following:

(i) Conservation of Agricultural Resources Act (Act No. 43 of 1983)

This act provides for control over the utilisation of the natural agricultural resources of South Africa in order to promote the conservation of soil, water sources and vegetation, as well as combating weeds and invader plants.

(ii) The Constitution (Act 6 of 1996)

The Constitution states that everyone has the right to an environment that is not harmful to their health or well-being, and to have the environment protected through reasonable legislative and other measures to prevent pollution and ecological degradation; promote conservation and ensure ecologically sustainable development and use of natural resources.

(iii) Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)

This act makes provision for equitable access to, and sustainable development of, minerals and petroleum resources.

(iv) National Environmental Management Act (NEMA), (Act No. 107 of 1998)

This act supports the Bill of Rights within the Constitution and highlights principles of sustainable development including preservation of ecosystems and biological diversity and avoidance, minimisation and remediation of pollution and environmental degradation. It also sets the stage for the EIA Regulations.

(v) National Environmental Management: Air Quality Act (Act No. 39 of 2004)

This act provides reasonable measures for the prevention of pollution and ecological degradation; and provides for specific air quality measures; for national norms and standards regulating air quality monitoring, management and control by all spheres of government.

(vi) National Environmental Management: Biodiversity Act (Act No. 10 of 2004)

This act makes provisions to accomplish the objectives of the United Nations' Convention on Biological Diversity. SANRAL may be required to apply for permits to conduct certain listed activities which, together with the listed threatened or protected species, may be identified by the Minister.

Section 73 (3) of this act empowers a competent authority to direct a person to take steps to remedy any harm to biodiversity resulting from the actions of that person or as a result of occurrence of listed invasive species occurring on land on which that person is the owner. Thus SANRAL may be directed to remedy harm caused by listed invasive species.

(vii) National Environmental Management: Protected Areas Act (Act No. 57 of 2003)

This act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity, natural landscapes and seascapes.

(viii) National Environmental Management: Waste Act (Act No. 59 of 2008)

This act aims to regulate waste management practices through provision of national norms and standards, specific waste measures, licensing and control of waste activities, remediation of contaminated land as well as providing for compliance and law enforcement.

(ix) National Forests Act (Act No. 84 of 1998)

This act makes provision for promoting the sustainable management and development of forests, and for the protection of certain forests and trees for environmental, economic, educational, recreational, cultural, health and spiritual purposes.

(x) National Heritage Resources Act (Act No. 25 of 1999)

This act provides for an integrated and interactive system for identification, assessment and management of South Africa's heritage resources, and empowers civil society to nurture and conserve their heritage resources.

(xi) National Water Act (Act No. 36 of 1998)

This act makes provision for the protection of surface water and groundwater and their sustainable management for the prevention and remediation of the effects of pollution, as well as for the management of emergency situations.

(xii) The South African National Roads Agency Limited and National Roads Act (Act No. 7 of 1998)

This Act makes provision for a National Roads Agency for the Republic to manage and control the Republic's national roads system and take charge, amongst others, of the development, maintenance and rehabilitation of national roads within the framework of government policy.

C1004 ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS

Copies of this EMP shall be kept at the site office and must be distributed to all senior contract personnel who shall familiarise themselves with its contents.

Implementation of this EMP requires the involvement of several stakeholders, each fulfilling a different but vital role as outlined herein, to ensure sound environmental management during the construction phase of a project.

(a) SANRAL

SANRAL and anyone acting on SANRAL's behalf is accountable for the potential environmental impacts of any activities that are undertaken and is responsible for managing these impacts.

(b) The Engineer

The Engineer has been appointed by, and acts for, SANRAL as its on-site implementing agent and carries the responsibility to ensure that the Contractor undertakes its construction activities in such a way that SANRAL's environmental responsibilities are not compromised.

The Engineer will, within seven days of receiving a contractor's request for approval of a nominated Designated Environmental Officer (DEO), approve, reject or call for more information on the nomination. The Engineer will be responsible for issuing instructions to the DEO where environmental considerations call for action to be taken.

If in the opinion of the Engineer the DEO is not fulfilling his/her duties in terms of this EMP, the Engineer may, after discussion and agreement with SANRAL, exercise his powers under FIDIC general conditions of contract and instruct replacement of the DEO in writing and with stated reasons.

(c) The Contractor

The Contractor is responsible for project delivery in accordance with the prescribed specifications, among which this EMP shall be included.

The Contractor shall receive and implement any instruction issued by the Engineer 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 Designated Environmental Officer (DEO). The Contractor shall nominate a person from among his site personnel to fulfil this function and submit to the Engineer for his approval the *curriculum vitae* of the proposed DEO. 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 Engineer to make a decision.

(d) The Designated/Dedicated Environmental Officer (DEO)

Once a nominated representative of the Contractor has been approved, he/she shall become the DEO and shall be the responsible person for ensuring that the provisions of this EMP are complied with during the life of the contract. The DEO shall submit regular written reports to the Engineer, but not less frequently than once a month.

The DEO may undertake other construction duties unless Section B: Specification Data, prescribes this position as 'Full-time' or 'dedicated' as opposed to the standard position being 'designated'. However, the DEO's environmental duties shall hold primacy over other contractual duties and the Engineer has the authority to instruct the Contractor to reduce the DEO's other duties or to replace the DEO if, in the Engineer's opinion, he/she is not fulfilling his/her duties in terms of the requirements of this EMP. Such instruction will be in writing clearly setting out the reasons why a replacement is required.

As a minimum the DEO shall have an accredited National Qualifications Framework (NQF) level 6 qualification in environmental or natural sciences or equivalent and a minimum of 2 years' experience in a similar role in construction or other environmental regulatory field.

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

(e) Environmental Control Officer (ECO)

The Environmental Control Officer (ECO) is an independent environmental specialist appointed by SANRAL or the Engineer to objectively and regularly monitor the Contractor's compliance with the conditions of the authorisations issued for the project and the approved EMPr (that is this EMP augmented with specifics of the project). These are external audits and the regularity is determined by the environmental authorisations.

C1005 TRAINING

(a) Qualifications

The (DEO) shall have the minimum qualifications as prescribed above and must be conversant with all legislation pertaining to the environment applicable to the contract. He/she must be appropriately trained in environmental management and possess the

skills necessary to impart environmental management skills to all personnel involved in the contract.

The Contractor shall ensure that adequate environmental training takes place. All employees shall have been given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees.

(b) Content

Apart from induction environmental training should, as a minimum, include the course content below and no induction or course should be given until the Engineer has been afforded the opportunity to appraise it and provide comment.

- (i) The importance of conformance with all environmental policies and the consequences of departure from standard operating procedures;
- (ii) Environmental impacts, actual or potential, caused by work activities, prevention measures to avoid them and mitigation measures when they occur;
- (iii) Work force roles and responsibilities in achieving conformance with the environmental policy and procedures, including emergency preparedness and response requirements;
- (iv) The environmental benefits of improved personnel performance and
- (v) Consequences of non- compliance

(c) Induction

In the case of permanent staff the Contractor shall provide evidence that such induction courses have been presented. In the case of new staff (including contract labour) the Contractor shall inform the Engineer when and how he intends concluding his environmental training obligations.

C1006 ACTIVITIES/ASPECTS CAUSING IMPACTS

Typical environmental aspects and impacts associated with road construction are listed in Table 1: Aspects and Impacts Associated with Road Construction. Actual impacts will differ from project to project and, therefore, so may the mitigation measures employed. The most common aspects and impacts are addressed separately, and typical avoidance and/or mitigation measures described. The list and descriptions are not by any means exhaustive, and they shall be used for guideline purposes only.

Table 1: Aspects and Impacts Associated with Road Construction

Aspect	Potential Impact
Waste generation/storage	Water pollution; nuisance; visual impact
Water use and stormwater discharge	Change in flow regime and/or reduction in downstream availability; soil erosion: water pollution
Vehicle use and maintenance	Air pollution; noise
Chemical/fuel storage	Water/air/soil pollution; health impacts; accidents e.g. spills, fire
Site clearing; earthworks; layer-works; seal works	Change in landform; impact on heritage resources; noise; soil erosion; air pollution
River bridges; installing drainage structures	Water pollution; impact on river flows; noise
Land acquisition	Loss of land and/or livelihood; change in land use;

Aspect	Potential Impact
Acquisition of building material from borrow pits	Change in landform and use

(a) General approach

The role of the DEO cannot be underestimated and once approved he/she shall be on the site at all times, and before the Contractor begins each construction activity, he/she shall give to the Engineer a written statement setting out the following:

- (i) The type of construction activity about to be started.
- (ii) Locality where the activity will take place.
- (iii) Identification of the environmental aspects and impacts that might result from the activity.
- (iv) The methodology of impact prevention for each activity or aspect.
- (v) The methodology of impact containment for each activity or aspect.
- (vi) Identification of the emergency/disaster potential for each activity (if any) and the reaction procedures necessary to mitigate impact severity.
- (vii) Treatment and continued maintenance of impacted environment.

The Contractor shall programme his work in such a way that each cause and effect of a construction activity is also identified, and the activity planned so as to prevent any impact from happening and shall demonstrate that he is capable of carrying out any repair and reinstatement of the damaged environment. These requirements shall be concurrent with the time constraints to produce method statements for each construction activity in compliance with the provisions of these project specifications.

The Contractor shall provide such information in advance of any or all construction activities provided that new submissions shall be given to the Engineer whenever there is a change or variation to the original.

The Engineer may provide comment on the methodology and procedures proposed by the DEO, but he shall not be responsible for the Contractor's chosen measures of impact mitigation and emergency/disaster management systems. However, the Contractor shall demonstrate at inception and at least once during the contract that the approved measures and procedures function properly.

(b) Spillages

Streams, rivers and dams shall be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous products. In the event of a spillage, the Contractor shall be liable to arrange for professional service providers to clear the affected area.

Responsibility for spill containment and treatment (whether hazardous or not) lies with the Contractor. The individual causing a spill, or who discovers a spill, must report the incident to his/her DEO or to the Engineer. The DEO will assess the situation in consultation with the Engineer and act as required. In all cases, the immediate response shall be to contain the spill. The exact treatment of polluted soil/water shall be determined by the Contractor in consultation with the DEO and the Engineer. Areas cleared of hazardous waste shall be re-vegetated according to the Engineer's instructions.

Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice will be sought for appropriate treatment and remedial procedures to be followed. The requirement for such input shall be agreed with the Engineer. The costs of containment and rehabilitation shall be for the Contractor's account, including the costs of specialist input as well as the sampling and testing of the water quality upstream and downstream of the spill. Water quality sampling and testing, and further treatment shall continue until upstream and downstream results correspond with each other.

(c) Water use and control

The Contractor's use of water shall take into consideration that it is a scarce commodity and shall be optimised. Authorisation shall be obtained from the Department of Water and Sanitation (DWS) before water is drawn from streams or new boreholes developed.

The Contractor shall also ensure that any stream deviations or diversions are undertaken in such a manner that the impact on the environment is minimised. Method statements shall be submitted to the Engineer for comment, detailing how the work will be undertaken, what risks are foreseen and what measures will be employed to minimise such risks. Notwithstanding any comments by the Engineer, no work on stream deviations or diversions shall be undertaken in accordance with GN 509 in GG 40229 of 26 August 2016 - General Authorisation in terms of Section 39 of the National Water Act, 1998 (Act No. 36 Of 1998) for Water Uses as defined in sections 21(c) and (i) .

The quality, quantity and flow direction of any surface water runoff shall be established prior to disturbing any area for construction purposes. Cognisance shall be taken of these aspects and incorporated into the planning of all construction activities. Before a site is developed or expanded, it shall be established how this development or expansion will affect the drainage pattern. Recognised water users/receivers shall not be adversely affected by the expansion or re-development. No water source shall be polluted in any way due to proposed changes.

Streams, rivers, pans, wetlands, dams, and their catchments shall be protected from erosion and flooding by dredging, daylighting, removal of debris and vegetation, etc. These shall also be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous products.

The Contractor shall submit to the Engineer his proposals for prevention, containment and rehabilitation measures against environmental damage of the identified water and drainage systems that occur on the site. Consideration shall be given to the placement of sedimentation ponds or barriers where the soils are of a dispersive nature or where toxic fluids are used in the construction process. The sedimentation ponds must be large enough to contain runoff so that they function properly under heavy rain conditions up to 1:5 year severity.

The Contractor shall submit to the Engineer the results of the baseline water quality test taken above and below the site of the proposed activity, and thereafter monthly testing results or at the frequency as may be specified by the Water Use Licence/General Authorisation, where applicable. No taking-over can be authorised until the water quality is shown to be at pre-construction levels or better.

(d) Vegetation management

The Contractor shall be responsible for the management of vegetation by protection of indigenous vegetation, especially identified protected species, and the prevention of alien vegetation germinating in areas disturbed by road construction activities within and outside the road reserve. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for or from road construction has been stored temporarily. This responsibility shall continue for the duration of the defects notification period. The project specification may instruct the removal of CARA and/or NEMBA-listed category 1 and 2 alien species and planting of specified indigenous species.

(e) Dust control

Dust caused by construction activities shall be controlled by appropriate means and applied at sufficient frequency so as not to cause nuisance to adjacent habitation or affect farming activities or natural vegetation. Vegetation cover should also be kept for as long as possible to reduce the area of exposed surfaces. Dust emissions from

batching and screening plants shall be subject to the relevant legislation and shall be the subject of inspection by the relevant authorities.

(f) Noise control

The Contractor shall endeavour to keep noise generating activities to a minimum. Noises that could cause a major disturbance, for instance blasting and crushing activities, should only be carried out during the hours prescribed by the conditions of contract (i.e. normal hours). Should such noise generating activities have to occur at any time outside normal hours the people in the vicinity of the noise-generating activity shall be warned about the noise well in advance and the activities kept to a minimum. Relevant legislation shall also be taken into consideration, and any practical mitigation measures adopted. No noise generating activity outside of normal hours, regardless of its proximity to residences, can take place without application to the Engineer for approval. The application shall be accompanied by the noise containment measures proposed.

(g) Energy consumption

The Contractor shall take into consideration the impacts of high energy consumption, both from a cost and emissions point of view. Energy use shall be minimised, and where possible, alternative energy sources such as solar utilised.

Furthermore, the Contractor shall measure and keep records of the consumption of carbon units his chosen method of construction produces in the execution of his programme. In conjunction with the Engineer who will provide complete cooperation, a month by month output shall be compiled and efforts made to see how these outputs can be curtailed and reduced.

C1007 ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES

The Contractor shall undertake “good housekeeping” practices during construction as stated in the COTO Standard Specifications for Roads and Bridges and the FIDIC conditions of contract. This will help avoid disputes on responsibility and allow for the smooth running of the contract as a whole. Good housekeeping extends beyond the wise practice of construction methods that leaves production in a safe state from the ravages of weather to include the care for and preservation of the environment within which the site is situated.

The construction activities addressed below shall become part of the Contractor’s obligations regarding his programme of work and incorporated into the required method statements for workmanship and quality control.

a) Site establishment

i) Site Plan

The site refers to an area with defined limits on which the project is located. The Contractor shall establish his construction camps, offices, workshops, staff accommodation and testing facilities on the site in a manner that does not adversely affect the environment. However, before any site establishment can begin, the Contractor shall submit to the ECO for his comments and to the Engineer for his approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the Contractor proposes to put in place.

The plans shall detail the locality as well as the layout of the waste management facilities for litter, kitchen refuse, sewage and workshop-derived effluents. The site offices should not be sited in close proximity to steep areas, as this will increase soil erosion. Preferred locations would be flat areas along the route. If

the route traverses water courses, streams and rivers, it is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course. No camp establishment, including satellite camps, can be placed within 150 metres of an identified watercourse unless the Contractor has applied to DWS and received authorisation to do so. Regardless of the chosen site, the Contractor's intended mitigation measures shall be indicated on the plan. The site plan shall have been submitted and approved before establishment commences. Detailed, electronic colour photographs shall be taken of the proposed site before any clearing may commence. These records are to be kept by the ECO and the Engineer for consultation during rehabilitation of the site in order that rehabilitation is, as a minimum, done to a standard similar to pre-construction activities.

ii) Vegetation

The Contractor has a responsibility to inform his staff of the need to be vigilant against any practice that will have a harmful effect on vegetation.

The natural vegetation encountered on the site is to be conserved and left as intact as possible. Vegetation planted at the site shall be indigenous and in accordance with instructions issued by the Engineer. Only trees and shrubs directly affected by the works, and such others as may be indicated by the Engineer in writing, may be felled or cleared. In wooded areas where natural vegetation has been cleared out of necessity, the same species of indigenous trees as were occurring shall be re-established. Protected trees may not be removed without a permit from the Department of Forestry, Fisheries and Environment.

Contravention of a notice of listed protected tree species under the National Forests Act, 1998 is regarded as a first category offence that may result in a fine or imprisonment for a period up to three years, or to both a fine and imprisonment. The DEO must be conversant with the latest gazette of declared protected trees.

Rehabilitation shall be undertaken using only indigenous tree, shrub and grass species. Special attention shall be given to any search and rescue operation identified during the environmental assessment process and any removal to an on-site nursery for continuous nurturing and protection and later replanting.

Any proclaimed weed or alien species that propagates during the contract period shall be cleared by hand before seeding.

Fires shall only be allowed in facilities or equipment specially constructed for this purpose. The need for a firebreak shall be determined in consultation with the Engineer and the relevant authorities, and if required a firebreak shall be cleared and maintained around the perimeter of the camp and office sites.

iii) Water management

Water for human consumption shall be available at the site offices and at other convenient locations on site.

All effluent water from the camp/office sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water sources (streams, rivers, pans, dams etc.). Only domestic type wastewater shall be allowed to enter this system.

iv) Heating and cooking fuel

The Contractor shall provide adequate facilities for his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The Contractor shall ensure that energy

sources are available at all times for construction and supervision personnel for heating and cooking purposes.

b) Sewage management

Particular reference in the site establishment plan shall be given to the treatment of sewage generated at the site offices, site laboratory and staff accommodation and at all localities on the site where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of the Engineer, the local authorities and legal requirements.

Safe and effective sewage treatment will require one of the following sewage handling methods: septic tanks and soak-aways, dry-composting toilets such as “enviro loos”, or the use of chemical toilets which are supplied and maintained by a specialist service provider. The type of sewage management will depend on the geology of the area selected, the duration of the contract and proximity (availability) of providers of chemical toilets. Should a soak-away system be used, it shall not be closer than 800 metres from any natural water course or water retention system. The waste material generated from these facilities shall be serviced on a regular basis. The positioning of the chemical toilets shall be done in consultation with the Engineer. Should a soak-away system be used, it shall not be closer than 800 metres from any natural water course or water retention system and shall be approved by the Engineer in consultation with the ECO.

Toilets and latrines shall be easily accessible and shall be positioned within walking distance from wherever employees are employed on the works. Use of the veld for this purpose shall not, under any circumstances, be allowed.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. The toilets shall also be placed outside areas susceptible to flooding. The Contractor shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such latrines in a clean, orderly and sanitary condition to the satisfaction of the Engineer.

c) Waste management

The Contractor's intended methods for waste management shall be outlined and implemented at the outset of the contract and shall be to the satisfaction of the Engineer. A waste inventory shall be drawn up of all waste streams that will possibly be generated by the site/project and an integrated approach shall be taken to its management. Records shall be kept of all waste disposed. Opportunities for avoiding, reducing, reusing and recycling of materials should be identified upfront, as should constraints for their implementation. All personnel shall be instructed to dispose of all waste in the proper manner.

i) Solid waste

Solid waste shall be stored in an appointed area in covered, tip-proof metal drums or similar container for collection and disposal. Disposal of solid waste shall be at a licensed landfill site or at a site approved by the relevant authority in the event that an existing operating landfill site is not within reasonable distance from the project area. No waste shall be burned or buried at or near the project area.

ii) Litter

No littering by construction workers shall be allowed and particular emphasis on litter control measures shall apply at stop/go facilities.

During the construction period, the various contractors' facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter. At all places of work the Contractor shall provide litter collection facilities for later safe disposal at approved sites.

iii) Hazardous waste

Hazardous waste such as oils shall be disposed of at an approved landfill site and proof of such disposal kept by the Contractor. Special care shall be taken to avoid spillage of bitumen products such as binders or pre-coating fluid to avoid water-soluble phenols from entering the ground or contaminating surface water.

Under no circumstances shall the spoiling of bituminous products on the site, over embankments, in borrow pits or any burying, be allowed. Unused or rejected bituminous products shall be returned to the supplier's production plant. Any spillage of bituminous products shall be attended to immediately and affected areas shall be promptly reinstated to the satisfaction of the Engineer.

iv) Construction and demolition waste

The opportunity for recycling and reuse of construction and demolition waste as fill for road embankments, land reclamation and drainage control must first be explored and take priority before the option of declaring these materials a 'waste'.

The Contractor is encouraged to actively engage with authorities and landowners adjacent to the site and identify where such materials can be usefully deployed to repair existing environmentally damaged areas such as erosion dongas.

d) Control at the workshop

The Contractor's management and maintenance of his plant and machinery will be monitored according to the criteria given below.

i) Hazardous Material Storage

Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. All hazardous materials such as bitumen binders shall be stored in a secured, appointed area that is suitably fenced, bunded and has restricted entry. Storage of bituminous products shall only take place using suitable containers to the approval of the ECO and the Engineer.

The Contractor shall provide proof to the Engineer that relevant authorisation to store such substances has been obtained from the relevant authority. In addition, hazard signs indicating the nature of the stored materials shall be displayed on the storage facility or containment structure. Before containment or storage facilities can be erected, the Contractor shall furnish the Engineer with details of the preventative measures he proposes to install in order to mitigate pollution of the surrounding environment from leaks or spillage. The preferred method shall be a concrete floor that is bunded. Any deviation from the method will require proof from the relevant authority that the alternative method proposed is acceptable to that authority. The proposals shall also indicate the emergency procedures in the event of misuse or spillage that will negatively affect an individual or the environment.

ii) Fuel and gas storage

The Contractor shall take cognisance of the limits set by legislation for the storage of fuels and acquire the necessary authorisation for storage capacity beyond these. An adequate bund wall, 110% of volume, shall be provided for fuel and diesel areas to accommodate any leakage spillage or overflow of these substances. The area inside the bund wall shall be lined with an impervious lining to prevent infiltration of the fuel into the soil. Any leakage, spillage or overflow of fuel shall be attended to without delay.

Gas welding cylinders and LPG cylinders shall be stored chained in a secure, well-ventilated area exterior to any building wall.

iv) Oil and lubricant waste

Used oil, lubricants and cleaning materials from the maintenance of vehicles and machinery shall be collected in a holding tank and sent back to the supplier. Water and oil should be separated in an oil trap. Oils collected in this manner, shall be retained in a safe holding tank and removed from site by a specialist oil recycling company for disposal at approved waste disposal sites for toxic/hazardous materials. Oil collected by a mobile servicing unit shall be stored in the service unit's sludge tank and discharged into the safe holding tank for collection by a specialist oil recycling company.

Drip trays shall be used to collect any lubricants or fuel spilled where any vehicle and machinery are repaired or refuelled. The lubricants and fuel collected shall be handled as specified above.

All used filter materials shall be stored in a secure bin for disposal off site. Any contaminated soil shall be removed and replaced. Soils contaminated by oils and lubricants shall be collected and disposed of at a facility designated by the local authority to accept contaminated materials.

e) **Clearing the site**

In all areas where the Contractor intends to or is required to clear the natural vegetation and soil, either within the road reserve, or at designated or instructed areas outside the road reserve, a plan of action shall first be submitted to the Engineer for his approval. Working areas shall be clearly defined and demarcated on site to minimise the construction footprint. 'No-go- areas' and other sensitive areas shall also be clearly demarcated on site, and staff must be made aware of them.

The plan of action shall contain a photographic record and chainage/land reference of the areas to be disturbed. This shall be submitted to the Engineer for his records before any disturbance/stockpiling may occur. The record shall be comprehensive and clear, allowing for easy identification during inspections.

f) **Soil management**

i) Topsoil

Topsoil shall be removed from all areas where physical disturbance of the surface will occur and shall be stored and adequately protected. The contract will provide for the stripping and stockpiling of topsoil from the site for later re-use. Topsoil is the natural soil covering, including all the vegetation and organic matter. Depth may vary at each site. The areas to be cleared of topsoil shall include all storage areas. All topsoil stockpiles and windrows shall be maintained throughout the contract period in a weed-free condition. Weeds appearing on the stockpiled or windrowed topsoil shall be removed by hand. Soils contaminated by hazardous substances shall be disposed of at an approved waste disposal site. The topsoil stockpiles shall be stored, shaped and sited in such a way that they do not interfere with the flow of water to cause damming or erosion, or itself be eroded by the action of water.

The Contractor shall ensure that no topsoil is lost due to erosion – either by wind or water. Areas to be top-soiled and grassed shall be done so systematically to allow for quick cover and reduction in the chance of heavy topsoil losses due to unusual weather patterns. The Contractor's programme shall clearly show the proposed rate of progress of the application of topsoil and grassing. The Contractor shall be held responsible for the replacement, at his own cost, for any unnecessary loss of topsoil due to his failure to work according to the progress plan approved by the Engineer. The Contractor's responsibility shall also extend to the clearing of drainage or water systems

within and beyond the boundaries of the road reserve that may have been affected by such negligence.

ii) Subsoil

The subsoil is the layer of soil immediately beneath the topsoil. It shall be removed, to a depth instructed by the Engineer, and if not used for road building it shall be stored and maintained separately from the topsoil so that neither stockpile is contaminated by the other. This soil shall be used for rehabilitation purposes by first spreading it over the excavated slopes without interfering with or contaminating the stockpiled topsoil.

Whilst in stockpile it shall be maintained free from erosion and weed infestation in the same way as for topsoil stockpile maintenance.

g) Earthworks and layerworks

This section includes all construction activities that involve the mining of all materials, and their subsequent placement, stockpile, spoil, treatment or batching, for use in the permanent works, or temporary works in the case of deviations. Before any stripping prior to the commencement of construction, the Contractor shall have complied with the requirements of this EMP. In addition, the Contractor shall take cognisance of the requirements set out below.

i) Quarries and borrow pits

The Contractor's attention is drawn to the requirement of the Department of Mineral Resources, that before entry into any quarry or borrow pit, an Environmental Authorisation for the establishment, operation and closure of a quarry or borrow pit shall have been approved by the Department where applicable. It is the responsibility of the Contractor to ensure that he is in possession of the authorisation prior to entry into the quarry or borrow pit. The conditions imposed by the relevant authorisation are legally binding on the Contractor and may be more extensive and explicit than the requirements of this specification. In the event of any conflict occurring between the requirements of the specific authorisation and this EMP, the former shall apply.

ii) Excavation, hauling and placement

The Contractor shall provide the ECO and the Engineer with detailed plans of his intended construction processes prior to starting any cut or fill or layer. The plans shall detail measures by which the impacts of pollution (noise, dust, litter, fuel, oil and sewage), erosion, vegetation destruction and deformation of landscape will be prevented, contained and rehabilitated. Particular attention shall also be given to the impact that such activities will have on the adjacent built environment. The Contractor shall demonstrate his "good housekeeping", particularly with respect to closure at the end of every day so that the site is left in a safe condition.

iii) Spoil sites

The Contractor shall be responsible for the safe siting, operation, maintenance and closure of any spoil site he uses during the contract period, including the defects notification period. This shall include existing spoil sites that are being re-entered. Before spoil sites may be used proposals for their locality, intended method of operation, maintenance and rehabilitation shall be given to the ECO for his/her comments and to the Engineer for his approval. The location of these spoil sites shall have signed approval from the affected landowner before submission to the ECO and the Engineer. No spoil site shall be located within 50m of any watercourse. A photographic record shall be kept of all spoil sites for monitoring purposes. This includes before the site is used and after re-vegetation.

The use of approved spoil sites for the disposal of any waste shall be prohibited. Spoil sites will be shaped to fit the natural topography. Depending on availability these sites shall receive a minimum of 75mm topsoil and be grassed with the recommended seed mixture. Appropriate grassing measures to minimise soil erosion shall be undertaken by the Contractor. This may include both strip and full sodding. The Contractor may motivate to the Engineer for other acceptable stabilising methods. The Engineer may only approve a completed spoil site at the end of the defects notification period upon receipt from the Contractor of a landowner's clearance notice.

iv) Stockpiles

The Contractor shall plan his activities so that materials excavated from borrow pits and cuttings, in so far as possible, can be transported direct to and placed at the point where it is to be used. However, should temporary stockpiling become necessary, the areas for the stockpiling of excavated and imported material shall be indicated and demarcated on the site plan submitted in writing to the Engineer for his approval. The Contractor's proposed measures for prevention of environmental damage, containment and subsequent rehabilitation shall also be submitted.

The areas chosen shall have no naturally occurring indigenous trees and shrubs present that may be damaged during operations. Care shall be taken to preserve all vegetation in the immediate area of these temporary stockpiles. During the life of the stockpiles the Contractor shall at all times ensure that they are positioned and sloped to create the least visual impact, constructed and maintained so as to avoid erosion of the material and contamination of surrounding environment and kept free from all alien/undesirable vegetation.

After the stockpiled material has been removed, the site shall be re-instated to its original condition. No foreign material generated/deposited during construction shall remain on site. Areas affected by stockpiling shall be landscaped, top soiled, grassed and maintained at the Contractor's cost until clearance from the Engineer and the landowner is received.

Material milled from the existing road surface that is temporarily stockpiled in areas approved by the Engineer within the road reserve, shall be subject to the same condition as other stockpiled materials. Excess materials from windrows, in situ milling or any leftover material from road construction activities may not be swept off the road and left unless specifically instructed to do so in the contract documentation or under instruction from the Engineer.

The ECO shall comment on and the Engineer shall approve the areas for stockpiling and disposal of construction rubble before any operation commences and shall approve their closure only when they have been satisfactorily rehabilitated.

v) Blasting activities

Wherever blasting activity is required on the site (including quarries and/or borrow pits) the Contractor shall rigorously adhere to the relevant statutes and regulations that control the use of explosives.

h) **On site plant**

i) Crusher, screening plants and concrete batching plants

Crushing plants and concrete batching plants, whether sited inside or outside of defined quarry or borrow pit areas, shall be subject to the requirements of the applicable industrial legislation that governs gas and dust emissions into the atmosphere. Such sites will be the subject of regular inspections by the relative authorities during the life of the project. In addition, the selection, entry onto, operation, maintenance, closure and rehabilitation of such sites shall be

the same as for those under section C1007(g)(i) of this EMP, with the exception that the Contractor shall provide additional measures to prevent, contain and rehabilitate against environmental damage from toxic/hazardous substances. In this regard the Contractor shall provide plans that take into account such additional measures as concrete floors, bunded storage facilities, linings to drainage channels and settlement dams. Ultimate approval of these measures shall be from the relevant authority, as shall approval of closure. The Engineer will assist the Contractor in his applications to the relevant authority.

Screening activities shall be undertaken so that dust and noise is minimised. This can be done by carefully choosing the site for the activity, and by using slightly damp material.

Effluent from concrete batch plants and crusher plants shall be reused where possible or treated in a suitable designated sedimentation dam to the legally required standards to prevent surface and groundwater pollution. The designs of such a facility should be submitted to the Engineer for approval.

ii) Asphalt Plant

Asphalt plants shall be subject to the applicable legislation that governs establishment and operation of batching plants. The Contractor shall be responsible to obtain the necessary permit from the relevant authority.

Operation of the plant shall conform to the same requirements as for a crushing plant or concrete batching plant under C1007(h)(i) above.

C1008 AREAS OF SPECIFIC IMPORTANCE

Any area, as determined and identified within the project documents as sensitive or of special interest within the site shall be treated according to the express instructions contained in these specifications or the specific environmental authorisation, as well as the approved EMPr. The Contractor may offer alternative solutions to the Engineer in writing should he consider that construction will be affected in any way by the hindrance of the designated sensitive area or feature. However, the overriding principle is that such defined areas requiring protection should not be changed. Every effort to identify such areas within the site will have been made prior to the project going out to tender. The discovery of other sites with archaeological or historical interest that have not been identified shall receive ad hoc treatment.

a) Archaeological sites

If an artefact on site is uncovered, work in the immediate vicinity shall be stopped immediately. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the Engineer of such discovery. The South African Heritage Resource Agency (SAHRA) is to be contacted, and a SAHRA-registered archaeological consultant may undertake the necessary work involved in confirming the find and advising on how it should be preserved or removed. Work may only resume once clearance is given in writing by the archaeologist. (Read with FIDIC condition of contract clause 4.24)

If a grave or midden is uncovered on site then all work in the immediate vicinity of the graves/middens shall be stopped, and the Engineer informed of the discovery. The South African Heritage Resource Agency and the South African Police Services (SAPS) should be contacted and in the case of graves, arrangements made for an undertaker to carry out exhumation and reburial. The undertaker will, together with SAHRA, be responsible for attempts to contact family of the deceased and for the place where the exhumed remains can be re-interred.

C1009 Rehabilitation

The Contractor shall be responsible for the re-establishment of grass within the road reserve boundaries for all areas disturbed during construction. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for, or from, construction has to be stored temporarily, and designated or instructed areas outside the road reserve. It also includes the area where site offices were erected which may require rehabilitation at the end of the contract. All construction material, including concrete slabs and barbecue (braai) areas shall be removed from the site on completion of the contract unless written approval from the relevant landowner demonstrates it is to be left in place.

Responsibility for re-establishment of vegetation shall extend until expiry of the defects notification period. However, SANRAL reserves the right to continue holding retention monies (or not releasing guarantees in lieu of retention) depending upon the state of cover at the end of the defects notification period. Such extension may continue until closure of the relevant quarry or borrow pit has been secured,

Rehabilitation of affected areas should be undertaken as early as possible when the relevant activities are done in order to reduce further environmental damage. All re-vegetation should be undertaken using indigenous vegetation. The standard of rehabilitation should be to the satisfaction of the Engineer and the relevant authorities. The Department of Minerals Resources will only issue closure certificates for borrow pits and quarries when they are satisfied with the rehabilitation undertaken. It should also be noted that in some cases there is a requirement for a final environmental audit covering the extent of the project.

C1010 RECORD KEEPING

The Engineer and the DEO will continuously monitor the Contractor's adherence to the approved impact prevention procedures and the DEO shall submit regular written reports to the ECO and to the Engineer at least once a month. The DEO will report the environmental compliance performance of the project at regular site meeting. The Engineer shall issue to the Contractor a notice of non-compliance whenever transgressions are observed. The DEO shall document the nature and magnitude of the non-compliance in a designated register, the action taken to discontinue the non-compliance, the action taken to mitigate its effects and the results of the actions. The non-compliance shall be documented and reported to the Engineer in the monthly report.

Copies of all authorisations shall be kept on site and made available for inspection by visiting officials from SANRAL, relevant authorities or internal/external auditors.

C1011 COMPLIANCE AND PENALTIES

The Contractor shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. This record shall be submitted with the monthly reports and an oral report given at the monthly site meetings.

Any non-compliance/omissions with the procedures in this EMP, environmental authorisations and the approved EMPr constitute a breach of the Conditions of Contract. Regulatory financial penalties imposed on SANRAL shall be passed onto the defaulting parties.

C1012 PROJECT SPECIFIC CONDITIONS

Notes to compiler:

1. The Contractor will be bound by the terms of this EMP regardless that some of them might not be part of an EMPr authorised by a competent authority.
2. It is intended that this standard EMP be the base document for the development of the draft of each EMPr that is to accompany each application to the relevant competent authority.
3. The EAP or ECO's identification of an activity requiring inclusion of mitigation or action in the EMPr should preferably use verbatim the relative text in this EMP. However, if the EAP can show that his/her version is an improvement then the Engineer in liaison with the relevant project manager should be aware of the amendment and approve the change.
4. It is preferable to improve this EMP than create different versions of the same mitigation. Proposals for improvement are encouraged.
5. This section of the EMP should be used by the EAP to record site specific activities and proposed mitigation measures. A graphic display of these will be a useful visual aid.
6. The EAP must ensure that this section is project-specific and complies with the relevant regulations.

PART D (SECTION D): STAKEHOLDER AND COMMUNITY LIAISON, AND TARGETED LABOUR AND TARGETED ENTERPRISES UTILISATION AND DEVELOPMENT

**PART D (SECTION D): STAKEHOLDER AND COMMUNITY LIAISON, AND TARGETED LABOUR
AND TARGETED ENTERPRISES UTILISATION AND DEVELOPMENT**

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D1001 SCOPE

Section D of the Specifications describes the structured engagement with project Stakeholders and affected Communities to the project. It also guides the selection and the enhanced utilisation and development of Targeted Labour and Targeted Enterprises.

Note to Tenderer;

This contract may not have a stand-alone PLC as required in terms of Item D1004 below. For that purpose, it will be incorporated into Employer's established PLC for the contract area (as per clause C3.4.4(e) of the Contract Data). The Contractor is obliged to participate in the PLC activities related or having a direct bearing on this contract and fulfil the Contractor's responsibilities as stipulated below.

Reference to CIDB grading shall apply to activities where CIDB registration is a requirement such as civil construction, electrical works and building works.

D1001.01 Employer's Fourteen Point Plan

The scope of the work described in this Section D of the Specifications shall be based on the Employer's 14 principles for project liaison, sub-contracting and labour sourcing in all SANRAL projects, which are stipulated below:

Establish project liaison committees (PLCs) in each project to create a platform for project liaison, works execution, sub-contracting and employment facilitation.

SANRAL to chair PLCs and provide secretarial support. Representation to comprise: SANRAL; contractor; consultant; business representatives; traditional representatives; provincial and municipal government representatives (not politicians); community representatives; and any other critical local stakeholder that may be deemed necessary by the PLC.

Project Liaison Officer (PLO) selection to be done under the auspices of the PLC.

Definition of a target area (sometimes referred to as a local area or traffic area) to be done under the auspices of the PLC.

Setup a database of contractors and suppliers (and consultants where relevant) to be done under the auspices of the PLC. The final database to be signed off by the PLC.

Setup of database of local labour for the target area to be done under the auspices of the PLC. The final list to be signed off by the PLC. An agreed system of labour selection from the database is to be agreed at the PLC.

Handover of signed-off databases for subcontracting and labour to contractor for open tender process and recruitment respectively done by the PLC.

Tender to be conducted by contractor using government principles (e.g. public opening of received bids, announcement of bidders and prices). Tabling of winning bidders in the PLC.

Appeals on the tender process to be escalated to SANRAL for an independent review.

Capability assessments of contractors and suppliers to be done under auspices of the PLC prior to tender stage, to identify any deficiencies in skills and experience. For labour, skills assessments are to be done at recruitment stage.

Contractor development support and training to be coordinated and conducted, ahead under the auspices of the PLC, prior to project commencement.

Identification of works areas that are deliverable by local service providers, and areas where capabilities are not available locally. All works areas where capabilities are not available locally shall be imported and locals will be given an opportunity to learn.

Formal contracting arrangements to be ensured for all projects.

Communication to be streamlined through the PLC and used to manage expectations of local business and communities.

These principles must be applied to facilitate better project level liaison with project Stakeholders and affected Communities. In addition, these principles serve to ensure communication and transparency in the execution of the Works and to facilitate inclusivity in the allocation of projects to benefit black business and local communities.

D1002 DEFINITIONS AND APPLICABLE LEGISLATION

The definitions and legislation listed below informs the requirements of this Section D of the Specifications for Stakeholder and Community Liaison, Targeted Labour employment and Targeted Enterprise subcontracting.

D1002.01 Definitions

Unless inconsistent with the context, in these Specifications, the following words, terms or expressions shall have the meanings hereby assigned to them:

Business Coaching

Business coaching establishes an atmosphere of mutual trust, respect, responsibility and accountability to motivate the emerging business owner and his team. To that end, the business coach must conduct an ethical and competent practice, based on appropriate professional experience and business knowledge.

Community³

South African Citizens, as defined in terms of the South African Citizenship Act, 1995 (Act 88 of 1995), who permanently reside within the Target and Project Area(s) of the project.

Contract Participation

A process by which the Employer implements Government's objectives by setting targets to enhance Targeted Labour and Targeted Enterprises' utilisation and development, which the Contractor shall achieve as a minimum.

Contract Participation Goal (CPG)⁴

- i) In the case of Targeted Enterprises, including manufacturers and suppliers, the amount equal to the value of goods, services and works for which the principal Contractor contracts to engage Targeted Enterprises in the performance of the Contract, expressed as a percentage of the tender value excluding escalation, contingency and value added tax associated with the targeting strategy that is identified in the Specification Data; or
- ii) In the case of Targeted Labour:
 - the sum of the wages and allowances, for which the principal Contractor, Sub-contractor or Targeted Enterprises contract to engage Targeted Labour in the performance of the Contract, expressed as a percentage of the contract amount associated with the targeting strategy that is identified in the Specification Data; or
 - the amount equal to the person days worked for which the principal Contractor, Subcontractors or Targeted Enterprises contract to engage Targeted Labour expressed as a percentage of the total person days worked associated with the targeting strategy that is identified in the Specification Data.

e) Contract Participation Goal Plan (CPG Plan)

The plan which outlines how the Contractor intends to achieve the various CPG targets as stated in the Contract Data and includes the detail of the Targeted Enterprise work programme, as well as the contents and value of the work packages. See Appendix 8 for the CPG Plan format.

³ CIDB Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Work Contracts, 31 October 2017, as adapted from SANS 10845, Suite for Construction Procurement, 2015.

⁴ Adapted from the CIDB Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Work Contracts, 31 October 2017, as adapted from SANS 10845-5:2015 and SANS 10845-8:20SANS 10845, Suite for Construction Procurement, 2015.

f) Contract Participation Performance (CPP)

The measure of the Contractor's progress in achieving the CPG.

g) Contract Skills Development Goals (CSDG)⁵

The number of hours or head count of skills development opportunities that a Contractor contracts to provide in relation to work directly related to the contract or order up to:

- i) completion in the case of a professional service contract;
- ii) the end of the service period in the case of a service contract; and
- iii) practical completion in the case of an engineering and construction works contract.

h) Designated Group⁶

Unless otherwise permissible in terms of procurement regulations or the PPPFA, "Designated Group" means:

- i) black designated groups;
- ii) black people;
- iii) women;
- iv) people with disabilities; or
- v) small enterprises, as defined in Section 1 of the National Small Enterprise Act, 1996 (Act No. 102 of 1996);

i) 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 help, advice and direction 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.

j) Labour

Persons:

- i) who are employed by the Contractor or a Subcontractor in the performance of the Contract; and
- ii) who resides in the Target and Project Area(s); and
- iii) whose monthly earnings are derived from hours worked for a fixed hourly rate which is adjusted from time to time by legislation (as a statutory minimum) and the Contractor's or Subcontractor's employment policies;
- iv) but who are not Targeted Labour as stated in the Specification Data.

The personnel employed by the suppliers of goods and material are not defined as "Labour" for the purposes of this Contract.

k) Mentoring

Mentoring is a professional relationship in which an experienced businessperson assists another by giving advice and imparting their knowledge in developing special skills and knowledge that will enhance the less experienced businessperson's professional and personal growth. The objective is to equip the emerging business owner and his team to improve their decision-making skills, being focussed and make positive progress quickly.

⁵ CIDB Standard for Developing Skills through Infrastructure Contracts, July 2020 (or latest version).

⁶ Preferential Procurement Regulations, 2017, Government Gazette N. 40553, 20 January 2017.

l) Mobilisation Period

The period from the Commencement Date, which includes the establishment of a presence in the Project Area for the purpose of developing a CPG Plan, developing a Training and Skills Development Programme, and subcontracting of the initial Targeted Enterprise subcontracts, up to just before the commencement of the Temporary Works (Access to Site), which period (duration) is stated in the Contract Data.

m) Project Area

The area through which the road under construction traverse or which is adjacent to and/or in proximity to project operations.

Based on market research and/or resources and skills audits, Project Areas other than defined above may be identified where preference would be given to Targeted Enterprises for subcontracting opportunities.

n) Project Liaison Committee (PLC)⁷

The Committee that represents the Employer, Engineer, Contractor, project Stakeholders and the Communities affected by the project. It is important to note that:

- i) elected and/or nominated political office bearers shall not be members of the PLC.
- ii) The Engineer and Contractor becomes members of the PLC on their appointment and participate in the Committee within the scope of their respective roles and responsibilities.

o) Project Liaison Officer (PLO)⁸

The person who acts as the liaison officer for the project. The PLO facilitates the selection of Targeted Labour to be employed by the Contractor and attends to the day to day project, Stakeholder, and Community matters that impact on the parties to the PLC.

p) Stakeholders⁹

Any Stakeholder listed in the Employer's Communication Policy who is affected by the Employer's operations in the Project Area(s) and/or who has an interest or concern in the project, either as a decision maker, participant or affected party and may include, amongst others, the following entities:

- i) Relevant Provincial departments;
- ii) Relevant Municipal departments;
- iii) Traditional authorities;
- iv) Community interest groups;
- v) Organised youth representation;
- vi) Organised women representation;
- vii) Organised disabled people representation;
- viii) Other structured community groups such as religion, education, farming, etc.
- ix) Local transport industry forums, e.g. Bus and taxi;
- x) Business sector forums;
- xi) Road user forums;
- xii) Environmental interest groups;
- xiii) Road safety interest groups;
- xiv) Any other recognised relevant and representative structure.

⁷ CIDB Standard for Minimum Requirements for Engaging Contractors and Sub-Contractors on construction Works Contracts, 31 October 2017.

⁸ CIDB Standard for Minimum Requirements for Engaging Contractors and Sub-Contractors on construction Works Contracts, 31 October 2017; CLO definition.

⁹ Derived from SANRAL communication Policy, March 2018.

q) Subcontractor

An entity appointed by the Contractor to execute a portion of the Works as defined in the Conditions of Contract.

r) Target Area

The geographic area defined in the Specification Data for Targeted Labour and which typically are:

- i) one or more Provinces;
- ii) one or more Metropolitan or District Municipalities;
- iii) one or more Local Municipalities;
- iv) one or more Wards that are predominantly located within the Project Area;
- v) one or more of the areas listed in the definition of Designated Groups.

s) Targeted Enterprise¹⁰

A Targeted Enterprise is 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; or
- ii) an EME or QSE which is at least 51% owned by black people who are youth; or
- iii) an EME or QSE which is at least 51% owned by black people who are women; or
- 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; or
- vi) an EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships; or
- vii) a cooperative which is at least 51% owned by black people; or
- viii) an EME or QSE

In addition, Targeted Enterprises must be:

- a. CIDB registered where applicable;
- b. tax compliant prior to award of the subcontract; and
- c. COIDA compliant prior to award of the subcontract.

t) Targeted Enterprise Construction Manager (TE Construction Manager)

The full-time staff member or sub-service provider appointed by the Contractor to develop, implement and monitor the training, development and support of Targeted Labour and Targeted Enterprises. The TE Construction Manager also mentors, guides and coaches the Targeted Enterprises.

u) Targeted Enterprise Procurement Coordinator (TE Procurement Coordinator)

The staff member or sub-service provider appointed by the Contractor to facilitate the procurement of Targeted Enterprise subcontractors.

v) Target Group

It is a group of entities and/or persons selected from the Designated Group as defined in the Preferential Procurement Policy Framework Act Regulations, 2017, and may include both Targeted Enterprises and Targeted Labour.

¹⁰ Preferential Procurement Regulations, 2017 Pertaining to the Preferential; Procurement Framework Act, Act no 5 of 2000.

w) Targeted Labour¹¹

Persons:

who are employed by the Contractor or a Subcontractor (including Targeted Enterprise Subcontractors) in the performance of the Contract; and whose monthly earnings are derived from hours worked for a fixed hourly rate which is adjusted from time to time by legislation (as a statutory minimum) and the Contractor's or Subcontractor's employment policies; and permanently reside in the Target Area(s) or who are recognized as being residents of the Target Area(s) based on identification and association with, and recognition by, the residents of the Target Area(s); and who are stated as being Targeted Labour in the Specification Data.

x) Trainee Targeted Enterprise

A Targeted Enterprise as defined in paragraph s) above but which is selected and subcontracted as a Trainee in terms of the Community Development Component associated with the project.

y) Training

Training refers to the process of teaching a Trainee, usually in a classroom or simulated work environment situation where principles, theory, knowledge and skills are taught, and demonstrations are given. Assignments are set to ensure that the Trainee can apply what has been taught. Training is done by a specialist in the subject, and who is qualified and accredited to train. The objective is to improve the competency of the Trainee.

z) Training and Skills Development Programme

The programme which outlines how the Contractor intends to achieve the CSDG targets, as per Part C3, Section D1010 and in line with the CIDB Standard for Developing Skills through Infrastructure Contracts, August 2013, by applying the various training methods described in Part C3, Section D1010.

aa) Contractor

Means the Contractor for the Design Build, Operations and Maintenance of the Toll System for the Operations and Maintenance of N1 South and R30 Toll Plazas on National Route N1 South and R30 (this contract) as defined in Part C1.

bb) Main Contractor

Means the Contractor for the Operations and Maintenance of N1 South and R30 Toll Plazas on National Route N1 South and R30 as defined in Part C1.

D1002.02 Applicable Legislation, Regulations and Standards

The following Acts, as amended from time to time, are predominant amongst those which apply to the Construction Industry and are listed here for reference purposes only:

- a) The Constitution of South Africa;
- b) Public Finance Management Act, 1999 (Act No. 1 of 1999);
- c) Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000) and its regulations;
- d) Construction Industry Development Board Act, 2000 (Act No. 38 of 2000);
- e) Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- f) The South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7 of 1998);
- g) The Skills Development Act, 1998 (Act No. 97 of 1998); and

¹¹ SANS 10845-7:2015, definition 2.12

- h) The amended Construction Sector Codes published in Notice 931 of 2017 of Government Gazette No. 41287 on 1 December 2017 by the Department of Trade and Industry.

The following Standards and Practice Notes, as amended from time to time, are applicable in terms of Targeted Labour and Targeted Enterprises and are used fully or portions thereof in this Section D of the Specifications:

- i) SANS 10845: 2015, Parts 5, 7 and 8; and
- ii) CIDB Standard for Contract Participation Goals for Targeted Enterprises and Labour through Construction Works Contracts, 31 October 2017.

D1003 TARGET GROUP PARTICIPATION

This part of Section D of the Specifications describes the Employer's requirements for the establishment of Target Group databases from which participants in the project will be selected for employment and subcontracting.

It also describes the measurement of, and penalties or bonus to be applied, with respect to the CPG as defined in the Specification Data.

D1003.01 Objectives of Target Group Participation

Amongst others, the key objectives of Government are to extend economic opportunities and build entrepreneurial capacity in rural and underdeveloped areas and townships by:

- a) optimising the utilisation of local resources in the Project Area;
- b) developing these local resources in the execution of the project; and
- c) maximising the amount of funds retained within the Project Area.

To give effect to these objectives the Contractor shall, over the full duration of the contract, from site establishment up to the completion of the works:

employ Targeted Labour from the Target Area(s) as stated in the Specification Data; and subcontract Targeted Enterprises as stated in the Specification Data; and give preference to Targeted Enterprises which are from rural and underdeveloped areas and townships within the Project Area(s).

D1003.02 Targeted Labour Database

A Targeted Labour Database shall be compiled by the PLO, under the auspices of the PLC and with the inputs of the Department of Labour, for the Target Area(s) as stated in the Specification Data. Once the Database has been signed off by the PLC, it shall be utilised to facilitate the selection of Targeted Labour as per the resources and skills required by the Contractor during the different construction stages.

The Targeted Labour Database shall be updated as and when required and as agreed with the PLC to reflect new employment seekers in the labour market.

Only Labour recruited from the Targeted Labour Database will be measured for Contract Participation Performance (CPP).

D1003.03 Targeted Enterprise Database

The Contractor shall, under the auspices of the PLC, compile a Targeted Enterprise Database from which Targeted Enterprises shall be subcontracted to construct portions of the work as described in this part of Section D of the Specifications.

Market Analysis and Resources and Skills Audit

Following a market analysis and a resources and skills audit of Targeted Enterprises in the Project Area, the Contractor shall apply the CPG Target Group criteria in the Specification Data to compile a **preliminary** Targeted Enterprise Database.

To inform the market analysis and resources and skills audit, the Contractor shall use the National Treasury's Central Supplier Database (CSD) which can be obtained from the Employer, as well as the CIDB contractor database.

Call for an Expression of Interest

In addition to the CSD and the CIDB database, the Contractor shall call for an expression of interest from Targeted Enterprises in the Project Area. The call for an expression of interest shall outline the anticipated eligibility, functionality, preference and compliance criteria, as well as the anticipated Works content.

Preliminary Targeted Enterprise Database

Based on the information obtained from the CSD, CIDB and the call for an expression of interest, the Contractor shall compile a Preliminary Targeted Enterprise Database.

The purposes of the Preliminary Targeted Enterprise Database are:

- i) for the Contractor to determine if the required resources and skills to execute the identified Targeted Enterprise work packages are available in the Project Area(s);
- ii) for the PLC to verify that Targeted Enterprises on the Preliminary Targeted Enterprise Database are authentic in terms of the Specification Data and other Database criteria agreed with the Contractor, and
- iii) for the PLC to alert prospective Targeted Enterprises that are not on the Preliminary Database of the opportunity.

Based on the market analysis and resources and skills audit, and the information obtained from the call for an expression of interest, additional criteria for the Preliminary Targeted Enterprise Database may be agreed between the Contractor and the PLC to ensure Target Group participation as intended by the Employer.

Final Targeted Enterprise Database

Once the Preliminary Targeted Enterprise Database has been accepted by the PLC, the Contractor shall invite Targeted Enterprises to tender for the Targeted Enterprise work packages. The Preliminary Targeted Enterprise Database shall remain a "live database" until the day of tender closure when a print-out of the CSD, based on the Database criteria, shall become the **Final** Targeted Enterprise Database for the tender and shall be signed off by the PLC.

Any Targeted Enterprise may respond to the invitation to tender, but preference shall be given to those Targeted Enterprises that satisfy the tender criteria.

The Targeted Enterprise Database shall be updated at every instance that a new subcontract tender or group of similar subcontract tenders are to be let for Targeted Enterprise work packages.

Targeted Enterprises within the Project Area shall be encouraged and assisted to register on the CSD and to become compliant with all other statutory requirements.

D1003.04 Contract Participation Goal (CPG)

The CPG is the monetary value of the participation targets set by the Employer for Targeted Labour and Targeted Enterprises expressed as a percentage of the Final Contract Value. The participation targets comprise of the following:

% Targeted Labour (TL_{Total%}) = the sum of the % Targeted Labour employed by the Contractor, Subcontractors and Targeted Enterprises.

% Targeted Enterprises (TE_{Total%}) = the % Targeted Enterprises, including the % Targeted Labour employed by Targeted Enterprises.

While the individual participation targets, i.e. TL_{Total%} and TE_{Total%} must be met, the total CPG (CPG_{Total}) is not the sum thereof, but are calculated as follows:

$$\text{CPG}_{\text{Total}} = \text{Final Contract Value} \times [\text{TL}_{\text{Total}\%} + (\text{TE}_{\text{Total}\%} - \text{Targeted Labour employed by the Targeted Enterprises})]$$

where

The Final Contract Value is the total value of the Contractor's final certified work measured at the date of issue of the Taking-Over Certificate. The Final Contract Value includes the value of all scheduled items (Cumulative amount of Pricing Schedule) and extra work, but excludes Community Development Work and any Contract Price Adjustment and adjustments for reduced payments, Rise and Fall, Retention Money, Penalties and VAT.

The Contractor shall strive to distribute and implement the participation targets and opportunities equally and continuously over the duration of the Contract. Where the Contractor deems such an equal and continuous distribution of the participation targets to be unachievable, he shall provide reasons and motivate it clearly in the preliminary CPG Plan submitted with the tender document.

The value of the Provisional Sum scheduled under item D10.05 will not necessarily make up the full value of the work required to meet the minimum target set by the Employer for Targeted Enterprises. It is the Contractor's responsibility to assess the work required to meet the targets and, if necessary, to engage additional Targeted Enterprises to execute work on the Contract as well to ensure that the minimum targets are achieved.

D1003.05 Contract Participation Performance (CPP)

The CPP is the monetary value of the Contractor's actual progress towards achievement of the CPG calculated as follows:

$$\begin{aligned} \text{CPP} &= \text{CPG}_{\text{Actual}} \\ &= \text{total monetary value (excluding VAT) of Targeted Labour employed by the Contractor} + \text{total monetary value (excluding VAT) of Targeted Enterprises contribution, including Targeted Labour employed by the Targeted Enterprises.} \end{aligned}$$

The Contractor's CPP shall be monitored monthly to determine the extent to which it is striving to achieve the CPG. The basis of monitoring shall be a comparison of the actual expenditure on Targeted Labour and Targeted Enterprises with the planned expenditure for Targeted Labour and Targeted Enterprises as per the accepted CPG Plan. Monthly returns, in the format required by the Employer, shall be submitted by the Contractor with each interim Payment Certificate.

To assist in the measurement of the CPP the Contractor shall include the envisaged CPG programme in its initial contract programme which is to be submitted within 28 days after the date of the commencement meeting. The CPG programme shall be updated in the accepted construction programme on acceptance of the CPG plan and with every subsequent revision.

As an incentive to encourage the Contractor to exceed the CPG, a bonus is offered, measured as follows:

CPP Bonus

The bonus = $0.05 \times (\text{CPP} - \text{CPG}_{\text{Total}})$

Any bonus due (or portion thereof) shall be calculated on the Final Contract Value (as defined in D1003.04). No bonus shall apply if either the Targeted Labour, Targeted Enterprises and/or any individual sub-targets for Target Groups are not reached.

CPP Penalties

Conversely, failure to reach either the CPG or any individual Target Group targets shall render the Contractor liable for a penalty as prescribed in clause 8.7 of the FIDIC Conditions of Contract unless there are compelling reasons why the target or sub-targets could not be achieved. Penalties for Targeted Labour and for Targeted Enterprises shall be calculated as follows:

Penalty Targeted Labour = $0.15 \times ((\text{TL} - \text{TG}) + \text{Sum}(\text{TL}_n - \text{TG}_n) - 1.2 \times \text{L dp})$

Where:

n	=	Each lowest order subgroup of Targeted Labour stipulated in the Specification Data.
TL	=	Monetary value of the Targeted Labour calculated at the percentage stipulated in the Specification Data applied to the Final Contract Value (as defined in D1003.04).
TG	=	Cumulative monetary value of Targeted Labour employed on the contract by the Contractor and all Subcontractors.
L dp	=	Cumulative monetary value of Black Disabled Persons employed on the Contract by the Contractor and all Subcontractors.
$(\text{TL}_n - \text{TG}_n)$	=	The monetary values calculated unless if any calculated value is negative, then it shall be a zero value.

Penalty Targeted Enterprises = $0.15 \times ((\text{TE} - \text{TGE}) + \text{Sum}(\text{TE}_n - \text{TGE}_n) - 1.2 \times \text{TE mv} - 1.2 \times \text{TE dp})$

Where:

n	=	Each lowest order subgroup of Targeted Enterprise stipulated in the Contract Data.
TE	=	Monetary value (excluding VAT) of Targeted Enterprises calculated at the percentage stipulated in the Specification Data applied to the Final Contract Value (as defined in D1003.04)
TGE	=	Cumulative monetary value (excluding VAT) by Targeted Enterprises subcontracted to the contract by the Contractor and 50% of the cumulative monetary value (excluding VAT) by Targeted Enterprise suppliers of goods and/or services.
TE mv	=	Cumulative monetary value (excluding VAT) by Targeted Enterprises being majority owned by black Military Veterans, subcontracted to the Contract by the Contractor.
TE dp	=	Cumulative monetary value (excluding VAT) by Targeted Enterprises being majority owned by black Disabled Persons, subcontracted to the Contract by the Contractor.
$(\text{TE}_n - \text{TGE}_n)$	=	The monetary values calculated unless if any calculated value is negative, then it shall be a zero value.

The total Penalty value shall be the sum of the Targeted Labour and Targeted Enterprises Penalty values unless the total Penalty value is negative then it shall be a zero value.

Interim penalty valuations, based on the accepted CPG Plan, should be calculated to interim Payment Certificate values (excluding VAT) to establish the anticipated outcome, and to plan corrective actions for non-adherence to the CPG Plan.

Interim penalty valuations shall not be applied to the interim certificate value, but the Contractor shall by notice be placed on terms to correct as prescribed in subclause 15.1 of the FIDIC Conditions of Contract. Failure to correct will lead to an Employer's Claim in terms of subclause 2.5 of the FIDIC Conditions of Contract.

Any Penalty payable shall be calculated on, and applied to, the Final Contract Value (as defined in D1003.04).

D1003.06 Accredited Registration

The CPP for Targeted Enterprises shall only be accepted if the respective Targeted Enterprises comply fully with the definition of a Targeted Enterprise, and documentary evidence to support the claim lodged with the Engineer before the work, goods or service may be considered as having been performed by a Targeted Enterprise. The responsibility for producing evidence of the respective documentation shall rest with the Contractor.

The Contractor shall assume responsibility for the compilation and maintenance of comprehensive records detailing each Targeted Enterprise's progress.

D1003.07 Contractor's Responsibility

In terms of the Conditions of Contract, all Targeted Labour recruitment and employment and Targeted Enterprises subcontracting, as well as its associated risks, shall remain the sole responsibility of the Contractor.

The Employer's CPG requirements, and the compulsory utilisation of project specific Targeted Labour and Targeted Enterprises databases, shall not relieve the Contractor of its obligations under the Contract and shall not attract any liability to the Employer.

D1004 STAKEHOLDER AND COMMUNITY LIAISON AND SOCIAL FACILITATION

This part of Section D of the Specifications describes the Employer's requirements with respect to Stakeholder and Community liaison and social facilitation. It also describes the roles and responsibilities of the Project Liaison Committee (PLC) and the Project Liaison Officer (PLO).

D1004.01 Purpose of Stakeholder and Community Liaison

To give effect to the need for transparency and inclusion in the process of delivering services, the Contractor shall liaise with the project Stakeholders and affected Communities for the duration of the Contract's life cycle. This shall be achieved through structured engagement with the PLC which was established by the Employer for this purpose.

SANRAL Project Liaison Committee Guidelines, is included in Part C4 of Volume 4 of the Contract for ease of reference.

D1004.02 Contractor's Responsibilities in Stakeholder and Community Liaison

The Contractor shall have the following general responsibilities in the Stakeholder and Community liaison process:

- a) Stakeholder and Community engagement shall be executed based on the Employer's social facilitation principles and processes described in this Section D of the Specifications.
- b) The Contractor shall make use of the PLC as the official communication channel and utilise it to facilitate harmonious relationships, with project Stakeholders and affected Communities.

- c) PLC members, to which the Contractor is a party, shall be held accountable to disseminate project information discussed at the PLC meetings to the entities that they represent.
- d) As a party to the PLC, the Contractor shall delegate from among his site personnel a responsible person to participate in the PLC and its business.
- e) The Contractor shall provide the PLC with any assistance and information that it requires to execute its duties, which amongst others, include training, providing a meeting venue on site, provide Target Group reports, etc.

It is important to note that in terms of the Conditions of Contract, all Targeted Labour recruitment and employment, and Targeted Enterprises' selection and sub-contracting, as well as its associated risks, shall remain the sole responsibility of the Contractor.

The Contractor shall take cognisance of the Employer's "Checklist for PLCs and PLOs", attached as Appendix 10, which shall be provided to the Contractor by the Engineer. While the Employer holds its own staff accountable for the deliverables listed in the checklist, the Contractor and the Engineer shall assist the Employer in accomplishing the deliverables.

The Employer's assistance in establishing a PLC and providing a PLO to the Contractor, shall not relieve the Contractor of its obligations under the Contract and shall not attract any liability to the Employer.

D1004.03 Project Liaison Committee (PLC)

The PLC is the official communication channel through which the Employer, Engineer, Contractor and project Stakeholders and affected Communities communicates on project matters. This platform is also used to communicate the impact that the project has or may have on project Stakeholders and the affected Communities. This part of Section D of the Specifications describes the general processes pertaining to the PLC, as well as its role and responsibilities.

Establishment of the PLC

A PLC has either been established prior to commencement of the Contract or shall be established as soon as possible by the Employer. The PLC consists of the Employer, Engineer, Contractor and representatives of project Stakeholders and affected Communities.

PLC meetings shall be chaired by the Employer which will typically be the Employer's Project Manager or a staff member with decision-making delegation. The Engineer's staff shall provide a secretarial service to take minutes of PLC meetings.

Secretarial support other than taking minutes at PLC meetings shall be provided by the PLO.

Duties of the PLC

The SANRAL Project Liaison Committee Guidelines requires of the PLC to execute specific duties during the design and construction phases of the project.

In the execution of their duties, members of the PLC shall adhere to the undertakings listed below and the Contractor shall inform the Engineer of any transgression of these undertakings. Members of the PLC shall:

- 1) have no private or business interests in any of the subcontract tenders tabled to the PLC or considered in this contract.
- 2) shall recuse themselves from discussions that deal with a subcontract tender if any other member is of the opinion that a member's participation in deliberations, which is rightly or wrongly construed as improper or irregular, may lead to the award of a subcontract to a tenderer known to the member or to the member itself.
- 3) recuse themselves from the operations of the PLC following a situation as described in paragraph 2) above and shall cease to be a PLC member for this contract.

- 4) during the process neither deliberately favoured nor prejudiced a person or tenderer, as intended or contemplated in treasury Regulation 16, A8.3 (a), (b) & (c).
- 5) accept that all information, documentation and decisions regarding any matter serving before the PLC are confidential and undertake not to communicate decisions or discussions of PLC meetings to external or internal parties unless so directed and approved by the Project Manager

Some of the PLC's duties during the design and construction stages overlap and hence, for completeness, a description of the PLC's duties in both project stages is provided here.

The PLC shall execute the following duties:

Project Design Stage

- a. Meet as often as required to discuss and resolve the project's design stage matters which are of interest or concern to the parties to the PLC.
- b. Peruse the SANRAL Project Liaison Committee Guidelines and agree on the duties of, and procedures to be followed by, the PLC to fulfil its duties.
Note: The principles of the Guidelines shall not be amended, but duties and procedures may be altered to be project specific and to improve the functionality of the PLC.
- c. Act in accordance to the agreed terms of reference for the PLC.
- d. Inform the Employer of any training that project Stakeholder and affected Community representatives of the PLC require to execute their duties.
- e. Assist the Engineer to source suitable candidates, based on the Employer's qualifying criteria, for the position of PLO.
- f. Observe and verify that the qualifying criteria and procedures applied by the Engineer to select and employ the PLO were executed in a fair and transparent manner and were within the prescripts of the relevant labour legislation and regulations.
- g. Assist the Engineer to identify the project's Target and Project Area(s), from which Targeted Labour and Targeted Enterprises could be employed and subcontracted respectively.
- h. Assist the Engineer to identify the project's Target Groups for inclusion in the Tender Documents and sign off the identified Target Groups.

Project Construction Stage

- a. Meet formally prior to the Employer's monthly site meeting, or as may be required, to discuss and resolve project matters, which are of interest or concern to the parties to the PLC.
- b. Assist the Contractor to establish the selection criteria and process to employ Targeted Labour.
- c. Assist the Contractor to identify the eligibility, functionality, preference and compliance criteria to select and subcontract Targeted Enterprises.
- d. Sign off the Databases compiled by the PLO and the Contractor from which Targeted Labour will be selected and employed and Targeted Enterprises will be subcontracted respectively.
- e. Verify that the criteria and methodologies applied by the Contractor to select and employ Targeted Labour and subcontract Targeted Enterprises are executed in a fair and transparent manner and are within Government legislation and regulations and the Employer's Policies.
- f. Verify that the conditions of employment and the conditions of subcontracting, in the employment of Targeted Labour and subcontracting of Targeted Enterprises are applied in a fair and transparent manner and according to the Employer's employment and subcontracting requirements.
- g. Make recommendations to the Contractor on the training needs, eligibility criteria and selection criteria for the provision of training to Targeted Labour, Targeted Enterprises, Designated Groups, project Stakeholders and the affected Communities.

- h. Verify that training and skills development programmes, which the Contractor committed to, are implemented and executed as approved and intended.
- i. Inform the entities whom they represent of any project matters which the respective parties to the PLC wishes to communicate with each other.
- j. Inform the entities whom they represent of any project matters that are impacting or may impact, either positively or negatively, on the respective parties to the PLC.
- k. Inform the Contractor of Stakeholder and/or Community requests and/or needs which could possibly be addressed within the project's Scope of Work.
- l. Inform the Employer, Engineer and Contractor of any road safety concerns within the Project Area(s) and advise them of possible mitigating measures and/or road safety programs that will be most suitable for acceptance by the affected Communities to promote road safety.
- m. Agree on a dispute resolution mechanism to resolve any disputes that may arise between the parties to the PLC.
- n. Assist parties to the PLC to liaise with their respective entities to resolve any disputes amongst the parties which may occur due to the project.

D1004.04 Project Liaison Officer (PLO)

The PLO facilitates the selection and employment of Targeted Labour and coordinates communication between the members of the PLC to address the day to day project, Stakeholder, and Community matters that impact on the parties represented in the PLC.

a) Appointment of the PLO

The PLO is appointed by the Engineer under the auspices of the PLC and in accordance to the Employer's criteria for a PLO.

Although the PLO predominantly provides social facilitation support to the Contractor, the PLO shall report to the Engineer or his delegated representative, e.g. the Resident Engineer.

b) Duties of the PLO

The SANRAL Project Liaison Committee Guidelines requires of the PLO to execute specific duties during the design and construction phases of the project. These duties include the following:

- (i) Except for taking the minutes of PLC meetings, which is a duty of the Engineer, the PLO shall provide a secretariat function to the PLC which includes, amongst others, the following:
 - Schedule meetings;
 - Compile meeting agendas;
 - Compile document packages for meetings;
 - Distribute minutes of meetings;
 - Assist representatives of project Stakeholders and affected Community to formulate their communication to the PLC in writing;
 - Distribute written communication between the parties to the PLC;
 - Keep records of all PLC correspondence and documentation; and
 - Provide any other reasonable secretariat function required by the PLC.
- (ii) Attend all PLC meetings to report on the day to day project, Stakeholder and Community matters that impact on the parties to the PLC.
- (iii) Attend all monthly project site meetings to report on the day to day project, Stakeholder and Community matters that impact on the parties to the PLC.
- (iv) Attend any other meetings related to the project and in which any of the project Stakeholders, affected Communities, Targeted Labour and Targeted Enterprises are involved.
- (v) Maintain a full-time presence on site to monitor and address the day to day project, Stakeholder and Community matters that impact on the parties to the PLC.

- (vi) Maintain a full-time presence on site to assist the parties to the PLC in the day to day liaison with each other.
- (vii) Assist the Engineer and the Contractor to disseminate information to PLC members such as:
 - the basic Scope of the Works and how it will affect the Community;
 - the project programme and regular progress updates;
 - the anticipated employment and subcontracting opportunities;
 - the project programme as it pertains to the employment of Targeted Labour and subcontracting of Targeted Enterprises;
 - Occupational Health and Safety precautions; and
 - any other information relevant to project Stakeholders and the affected Communities.
- (viii) Be well acquainted with the contractual requirements as it pertains to Targeted Labour employment and training.
- (ix) Assist the PLC to establish and agree the criteria to be followed when selecting and employing Targeted Labour.
- (x) Assist the Engineer and the Contractor in their resources and skills audits by providing a coordinating function between the Engineer, the Contractor, project Stakeholders, and the affected Communities.
- (xi) Ensure that Targeted Labour databases are compiled based on the agreed eligibility and selection criteria and that it is updated as and when required.
- (xii) Coordinate the selection and employment of Targeted Labour based on the agreed eligibility and selection criteria and based on the Contractor's labour and skills requirements.
- (xiii) Ensure that each Targeted Labourer enters into an employment contract which adheres to current and relevant Labour legislation.
- (xiv) Ensure that each Targeted Labourer understands the conditions of his/her employment contract with an emphasis on the employment start date, end date and wages payable.
- (xv) Identify and inform the Contractor of any relevant training required by the Targeted Labour.
- (xvi) Attend all disciplinary proceedings to ensure that hearings are fair and conducted in accordance to the current and relevant Labour legislation.
- (xvii) Be proactive in identifying project Stakeholder and affected Communities' (including Targeted Labour and/or Targeted Enterprise Subcontractor), requirements, disputes, unrest, strikes, etc. and bring it to the attention of the PLC.
- (xviii) Assist the parties to the PLC to resolve any disputes, which may occur due to the project.
- (xix) Other than the document records to be kept as mentioned above, keep record of all other documents and processes pertaining to the employment of Targeted Labour.
- (xx) Produce and submit a monthly report to the PLC on PLC and other meetings attended by the PLO, as well as on Targeted Labour employment, and project Stakeholder, affected Community and any other project matters that impact on the parties to the PLC.

D1005 MOBILISATION PERIOD

The Mobilisation Period starts at the Commencement Date, which includes the establishment of a presence in the Project Area for the purpose of developing a CPG Plan, developing a Training and Skills Development Programme and subcontracting of the initial Targeted Enterprise subcontracts and ends just prior to the Commencement of the Temporary Works (Access to Site). Its duration is defined in the Contract Data.

Access to site for the Commencement of the Temporary Works shall only be issued once the CPG Plan has been accepted and the initial Targeted Enterprise subcontracts have been let.

D1005.01 Purpose of the Mobilisation Period

The Mobilisation Period was introduced as an aid to the Contractor to:

- a) become acquainted with the Stakeholder and Community liaison requirements of the Contract as prescribed in this Section D;
- b) allow for the Contractor's planning to obtain the CPG as required in the Specification Data;
- c) allow for the Contractor's planning to obtain the Contract Skills Development Goals (CSDG) as required in this Section D, clause D1010,
- d) follow the processes prescribed in this Section D to employ the initially required Targeted Labour and enter into the first subcontracts with Targeted Enterprises; and
- e) provide the training required by Targeted Labour and Targeted Enterprises to commence with the construction of the Works.

D1005.02 Duties of the Contractor

During the Mobilisation Period, the Contractor shall execute the following duties:

Compile a CPG Plan

The Contractor shall compile an acceptable CPG Plan, which sets out how he intends to achieve the various CPG targets as stated in the Specification Data. The Contractor shall distribute and implement the participation targets and Targeted Enterprise work opportunities equally and continuously over the duration of the Contract, i.e. from site establishment to completion of the Works. Where the Contractor deems such an equal and continuous distribution of the participation targets to be unachievable, he shall provide reasons and motivate it clearly in the CPG Plan.

The CPG Plan shall provide the detail of the Targeted Enterprise work programme, as well as the contents and value of the work packages. See Appendix 8 for the CPG Plan format.

The Targeted Enterprise work programme shall be in line with the Works Programme and once the CPG Plan has been accepted by the Engineer, it shall be captured in the Works Programme.

The Mobilisation Period shall only be concluded once the CPG Plan has been accepted by, and all the duties above have been executed to the satisfaction of, the Engineer after consultation with the Employer.

The Employer and the Engineer shall monitor progress and adherence to the CPG Plan in the same manner as they would monitor the Works Programme.

Compile a Training and Skills Development Plan

The Contractor shall compile an acceptable Training and Skills Development Plan, which sets out how he intends to achieve the various CSDG targets as per the Contract Documentation, Part C3, Section D1010 and in line with the CIDB Standard for Developing Skills through Infrastructure Contracts August 2013.

The Training and Skills Development Plan shall provide the detail of the training methods selected for implementation as described in clause D1010.05 and shall include an execution programme for acceptance by the Engineer, which shall demonstrate its correlation with the Works Programme.

The Mobilisation Period shall only be concluded once the Training and Skills Development Plan has been accepted by the Engineer after consultation with the Employer.

The Employer and the Engineer shall monitor progress and adherence to the Training and Skills Development Plan in the same manner as they would monitor the Works Programme.

Subcontracting of Targeted Enterprises

During the Mobilisation Period the Contractor shall execute the following duties w.r.t. the subcontracting of Targeted Enterprises:

- i) Liaise with the Employer, Engineer and PLC to structure and finalise the work packages to be subcontracted to Targeted Enterprises.
- ii) Liaise with the Employer, Engineer and PLC to determine the Targeted Enterprise Database criteria for the subcontracting of Targeted Enterprises.
- iii) Compile the Targeted Enterprise Database(s) for sign off by the PLC.
- iv) Undertake a skills audit of the Targeted Enterprises which appear on the Targeted Enterprise Database(s).
- v) Based on the skills audit, and in consultation with the PLC, identify the pre-tender training requirements of Targeted Enterprises.
- vi) Provide an opportunity to Targeted Enterprises to receive the identified pre-tender training.
- vii) Tender the initial work packages and subcontract the first group of Targeted Enterprises for commencement of the Works.

Employment of Targeted Labour

During the Mobilisation Period the Contractor shall execute the following duties w.r.t. the employment of Targeted Labour:

- i) Liaise with the PLC and the PLO on the compiled Targeted Labour Database(s) for the employment of Targeted Labour.
- ii) Undertake a skills audit of the Targeted Labour which appear on the Targeted Labour Database(s).
- iii) Based on the skills audit, and in consultation with the PLC, identify the training requirements of Targeted Labour to enhance their employability.
- iv) Provide an opportunity to eligible Targeted Labour to receive the identified training to enhance their employability.
- v) Select and appoint the first group of Targeted Labour for commencement of the Works.

Training Requirements

The Contractor will not be able to address all the training requirements identified for Targeted Labour and Targeted Enterprises during the Mobilisation Period and it is accepted that training will take place over the duration of the Contract.

The training provided to both Targeted Enterprises and Targeted Labour during the Mobilisation Period shall focus on the activities and/or skills required for the commencement of the Works and shall include the mandatory Occupational Health and Safety training.

D1006 THE ROLE OF THE ENGINEER

The role and responsibilities of the Engineer are clearly described in the Conditions of Contract. This section elaborates on the Engineer's duties with respect to Stakeholder and Community Liaison, Targeted Labour Employment and Targeted Enterprise subcontracting.

Together with the Employer and the Contractor, the Engineer is also a party to the PLC and hence, is co-responsible for successful project Stakeholder and Community liaison.

In addition, the Engineer shall play a supporting role to the Contractor in the successful implementation of the Employer's Targeted Labour and Targeted Enterprise utilisation and development goals.

D1006.01 Duties During the Design Phase

During the design phase, the Engineer undertook a preliminary skills and resources audit of the Targeted Enterprises in the Project Area. The purpose of the audit was to:

- obtain an understanding of the Community's skills, both academically and occupationally;
- obtain an understanding of the resources within the Community, i.e. Targeted Enterprise availability and capabilities;
- establish the CPG targets for Targeted Enterprises and Targeted Labour for inclusion of the Specification Data; and
- identify tender and other relevant training to be offered to Targeted Enterprises and Targeted Labour to prepare them for tendering and to enhance their employability.

D1006.02 Duties During the Construction Phase

To implement the Employer's Targeted Labour and Targeted Enterprise goals, the Engineer shall provide support to the Contractor by executing the following duties:

Targeted Enterprise Subcontracting

- i) Make recommendations to the Contractor in identifying and structuring the work packages to be subcontracted to Targeted Enterprises and approve the scope and extent of the work packages.
- ii) Verify that the Targeted Enterprise Database(s) has been updated prior to the letting of every new set of subcontracts.
- iii) 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 Targeted Enterprises are executed in a fair and transparent manner and are within the Employer's and Government's Supply Chain Management Policies.
- v) Verify that subcontract agreements and 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, the termination of contracts, etc. are applied in a fair and transparent manner and within the prescripts of the agreement.

Targeted Labour Employment

- i) Verify that the Labour Database(s) from which Targeted Labour will be employed is updated prior to every new Labour intake.
- ii) 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.
- iii) 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.

Target Group Training Requirements

- i) Make recommendations to the Contractor in identifying the training requirements of Targeted Labour and Targeted Enterprises and approve the proposed training programmes.
- ii) Monitor that training programmes and support programmes, which the Contractor committed to, are implemented and executed as intended.

D1007 TENDER PROCESS FOR TARGETED ENTERPRISES

While the Contractor may utilise service providers, sub-contractors and suppliers of its choice and selected via its own internal processes, for the subcontracting of Targeted Enterprises based on the Employer's Contract Participation Goals, the Contractor shall follow the prescripts of this Section D.

D1007.01 Targeted Enterprise (TE) Procurement Coordinator

The Contractor shall appoint a TE Procurement Coordinator to facilitate the subcontracting of work to Targeted Enterprises as defined in the Specification Data. For Contracts with a value of less than R 100 million the Contractor may appoint a TE Procurement Coordinator from its site staff. For Contracts with a value of more than R 100 million the Contractor shall employ or subcontract a dedicated TE Procurement Coordinator, whose sole responsibility will be the management of Targeted Enterprise procurement and sub-contracting matters.

The TE Procurement Coordinator shall be knowledgeable of, and have experience in, the management of road construction and ancillary works, National Treasury supply chain management legislation and regulations, and stakeholder relations management.

Under the auspices of the PLC, the TE Procurement Coordinator shall conduct the tender processes and procedures for Targeted Enterprise subcontracting as prescribed in this Section D and shall adhere to the Employer's and Government's Supply Chain Management Policies and requirements as set out in the Contract Documentation. Part C3, Section D.

D1007.02 Procedures for Targeted Enterprises Subcontracting

The Contractor shall utilise the Employer's proforma tender and contract document for Targeted Enterprise subcontracting. The proforma subcontract document is attached as Appendix 11 and an electronic version will be provided to the Contractor on award.

The identification and application of the eligibility and functionality criteria, and conducting the tender processes and procedures for subcontracting include, amongst others, the following tasks:

Tender Preparation

Compile preliminary list of subcontracting work packages

Based on the Specification Data and the Scope of the Works, the Contractor shall compile a preliminary list of the work packages (scope of work and number of packages) that are anticipated to be subcontracted to Targeted Enterprises.

The Contractor shall refer to the construction activities that have been identified as being suitable for construction by Targeted Enterprises as listed in Section D1009 of these Project Specifications, and to any other construction activities which are required to execute the Works in terms of this Contract, to determine how to unbundle or package subcontracts for Targeted Enterprises.

Conduct a market analysis and resources and skills audit

Based on the preliminary list of work packages, the Contractor shall conduct a market analysis and resources and skills audits to determine the availability of the required resources and skills in the Project Area to execute the anticipated subcontractor work packages. The Contractor shall consult the following databases as a minimum:

- a. Construction Industry Development Board (CIDB)'s contractor database (not applicable to suppliers and non-construction services).
- b. National Treasury's Central Supplier Database (CSD) to be obtained from the Employer.

Call for an expression of interest

In addition to consulting the CIDB contractor database and National Treasury's CSD, the Contractor shall call for an expression of interest, which shall be published in newspapers and at locations as agreed by the PLC.

For each group of work packages, the call for an expression of interest shall outline:

- evaluation and selection criteria such as eligibility, preference and functionality.
- compliance requirements such as CSD and CIDB registration, tax clearance and COID.
- the anticipated scope of the works to be undertaken.

Establish a Targeted Enterprise Helpdesk

Other than informing the Contractor's market analysis and resources and skills audits, the purpose of the call for an expression of interest is to alert Targeted Enterprises of the subcontracting opportunities and inform them of the anticipated eligibility, preference and functionality criteria, as well as of the compliance requirements.

The Contractor shall enhance the readiness of Targeted Enterprises to participate in the subcontracting opportunities by establishing a helpdesk at a suitable and easily accessible location in the Project Area.

The Contractor shall provide guidance to Targeted Enterprises in getting their statutory requirements in order in anticipation of the subcontracting opportunities. The helpdesk shall assist with, or provide guidance in, registering with the CSD and the CIDB, obtaining tax clearance and COID compliance and any other relevant qualifying requirements.

Compile Preliminary Targeted Enterprise Database

Based on the CPG targets listed in the Specification Data and the information obtained from the activities described in paragraphs ii) and iii) above, the Contractor shall compile a Preliminary Targeted Enterprise Database.

In compiling the preliminary Targeted Enterprise Database, the Contractor must bear in mind that the bench-mark for an adequate number of tenderers to ensure a competitive tender process is ten (10) tenderers that are able to achieve the functionality threshold during the tender evaluation.

Identify Targeted Enterprises, Target Groups and Project Area(s)

Based on the CPG targets listed in the Specification Data and the Preliminary Targeted Enterprise Database, the Contractor shall identify the:

- a. Targeted Enterprises (CIDB grades and types); and
- b. Designated Groups (woman, youth, etc.) which are anticipated to benefit from the subcontracting opportunities; and
- c. Project Area(s) from which Targeted Enterprises will be given preference for subcontracting opportunities.

Compile a Contract Participation Goal (CPG) Plan

The Contractor shall utilise all the information gathered from the activities described in the paragraphs above to compile an acceptable CPG Plan. The plan shall contain:

- a. a list of work packages (scope of work and number of packages) to be subcontracted to Targeted Enterprises;
- b. procurement, award and execution dates for the work packages, distributed over the duration of the Works Contract (from site

- establishment to completion of the Works) to ensure continuous work opportunities;
- c. the preliminary Targeted Enterprise Database(s) for each work package;
- d. the Targeted Enterprises (CIDB grades and types) and Designated Groups (woman, youth, etc.) which are to benefit from the subcontracting opportunities;
- e. the Project Area(s) from which Targeted Enterprises will be given preference for subcontracting opportunities; and
- f. the tender evaluation and selection criteria for the respective work packages.

Acceptance of the CPG Plan

The Contractor shall submit the CPG Plan to the Engineer for acceptance after which it shall be tabled to the PLC for their information.

The Contractor shall ensure that the tender requirements and the outcome of different tendering scenarios are explained to the PLC, specifically with respect to the outcomes of evaluating:

- a. Eligibility criteria;
- b. Functionality structuring and scenarios;
- c. Price and Preference;
- d. Compliance requirements; and
- e. Negotiation processes (if applicable).

If required, the Contractor shall make amendments to the CPG Plan based on the Engineer's instructions.

Compile tender documents

The Contractor shall compile the tender documents for each Targeted Enterprise subcontract work package and shall utilise the Employer's proforma document for Targeted Enterprise subcontracting (see Appendix 11).

In compiling the subcontract tender documents, the Contractor shall include in each tender document relevant Conditions of Tender and the FIDIC subcontract agreement. The Contractor shall compile each subcontract tender document in a manner that facilitates the achievement of all objectives and principles pertaining to the development of the Targeted Enterprises.

The draft subcontract tender documents shall be approved by the Engineer before letting the tender.

Tender Process

Advertise the subcontract packages

The Contractor shall advertise and invite tenders from Targeted Enterprises for the respective subcontract packages. Advertisements shall be placed in local newspapers, on community notice boards, on SANRAL's electronic supply development desk portal (<https://sanralesdd.co.za>), and any other place or medium as agreed with the PLC.

If the Employer has a pro-forma Tender Notice available, the Contractor shall use this document.

Conduct a tender briefing and tender training session

For each group of subcontract packages, the Contractor shall conduct a compulsory briefing session to explain the tender process, the evaluation and selection criteria and the scope of the works to the Targeted Enterprises.

An Attendance Register shall be completed by all attendees and Minutes shall be taken during the briefing session. The Minutes of the briefing session shall be distributed to all attendees as an Addendum to the Tender Documents.

The Contractor shall conduct a “how to complete a tender document” training session as a component of the tender briefing to interested Targeted Enterprises. The level of detail and hence the duration of the training session shall be informed by the findings of the resources and skills audit conducted during the Tender Preparation Phase.

The Contractor shall engage with the Employer’s Regional Transformation Officer on the Employer’s SMME Pre-tender Training and Development Programme and utilise this programme if it is available at the time in the Project Area. The Regional Transformation Officer’s contact details are provided in the Specification Data:

Notes of this training session shall be distributed to all attendees of the briefing session as an Addendum to the Tender Documents, irrespective if they have attended the training session or not.

A separate Attendance Register shall be completed for the training session for future reference.

Minimum tender submission documents

It shall be a condition of tender that Targeted Enterprises include in their tender submissions the following documentation (if applicable, based on the subcontract type e.g. construction, supply or services):

- a. Proof of the Tenderer’s B-BBEE contributor level.
- b. Proof that the Tenderer is an EME or QSE entity.
- c. Proof that the Tenderer is registered on National Treasury’s CSD.
- d. Proof of the Tenderer’s locality (address registered with the CIPC).
- e. Proof that the Tenderer is registered with the CIDB in the required grading and class (not applicable to suppliers).
- f. Proof that the Tenderer is compliant with the COID Act.
- g. Proof that the Tenderer is tax compliant.

Tender closure and opening of tenders

Tenders for the subcontract packages shall close at a stipulated time and date. Tenders shall be submitted to the Contractor in the format and at the address prescribed by the Contractor in the subcontract Tender Data.

The tender opening shall be conducted by the Contractor who shall publicly announce and record the names of all bidders and their tender prices.

Finalise Targeted Enterprise Database

The purposes of the preliminary Targeted Enterprise Database are described in paragraph (a)(v) of the Tender Preparation phase above of which one is to alert Targeted Enterprises to assess their readiness to participate in the project’s subcontractor opportunities.

The period between the Contractor’s call for an expression of interest and the date of closure of the relevant subcontract tender allows for prospective Tenderers to become compliant to the database criteria. The preliminary database is thus a “live” database until the date of tender closure.

On the date of tender closure, the Contractor shall request the Employer to print out a list from National Treasury’s CSD, of entities that adheres to the Targeted Enterprise Database criteria. This list shall become the Final Targeted Enterprise Database for relevant subcontract tender and shall be submitted to the PLC for sign-off.

Tender Evaluation

The Contractor shall evaluate the tenders and it shall be a condition of tender that tenders will only be accepted from Targeted Enterprises that fully comply with the definition of a Targeted Enterprise as described in this Section D.

The Contractor shall evaluate the tenders based on (1) Eligibility, (2) Functionality, (3) Price and Preference, and (4) Compliance.

Stage 1 – Eligibility

Tenderers shall be checked for their eligibility to tender for the advertised subcontract packages based on the following eligibility criteria:

Proof that the Tenderer is registered with the CIDB (if applicable).

Proof that the Tenderer is registered on National Treasury's CSD

Proof that the Tenderer is registered with the CIPC.

The Tenderer's B-BBEE contributor level; and

Proof that the Tenderer is an EME or a QSE.

Proof that the Tenderer falls within one or more of the designated groups as per the Specification Data (if applicable).

Eligible Tenderers shall be further evaluated against the functionality criteria.

Stage 2 – Functionality

No Targeted Enterprise may be prohibited from responding to the invitation to tender, however, preference shall be given to those Targeted Enterprises that adheres to the tender criteria which, amongst others, shall be measured by means of a functionality evaluation.

To ensure Targeted Enterprise participation as it is intended by the Employer and as defined in the Specification Data, Functionality shall be scored based on the type of subcontract package, e.g. construction or the supply of goods or services and at least three (3) or more of the criteria listed below shall be applied.

The points allocated for the listed criteria shall be clearly demonstrated to tenderers as a matrix in the tender document. The functionality matrixes provided in the Employer's proforma document for Targeted Enterprise subcontracting (Appendix 11) shall be applied to evaluate the functionality of Tenderers.

Tenderers must score a minimum of 75% for functionality and Tenderers that do not obtain the threshold shall not be evaluated further.

a. Locality

For lower CIDB grade packages, the points allocated for Locality typically has a higher weighting in the total evaluation points but shall not be more than 65% of the total evaluation points.

Points scored shall be based on the Targeted Enterprise's registered address with the CIPC.

i. If the Targeted Enterprise is more than twelve (12) months old and the company address:

(a) was changed with the CIPC in the twelve (12) months prior to the tender advertisement; or

(b) does not correlate with the company address recorded on the CSD,

the Targeted Enterprise shall provide additional proof of its address in the twelve (12) months preceding the tender

advertisement date and that the address is current by submitting the following:

- (i) for urban areas:
 - 1. signed lease agreement confirming occupation in the preceding twelve (12) months; or
 - 2. mortgage statement confirming ownership in the preceding twelve (12) months; and
 - 3. a current utility bill (not older than three (3) months) confirming that occupation is current; or
- (ii) for semi-urban and rural areas
an affidavit from the relevant ward councillor or traditional authority, signed and stamped by a registered commissioner of oaths, which confirms that the business has been operating from the said address in the preceding twelve (12) months.

- ii. If Targeted Enterprise is less than twelve (12) months old and the company address:
 - was changed with the CIPC in the twelve (12) months prior to the tender advertisement; or
 - does not correlate with the company address recorded on the CSD,the oldest registered address on either the CIPC or the CSD will be accepted as the Targeted Enterprise's address for the purpose of scoring locality points.
- iii. If the Targeted Enterprise intends to operate from a branch office for the purpose of the anticipated subcontract, the same additional proof that the company has been operating from the branch office in the twelve (12) months prior to the tender advertisement date must be provided as listed in the paragraphs above.
- iv. If the above additional proof of address cannot be provided, locality points shall be awarded based on the tenderer's address registered with the CIPC in the twelve months prior to the tender advertisement date.

b. Equipment

For lower CIDB grade packages, the points allocated for Equipment typically has a lower weighting in the total evaluation points.

The combined points allocated for Equipment and Experience shall not be more than 35% of the total evaluation points.

c. Experience

For lower CIDB grade packages, the points allocated for Experience typically has a lower weighting in the total evaluation points.

The combined points allocated for Equipment and Experience shall not be more than 35% of the total evaluation points.

d. CIDB grade and class

The points allocated for CIDB grade and class shall not be more than 35% of the total evaluation points.

CIDB grade and class shall not be used as an evaluation criterion for packages pertaining to the supply of material, goods and/or services.

- e. Project Specific Designated Groups; e.g. woman, youth, etc.

In addition to the eligibility criteria for preferential procurement functionality points may also be allocated for the following Designated Groups:

- i. Tenderer is 51%+ owned by black people who are youth.
- ii. Tenderer is 51%+ owned by black people who are women.
- iii. Tenderer is 51%+ owned by black people with disabilities.
- iv. Tenderer is 51%+ owned by black people who are military veterans.

The points allocated for Designated Groups shall not be more than 15% of the total evaluation points.

One, two or three of the Designated Groups listed above may be selected to count towards the score for Designated Groups.

If any one of the Designated Groups listed above is already an eligibility criterion, it must not be included as a functionality criterion as well.

The inclusion of any of the Designated Groups listed above shall be based on the Contractor's Resources and Skills Audit.

Youth and veterans may not be selected together.

Stage 3 – Price and Preference

Tenderers that obtained the minimum threshold for functionality shall be further evaluated on their Price and Preference submissions, i.e.:

- a. Price = 80 / 90 %
- b. Preference = 20 / 10 %

The highest scoring tenderer for each subcontract package shall be checked for compliance.

The Contractor shall state in the tender advertisement and in the tender documents that only one subcontract package shall be awarded to an entity at any one time for this project, meaning that a Targeted Enterprise may be awarded a work package and on conclusion thereof may be awarded a subsequent work package, but more than one work package may not be awarded simultaneously for this project.

If a tenderer tendered for more than one subcontract package and scored the highest points in more than one package, the Contractor shall award to the tenderer the work package that has the most economic benefit to the Employer.

Stage 4 – Compliance Check

The highest scoring tenderer for each subcontract package shall be checked for compliance with respect to the following criteria:

- a. Proof that the Tenderer is compliant with the COID Act (excl. CIDB 1 and 2 subcontractors).
- b. Proof that the Tenderer is tax compliant.

If the highest scoring tenderer fails to meet any of the compliance criteria, he will be given seven (7) calendar days to become compliant.

If the highest scoring tenderer fails to submit the requested compliance information in the required timeframe, he shall be deemed non-compliant and the evaluator shall check the second highest tenderer for compliance. This process is repeated until a compliant tenderer has been identified.

Appoint successful Targeted Enterprises

Table the Tender Report to the PLC

The Contractor shall present the Tender Report for each subcontract package to the Employer and the Engineer and thereafter table it to the PLC prior to award of the subcontract.

Negotiating tender sum and/or rates with Targeted Enterprises

a. Rates

If the Contractor choose to include work for which he has tendered rates in the subcontract package and the tenderer who scored the highest points tendered higher rates than that of the Contractor, the Contractor may negotiate rates and the final sum with the tenderer.

If the Contractor fails to negotiate a reasonable tender sum or rates with the tenderer, he may:

approach the second highest points scoring, compliant tenderer for negotiation. This process may be repeated up to the third highest points scoring compliant tenderer, where after the package shall be retendered. The Contractor shall be limited to negotiate down to 25% above his own rates (this process must be clearly explained prior to negotiation, when the tender report is tabled to the PLC); or

accept the highest points scoring tenderer's higher rates and total sum and remunerate the sub-contractor at the sub-contractor's tendered rates from the lump sum which the Contractor has tendered for the fluctuation between the Contractor's rates and that of the Targeted Enterprise sub-contractors.

b. Provisional Sum

If the Employer has provided a provisional sum for the work items in the subcontract package, the Contractor shall report on the feasibility of the highest point scoring compliant tenderer's tender rates and tender sum to the Employer and the Engineer.

- i. If the highest points scoring compliant tenderer's rates and tender sum are deemed market related by the Engineer, the Contractor shall obtain the Employer's approval to utilise the provisional sum provided for the work items.
- ii. If the highest points scoring compliant tenderer's rates and tender sum are deemed not market related and the Employer does not approve the utilisation of the relevant provisional sum, the Contractor may negotiate with the tenderer for market related rates and tender sum.
- iii. If the Contractor fails to negotiate market related rates and a tender sum with the tenderer, he may:
 - (a) approach the next highest point scoring, compliant tenderer for negotiation. This process may be repeated up to the third highest points scoring compliant tenderer, where after the package shall be retendered; or
 - (b) accept the highest points scoring tenderer's rates and total sum and remunerate the sub-contractor from the lump sum which the Contractor has tendered for the fluctuation between the Contractor's rates and that of the Targeted Enterprise sub-contractors. The Contractor shall not pay rates or tender sums that are more than 15% higher than what are deemed market related by the Engineer.

Low tender sums submitted by Targeted Enterprises

The Contractor shall report to the Employer and the Engineer on the feasibility of tendered rates, sums or provisional sums of tenderers who tendered exceptionally low. Exceptionally low rates, sums or provisional sums are those that are more than ten percent (10%) less than what the Contractor tendered or, in the case of a provisional sum, what is deemed market related by the Engineer.

If the tendered rates, sums or provisional sums of those tenderers who tendered exceptionally low are deemed by the Engineer to still be feasible, the Contractor may continue to include these tenders in his tender evaluation.

If the tendered rates, sums or provisional sums of those tenderers who tendered exceptionally low are deemed by the Engineer to not be feasible, the Contractor may disqualify these tenders from his tender evaluation.

The Employer strongly discourages the appointment of Targeted Enterprises that did not tender feasible rates, sums or provisional sums. If all prices submitted are deemed exceptionally low by the Engineer, the subcontract package shall be retendered.

The consequences of exceptionally low prices must be clearly outlined in the Tender Report and clearly explained to the PLC prior to award or retendering of the subcontract packages.

Payment to the Contractor

The Employer shall not remunerate the Contractor, other than what have been provided for in the payment items, for accepting higher tender sums tendered by Targeted Enterprises.

If the Contractor accepts tender sums that are higher than what have been provided for in the Contractor's tendered rates or the Employer's provisional and/or prime cost sums, the costs shall be paid by the Contractor from the lump sum which he tendered for the fluctuation between the Contractor's rates and that of the Targeted Enterprise sub-contractors.

Entering the Subcontract Agreement

The Contractor's TE Procurement Coordinator shall assist successful Targeted Enterprises to enter into a subcontract agreement with the Contractor as described in this Specifications.

D1008 GENERAL RESPONSIBILITIES OF THE CONTRACTOR TOWARDS TARGETED ENTERPRISES

The Contractor shall have the responsibilities described in this Section, D1008, towards all Targeted Enterprises subcontracted in terms of the CPG as stated in the Specification Data.

D1008.01 Targeted Enterprise (TE) Construction Manager

The Contractor shall appoint a dedicated TE Construction Manager whose sole responsibility shall be to assist the Contractor with the execution of his responsibilities towards Targeted Enterprises and Target Groups as prescribed in this Section D, with an emphasis on D1008 and D1010.

Amongst others, the TE Construction Manager shall facilitate the training, mentoring, development and support of Targeted Enterprises as per the Contractor's approved Training and Skills Development Programme (see Section D1010).

TE Construction Manager's Qualifications and Experience

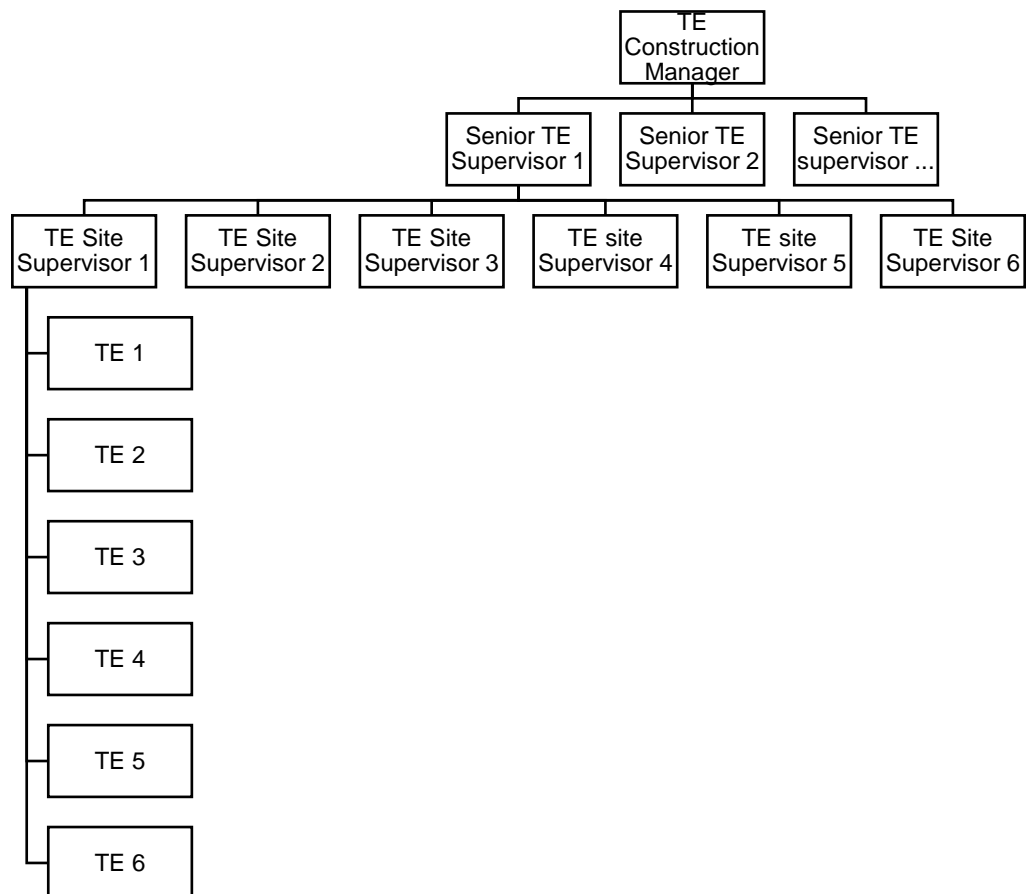
The TE Construction Manager shall have, as a minimum, a National Diploma: Management of Civil Engineering Construction Processes (NQF Level 5) or an equivalent qualification.

The TE Construction Manager shall have at least 5 years' experience as a Site Agent, managing construction processes in the fields of roads maintenance, new roads construction, roads rehabilitation, roads structures, etc. In addition, he shall have ample knowledge of, and experience in, the requirements of training and mentoring in the road construction environment.

TE Construction Manager's Team

The TE Construction Manager shall have on his team one (1) TE Site Supervisor for every six (6) Targeted Enterprises which are in their respective construction phases and one (1) Senior TE Supervisor for every six (6) TE Site Supervisors.

The qualifications and/or experience of TE Site Supervisors and Senior TE Supervisors shall be relevant and of a suitable level to enable them to supervise the level of Targeted Enterprise and the specific works under construction. Below is an indicative organogram of the TE Construction Manager and his team.



D1008.02 General Obligations

The Contractor shall, with the assistance of the TE Construction Manager, comply with the following general obligations:

- a) Assist the Targeted Enterprises in instituting a quality assurance system;

- b) Provide adequate training, coaching, guidance, mentoring and any other identified and approved assistance to Targeted Enterprises;
- c) Provide support and any other identified and approved assistance to ensure that the Targeted Enterprises meet their obligations and commitments with respect to their subcontracts, and
- d) Ensure that the CPG objectives are achieved.

D1008.03 Subcontract Agreements

The Contractor shall conclude subcontract agreements with each subcontracted Targeted Enterprise. The subcontract agreement shall be the FIDIC subcontract agreement and shall be in accordance with the provisions of amended sub-clause 4.4 of the Conditions of Contract and shall be consistent with the terms and conditions of this Contract.

Special Conditions of Contract

The following Special Conditions of Contract shall be included in the subcontract agreement:

- i) The Targeted Enterprise's entitlement to receive the training contemplated in this Contract;
- ii) The Targeted Enterprise's obligation to participate and co-operate in the training provided for in this Contract;
- iii) The allowable sources from which Labour may be drawn in terms of the Contract;
- iv) The terms and conditions relating to the recruitment, employment and remuneration of Labour engaged on the Contract;
- v) The training to be provided to the Targeted Enterprise's workforce;
- vi) The terms and conditions related to payment of the Targeted Enterprise;
- vii) Sanctions in the event of failure by the Targeted Enterprise to comply with the terms and conditions of the subcontract agreement; and
- viii) Dispute avoidance and resolution procedures.

Further Special Conditions of Contract shall only be included into the subcontract agreement once approved by the Engineer.

Monitoring of Subcontract Agreements by the PLC

The proforma subcontract agreement for each group of work packages shall be tabled to the PLC for their information. Special Conditions of Contract, in addition to those listed in (a) above shall be developed under the auspices of the PLC.

The PLC may at any stage during the Contract request proof that subcontract agreements were entered into with the subcontracted Targeted Enterprises. The PLC may also request insight into the Conditions of Subcontract and Subcontract Data.

To protect Targeted Enterprises' competitive advantage and/or tender strategy, only the subcontract agreement shall be available to the PLC for perusal and not the pricing structure and/or Schedule of Quantities.

A copy of each subcontract agreement shall be filed with the Engineer after confirming that it is in accordance with the provisions of this Contract.

D1008.04 Payment of Targeted Enterprises

Targeted Enterprises shall be paid the rates and/or provisional sums which they have tendered, or which have been negotiated as described in this Section D of the Specifications.

Payment of Provisional and General Obligations

Provision shall be made in the subcontract agreement for the Targeted Enterprise's preliminary and general obligations (P&Gs), which shall be

calculated as a minimum of 15% of the value of the scheduled subcontract work items.

Where the Contractor's subcontract work is not paid from a provisional sum, the P&Gs of the Targeted Enterprise shall be paid from the lump sum tendered by the Contractor for the P&Gs of Targeted Enterprises.

P&Gs shall be paid to Targeted Enterprises as per Section C1.3.1 of the COTO specification payment items, i.e.:

- i) C1.3.1.1 paid in 3 instalments of 50%, 35% and 15%;
- ii) C1.3.1.2 paid as a percentage of the total value progressively per certificate;
- iii) C1.3.1.3 paid monthly for the sub-contractor's contract duration.

D1008.05 Quality of Work and Performance of Targeted Enterprises

Ensuring Quality of Work and Performance

The Contractor's TE Construction Manager shall closely monitor and supervise all Targeted Enterprises and shall train, coach, guide, mentor and assist each Targeted Enterprise in all aspects of management, execution and completion of its 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, coaching, guidance, mentoring, and assistance to be provided by the Contractor shall be commensurate with the level of subcontract applicable and shall be directed at enabling the Targeted Enterprise to achieve the successful execution and completion of its subcontract.

Failure by the Targeted Enterprise to Comply

If the Targeted Enterprise, in the opinion of the Engineer, fails to comply with any of the criteria listed below, the Engineer 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:

- Deliver acceptable standard of work as set out in the specifications;
- Progress in accordance with the time constraints in the subcontract agreement;
- Punctual and full payment of the workforce and suppliers;
- Site safety; and
- Accommodation of traffic.

Assist the Targeted Enterprise to Make Good

The Contractor shall give reasonable warning to the Targeted Enterprise when any contravention of the terms and conditions of the subcontract agreement 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.

D1008.06 Dispute Avoidance and Resolution Procedures

When any disputes arise, the Contractor shall explain fully to the Targeted Enterprise that such actions are provided for in the subcontract agreement. If such action is contemplated, it shall be discussed with the Engineer and tabled to the PLC before any action is taken.

The Targeted Enterprise shall have 21 calendar days from the date of receipt of the letter of warning by the Contractor to address and rectify the issues raised by the Engineer, except for issues pertaining to Site Safety and Accommodation of Traffic, for which the reaction time shall be in accordance with the relevant specifications for those aspects of the Works, but which shall not be longer than 24 hours.

Failure by the Targeted Enterprise to comply with a deadline, will be sufficient grounds for the Contractor to apply a penalty or terminate the subcontract agreement provided that the

Employer and the Engineer are satisfied that the Contractor has made every effort to correct the performance of the Targeted Enterprise.

The Targeted Enterprise shall have the right to dispute any ruling given or deemed to have been given by the Contractor or the Engineer. Provided that, unless the Targeted Enterprise shall, within 21 calendar 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 the relevant clause(s) in the subcontract agreement 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.

D1009 WORK SUITABLE FOR EXECUTION BY TARGETED ENTERPRISES

To assist the Contractor in achieving his CPG, the following work items have been identified as being suitable for execution by Targeted Enterprises:

- a) Erection and maintenance of the Contractor's camp site
- b) Management of traffic control facilities and traffic safety as part of the accommodation of traffic
- c) Electronics works.
- d) CCTV cameras
- e) Provision of traffic control facilities.
- f) Installation and maintenance of lane equipment
- g) Fencing
- h) Road signs
- i) Site security services
- j) Supply of fuel
- k) Training to staff

The work to be carried out by Targeted Enterprises is not limited to the work listed above and the Contractor may need to engage Targeted Enterprises on other aspects of the Works to achieve the CPG.

A Provisional Sum for the work by CIDB 1 and 2 Targeted Enterprise sub-contractors is allowed under pay item D10.05.

D1010 TRAINING, COACHING, GUIDANCE, MENTORING AND ASSISTANCE

The Contractor shall under the auspices of the PLC develop a Training and Skills Development Programme which shall be managed by the Contractor's TE Construction Manager.

D1010.01 Purpose of the Training and Skills Development Programme(s)

Skills development forms an integral part of the Employer's Transformation and Community Development Policies and hence, it is important to the Employer that Targeted Labour and Targeted Enterprises be equipped with skills that can be used to gain meaningful future employment and secure subcontracting opportunities.

It is, therefore, a requirement of this Contract that the Contractor provide adequate training, coaching, guidance, mentoring and assistance to the Targeted Labour and Targeted Enterprises to ensure skills development within the Construction Industry.

D1010.02 Skills Audit and Analysis

Prior to developing the Training and Skills Development Programme(s), the Contractor shall conduct a skills audit and analysis of its own employees and those of its Subcontractors to determine their levels of education, existing qualifications, and skills sets. The outcome of the skills audit and analysis shall be used to develop a Training and Skills Development Programme(s) that will benefit both the employee and the Construction Industry at large.

Included in the skills audit and analysis shall be a separate section, analysing the education, qualifications and skills sets of the Targeted Enterprise's owners and supervisors subcontracted by the Contractor to develop a Training and Skills Development Programme that will develop and improve the ability of small business owners and their supervisory staff to better manage their enterprises.

D1010.03 Developing the Training and Skills Development Programme

The Employer shall be involved in the decision making and quality control pertaining to the development and implementation of the Training and Skills Development Programme facilitated through this Contract.

The Employer has no service agreement or memorandum of understanding with any education and training quality assurance body and, therefore, does not function as the "Employer" as defined under any three-party-agreement between the Trainee, the Training Provider and the Employer.

However, the Employer requires similar outcomes to that of formal learnership programmes and the Contractor shall structure a Training and Skills Development Programme in a manner that permits continued access to further learning and qualifications within a defined programme.

The complete Training and Skills Development Programme shall be developed during the Mobilisation Period, accepted by the Engineer after consultation with the Employer and tabled to the PLC for their information before any training commence.

D1010.04 The Training Service Provider

While the Contractor's TE Construction Manager will manage the Training, Development and Support Programme and mentor Targeted Enterprise subcontractors from a practical point of view, the Contractor shall subcontract a Training Service Provider to implement the theoretical training components of the Programme by applying the Employer's Supply Chain Management Policy for second tier procurement.

Accreditation of the Training Service Provider

The Training Service Provider entity shall be accredited, and have in its employ Practitioners, Assessors and Moderators whom are registered, with the Construction Education Training Authority (CETA). Proof of accreditation and registration shall be current, valid and list the NQF levels and Unit Standards for which the entity and its staff are accredited.

Qualifications and Experience of the Training Service Provider

The training and competency levels required of the Training Service Provider and his staff are outlined in the table below:

TABLE D1010/1: QUALIFICATIONS FOR TRAINING STAFF

Designation	Title and Unit Standard No.	NQF Level	Credit
Practitioner	Train the trainer; No 7384	4	16

Designation	Title and Unit Standard No.	NQF Level	Credit
Assessor	Conduct outcome base assessment; No 115753	5	15
Moderator	Conduct moderation of outcome-based assessment; No 115759	6	10

In addition to the above qualifications, and in keeping with current CETA practical experience requirements for registration as a Practitioner, NQF Level 4 Unit Standards shall only be presented by Practitioners with NQF Level 5 (one level up) credentials.

The Employer further requires that Assessors and Moderators shall have at least 5 years' experience as a Site Agent, managing construction processes in the fields of roads maintenance, new roads construction, roads rehabilitation and structures.

Elective Unit Standards are typically more vocational orientated and may require specialist input. It is thus not a requirement that individual Practitioners and Assessors shall have all the necessary skills for all the different categories of Unit Standards. The Training Service Provider may and shall therefore, when necessary, appoint Practitioners and Assessors on an ad hoc basis with the levels of experience which are required for the Unit Standards to be presented.

D1010.05 Training and Skills Development Programme: General Requirements

The Training and Skills Development Programme shall consist of Learnerships that include multiple, but related Unit Standards which are (1) relevant to the Works to be constructed, (2) aimed at achieving the skills development objectives of the Programme, and (3) lead towards a formal qualification in the Construction Industry.

Learnerships shall include both the theoretical and practical components of each Unit Standard and shall be in accordance with the various laws and regulations contained in the South African Qualification Authority (SAQA) statutes.

Training Programme: Requirements and Considerations

The Skills Audit and Analysis shall inform the Contractor of every employee's Recognised Prior Learning (RPL) skills and competencies, which shall be taken into consideration in the development of the Training and Skills Development Programme so that the RPL skills and competencies, together with the Training Programme Unit Standards offerings, will lead to a full Learnership outcome and hence a formal qualification.

It is recognised that the Training and Skills Development Programme may consist of several Unit Standards but totalling insufficient credits for a full Learnership qualification. Nevertheless, the competencies and credits achieved in the Programme shall contribute to a full Learnership by a later acquisition of the outstanding Unit Standards required for the full Learnership.

The Training and Skills Development Programme shall be structured in a manner to prioritise those Unit Standards that will equip Trainees with the minimum skills required to become economically involved in the execution of the Works as soon as possible.

The Training Service Provider shall apply the SAQA Learnership criteria of which the basic elements are listed below to demonstrate the Employer's requirements:

Minimum credits for qualification;

Fundamental Unit Standards and credit values;

Core Unit Standards and credit values;

Elective Units Standards and credit values;

Assumption that NQF Level 3 literacy, numeracy, and computer competencies exist;

RPL processes;
Exit level outcomes.

The above criteria are not exhaustive, and the Training Service Provider shall apply the systems and processes required by the relevant SAQA and other related legislation pertinent to training. The Training Service Provider shall regularly consult the SAQA website (www.saga.org.za) to ensure that the most current Unit Standards are presented. In the event of any conflict, the legislated requirements shall apply.

While structuring the Learnership offerings, the Training Service Provider shall distinguish between the levels of learning required. The bulk of the training shall focus on NQF Levels 4 and 3. NQF Level 5 training is not anticipated but may be suitable for qualifying staff of established small contractors. The qualification titles for the respective NQF Levels are:

NQF Level 3	National Certificate: Construction Roadworks.
NQF Level 4	National Certificate: Supervision of Construction Processes
NQF Level 4	National Certificate: Business Management
NQF Level 5	National Diploma: Management of Civil Engineering Construction Processes

It may be necessary to include additional Core Unit Standards, e.g. “Tendering” or “Entrepreneurship” as an additional Unit Standard for NQF Level 4, to achieve the Contract’s development objectives. The identification of any additional Unit Standards shall be discussed with the Engineer and shall not be implemented without prior approval.

Before qualifying, Trainees will be expected to demonstrate competence in a practical situation that integrates the assessment of all specific outcomes, for all Unit Standards in the Learnership Programme.

All training shall take place within normal working hours, or as agreed with the trainees.

Selection of Trainees

To complete a Learnership successfully requires minimum literacy and numeracy competencies as defined by SAQA. The Training Service Provider shall utilise the skills audit and analysis and conduct additional skills analysis to benchmark the literacy and numeracy levels of employees and Subcontractors. This information shall guide the Training Service Provider in formulating the Trainee selection methodology(ies) and process(es). The Training Service Provider shall make provision for:

- i) baseline assessments, e.g. conducting RPL enquiries and tests; and
- ii) a gap skills programme consisting of Fundamental Unit Standards, to facilitate the selection process.

Trainees identified as having already acquired some tertiary training, particularly in the field of Civil Engineering, may be suitable for a specialised Trainee programme or a higher NQF Level programme. The Training and Skills Development Programme shall, therefore, make provision for Trainees with a variety of competency levels and shall make provision for different levels of training.

It should be noted that where this section refers to the selection and training of Trainees, any person, employed by any national, provincial or local authority, being it full time or part time, is expressly excluded from being considered for this training.

Learning Material

Learning material is required for each Unit Standard. This learning material is the equivalent of prescribed textbooks for other qualifications. Each Trainee shall receive a copy of the learning material to learn the contents and to use it as a reference source after obtaining the qualification.

The SAQA Unit Standard curriculums define the contents of the learning material. The learning material shall not only comply with the SAQA and CETA guidelines but shall be technically and practically aligned to road construction and/or road maintenance. Any input from a subject matter expert required to ensure the appropriateness of learning material contents shall be included in the Training Service Provider's costs.

The requirements to be addressed in learning material as outlined by the SAQA Unit Standard curriculums are, amongst others, the following:

- purpose of the Unit Standard;
- specific outcomes (typically 4 per Unit Standard);
- assessment criteria (typically 4 per specific outcome);
- range as is defined for each specific outcome;
- critical cross-field outcomes for the Unit Standard;
- Unit Standard essential embedded knowledge.

Student Experiential Training or Learnerships or Internships

The Employer may deploy students to the construction site to obtain experiential training. The Contractor shall provide experiential training to these students in accordance with the relevant academic institution's requirements, which is typically a university, a university of technology, or a TVET.

The Contractor shall also provide students with all the tools (including appropriate information technology hardware and software) and site office space necessary to carry out engineering work as if they were the Contractor's own permanent staff.

Reporting on training progress of each student shall be compiled according to the formats and intervals set by the relevant academic institution.

(e) Keeping of Records

The Training Service Provider shall keep comprehensive records of the training provided to each Trainee and shall ensure that Trainees' successful completion of successive Unit Standards are entered onto the national SAQA database. After the successful completion of generic skills courses, each Trainee shall be issued with a certificate indicating the course contents as proof of attendance and completion. The Contractor shall keep a register of certificates issued. Whenever required, the Contractor shall provide copies of such records to the Engineer.

(f) Skills Development Requirements

Contract Skills Development Goals (CSDG)

This section establishes a minimum CSDG which is to be achieved in the performance of a Contract (*as per the CIDB Standard for Developing Skills through Infrastructure Contracts August 2013*) in relation to the provision of different types of workplace opportunities linked to work associated with a Contract which culminates in or leads to:

- a part- or full occupational qualification registered on the National Qualification Framework;
- a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012);
- a national diploma registered on the National Qualification Framework;
- and
- registration in a professional category by one of the professional bodies listed in Table 1 of the Standard.

The Contractor shall achieve or exceed the CSDG in the performance of the Contract. The Contractor may, if need be, devolve their obligations onto Subcontractors.

The CSDG shall not be less than the contract amount multiplied by 0.25 percent (%) for Civil Engineering work (CE). For this reason, the Contractor shall insert the CSDG amount in form C2.3 Summary of Pricing Schedule.

Achieving Contract Skills Development Goal (CSDG)

The Contractor shall achieve the CSDG by providing employment opportunities to Trainees requiring structured workplace learning using one or a combination of any of the following methods in relation to work directly related to the Contract:

Method 1: Structured workplace learning opportunities for Trainees (LoL) towards the attainment of a part or a full occupational qualification.

This training method shall apply to Targeted Enterprises and Targeted Labour.

Method 2: Structured workplace learning opportunities for apprentices or other artisan Trainees (LoA) 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 Trainees being holders of public FET college qualifications.

This training method shall apply to Targeted Enterprises and Targeted Labour.

Method 3: Work integrated learning opportunities for University of Technology or Comprehensive University students (LoUS) completing their national diplomas.

This training method shall apply to P1 and P2 Trainees, or Trainees with a 240 credits qualification. Both the permanently employed and temporary employed Trainees shall be considered under this training method.

Method 4: Structured workplace learning opportunities for candidates (LoC) toward registration in a professional category by a statutory council listed in Table 1 of the Standards.

This training method shall apply to Candidates with 480 credits qualification. Both the permanently employed and temporary employed Trainees shall be considered under this training method.

No single method shall contribute more than 75 percent of the CSDG. Permanently employed Trainees may not account for more than 33 percent (%) of the CSDG, and not more than one method may be applied to any individual concurrently in the calculation of the CSDG.

CSDG Credits

The CSDG shall be calculated by multiplying the number of people employed by the Contractor and placed for continuous training opportunities in a three-month period by the notional values contained in Table 3 of the Standard, or as revised in a Gazette notice.

The Contractor may source beneficiaries of the CSDG from a Skills Development Agency (SDA) recognised by the CIDB.

All beneficiaries shall be registered with a construction Skills Development Agency (SDA) recognised by the CIDB.

Denial of Credits

Credits towards the CSDG shall be denied should the Contractor not fulfil all the requirements listed in clause 3.4 (a) to (f) of the Standards.

Compliance with Requirements

The Contractor shall comply with the requirement as set out in clause 4 of the Standards.

Records

The Contractor shall submit all the documentation required in terms of clause 4 of the Standards, in a timely manner and according to a prescribed format where applicable.

The Engineer shall certify the value of the credits counted towards the CSDG, if any, whenever a claim for payment is issued to the Employer and shall notify the Contractor of this amount.

The Contractor shall, upon termination of the opportunities provided to satisfy the CSDG, certify the quantum and nature of the opportunity and submit the certificate, counter-certified by the relevant individual, to the Engineer for record-keeping purposes.

Sanctions

Failure to achieve the CSDG shall render the Contractor liable for a penalty as prescribed in clause 8.7 of the FIDIC Conditions of Contract. Penalties shall be as follows:

- a. $\text{Penalty} = 0.5 \times \{[\text{LoAs} + \text{LoLs} + \text{LoUSs} + \text{LoCs}]\}$

Where:

LoLs = Monetary Value of the shortfall for structured workplace learning opportunities for Trainees towards the attainment of a part or a full occupational qualification;

LoAs = Monetary Value of the shortfall for structured workplace learning opportunities for apprentices or other artisan Trainees 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 Trainees being holders of public FET college qualifications;

LoUSs = Monetary Value of the shortfall for work integrated learning opportunities for University of Technology or Comprehensive University students completing their national diplomas (LoUS);

LoCs = Monetary Value of the shortfall for structured workplace learning opportunities for candidates towards registration in a professional category by a statutory council listed in Table 1 of the Standards (LoC), and

Delay the issuing of the Performance Certificate until all the required records described in clause 5 of the Standards are received.

(g) Generic Skills Training

Generic skills shall be taught where the need has been identified and approved by the Employer and the Engineer.

The Contractor shall make representation to the Employer and the Engineer, who shall approve candidates that should attend such courses as they deem appropriate. Those selected shall receive formal generic skills training in a programmed and progressive manner. The PLC may also identify a need for generic skills training.

Typical training programmes could comprise some or all of the following modules:
Basic hygiene and HIV/AIDS awareness;
Road safety;
Basic management of the environment;
Tourism awareness and opportunities;
Managing personal finance;
Adult Basic Education and Training (ABET);
Community based training programmes (e.g. knitting, computer skills, plant/machine operator, etc.).

All generic skills training shall be accredited by the relevant Sector Education and Training Authority (SETA) and shall be provided with accredited entities and/or individuals.

(h) Community Training

Community training shall be taught where the need has been identified.

Affected Communities may submit their training needs to the PLC for consideration and inclusion into the Training and Skills Development Programme. While considering the training needs of the affected Communities, the Engineer shall inform the PLC of the Contract's training limitations, as well as of the training that could be undertaken through the Contract. Trainees from the Community shall be identified through the Community structures, but under the auspices of the PLC. Trainees selected from the Community shall receive formal skills training in a programmed and progressive manner in compliance with subclause D1010.04. Priority shall be given to training that will equip Community members with skills that will enhance their employability.

All community skills training shall be accredited by the relevant Sector Education and Training Authority (SETA) and shall be provided with accredited entities and/or individuals.

(i) Training Facilities

The Contractor shall be responsible for providing everything necessary to offer the various training workshops and modules including:
a suitable venue with sufficient furniture, lighting and power,
all necessary stationery consumables and study material,
transport for attendees.

D1011 LABOUR ENHANCED CONSTRUCTION

The Contractor's attention is drawn to the fact that it is an objective of the Contract to maximise the labour content of certain operations or portions thereof. In this regard, where the specified work allows for a choice between mechanical or labour-enhanced means, the former should generally be kept to the practical minimum.

Before commencing with any labour enhanced operations the Contractor shall discuss his intentions with the Engineer and shall submit to the Engineer on a monthly basis, daily labour returns indicating the numbers of temporary personnel employed on the Works and the activities on which they were engaged.

It should be noted that activities that are conventionally done by labour methods, e.g. gabions, shall not qualify under this section.

D1012 COMMUNITY DEVELOPMENT

D1012.01 Corporate Social Investment (CSI)

The Contractor shall demonstrate its willingness to actively participate in the social development initiatives for local Communities affected by the Contract. To this end, the Contractor shall provide details of CSI initiatives it will actively pursue under Form D9: Corporate Social Investment. The Employer will evaluate the CSI initiatives as part of the tender evaluation under “*other objective criteria*” of the Preferential Procurement Policy Framework Act, 2000.

D1012.02 Community Development Component

Community Development (CD) components to the Contract are primarily training and skills development programmes to benefit an identified Community and Trainee Targeted Enterprises selected from this Community.

The owners and supervisors of Trainee Targeted Enterprises receive SAQA accredited training towards an accredited qualification which consists of theoretical and practical components.

The theoretical training is conducted by the Contractor's Training Service Provider while the practical training, which is the construction of the CD Works, is undertaken by the Trainee Targeted Enterprises under the mentorship and supervision of the Contractor's dedicated TE Construction Manager.

The General Requirements for Community Development Projects is attached as Appendix 12.

a) CD Component for this Contract

Not applicable.

b) Inclusion of CD Component in the CPG Plan

Provision shall be made for the CD component in the Contractor's CPG Plan as a separate section and it shall be planned and scheduled in the same detail as the CPG Works.

The CPG Plan shall be updated with the CD component planning within 28 days after the Scope of the CD component has been issued to the Contractor by the Engineer.

The CD component shall not add towards the Contractor's CPG but is an additional effort towards the Employer's transformation and socio-economic development goals.

A minimum of 90% of the CD component's Works value shall be undertaken by CIDB level 1 to 4 Trainee Targeted Enterprises.

c) Inclusion of CD Component in the Training and Skills Development Programme

Provision shall be made for the CD component in the Contractor's Training and Skills Development Programme as a separate section and it shall be planned and scheduled in the same detail as the Training and Skills Development requirements stipulated in Part C3, Section D1010.

The Training and Skills Development Programme shall be updated with the CD component planning within 28 days after the Scope of the CD component has been issued to the Contractor by the Engineer.

D1013 MEASUREMENT AND PAYMENT

Item		Unit
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D10.01 Target Group Participation

(a)	Contract Participation Performance bonus	Prime Cost (PC) Sum
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The prime cost sum for item D10.01(a) shall cover any CPP bonus due as specified in clause D1003.05. The prime cost sum shall be expended in accordance with clause 13.5 of the FIDIC Conditions of Contract.

Note:

No separate payment shall be made for any costs incurred by the Contractor, whether direct or indirect, for his efforts in accomplishing the specified requirements, and which are not recoverable from the pay-items allowed. Such costs shall be deemed to have been included in the rate offered under pay sub-item C1.3.1.3 Contractor's Establishment on Site and General Obligations: Time Related Obligations.

Item		Unit
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D10.02 Stakeholder and Community Liaison and Social Facilitation

(a)	Cost of liaison, social facilitation and PLC support	Prime Cost (PC) Sum
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(b)	Handling cost and profit in respect of sub-item D10.02(a)	Percentage (%)
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The prime cost sum for item D10.02(a) shall cover the direct costs incurred by attending members of the PLC. The rate of compensation shall be fair and agreed by the Engineer in accordance with clause 13.5 of the FIDIC Conditions of Contract. The tendered percentage for sub-item D10.02(b) shall include full compensation for all handling costs and profit of the Contractor associated with sub-item D10.02(a).

The liaison with, and assistance provided by the Contractor to the PLC to perform its duties shall not be paid from the prime cost sum. The Contractor's costs to liaise with the PLC and render such assistance shall be deemed to have been included in its rate offered for pay sub-item C1.3.1.3 Contractor's Establishment on Site and General Obligations: Time Related Obligations.

Item		Unit
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D10.03 Tender Process for Targeted Enterprises

(a)	Contractor's charge for the management and execution of the Targeted Enterprise procurement process:	
	(i) Procurement process for the totality of all tenders concluded for the appointment of Targeted Enterprise subcontractors of CIDB 1 and 2 contractor grading	Number (No)
	(ii) Procurement process for the totality of all tenders concluded for the appointment of Targeted Enterprise subcontractors of CIDB 3 and 4 contractor grading	Number (No)
	(iii) Procurement process for the totality of all tenders concluded for the appointment of Targeted Enterprise subcontractors of CIDB 5 and higher contractor grading	Number (No)
	(iv) Procurement process for the totality of all tenders concluded for the appointment of Targeted Enterprise suppliers	Number (No)

(b)	Targeted Enterprise Procurement Coordinator	Month
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The unit of measurement for item D10.03(a) shall be the number of individual subcontract agreements concluded with Targeted Enterprise sub-contractors and suppliers in accordance with the procurement process described in this Section D.

The tendered monthly rate for subitem D10.03(b) shall include full compensation for the provision of the relevant personnel on a full-time basis to carry out the requirements in terms of subitem D10.03(a) and the full contents of this Section D.

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 appointment of a TE Procurement Coordinator (if required), the pre-tender training of eligible Targeted Enterprises, 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, Engineer and the PLC, for the award of each tender and for the conclusion of the subcontract agreement with each successful Targeted Enterprise tenderer, and any other relevant requirement described in this Section D.

Item		Unit
D10.04	Responsibilities of the Contractor towards Targeted Enterprises	
(a)	Contractor's establishment, management, management support, assistance, coaching, guidance, mentoring and supervision of Targeted Enterprises	Month
(b)	Targeted Enterprise Construction Manager	Person Month
(c)	Targeted Enterprise Site Supervisors	Person Month

The tendered monthly rate for subitem D10.04(a) shall include full compensation for the registration of all the subcontract agreements and the management of all the Targeted Enterprise subcontracts, including for the provision of the necessary management, support, coaching, guidance, mentoring and supervision of the Targeted Enterprise subcontractors.

The tendered monthly rate for subitems D10.04(b) and (c) shall include full compensation for the provision of the relevant personnel on a full-time basis to carry out the requirements in terms of subitem D10.04(a) and the full contents of this Section D.

Item		Unit
D10.05	Construction Works by Targeted Enterprises	
(a)	Payments associated with the construction works carried out by Targeted Enterprise subcontractors of CIDB 1 and 2 contractor grading designation appointed in terms of Section D	Provisional (Prov) Sum
(b)	Handling costs and profit in respect of payment associated with sub-item D10.05(a)	Percentage (%)
(c)	Fluctuation between the main contractor's rates and that of the Targeted Enterprise subcontractors	Lump Sum (LS)

(d)	Preliminary and General Obligations of Targeted Enterprise sub-contractors appointed in terms of Section D	Lump Sum (LS)
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Expenditure under subitems D10.05(a) shall be in accordance with clause 13.5 of the FIDIC Conditions of Contract.

The provisional sum for subitem D10.05(a) is provided to cover the cost of the construction works, including preliminary and general obligations carried out by the Targeted Enterprise subcontractors of CIDB 1 and 2 contractor grading designation as certified by the Engineer, in separate payments for each Targeted Enterprise in accordance with Section D. Expenditure under subitem D10.05(a) shall be limited to the provisional sum amount stated in the Pricing Schedule. Construction works by Targeted Enterprise subcontractors of CIDB 1 and 2 contractor grading designation exceeding the provisional sum amount shall be measured for payment from the applicable work items in the Contractor's pricing schedule.

The tendered percentage for subitem D10.05(b) is the percentage of the amount actually spent under subitem D10.05(a) and shall include full compensation for the Contractor's handling costs, profit or any other costs associated with the work conducted by the Targeted Enterprise subcontractors, which are not provided for in other pay items.

The Lump Sum tendered under item D10.05(c) is for fluctuation of the Targeted Enterprise subcontractor rates in excess of the contractor's tendered rates, for work not paid under items D10.05(a). Payment of the lump sum shall be on a prorata basis to provide compensation for the fluctuation between the tendered rates of the Main Contractor and that of the Targeted Enterprise subcontractors until the lump sum is depleted. Any costs incurred due to fluctuation in tendered rates in excess of that tendered for under item D10.05(c) will be for the Contractor's account. Item D10.05(c) is applicable where the Target Enterprise subcontractor's tender amount is higher than the Main Contractor's tender amount. The lump sum will cover the fluctuation for all the tendered rates of the subcontractors.

The Lump Sum tendered under item D10.05(d) is for the Preliminary and General Obligations of Targeted Enterprise sub-contractors (excluding CIDB 1 and 2 contractor grading designation paid from the Provisional Sum). Payment of the lump sum shall be on a prorata basis to provide compensation for the P&Gs of Targeted Enterprise sub-contractors until the lump sum is depleted. Any costs incurred for the P&Gs of Targeted Enterprise sub-contractors in excess of that tendered for under item D10.05(d) will be for the contractor's account.

Item	Unit
D10.06 Training, coaching, guidance, mentoring and assistance	
(a) Training Costs	
(i) Accredited NQF training	Provisional (Prov) Sum
(ii) Accredited generic skills training	Provisional (Prov) Sum
(iii) Community skills training	Provisional (Prov) Sum
(iv) Handling cost and profit in respect of subitems D10.06(a)(i), (ii) and (iii)	Percentage (%)
(b) Student experiential training	
(i) Student stipends	Prime Cost (PC) Sum
(ii) Provision of experiential training	Person Month
(c) Other costs during training	Provisional (Prov) Sum
(d) Training venue	Lump Sum (LS)

The provisional sums under sub-items D10.06(a) shall be paid in accordance with the provisions of sub-clause 13.5 of the FIDIC Conditions of Contract. The provisional sums shall include all charges for the provision and delivery of the service including an accredited

Training Service Provider (if required), learning material and any other requirement as described in sub-clause D1010.

The rate tendered under sub-item D10.06(a)(iv) shall be deemed to cover all costs required to organise accredited trainers to provide training and shall include the Contractor's handling cost, profit, record keeping, reporting and all other costs associated with sub-items D10.06(a)(i), (ii), and (iii).

The prime cost sum under sub-item D10.06(b)(i) shall be paid in accordance with the provisions of sub-clause 13.5 of the FIDIC Conditions of Contract. The prime cost sum shall cover the monthly stipend as prescribed by the Employer to be paid to students receiving experiential training.

The unit of measurement for sub-item D10.06(b)(ii) shall be the person-month, with prorata payments made for partial months for training provided based on 23 work days per month.

The rate tendered under sub-item D10.06(b)(ii) shall include full compensation for the Contractor to provide training to the students provided by the Employer inclusive of all costs to communicate with the Employer and any other body or organisation in respect of work assigned to the students. The rate tendered shall include telephone calls and charges, stationery and information technology hardware, software, connection or licence costs and lost production, profits and all other incidentals as well as all administrative and overhead costs.

The provisional sum under pay item D10.06(c) shall be paid in accordance with the provisions of sub-clause 13.5 of the FIDIC Conditions of Contract. The provisional sum shall cover the Contractor's costs for payment of wages of employed trainees attending training courses during working hours, for the provision of meals to trainees, for provision of transport and for all other incidentals required for the trainees and approved by the Engineer. No mark-up is payable to the Contractor under this item.

The unit of measurement for pay item D10.06(d), shall be the lump sum. The sum tendered shall include full compensation for the provision of the training venue, for all necessary lighting, power, furniture, stationery, consumables and study material and all other costs necessary to maintain the venue for the duration of the contract. Payment of the lump sum shall be made in two instalments as follows:

- a) The first instalment, 75% of the lump sum, shall be paid after the Contractor has met all his obligations regarding the provision of the training venue as specified.
- b) The second and final instalment, 25% of the lump sum, shall be paid after the provision of all the accredited training as specified in the document.

No payment, nor prorata payment, shall be made for trainees that, once selected, do not attend or only partially complete structured training courses. The Contractor's own staff may attend the courses provided. However, such attendants from the Contractor's staff shall not be considered for measurement and payment purposes unless they also qualify as Targeted Labour.

Item	Unit
D10.07 Community Development Component	
D10.07.01 Contractor's Personnel	
(a) Contractor's Training Staff	
(i) Training Provider	Lump Sum (LS)
(ii) Practitioners	Lump Sum (LS)
(iii) Assessors	Lump Sum (LS)
(iv) Moderators	Lump Sum (LS)
(b) Contractor's Construction Management Staff	
(i) Construction Manager	Lump Sum (LS)
(ii) Construction Mentors	Lump Sum (LS)
(iii) Construction Supervisors	Lump Sum (LS)

The unit of measurement for pay item D10.07.01(a)(i) shall be the Lump Sum. The Lump Sum tendered shall include full compensation for the Training Provider's cost for the full duration of the CD component, including procurement cost (if necessary), salary cost (including all taxes, leave conditions, bonuses, UIF, provident fund, medical aid, group life benefits, etc.), subsistence, travel, accommodation, meeting attendance and all other costs associated with the duties and services to be delivered by the Training Provider.

The total duration and intervals that the Training Provider spend on the CD component shall be determined by the Contractor. It shall be based on the requirements of the Scope of the Work and shall correspond to the Contractor's approved Training and Skills Development Programme. The Lump Sum shall not be adjusted due to amendments required by the Employer and/or the Engineer of the Contractor's draft Training and Skills Development Programme.

The unit of measurement for pay items D10.07.01(a)(ii) to (iv) shall be the Lump Sum. The Lump Sum tendered shall include full compensation for the Practitioners, Assessors and Moderators' cost for the full duration of the CD component, including procurement cost (if necessary), salary cost (including all taxes, leave conditions, bonuses, UIF, provident fund, medical aid, group life benefits, etc.), subsistence, travel, accommodation, meeting attendance and all other costs associated with the duties and services to be delivered by Practitioners, Assessors and Moderators.

The number of Practitioners, Assessors and Moderators, the total duration that they spend on the CD component and the intervals at which they participate in the project shall be determined by the Contractor. It shall be based on the requirements of the Scope of the Work and shall correspond to the Contractor's approved Training and Skills Development Programme. The Lump Sum shall not be adjusted due to amendments required by the Employer and/or the Engineer of the Contractor's draft Training and Skills Development Programme.

The unit of measurement for pay item D10.07.01(b)(i) shall be the Lump Sum. The Lump Sum tendered shall include full compensation for the Construction Manager's cost for the full duration of the CD component, including procurement cost (if necessary), salary cost (including all taxes, leave conditions, bonuses, UIF, provident fund, medical aid, group life benefits, etc.), subsistence, travel, accommodation, meeting attendance and all other costs associated with the duties and services to be delivered by the Construction Manager.

The total duration and intervals that the Construction Manager spend on the project shall be determined by the Contractor, but the Contractor shall take cognisance of the requirement that the Construction Manager shall maintain a full-time presence on site during the practical training and construction of the Works phases of the CD component. The total duration and intervals that the Construction Manager spend on the CD component shall correspond to the Contractor's approved Training and Skills Development Programme and the Lump Sum shall not be adjusted due to amendments required by the Employer and/or the Engineer of the Contractor's draft Training and Skills Development Programme.

The unit of measurement for pay items D10.07.01(b)(ii) to (iv) shall be the Lump Sum. The Lump Sum tendered shall include full compensation for the Construction Mentors, Supervisors and Clerks of Works' cost for the full duration of the CD component, including procurement cost (if necessary), salary cost (including all taxes, leave conditions, bonuses, UIF, provident fund, medical aid, group life benefits, etc.), subsistence, travel, accommodation, meeting attendance and all other costs associated with the duties and services to be delivered by Construction Mentors, Supervisors and Clerks of Works.

An estimated ratio between Construction Mentors, Supervisors and Clerks of Works and the number of Trainee Targeted Enterprises subcontracted are provided in Appendix 12. Section A1003.04 (b). However, the number of staff and the time and intervals that they spend on the CD component shall be determined by the Contractor. The Contractor shall take cognisance of the requirement that full-time mentoring and supervision of Trainee Targeted Enterprises shall be available during the practical training and construction of the Works phases of the CD component.

The number of staff and the total duration and intervals that Construction Mentors, Supervisors and Clerks of Works spend on the CD component shall correspond to the Contractor's approved Training and Skills Development Programme and the Lump Sum shall not be adjusted due to amendments required by the Employer and/or the Engineer of the Contractor's draft Training and Skills Development Programme.

Item	Unit
D10.07.02 Contractor's Training Facility and Establishment of Staff	
(a) Providing a Training Facility	Lump Sum (LS)
(b) Establishment of the Contractor's Training Staff for all CD component phases, including PPE	Lump Sum (LS)
(c) Establishment of the Contractor's Construction Management Staff during the Training phases of the CD component, including PPE	Lump Sum (LS)

The unit of measurement for pay items D10.07.02(a) to (c) shall be the Lump Sum. The Lump Sum tendered shall include full compensation for all costs associated with establishing the Contractor's Training Facility and his staff for the relevant phases of the CD component as described in the Scope of the Work and as required by the Contractor's approved Training and Skills Development Programme. This includes full compensation for the supply of electricity and all other utility services.

The Lump Sum shall also include full compensation for the Contractor's stationary (including paper, cartridges, files, etc.), computers, laptops, software, printers, appliances, connections, office and classroom furniture (including storage cupboards, shelves, bookcases, notice boards, etc.) and any other training aids required by his staff to perform their duties as per the Scope of Work.

Personal Protective Equipment (PPE) is deemed to include all the necessary protective clothing, eyewear, masks, gloves, and any other items required in compliance with the OHS Act.

Item	Unit
D10.07.03 Training and Skills Development Programme	
(a) Resources Audit Chapter	Lump Sum (LS)
(b) Skills Audit Chapter	Lump Sum (LS)
(c) Market Analysis Chapter	Lump Sum (LS)
(d) Approved Training and Skills Development Programme for the CD component	Lump Sum (LS)

The unit of measurement for pay items D10.07.03(a) to (d) shall be the Lump Sum. The Lump Sum tendered shall include full compensation for all costs associated with conducting Resources and Skills Audits, a Market Analysis and producing an approved Training and Skills Development Programme for the CD component.

The Lump Sum shall, amongst others, include for all staff and their associated costs, conducting research, stakeholder engagement and consulting, compiling reports and documents, printing and all administration required to present the deliverables.

Interim reports of the Resources and Skills Audits and Market Analysis shall be submitted to the Employer and the Engineer for perusal, which reports shall become chapters of the Training and Skills Development Programme.

Item	Unit
D10.07.04 Training Provisions	
(a) Training for Trainee Targeted Enterprises	
(i) NQF Level 2 training	Trainee Credit
(ii) NQF Level 3 training	Trainee Credit
(iii) NQF Level 4 training	Trainee Credit
(iv) NQF Level 5 training	Trainee Credit
(b) (i) Targeted Labour	Provisional (Prov) Sum
(ii) Handling cost and profit i.r.o. item D10.07.04(b)(i)	Percentage (%)

The unit of measurement for pay items D10.07.04(a)(i) to (iv) shall be the Trainee Credit. The Trainee Credit is the product of the number of Trainees to be trained and the number of Unit Standard credits required for a Trainee to complete a SAQA accredited qualification on a specified NQF level. It shall provide for all the Contractor's costs to provide SAQA accredited NQF level 2 to 5 training that has not been provided for under pay items:

- D10.07.01 Contractor's Staff and
- D10.07.02 Contractor's Training Facility and Establishment of Staff
- D10.07.05 Theoretical (Classroom) Training

This includes full compensation for all costs associated with the Contractor's Training Staff to compile learning material and the accompanying assessors' guides, to provide demonstration tools and equipment and to conduct the theoretical and practical training as per the approved Training and Skills Development Plan.

The Trainee Credit tendered shall also include full compensation for all costs associated with keeping Trainees' portfolios of evidence updated and safe, the assessment and moderating of the Trainees' competencies, conduct retraining of Trainees found not yet competent as is allowed for in the Scope of the Work, as well as for updating Trainees' competencies on the national database on Traineeship training.

Payment shall only be made once a Trainee has been assessed for a specific Unit Standard and found competent.

The unit of measurement for pay item D10.07.04(b)(i) shall be the Provisional Sum. The Provisional Sum shall provide for all the Contractor's costs to provide SAQA accredited NQF level 2 to 5 technical, entrepreneurial and generic training to the Targeted Labour of the Trainee Targeted Enterprises.

The Provisional Sum shall provide for full compensation for the Contractor's costs pertaining to Trainees' stipends, wages and/or salaries during the training period, including subsistence, travel and accommodation.

The Provisional Sum shall also provide for the registration and induction of Trainees, their learning material, workbooks and logbooks, and any contract and specification documents, required for the training.

To utilise the Provisional Sum, a detailed breakdown of the above costs shall be provided by the Contractor for approval by the Engineer and the Employer by means of a Works Authorisation prior to commencement of the training.

The unit of measurement for pay items D10.07.04(b)(ii), shall be the Percentage (%). The Percentage shall provide for all the Contractor's costs and profit associated with the training of Targeted Labour employed by Trainee Targeted Enterprises.

Amongst others, the Percentage shall provide for full compensation for the Contractor's costs pertaining to staff's remuneration, including their travel and accommodation. It shall also provide for the Contractor's additional Training Facility, stationary, computers, laptops,

software, printers, appliances, connections, classroom furniture and any other training aids, including PPE, required for the training.

Pro-rata payment of Provisional Sums, per Trainee, and its associated handling cost and profit mark-ups, i.e. Percentages, shall only be made once a Trainee has been assessed for a specific Unit Standard and found competent.

Item	Unit
D10.07.05 Theoretical (Classroom) Training	
(a) Registration of Trainees	Lump Sum (LS)
(b) Induction of Trainees	Lump Sum (LS)
(c) Stationery and Learning Aids	Lump Sum (LS)
(d) Learning Material, Workbooks and Logbooks	Lump Sum (LS)
(e) Contract and Specification Documents	Lump Sum (LS)

The unit of measurement for pay item D10.07.05(a) shall be the Lump Sum (LS). The Lump Sum tendered shall provide for all the Contractor's costs to Register Trainee Targeted Enterprises on the National Database for Traineeship Training, including capturing Trainees' personal detail and banking details for the payment of stipends and the signing of a Traineeship agreement between the Contractor and the Trainee.

The Registration of Trainees and associated requirements for beneficiaries, other than the Trainee Targeted Enterprises, shall be paid from the Provisional Sum provided under pay items D10.07.04(b). The Lump Sum tendered for pay item D10.07.05(a) shall serve as a bench-mark rate for the utilisation of the Provisional Sum.

The unit of measurement for pay item D10.07.05(b) shall be the Lump Sum (LS). The Lump Sum tendered shall provide for all the Contractor's costs for the induction of Trainee Targeted Enterprises into the Training Programme.

The induction of Trainees, other than the Trainee Targeted Enterprises, into the Training Programme shall be paid from the Provisional Sum provided under pay items D10.07.04(b). The Lump Sum tendered for pay item D10.07.05(b) shall serve as a bench-mark rate for the utilisation of the Provisional Sum

The unit of measurement for pay item D10.07.05(c) shall be the Lump Sum (LS). The Lump Sum tendered shall provide for all the Contractor's costs to provide Trainee Targeted Enterprises with the stationery and learning aids that they require to complete SAQA accredited training, on the relevant NQF levels, successfully.

Stationery and learning aids to be provided to beneficiaries, other than the Trainee Targeted Enterprises, shall be paid from the Provisional Sum provided in Pricing Schedule A, under pay items D10.07.04(b). The Lump Sum tendered for pay item D10.07.05(c) shall serve as a bench-mark rate for the utilisation of the Provisional Sum

The unit of measurement for pay item D10.07.05(d) shall be the Lump Sum (LS). The Lump Sum tendered shall provide for all the Contractor's costs to provide Trainee Targeted Enterprises with the Learning Material, Workbooks and Logbooks that they require to complete SAQA accredited training, on the relevant NQF levels, successfully.

Learning Material, Workbooks and Logbooks to be provided to beneficiaries, other than the Trainee Targeted Enterprises, shall be paid from the Provisional Sum provided under pay items D10.07.04(b). The Lump Sum tendered for pay item D10.07.05(d) shall serve as a bench-mark rate for the utilisation of the Provisional Sum.

The unit of measurement for pay item D10.07.05(e) shall be the Lump Sum (LS). The Lump Sum tendered shall provide for all the Contractor's costs to provide Trainee Targeted

Enterprises with the Contract and Specification Documents that they require to complete SAQA accredited training, on the relevant NQF levels, successfully.

Contract and Specification Documents to be provided to beneficiaries, other than the Trainee Targeted Enterprises, shall be paid from the Provisional Sum provided under pay items D10.07.04(b). The Lump Sum tendered for pay item D10.07.05(e) shall serve as a benchmark rate for the utilisation of the Provisional Sum.

Item	Unit
D10.07.06 Practical (Workplace) Training	Lump Sum (LS)

The unit of measurement for pay item D10.07.06 shall be the Lump Sum (LS). The Lump Sum tendered shall provide for all the Contractor's costs, other than construction expenses (which is provided for in D10.07.10 or in Schedule xxx of the Schedule of quantities), to provide Trainee Targeted Enterprises with the Practical Training that they require to complete SAQA accredited training, on the relevant NQF levels, successfully and the assessment thereof.

Amongst others, the Lump Sum shall include for ensuring that Trainees keep a Logbook and update their Portfolio of Evidence continuously, training Trainees in the use of construction tools and practical construction techniques, ensure adequate plant, material and labour for the practical training experience and conduct assessments of the Trainees' learning progress. Provision shall be made for repeat training when necessary.

Item	Unit
D10.07.07 Contractor's Responsibilities Towards Trainees	

(a)	(i)	Trainee Sustenance	Prime Cost (PC) Sum
	(ii)	Handling cost and profit i.r.o. item D10.07.07(a)(i)	Percentage (%)
(b)	(i)	Trainee Stipends	Prime Cost (PC) Sum
	(ii)	Handling cost and profit i.r.o. item D10.07.07(b)(i)	Percentage (%)

The unit of measurement for pay item D10.07.07(a)(i) shall be the Prime Cost (PC). The Prime Cost Sum shall provide for all the Contractor's costs to provide Trainee Targeted Enterprises with sustenance during the theoretical training phase of the CD component.

The unit of measurement for pay items D10.07.07(a)(ii) shall be the Percentage (%). The Percentage shall provide for all the Contractor's costs and profit associated with providing Trainee Targeted Enterprises with sustenance during the theoretical training phase, including the cost of the procurement processes required to procure sustenance from local Suppliers.

Sustenance to be provided to beneficiaries, other than the Trainee Targeted Enterprises, shall be paid from the Provisional Sum provided in Pricing Schedule A, under pay items D10.07.04(b) to (f). The Prime Cost Sums utilised under pay item D10.07.07(a)(i) shall serve as a benchmark rate for the utilisation of the Provisional Sum

The unit of measurement for pay item D10.07.07(b)(i) shall be the Prime Cost (PC). The Prime Cost Sum shall provide for all the Contractor's costs to pay stipends to Trainee Targeted Enterprises during the theoretical and practical training phases of the CD component in accordance with the Basic conditions of Employment Act (Act no. 75 of 1997).

The unit of measurement for pay items D10.07.07(b)(ii) shall be the Percentage (%). The Percentage shall provide for all the Contractor's costs and profit associated with paying stipends to Trainee Targeted Enterprises during the theoretical and practical training phases of the CD component, including the cost of electronic funds transfers and/or bank cash deposits and all administration related to the payment of stipends.

Stipends to be paid to beneficiaries, other than the Trainee Targeted Enterprises, shall be paid from the Provisional Sum provided under pay items D10.07.04(b) to (f).

Stipends shall be paid in accordance with the legislated daily stipends stated in the Basic Conditions of Employment Act (Act No. 75 of 1997), as amended and as per its most recent learnership allowances table.

Item	Unit
D10.07.08 Construction Simulation Phase	Lump Sum (LS)

The unit of measurement for pay item D10.07.08 shall be the Lump Sum (LS). The Lump Sum tendered shall provide for all the Contractor's costs, other than construction expenses (which is provided for in D10.07.10 or in Schedule xxx of the Schedule of quantities), to provide Trainee Targeted Enterprises with the Construction Simulation experience that they require to complete SAQA accredited training, on the relevant NQF levels, successfully.

Amongst others, the Lump Sum shall include for mentoring, coaching and guidance of Trainees, providing each Trainee Targeted Enterprise with a Bill of Quantities for their respective work packages and assist Trainees to price the Bill of Quantities, assist the Trainee Targeted Enterprises to establish and train their construction teams, to schedule and execute the work, to procure material, plant and labour, and to measure the work and compile payment certificates.

Item	Unit
D10.07.09 Construction Management Phase	Lump Sum (LS)

The unit of measurement for pay item D10.07.09 shall be the Lump Sum (LS). The Lump Sum tendered shall provide for all the Contractor's costs, other than construction expenses (which is provided for in D10.07.10 or in Schedule xxx of the Schedule of quantities), to manage the construction of the Works by Trainee Targeted Enterprises.

Amongst others, the Lump Sum shall include for Trainee Target Enterprises' competency reviews, Construction mentoring, coaching and guidance, assistance to Trainee Targeted Enterprises on any aspect of the planning and administration of the Works, ensuring that Trainee Targeted Enterprises comply with all relevant statutory requirements monthly and overall management of the construction of the Works.

Item	Unit
D10.07.10 Construction of the CD Component Works	

(a)	Payments associated with the construction of the CD component Works carried out by Trainee Targeted Enterprise subcontractors of CIDB 1 to 4 contractor grading designation	Provisional (Prov) Sum
(b)	Handling costs and profit in respect of payment associated with subitem D10.07.10(a)	Percentage (%)

Expenditure under subitems D10.07.10(a) shall be in accordance with clause 13.5 of the FIDIC Conditions of Contract.

The provisional sum for subitem D10.07.10(a) is provided to cover the cost of the construction of the CD component Works, including preliminary and general obligations, carried out by the Trainee Targeted Enterprise subcontractors of CIDB 1 to 4 contractor grading designation as certified by the Engineer, in separate payments for each Trainee Targeted Enterprise in accordance with Section D. Expenditure under subitem D10.07.10(a) shall be limited to the provisional sum amount stated in the Pricing Schedule. Construction works by Trainee Targeted Enterprise subcontractors of CIDB 1 to 4 contractor grading designation, exceeding the provisional sum amount shall be measured for payment from the applicable work items in the Contractor's pricing schedule

The tendered percentage for subitem D10.07.10(b) is the percentage of the amount actually spent under subitem D10.07.10(a) and shall include full compensation for the Contractor's handling costs, profit or any other costs associated with the work conducted by the Targeted Enterprise subcontractors, which are not provided for in other pay items.

The Lump Sum tendered under item D10.05(c) is for fluctuation of the Trainee Targeted Enterprise subcontractor rates in excess of the contractor's tendered rates, for work not paid under items D10.05(a) or the separate schedule in the BoQ for the CD component. Payment of the lump sum shall be on a prorata basis to provide compensation for the fluctuation between the tendered rates of the Main Contractor and that of the Trainee Targeted Enterprise subcontractors until the lump sum is depleted. Any costs incurred due to fluctuation in tendered rates in excess of that tendered for under item D10.05(c) will be for the Contractor's account. Item D10.05(c) is applicable where the Trainee Target Enterprise subcontractor's tender amount is higher than the Main Contractor's tender amount. The lump sum will cover the fluctuation for all the tendered rates of the subcontractors.

The Lump Sum tendered under item D10.05(d) is for the Preliminary and General Obligations of Trainee Targeted Enterprise sub-contractors (excluding CIDB 1 and 2 contractor grading designation) paid from the Provisional Sum. Payment of the lump sum shall be on a prorata basis to provide compensation for the P&Gs of Trainee Targeted Enterprise sub-contractors until the lump sum is depleted. Any costs incurred for the P&Gs of Trainee Targeted Enterprise sub-contractors in excess of that tendered for under item D10.05(d) will be for the contractor's account.

PART C3.4 (SECTION E): REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS

Note to tenderer:

Wherever reference is made in this section of the Scope of Works to contractor this is the equivalent of the *principal contractor* in the Occupational Health and Safety Act and Regulations. Similarly, reference to subcontractors is equivalent to *other contractors*.

**PART C3.4 (SECTION E): REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND
SAFETY ACT AND REGULATIONS**

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E1001 SCOPE

The Occupational Health and Safety Act, Act 85 of 1993 (OHS Act) and its Regulations together with SANS Codes set out minimum standards with regards to Occupational Health and Safety. The South African National Roads Agency SOC Limited (SANRAL), has developed this Occupational Health and Safety Specifications with these minimum standards in mind and in certain aspects the requirements of SANRAL exceeds the minimum legal requirements to follow best practices and to ensure a healthy and safe workplace for all.

SANRAL in no way assumes The Principal Contractors legal liabilities and responsibilities. The Principal Contractor is and remains accountable for the quality and execution of his health and safety program for his employees. This Health and Safety Specification reflects minimum legal and SANRAL requirements and should not be construed as all encompassing.

It is realized that The Principal Contractor have its own Health and Safety Management system and safe work practices. The intention of this Health and Safety Specification is not to change The Principal Contractors Health and Safety management system, but for The Principal Contractor to use its current Health and Safety management system to draw up a project specific Health and Safety plan according to these specifications as well as to legally comply with the any applicable Regulations under the OHS Act and incorporated Standards.

It is the responsibility of the Principal Contractor and other Contractors to make themselves conversant and comply with the requirements and conditions contained in the various legislation pertaining to their profession and scope of works at all times.

This specification is not exhaustive of all duties imposed by the OHS Act and its Regulations, governing the duties and obligations, of a Designer, Principal Contractor and Contractor performing duties in terms of an agreement with the client (SANRAL). These duties are fully described in the OHS Act and its Regulations and it is the duty of every Designer, Principal Contractor and Contractor to acquaint themselves therewith before commencing work.

This specification is compiled to ensure that the Principal Contractor and any other Contractors working for SANRAL directly or through a Principal Contractor, are aware of the Occupational Health and Safety requirements when working on a SANRAL contract, as well as to make them aware of their legal liabilities and responsibilities as per the Occupational Health & Safety Act, Act 85 of 1993, and its Regulations.

Words used herein in the singular shall be deemed to include the plural and male shall include female and vice versa unless the context otherwise requires.

E1002 DEFINITIONS AND ABBREVIATIONS

Assessment – An opinion or a judgment about someone or something that has been thought about very carefully.

At-risk behavior – Conduct that unnecessarily increases the likelihood of an injury or incident.

Audit – A systematic and documented review of the effectiveness of implementation of processes, programs and procedures, based on general process criteria.

Baseline risk assessment: This is the initial assessment of risk in a workplace. It is a broad assessment and includes all activities taking place on site but does not include risk control measures or safeguards.

Client – Any organization or person for whom construction work is performed. For the purpose of this document, the client is the South African National Roads Agency SOC Limited, also identified in the contract document as the Employer.

Competence – A combination of attributes such as knowledge, training, experience and qualifications to assure successful performance.

Competent Person – Means a person who has in respect of the work or task to be performed the required knowledge, training and experience and, where applicable, qualifications, specific to that work or task: Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualification Framework Act, 2000 (Act No. 67 of 2000), those qualifications and that training

must be regarded as the required qualifications and training; and is familiar with the Act and with the applicable regulations made under the Act.

Consequence – Outcome or impact of an event.

Continual Improvement – A recurring process of enhancing performance to achieve consistent improvements in overall performance.

Contractor – An employer as defined in section 1 of the OHS Act, who performs construction work and includes Principal Contractors and Sub-Contractors.

Construction Work – any work in connection with:

- The construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or
- The construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling, or any similar civil engineering structure or type of work.

Corrective Action – An action taken to eliminate the cause of a detected non-conformity or other undesirable situation.

Construction Regulations (CR) – Construction Regulations, GNR. 84 of 2014

Critical equipment – A piece of equipment or a structure whose failure to perform to design specification, has the potential to result in a major accident event.

Design – in relation to any structure, includes drawings, calculations, design details and specifications.

Designer –

- a) competent person who:
 - Prepares a design;
 - Checks and approves a design;
 - Arranges for a person at work under his or her control to prepare a design, including an employee of that person where he or she is the employer; or
 - Designs temporary work, including its components;
- b) an architect or engineer contributing to, or having overall responsibility for a design;
- c) a building services engineer designing details for fixed plant;
- d) a surveyor specifying articles or drawing up specifications;
- e) a contractor carrying out design work as part of a design and building project; or
- f) an interior designer, shop fitter or landscape architect.

DMR – Driven Machinery Regulations, GNR. 295 of 26 February 1988

Documents – Structured units of recorded information and its supporting medium (paper or electronic). Most records are documents, but not all documents are records. A document becomes a record when it is part of a business transaction, is kept as evidence of that transaction and is managed within a record-keeping system.

EIR – Electrical Installation Regulations, GNR. 242 of 6 March 2009

Emergency – An abnormal occurrence that pose a threat to the safety or health of employees, customers, or local communities, or which can cause damage to assets or the environment.

Employee – An individual who is employed by or works for an Employer and who receives or is entitled to receive any remuneration or who works under the direction or supervision of an employer or any other person.

Employer – Any person who employs or provides work for any person and remunerates that person or expressly or tacitly undertakes to remunerates him but excludes a labour broker as defined in section 1(1) of the Labour Relations Act, 1956 (Act No. 28 of 1956). The South African National Roads Agency SOC Limited, also identified in the contract document as the Employer.

EMR – Electrical Machinery Regulations, GNR. 250 of 25 March 2011

Environment – The surroundings or conditions in which a person, animal or plant lives or operates, including air, water, land, natural resources and habitats.

Epidemic Disease - An *epidemic* disease is one affecting many persons at the same time and spreading from person to person in a locality where the disease is not permanently prevalent. The World Health Organization (WHO) further specifies *epidemic* as occurring at the level of a region or community.

Excavation work – The making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping

GAR – General Administrative Regulations, GNR. 929 of 25 June 2003

GMR – General Machinery Regulations, GNR. 1521 of 5 August 1988

GSR – General Safety Regulations, GNR. 1031 of 30 May 1986

Harm – A significant and or long-lasting adverse effect on people, the environment or the community.

Hazard – A source, situation or act with a potential for harm in terms of human injury or ill health.

Health and Safety File – Means a file, or other record in permanent form, containing the information in writing as required by the Construction Regulations, GNR. 84 of 7 February 2014, Section 7(1)(b).

Health and Safety Plan – Means a project specific documented plan in accordance with the client's health and safety specifications, as required by the Construction Regulations, GNR. 84 of 7 February 2014, Section 7(1)(a).

Health and Safety Specification – Means a project specific document prepared by the client pertaining to all health and safety requirements related to construction work, as required by the Construction Regulations, GNR. 84 of 7 February 2014, Section 5(1)(b).

HSE – Health, Safety and Environment. Commonly used in the format HSE.

Incident – Work-related events (including accidents which give rise to injury, ill health, fatality or emergencies) that have resulted in, or has the potential to result in adverse consequences to people, the environment, property, reputation or a combination of these.

Likelihood – A description of probability or frequency, in relation to the chance that something will occur.

Lost Time Injury (LTI) – When a person is injured during the execution of his/her duties and as a result of the injury is unable to perform his/her regular duties for one full shift or more on the day following the day on which the injury has incurred, whether a scheduled work day or not(weekend).

Management System – Management processes and documentation that collectively provide a systematic framework for ensuring that tasks are performed safely, correctly, consistently and effectively to achieve a specified outcome and to drive continual improvement in performance.

Mandatory – An agent, contractor or sub-contractor for work, but without derogating from his status in his own right as an employer or a user.

MSDS – Material Safety Data Sheet

Near Hit / Near Miss – Any occurrence or situation which had the potential for adverse consequences to people, the environment, property, reputation or a combination of these.

Non-conformance – Any deviation from work standards, practices, procedures, regulations that could either directly or indirectly lead to injury or illness, property damage, damage to the environment or a combination of these.

OHS Act – Occupational Health & Safety Act, 85 of 1993

Pandemic Disease - a *pandemic* disease is an *epidemic* disease that has spread over a large area, that is, it is prevalent throughout an entire country, continent, or the whole world.

Policy – Statement by an organization of its intentions and principles in relation to its overall performance which provides a framework for action and for the setting of its objectives and targets.

PPE – Personal Protective Equipment

Preventive Action – An action implemented to eliminate the cause of a potential non-conformity or other undesirable potential situation.

Principal Contractor – An employer appointed by the client to perform construction work and who is in overall control and management of a part of or the whole construction site.

Procedure – A specific documented way to carry out an activity or a process.

Records – Recorded information, in any form that is kept as evidence. Records include monitoring results, evidence of training, audits, inspections and calibration reports.

Risk Assessment – A process of evaluating the risk(s) arising from hazards taking into account the adequacy of any existing controls and deciding whether or not the risk(s) is acceptable.

Risk Management – The ongoing treatment of risks through the application of management policies, processes, procedures and risk control measures.

Risk – A combination of the likelihood of an occurrence of a hazardous event or exposure and the severity of injury or ill health that can be caused by the event or exposure.

Root Cause – The cause of the incident that, when rectified, will prevent the recurrence of not just incidents with those exact circumstances, but others with similar causes.

SACPCMP – South African Council for Project and Construction Management Professions

SANRAL - South African National Roads Agency SOC Limited

Supplier – A person or company that supplies material or equipment to a contractor on a construction site but does not physically carry out construction work on the construction site.

The Act – The Occupational Health and Safety Act No. 85 of 1993

The Site – The area where work is carried out for SANRAL as defined on the front page of this document.

WAH – Acronym for Working at Heights.

E1003 health and safety policy

Contractors are expected to have their own written Health and Safety Policy. The policy should declare their attitude and approach to the health, safety and welfare of their employees and others. The policy should include a description of the company and provision must be made to review the policy annually and the CEO or Managing Director must sign and date the policy to indicate his commitment to ensuring the health and safety of his employees, as per Section 7 of the OHS Act.

E1004 ROLES AND RESPONSIBILITIES

Every Contractor is considered to be an employer in his own right and shall comply with all legal requirements pertaining to an employer, which include the responsibility to provide as far as reasonably practicable a safe and healthy working environment for his employees, as per Section 8 of the OHS Act.

In conjunction with Section 8 of the OHS Act, all employees on the project are responsible for their own health and safety as well as the safety of persons who may be affected by their acts, as per Section 14 of the OHS Act. It is the responsibility of each employee to ensure that he acts in a safe manner before and during work is carried out.

The Principal Contractor shall ensure that where required by the OHS Act and Regulations, competent employees are appointed in writing. These appointments must be project/contract specific and specific to the tasks that will be performed. Every appointment must display the duties of the person appointed and training certificates from a registered training provider must be attached to such appointment (where applicable). A list of possible appointments can be found in clause E1010 below.

E1005 HSE TRAINING AND COMPETENCE

Where appropriate qualifications and training are registered in terms of the provisions of the National Qualifications Framework Act, 2000 (Act No. 67 of 2000), those qualifications and training must be regarded as the required qualifications and training and employees must have attended courses of the aforementioned nature to be considered competent in the task.

All employees that forms part of the construction work must be trained and competent. Employees formally appointed to perform a certain duty must be in possession of a training certificate (where applicable), received from a registered training provider. All employees must as a minimum have received site specific safety induction training and must receive daily safe task instruction training (DSTI) before any work commences and thereafter on a daily basis.

a) Training Needs

There shall be a system in place to determine the training requirements of each individual, based on the tasks that the employee will perform as well as to ensure the health and safety of fellow employees and the public. Special attention should be given to employees who are new hires, new to the task or have combined responsibilities.

b) Basic Safe Work Training (Induction Training)

Every contractor shall ensure that his employees are inducted into his own company Health and Safety System as well as basic safe work training (HSE Induction Training). The Principal Contractor shall ensure that his, all his Contractor's employees and visitors are inducted on the specific site safety procedures.

A Daily Safe Task Instruction (DSTI) must be conducted on site with all employees involved in the project. The DSTI must be carried out each day before work commences and proof thereof must be available on site. Each work crew may conduct their own specific DSTI to discuss the hazards, risks and control measures associated with their task for the day.

Where two or more contractors or work crews work in the same area, they should have a combined DSTI to ensure they know of the additional hazards the other contractor or work crew will introduce to their operations and what precautions to put in place.

The Principal Contractor shall have evidence that employees have been trained on the relevant procedures prior to and during the project duration. The evidence will be in a form of attendance register.

c) Formal Training

All qualifications for which there are SAQA registered training courses, must be regarded as the minimum required qualifications and training. To be deemed "competent" an employee must have received training at a registered training provider, the training course must be registered and if there is an assessment, the employee must have been found competent after the assessment. A person cannot be deemed competent after awareness training only.

The Principal Contractor shall ensure that his employees, as well as the employees of any contractors that may be used, have received appropriate training for the type of work that will be performed, e.g. First Aid, Flag Man, Mobile Plant Operator, Working at Heights, Risk Assessment training etc.

d) Records

Record of all training shall be kept by the employer and shall be readily available. Records shall make provision for refresher training where applicable. Where an employee is legally appointed with certain duties and responsibilities a copy of the training certificate must be attached to the appointment.

E1006 application for construction work permit

Construction Regulation, 2014 Section 3 requires that the client apply for a construction work permit at least 30 days before construction work is started, if the intended construction work will:

- exceed 365 days AND will involve more than 3 600 person days of construction work; or

- if the tender value limit is a CIDB grade 7, 8 or 9.

If approved, the provincial director will issue a construction work permit in writing to perform construction work within 30 days of receiving the application and assign a site-specific number for the construction site. It is the intention of SANRAL to apply for a construction work permit as soon as The Principal Contractor is appointed and his Health and Safety Plan is received, in order to minimize construction delays.

The site-specific construction work permit number must be displayed at the main entrance to the site and a copy of the construction work permit must be kept in the principal contractor's health and safety file for inspection purposes.

E1007 DUTIES

Various duties are imposed on the client, designer, principal contractor and other contractors by the Construction Regulation, 2014, Sections 5, 6 & 7. SANRAL will comply and carry out the required duties as contemplated in Section 5 of the Construction Regulations, 2014 and it is expected from the designer and every contractor to make themselves conversant with the requirements and duties imposed on them and to ensure that they comply with the requirements of section 6 & 7 at all times.

E1008 MANAGEMENT AND SUPERVISION

The Principal Contractor shall ensure that the project is managed safely, and legal compliance is ensured at all times.

A full-time competent person must be appointed as a Construction Manager to manage all construction work, including health and safety compliance. The construction manager may not be appointed to manage more than one single construction site. An Alternate Construction Manager must be appointed, to carry out the duties in the absence of the Construction Manager.

The construction manager must appoint construction supervisors responsible for construction activities and ensuring occupation health and safety on the construction site.

The Principal Contractor must appoint a full-time construction health and safety officer, who is registered with the SACPCMP, to assist in the control of health and safety aspects on site.

E1009 RISK MANAGEMENT

The Principal Contractor must follow a formal risk-based approach to ensure hazard control measures are implemented to an acceptable reasonable practical level. The Principal Contractor and his employees shall be responsible to ensure all hazards pertaining to his scope of activity are proactively identified, the risks assessed and appropriately eliminated or minimized and managed on an ongoing basis. Risk assessments shall also identify possible and potential environmental, health and hygiene issues pertaining to each hazard with potential exposures and limits.

a) **Risk Assessment**

i) Hazard Identification and Risk Assessment (Construction Regulation 9)

The Principal Contractor shall, before the commencement of any construction work or work associated with the aforesaid construction work and during such work, conduct a risk assessment by a competent person, appointed in writing and the risk assessment so produced shall form part of the OH&S plan and be implemented and maintained as contemplated in Construction Regulation 9(1). Competence is a factor of training, knowledge, experience and/or appropriate qualifications.

The risk assessment shall include, as far as is reasonably practicable, at least:

- The task or task step
- the identification hazards to which persons may be exposed to during the task or task step;
- The analysis and evaluation of the risks associated to the hazards identified, inclusive of a residual risk rating methodology. The method to be used is not prescribed;
- a documented plan of safe work procedures, to mitigate, reduce or control those residual risks that have been identified as unacceptably high, by means of the rating system;
- a monitoring plan;
- a review plan, inclusive of dates to be adhered to; and
- Ergonomic related risks are to be analysed, evaluated and addressed as part of the process.

Based on the risk assessments, The Principal Contractor shall develop a set of site-specific OH&S rules that shall be applied to regulate the OH&S aspects of the construction. The risk assessments, together with the site-specific OH&S rules shall be submitted to the Employer before construction on site commences. SANRAL has conducted a Baseline Risk Assessment as per clause E1009 (b) below, which must be used by The Principal Contractor to develop task specific risk assessments before work commences. This does not mean that all possible Risk Assessments must be attended to before work commences, but that all relevant Risk Assessments receive the necessary attention as the contract progresses, and this is the responsibility of The Principal Contractor.

All variations to the scope of work shall similarly be subjected to a risk assessment process.

ii) Risk Assessment Monitoring

The Principal Contractor shall ensure that a monitoring plan for all risk assessments are in place. Risk assessments must be monitored to ensure effectiveness and employee understanding. The monitoring of risk assessments shall be formal, and records thereof shall be available for audit purposes.

iii) Review of Risk Assessment

The Principal Contractor shall review the hazard identification, risk assessments and standard safe working procedures:

- prior to any work activity commencement,
- where changes are affected to the design and construction that result in a change to the risk profile,
- when an incident has occurred, or
- at least quarterly.

The Principal Contractor shall provide the Employer, sub-contractors and all other concerned parties with copies of any changes, alterations or amendments as contemplated above.

Activities carried out without conducting a risk assessment or found to be non-compliant with the risk assessment, will be stopped until such time a risk assessment is compiled, and work is carried out according to the risk assessment.

Risk assessments must be fully communicated to all relevant personnel and must be considered when establishing training, awareness and competency requirements. Records of risk assessment communications must be kept for inspection purposes.

b) Baseline Risk Assessment

SANRAL prepared a Baseline Risk Assessment from which the Health and Safety Specifications for this project was prepared. The Baseline Risk Assessment highlights all work for which The Principal Contractor must prepare safe work procedures and or work method statements. It must be noted that the Baseline Risk Assessment is not exhaustive and Principal Contractors are required to identify risks and come up with control measures, this must be identified by Principal Contractor when preparing the Issue Based Risk Assessments.

The Baseline Risk Assessment for this Project can be found in clause E1018.

c) Continuous Risk Assessment

The Principal Contractor shall continuously assess the risks of the activities that are carried out. Risk assessments must be in writing, site specific and must be reviewed continuously as per E1009 a(iii) to ensure it is current and it address all the relevant hazards and risks associated with the specific activity at the specific site.

The Risk assessment must be discussed with the whole work crew before the activity starts and the work crew must acknowledge in writing having discussed the risk assessment and that they understand it. This acknowledgement must be on site and must be available to the client for audit purposes.

E1010 LEGAL COMPLIANCE AND DOCUMENT CONTROL

The Principal Contractor is required to implement systems and procedures to ensure legal compliance through:

- Identification of all relevant HSE legislation, standards and codes applicable to its operations.
- Have available copies of all relevant HSE legislation, standards and codes for reference purposes.
- Update systems and procedures with changed/updated legislation, standards and codes.
- Communicate to all employees any changes that may affect their accountabilities and conformance
- Incorporate any legal requirements into their HSE management system
- Monitor and review their HSE management system for effectiveness.

The Principal Contractor shall, as a minimum, comply with:

- The Occupational Health and Safety Act and Regulations (Act 85 of 1993), an up-to-date copy of which shall be available on site at all times.
- The Compensation for Occupational Injuries and Diseases Act (Act 130 of 1993), an up-to-date copy of which shall be available on site at all times.
- Where work is being carried out on a quarry/borrow pit/"mine", The Principal Contractor shall comply with the Mines Health and Safety Act and Regulations (Act 29 of 1960) and any other OH&S requirements that the mine may specify. An up-to-date copy of the Mines Health and Safety Act and Regulations shall be available on site at all times.

Wherever in the Construction Regulations or this specification there is reference to other regulations (e.g. Construction Regulation 24: Electrical Installations and Machinery on Construction Sites) The Principal Contractor shall be conversant with and shall comply with these regulations.

All legal appointments of The Principal Contractor regarding the Health and Safety of his employees who are to work on the project are addressed and governed by the OHS Act and applicable Regulations. Legal appointments must be in place and must reflect in the project safety file before work commences.

a) **Overall Supervision and Responsibility for OH&S**

SANRAL will appoint the Principal Contractor in terms of Construction Regulation 5(1)(k). A Mandatory agreement as per Section 37.2 of the OHS Act, shall be signed between SANRAL and the Principal Contractor.

It is a requirement that the Principal Contractor, when he appoints other contractors in terms of Construction Regulations 7(1)(c), 7(1)(d), 7(1)(f) and 7(3) includes in his agreement with such Contractors the following:

- OH&S Act (85 of 1993), Section 37(2) agreement: "Agreement with Mandatory".
- OH&S Act (85 of 1993), Section 16(2) appointee(s) as detailed in his/her/their respective appointment forms. (Where applicable).

The signed Mandatory agreements shall be placed in the project file for reference and for audit trail purposes.

b) **Specific Supervision Responsibilities for OH&S**

The Principal Contractor shall appoint designated competent employees and/or other competent persons as required by the OHS Act and Regulations, as well as this specification. Appointments shall be in writing and the responsibilities clearly stated together with the period for which the appointment is made. This information shall be communicated to and agreed with the appointees. Where applicable, the training certificate must be attached to the appointment. Notice of appointments shall be submitted to the Employer. All changes shall also be communicated to the Employer.

Below is a list of possible appointments for the project, which is not an all-inclusive list, but for reference purposes only:

Appointment	Legal Reference
Assistant to CEO	OHS Act 16(2)
Health and Safety Representative	OHS Act 17(1)
Nominated Health and Safety Committee Member	OHS Act 19(3)
Contractor (Sub-contractor)	CR 7(1)(c)(v)
Construction Manager	CR 8(1)
Alternate Construction Manager	CR 8(1)
Assistant Construction Manager	CR 8(2)
Health and Safety Officer	CR 8(5)
Construction Supervisor	CR 8(7)
Assistant Construction Supervisor	CR 8(8)
Risk Assessor	CR 9(1)
Fall Protection Plan Developer	CR 10(1)(a)
Structure Inspector	CR 11(2)(a)
Temporary Works Designer	CR 12(1)
Temporary Works Supervisor	CR 12(2)
Excavation Supervisor	CR 13(1)(a)
Demolition Supervisor	CR 14(1)
Competent Person in the use of Explosives	CR 14(11)
Scaffold Supervisor	CR 16(1)
Suspended Platform Supervisor	CR 17(1)
Rope Access Supervisor	CR 18(1)(a)
Material Hoist Inspector	CR 19(8)(a)
Bulk Mixing Plant Supervisor	CR 20(1)
Explosive actuated fastening device Inspector	CR 21(2)(b)

Appointment	Legal Reference
Explosive actuated fastening device cartridge Controller	CR 21(2)(g)(i)
Construction Vehicle & Mobile Plant Operator Authorised	CR 23(1)(d)(i)
Temporary Electrical Installation Controller	CR 24(c)
Stacking and Storage Supervisor	CR 28(a)
Fire Equipment Inspector	CR 29(h)
Incident investigator	GAR 9(2)
Lifting tackle inspector	DMR 18(10)(e)
Ladder inspector	GSR 13(a)
Certified Explosives Manager	ER 12(1)
First Aider GSR	GSR 3(4)
Lifting machine Operator	DMR 18(11)

In addition to the above, the Employer requires that a Traffic Safety Officer be appointed.

It is a requirement that The Principal Contractor shall provide the Employer with an organogram of all sub-contractors that he/she has appointed or intends to appoint and keep this list updated and prominently displayed on site.

c) Designation of OH&S Representatives (Section 17 of the OH&S Act)

Where the Principal Contractor employs more than 20 persons (including the employees of sub-contractors) he has to appoint 1 (one) OH&S representative for every 50 employees or part thereof. This is a minimum (legal) requirement. The Principal Contractor may at his own discretion appoint more OH&S representatives according to site specific requirements. General Administrative Regulation 6 requires that the appointment or election of the OH&S representatives be conducted in consultation with employee representatives or employees (Section 17 of the Act and General Administrative Regulation 6 & 7). OH&S representatives shall be designated in writing and the designation shall include the area of responsibility of the person and term of the designation. OH&S representatives must be experienced, permanently employed by The Principal Contractor or his sub-contractors, trained and able to move freely within their designated area of responsibility.

d) Duties and Functions of the OH&S Representatives (Section 18 of the OH&S Act)

The Principal Contractor shall ensure that the designated OH&S representatives perform their functions in respect of the workplace or section of the workplace for which they have been appointed. These functions include to conduct continuous monitoring and monthly inspections of their respective areas of responsibility, focusing on unsafe acts and unsafe conditions and report thereon to The Principal Contractor and OH&S Committee. OH&S representatives shall participate in accident or incident investigations. OH&S representatives shall attend all OH&S committee meetings. The complete list of functions can be found in Section 18 of the OHS Act.

e) Appointment of OH&S Committee (Sections 19 and 20 of the OH&S Act)

The Principal Contractor shall establish an OH&S committee, which shall meet at least once a month, where two or more Health and Safety Representatives have been appointed. OH&S representatives must be appointed as OH&S committee members. The number of members nominated by management may not exceed the number of OH&S representatives on the committee and must be appointed in writing.

E1011 operational integrity

The operational integrity of plant, equipment, structures and protective systems must be monitored and assured on an ongoing basis throughout the project cycle. Hazards must be identified, risks assessed

and as far as reasonably practicable, eliminated or the risks treated to as low as reasonably practicable (ALARP).

a) Construction Plant & Equipment

The Principal Contractor shall maintain all items of plant and equipment necessary to perform the work in a safe condition.

SANRAL reserves the right to inspect items of plant and equipment brought to site and used on site by The Principal Contractor. Should it be found that any item is inadequate, faulty, unsafe or in any other way unsuitable for the safe and satisfactory execution of the work for which it is intended, The Principal Contractor will be advised of such observation/inspection, and The Principal Contractor shall be required to repair, make safe or remove such item from operation and replace it with a safe and adequate substitute.

The Principal Contractor shall ensure that all plant, equipment, and power tools that are brought onto and used on site are:

- Appropriate for the type of work to be performed
- Placed on a register and inspected by a competent person and/or the authorized operator before use, daily or monthly dependent on Legislation.
- Record inspection findings on a register that must be kept on site.
- The inspection register shall reflect the serial number of the plant, equipment or power tool.
- Maintained and used in accordance with the manufacturers' recommendations
- Have adequate machine guarding fitted to all exposed rotating or moving parts, as reasonably practicable, that have the potential to cause harm
- All electrical power supply units are protected with operational earth leakage devices.
- Any defective, damaged or sub-standard equipment must be marked as unsafe for use and removed from operation as soon as possible

b) Standards and Registers

As standard project procedures, The Principal Contractor is expected to:

- Set up an initial set of registers as per the requirements of the OHS Act and Regulations.
- Complete the registers for each piece of plant, tool and equipment brought on and used on site
- Maintain a complete, continuous and comprehensive inspection and service history in these registers or checklists
- Ensure daily, weekly, monthly inspections are done and recorded for all plant, tools & equipment by a competent person and/or authorized operator as required by the OHS Act and Regulations.
- Have the inspection and maintenance records available for audit purposes.

E1012 OCCUPATIONAL HEALTH AND HYGIENE

a) Medical Fitness for Duty

All contractor employees shall undergo medical examinations and be certified fit for duty by an Occupational Health Practitioner before they are allowed to work on site.

The medical certificate must be in the form of Annexure 3 of the Construction Regulations and stipulate the possible exposures the employee might be exposed to during the execution of the project.

It is recommended and in the best interest of The Principal Contractor to implement pre-employment, periodic, as well as exit medical surveillance, especially with regards to Section 8 of the Noise Induced Hearing Loss Regulation.

b) First Aid

According to GSR 3(4), where more than 10 employees are employed at a workplace/worksites, The Principal Contractor shall ensure that there is at least one trained first aider for every group of 50 employees at the workplace/site. First Aid boxes must be provided where more than 5 employees are employed and must be readily available and accessible for the treatment of injured persons at the workplace.

To ensure immediate treatment of an injured person, it is recommended that all work crews have at least one trained first aider, with a fully stocked first aid box, irrespective of the number of people in the work crew. This is especially important when contractors work at great distances from the nearest emergency facility or town. These persons shall be appointed in writing as the first aiders with their certificates attached as proof of competency.

The minimum contents of the first aid box shall be as per the supplied list in the General Safety Regulations.

All treatments done must be recorded on a register and kept with the first aid box. A trained and appointed first aider must be responsible for the first aid box and its content. Used content must be replenished as soon as possible.

In order to ensure prompt response at the emergency facility it is recommended that the W.CI 2 forms be partially completed with the Employers' details.

c) Hygiene Facilities

The Principal Contractor and his contractors shall ensure compliance to Section 30 of the Construction Regulations with regards to facilities on the construction site as well as where accommodation is provided to employees on remote sites. The Principal Contractor shall ensure that the facilities are kept clean at all times, either through a service provider or self-employed persons. The Principal Contractor shall provide employees with at least one sanitary facility for each sex and for every 30 workers, changing facilities for each sex and sheltered eating areas.

d) Health related Epidemics and Pandemics

The contractor shall, as far as reasonably practicable describe in his health and safety plan how health related epidemics and pandemics will be dealt with. The Employer is aware that this section in the health and safety plan will not speak to specifics, but generic procedures. The Contractor must ensure that the requirements stipulated in the Hazardous Biological Agents (HBA) Regulation are addressed in his health and safety plan, training and information given to staff and procedures implemented on site to prevent health risks on site.

Once the nature and scale of the epidemic or pandemic is known, the Contractor must update his health and safety plan with the relevant information and send the updated plan to the relevant appointed OHS Agent for approval. Once approved, the Contractor must implement the updated health and safety plan and maintain the updated plan on site.

E1013 waste management

The Principal Contractor shall comply with all applicable and relevant Waste management legislation, as well as municipal bylaws applicable to waste management.

The Principal Contractor shall remove all waste generated at the construction site as soon as possible after generation to ensure good housekeeping at all times. The Principal Contractor shall have a waste management plan which must be implemented on the construction site and which will have the objective to ensure that waste is managed according to the Waste Management Hierarchy:

- Reduce what you can. If you cannot reduce then,

- Re-use what you can. If you cannot re-use then,
- Recycle what you can. What you cannot recycle,
- Convert into energy sources. If it cannot be converted to an energy source,
- Dispose of in a landfill – this is only to be done as a last resort and disposed without endangering human health and without using processes or methods which could harm the environment.

E1014 HAZARDOUS SUBSTANCE MANAGEMENT

The Principal Contractor shall ensure that hazardous substances brought onto site are easily identifiable and stored according to the requirements of the General Safety Regulations, GNR. 1031 of 1986, Section 4.

Where flammable liquids are being used or stored, this must be done in a manner which would not cause a fire or explosion hazard.

The Principal Contractor shall have Material Safety Data Sheets (MSDS) readily available for flammable, hazardous and toxic chemical substances and materials brought onto site and shall ensure that his employees are trained in these MSDS's.

Flammable, hazardous or toxic chemical substances may not be stored in empty food or drink containers. Empty flammable, hazardous and toxic containers must be disposed of in a safe manner, which will prevent further use of such a container.

A survey of the construction site must be done during site establishment, to locate any asbestos. Should asbestos be located, the conditions of the Asbestos Regulations, GNR. 155 of 2002 must be followed and complied with.

E1015 contractors

a) Consultations, Communications and Liaison

OH&S liaison between the Employer, The Principal Contractor, The Contractors, the designer and other concerned parties will be through the OH&S committee. In addition to the above, communication may be directly to the Employer or his appointed agent, verbally or in writing, as and when the need arises.

Consultation with the workforce on OH&S matters will be through their construction managers and supervisors, OH&S representatives and the OH&S committee. The Principal Contractor shall be responsible for the dissemination of all relevant OH&S information to The Contractors e.g. design changes agreed with the Employer and the designer, instructions by the Employer and/or his/her agent, exchange of information between subcontractors, the reporting of hazardous/dangerous conditions/situations etc. The Principal Contractors' most senior manager on site shall be required to attend all OH&S meetings.

b) Operational Procedures

Each construction activity shall be assessed by The Principal Contractor so as to identify operational procedures that will mitigate against the occurrence of an incident during the execution of each activity. This specification requires The Principal Contractor:

- to be conversant with all relevant Regulations;
- to comply with their provisions;
- to include them in his OH&S plan where relevant

c) **Checking, Reporting and Corrective Actions**

i) Monthly Audit by Employer (Construction Regulation 5(1)(o))

The Employer will conduct monthly health and safety and document verification audits in compliance with Construction Regulation 5(1)(o) in order to ensure that The Principal Contractor has implemented and is maintaining the agreed and approved OH&S plan.

The Principal Contractor will be provided with a copy of the Health and Safety audit report within seven days after the audit. The Employer or his representative may stop any Principal Contractor from executing a construction activity which poses a threat to the health and safety of persons which is not in accordance with the client's health and safety specification and the Principal contractor's health and safety plan for the specific site.

ii) Other Audits and Inspections by the Employer

The Employer reserves the right to conduct other ad hoc audits and inspections as deemed necessary. This will include site safety walks.

iii) Principal Contractor's Audits and Inspections

The Principal Contractor must conduct his own regular internal audits to verify compliance with his own OH&S management system, as well as with this specification.

The Principal Contractor shall furthermore ensure that each contractor's health & safety plan is being implemented and maintained. The Principal Contractor will ensure that periodic health and safety audits and document verification are conducted at intervals mutually agreed upon between the Principal Contractor and any contractor, but at least once every 30 days.

iv) Inspections by OH&S Representatives and other Appointees

OH&S representatives shall conduct monthly inspections of their areas of responsibility and report thereon to their foreman or supervisor, as well as the OH&S Committee, whilst other appointees shall conduct inspections and report thereon as specified in their appointments e.g. vehicle, plant and machinery drivers, operators and users must conduct daily inspections before start-up.

v) Recording and Review of Inspection Results

All the results of the abovementioned inspections shall be in writing, reviewed at OH&S committee meetings, endorsed by the chairman of the meeting and placed on the OH&S File.

d) **Project Health and Safety Management Plan**

As per Section 5(1) (l) and Section 7(1) (a) of the Construction Regulations of 2014, The Principal Contractor shall develop, implement and administer a Health and Safety Management Plan. The plan shall be in writing and shall be negotiated between The Principal Contractor and SANRAL or designated OHS Agent and must be approved by SANRAL or the designated OHS Agent prior to the commencement of work on site. The plan shall demonstrate management's commitment to ensure employee health and safety as their primary objective during the contract. The H&S plan shall be site and project specific and must address all aspects of the project H&S specification.

e) **Project Health and Safety File**

The Principal Contractor shall compile a project specific Health and Safety File that consist of all the relevant project specific documentation. The Health and Safety file may consist of multiple files, which when combined should contain all the required documentation.

It is recommended that the project specific Health and Safety file contain at least the following:

- Scope and summary of the project as well as any scope changes.
- Notification of Construction Work to DoL / Copy of Work Permit
- Proof of COID registration (Letter of Good Standing)

- Contractor Health and Safety Policy statement signed by management
- Appointment of Principal Contractor
- Mandatory Agreement – OH&S Act 37.2 (Between Employer and Principal Contractor)
- Client Health and Safety specification
- Latest copy of the OHS Act and Regulations
- Company Organogram depicting Health and Safety Responsibilities, including sub-contractors
- Employee list including copy of IDs and medicals
- Project specific Health and Safety Management Plan agreed with the Employer – See E1015(d) above
- Relevant OH&S Legal appointments which includes duties and responsibilities as well as competencies (training certificate)
- Copies of minutes of meetings – OH&S committee and other relevant OH&S meeting minutes
- Site specific Fall Protection Plan (if applicable)
- Risk Assessments
- Contractor Induction material
- Waste management Plan
- Emergency preparedness (first aid, firefighting, emergency plan, etc.)
- Emergency Contact Telephone numbers
- List of hazardous chemical substances used on site
- Material Safety Data Sheets of hazardous chemicals on site
- List of plant & equipment to be used on site
- Inspection Checklists/Registers of plant & equipment and emergency equipment
- List of Sub-contractors including type of work
- Sub-contractor 37.2 Mandatory Agreements
- Sub-contractor appointments which shall include the type of work The Principal Contractor is appointed for.

f) **Contracting Philosophy**

Any site-specific hazards and safety management expectations will be made known to the Principal Contractor prior to the work commencing on site. This will be done through the OH&S Specification for the project. SANRAL as the Employer/Client may specify requirements that are stricter than Legislative requirements in this OH&S Specification. Legal OHS requirements contained in the OHS Act and Regulations, SANS Codes and the project OH&S Specifications are the minimum requirements the Principal Contractor must apply during this contract with regards to Occupational Health and Safety. The Principal Contractor shall implement the minimum OH&S requirements and ensure conformance to these at all times.

g) **Workers Compensation Registration**

The Principal Contractor shall ensure that his employees are covered for any occupational injuries and illnesses in terms of the Occupational Injuries and Diseases Act 130 of 1993, which cover shall remain in place and up to date for the duration of the project.

The Principal Contractor shall ensure that his sub-contractor employees are covered for any occupational injuries and illnesses in terms of the Occupational Injuries and Diseases Act 130 of 1993, which cover shall remain in place and up to date for the duration of the project.

h) **HSE Non-Compliance**

It is a legal duty of the client according to the Construction Regulation 5(1)(q) that a Principal Contractor is stopped from executing any activity which poses a threat to the health and safety of persons. Depending on the seriousness of the non-compliance only the specific activity may be stopped until the non-compliance is rectified or the whole operation may be stopped.

It is also the duty of every employee to take reasonable care of his own health and safety and of other persons who may be affected by his acts as per OHS Act, Section 14(a). Keeping this in mind, it is required of The Principal Contractor to ensure his employees has the right to remove themselves from any unsafe situation or work activity, without any negative consequence to them until such time as The Principal Contractor has made the unsafe situation or activity as safe as practicable possible.

i) **Indemnity by Contractor**

The Principal Contractor shall indemnify the Employer against and from all damages, losses and expenses (including legal fees and expenses) resulting from:

- i) the loss of output and delay caused by the slowing down or partial or total stoppage of work caused by:
 - all or any of The Principal Contractor's workforce as a result of a dispute between all or any of the Principal Contractor's workforce and The Principal Contractor; or
 - all or any of the Principal Contractor's suppliers' difficulty or impossibility to deliver goods or materials needed to perform the Works;
- ii) Any unlawful, riotous or disorderly conduct by or amongst the Principal Contractor's personnel."

j) **The Principal Contractor Conduct**

Guidelines to the most important rules that shall be implemented and maintained by the Principal Contractor:

- Complete compliance to the OH&S Act 85 of 1993 and Regulations,
- Hazard identification and Risk Assessments for all activities,
- Daily communication of DSTI's before work commences, even if it is a repetitive task,
- Safe access and egress to and from work areas,
- Compulsory use of lifelines, Safety Harnesses and Fall Arrestors (Lanyards to be attached at all times), when working in elevated positions,
- Scaffold shall comply with Legal and SANS standards at all times,
- Good housekeeping and stacking practices,
- Safe lifting, rigging and slinging practices,
- Complying to Legal standards for lifting machinery & equipment,
- No lifting in wind conditions exceeding 30km/h (This is a guide and is dependent on risk assessments),
- Securing of tools, equipment and material at heights,
- Wearing of appropriate personal protective equipment as identified in the risk assessment.

Supervisors in charge are responsible for ensuring that the employees are aware of the hazards/risks involved in the work they will be doing/are doing and shall ensure the safety rules are obeyed.

No person shall act in a manner that endangers or is likely to endanger, the safety of any other person, or cause harm to any other person.

An employee who observes any dangerous situation, shall as soon as possible inform the person who is responsible for that section of the site.

Any employee who becomes aware of any person disregarding any safety rules, shall remind that person of the rules. If he persists in disregarding the rules, the matter must be reported to his supervisor.

No person shall damage, alter, remove, render ineffective or interfere with anything that has been provided for the protection of the site, or for the health and safety of persons.

No person shall interfere with or use firefighting equipment without authority and training.

No person in a state of intoxication or condition that render him incapable of controlling himself shall enter or be allowed to enter the site.

No alcohol or illegal drugs shall be taken onto the site.

All safety and warning signs shall be obeyed.

Always be alert of construction vehicles as well as traffic. Never turn your back to oncoming traffic, always have a line of sight.

k) Principal Contractor and Contractor Management

The Principal Contractor shall establish, maintain and ensure that all his contractors establish and maintain OH&S standards and systems as necessary and to comply with the Legal requirements as well as these OH&S specifications.

The Principal Contractor shall be solely responsible for carrying out work on the project, having the highest regard for the health and safety of his employees and people in the vicinity of his work area.

l) Public Health and Safety

The Principal Contractor shall, as far as is reasonably practicable, be responsible for ensuring that non-employees affected by the construction work are made aware of the dangers likely to arise from said construction work as well as the precautionary measures to be observed to avoid or minimise those dangers.

This includes:

- Non- employees entering the site for whatever reason
- The surrounding community
- Passers-by to the site.

E1016 DESIGNING FOR HEALTH, SAFETY AND THE ENVIRONMENT

Designing for safety is a process aimed at minimizing injury, death, property damage or destruction and harm to the environment, by utilizing an approach to identify and eliminate or control hazardous conditions and material during the design process. The Principal Contractor is responsible for appointing the temporary works Designer and shall ensure that the temporary works Designer implement a process and designs the temporary works in such a way that ensure the safety of employees during the erection, use and dismantling of the temporary works. The temporary work designer shall comply with the duties of the Temporary Work Designer as per the Construction Regulations, 2014 Section 6(2).

The Principal Contractor must communicate the anticipated risks and hazards resulting from the design to his employees and establish safe work procedures for the temporary works.

E1017 incident management

The Principal Contractor shall ensure that a culture exists within his company that promotes the recognition, response, reporting and investigation of incidents, including near misses (near hits). The Principal Contractor must implement a procedure for reporting and investigating accidents, incidents and near misses. The Principal Contractor should have a clear objective and target to obtain zero injuries for the duration of the project and such an objective must be communicated to all employees.

Appropriate corrective actions must be implemented, and the applicable learnings must be shared within The Principal Contractors business to prevent a recurrence of the incident or to prevent the near miss from becoming an incident in future.

(a) Incidents and Accidents

The Principal Contractor and his contractors shall coordinate their investigation of all accidents/incidents where employees and non-employees were injured to the extent that he had to be referred for medical treatment by a doctor, hospital or clinic. The results of the investigation shall be entered into an accident/incident register, which must be updated with each accident/incident.

The Principal Contractor shall notify the relevant SANRAL Project Manager and or SANRAL OHS Specialist of any incident/accident within the Principal Contractors or his Contractors area of responsibility in writing as soon as possible.

Although the accident/incident is reported to the client, the Principal Contractor has a responsibility and is required by law to report any Section 24 accidents and incidents to the Department of Labour. Any road traffic accident must be reported to the relevant authorities.

It is essential that the Principal Contractor demonstrate that corrective and preventative action has been taken to prevent a similar incident in future and that it is communicated to all the Principal Contractors affected staff. A copy of the investigation, corrective and preventative action taken as well as the attendance register of the employees who attended the discussion of the incident and the action implemented to prevent a similar incident, must be forwarded to the SANRAL Project Manager and or the SANRAL OHS Specialist.

Investigations must be completed for:

- Near Miss Incidents (To prevent it from becoming an incident)
- First Aid case Incidents
- Medical treatment case Incidents
- Fatalities

(b) Incident Reporting

The Principal Contractor shall provide the Employer with copies of all statutory reports required in terms of the Act within 7 days of the incident occurring. In addition, The Principal Contractor shall update monthly the Disabling Injury Frequency Ratio (DIFR) and display this information on a signboard at the site office.

The Principal Contractor is responsible for collecting, recording, calculating and reporting his and his sub-contractors Health & Safety statistics to the SANRAL OHS Specialist.

The statistics should contain at least the following for all employees of all contractors working on the project:

- Total Number of workers
- Total Number of hours worked (on the SANRAL project)
- Total Number of Near Miss Incidents
- Total Number of First Aid case Incidents
- Total Number of Medical Treatment case Incidents (Excluding Section 24 type incidents)
- Total Number of Section 24 type Incidents
- Preventative actions taken on incidents that have occurred
- Communication to employees and contractors of incidents and preventative actions.

E1018 PROJECT SPECIFIC CONSTRUCTION REQUIREMENTS

The clause contains specific requirements for Contract SANRAL N.001-192-2018/1, which must be adhered to in addition to minimum legislative requirements.

a) Baseline Risk Assessment (Part C3.5: Risk Assessment Plan)

The following is a list of activities, hazards and risks identified which forms the Baseline Risk Assessment for the project prepared by the Client in terms of Construction Regulation 5(1) (a):

Risks associated for identified activities and hazards:

Baseline Risk Assessment																	
Because People Depend on You																	
Project: Operations and Maintenance of N1 South and R30 Toll Plazas on National Route N1 and R30																	
Risk Identification							Risk Analysis			Risk Treatment			Risk Analysis (with Risk Controls in place)		Risk Treatment (additional treatment required unless risk is evaluated to be Acceptable, Transferred or Retired)	Status Comment	
A	B	C	D	E	F	G	H	I	J	K			L	M	N	O	P
Project or Unit Level Risk	Risk No.	Task / Situation	What are the hazards? <i>What aspects of work could harm workers or the public?</i>	Risk event / description <i>What can go wrong?</i>	Impact / and or consequences <i>How can these hazards harm workers or the public and what are the consequences that can result?</i>	Risk Owner (Name, Position Title)	Inherent Risk			Existing Controls			Current Residual Risk			Summary Action Plan	Status Comments
							Consequence (select from drop down list)	Likelihood (select from drop down list)	Risk Level (auto-filled)				Consequence (select from drop down list)	Likelihood (select from drop down list)	Risk Level (auto-filled)		
		Site establishment															
Project	A1	Clearing and grubbing of the area/site	Dust	Dust generation resulting in inhalation of dust particles and causing poor visibility.	Lung disease. Eye irritation.	Principal Contractor	Moderate	Almost Certain	High	• Wear a FFP1 dust mask for total inhalable dust. • Implement water suppression on site.			Minor	Unlikely	Low		
Project	A2	Working in close proximity of traffic	Unsafe man-machine interfaces.	Unplanned activities and poor traffic management. Being knocked down by plant / machinery.	Body injuries. Damaged to property. Damage to environment.	Principal Contractor	Moderate	Almost Certain	High	• Implement a traffic management plan. • Keep a safe distance from operating plant / machines on site. • Keep within the agreed footprint and adhere to the environmental management plan.			Moderate	Unlikely	Medium		
Project	A3	Lifting and lowering containers, equipment and machinery. Secure/safe storage for materials, • Plant and equipment • Ablutions • Sheltered eating area • Maintenance workshop • Vehicle access to the site • Temporary fuel storage, where applicable • Laboratory establishment, where	Uncontrolled and unplanned lifting operations. Lifting machine & equipment.	Falling of load or container to the ground. Topping of crane. Unsafe and non-compliant lifting equipment and lifting activities resulting in dropped loads.	Nip-points. Pinch points. Property damage. Body injury. Disabling injury. Fatality.	Principal Contractor	Catastrophic	Possible	Critical	• Only competent crane operator with valid medical fitness certificate to carry out the lift activity. • Pre-inspect the crane before use. • Rigging study to be conducted before the lift depending on the size of load. • Wear gloves and keep fingers away from nip / pinch points. • Use a warning system (such as a whistle) when the load leaves the ground. • Test certificate to be in place for the crane.			Moderate	Unlikely	Medium		
Project	A4	Dealing with existing structures.	Asbestos exposure if material damaged or incorrectly maintained.	Collapsing of worn out or unstable asbestos material. Demolition of structure containing asbestos. Inhalation of fine asbestos fibres.	Asbestosis	Principal Contractor	Moderate	Almost Certain	High	• Ensure the asbestos assessment and inventory is conducted by an Asbestos Approved Inspection Authority to establish the type, and how to deal with asbestos waste on site. • Wear a respirator to protect against asbestos fibres.			Moderate	Unlikely	Medium		
Project	A5	Installation and maintenance of temporary construction electrical supply, lighting and equipment.	Improper electrical cables installation. Electricity.	Exposure to unsafe live electric wire.	Electrocution. Burns. Property damage.	Principal Contractor	Moderate	Almost Certain	High	• Only competent electrician to install the temporary electrical supply to the offices or equipment. • All employees should be notified to treat all cables as live and keep away from them. • Light source should be installed as per maintenance and repair plan.			Minor	Unlikely	Low		
Project	A6	Adjacent land users / surrounding property.	Disgruntled public persons.	Verbal altercation with other land users. Shoving or man handling of officials by external forces.	Trauma. Threats.	Principal Contractor	Moderate	Almost Certain	High	• Pre-arrange with the land owner regarding any issue pertaining to their land. • Avoid arguments in public rather arrange a meeting for proper discussion. • Refrain from heroic acts.			Minor	Unlikely	Low		
Project	A7	Boundary and access control / public liability.	Open trenches. Plant machinery.	Plant or site traffic falling into unsafe open trenches. Members of the public have unauthorized access to site.	Injury to employees or public. Property damage.	Principal Contractor	Moderate	Almost Certain	High	• Ensure all signs and barricading are implemented when working on site that exposes the public to your hazard (open trench). • Only competent and authorized employees to drive the plant on site.			Minor	Unlikely	Low		
Project	A8	Health risks arising from neighbours, own activities and from the environment.	Dogs. Dangerous fauna & flora.	Being bitten by neighbour dogs. Contact with dangerous / poisonous fauna and flora.	Body injuries. Skin irritations. Bites & stings.	Principal Contractor	Moderate	Almost Certain	High	• Communicate in advance with the neighbour to keep their dogs locked up in their yard. • Site employees should not provoke / tease the dogs. • Be on lookout of dangerous fauna. • Erect fence around servitude.			Minor	Unlikely	Low		
		Land Transport / Driving															
Project	A9	Driving.	Unroadworthy vehicle. Vehicle not fit for type of road.	Vehicle breakdowns. Motor vehicle accidents. Time / cost implication.	Multiple injuries. Fatalities. Project production delays.	Principal Contractor & Appointed Supervisor	Catastrophic	Almost Certain	Critical	• Vehicles to be serviced and maintained as per manufacturer’s requirements and inspected for roadworthiness on regular basis. • Select correct type of vehicle for the terrain and ensure you are trained to drive the type of vehicle. • Complete Journey Management Plan as required.			Moderate	Unlikely	Medium		
Project	A10	Unsatisfactory driving behaviour.	Excessive speeding. Recklessness.	Motor vehicle accidents. Time / cost implication.	Multiple and disabling injuries. Fines. Property damage.	Principal Contractor & Appointed Supervisor	Incidental	Possible	Medium	• All vehicle operators are to follow the rules of the road and obey speed limits. • Operators to adjust driving behaviour accordingly to compensate for road condition / levels of traffic. • Four wheel driving training to be arranged for inexperienced operators.			Incidental	Possible	Low		
Project	A11	Driving on rural, urban and national roads during the day.	Presence of pedestrians along the road. Presence of livestock and wild animals on the road.	Not anticipating pedestrians on the road. Not adjusting driving behaviour. Knocking down livestock and wild animals on the side of the road. Motor Vehicle Accidents.	Multiple injuries. Fatality. Disabling injury. Property damage.	Principal Contractor & Appointed Supervisor	Catastrophic	Rare	High	• Awareness of road sections with high roadside activity. • Adjust speed and behaviour accordingly. • Be cautious when spotting animals along the road. • Avoid driving at night unless trip is authorized. • All risks and hazards should be identified and mitigated.			Minor	Unlikely	Low		
Project	A12	Driving.	Poor road conditions. Unknown road conditions. Not adjusting driving behaviour.	Motor Vehicle Accidents. Getting stranded. Not knowing what to do during an emergency.	Property damage. Accidents. Time/cost implication. Multiple and serious injuries.	Principal Contractor & Appointed Supervisor	Catastrophic	Almost Certain	Critical	• Appropriate navigation tools e.g. GPS or map should be in place when embarking on the unknown journey. • Identify all potential emergency situations and keep record of occurrences. • Emergency Response Plan should stipulate what actions to do and what actions to avoid. • Keep all necessary emergency / contact details at hand.			Moderate	Unlikely	Medium		
Project	A13	Driving and stopping at unsafe location.	Criminals. Perpetrators.	Not being alert or aware of a hijack hot spot. Being hijacked. Being robbed.	Trauma. Body injury.	Principal Contractor & Appointed Supervisor	Major	Possible	High	• Avoid driving in high risk areas, especially in remote areas. • Know the security situation of the area e.g. community actions. • Consider anti-hijacking training and / or personal security training. • Avoid known high-jacking hotspots. • Basic security to be practiced e.g. lock doors and windows closed. Do not stop at unsafe areas.			Minor	Unlikely	Low		
Project	A14	Driving in the dark and during adverse weather conditions.	Poor visibility. Fatigue.	Cannot see obstacles, potholes, roadworks, tollgates or other hazards. Falling asleep behind the wheel. Collision or loss of control and leaving road. Vehicle overturn.	Multiple and serious injuries. Time / cost implication. Property damage.	Principal Contractor & Appointed Supervisor	Catastrophic	Possible	Critical	• Avoid driving in the dark. • Use highways and avoid isolated roads where possible. • Check weather forecasts. • Reduce speed, increase following distance, use hazard lights and find a place of refuge in a town, under a bridge or other safe place until weather clears. • Ensure vehicle is roadworthy - especially wiper blades and headlights. • Avoid driving alone, especially in remote areas. • Plan working day (including return travel time) to not exceed 14 hours. • Get enough sleep before travelling long distances. • Complete Journey Management Plan (JMP) before embarking on a long journey and use buddy system. • Know the security situation of the area e.g. community actions. • Consider anti-hijacking training and/or personal security training. • Avoid known high-jacking hotspots.			Moderate	Unlikely	Medium		
Project	A15	Driving.	Political unrest. Community action.	Not aware of the situation or its development - getting caught in the middle of the situation.	Vehicle being confiscated, stoned or burnt by strikers. Multiple and serious injuries. Property damage.	Principal Contractor & Appointed Supervisor	Major	Likely	High	• Get update from social monitor / office if there will be a strike before travel. • Project Leader to constantly assess potential dangerous situations and take decision to evacuate if necessary - include protocols and conduct in the ERP.			Moderate	Unlikely	Medium		

Project: Operations and Maintenance of N1 South and R30 Toll Plazas on National Route N1 and R30																
Risk Identification							Risk Analysis			Risk Treatment		Risk Analysis (with Risk Controls in place)		Risk Treatment (additional treatment required unless risk is evaluated to be Acceptable, Transferred or Retired)	Status Comment	
A	B	C	D	E	F	G	H	I	J	K		L	M	N	O	P
Project or Unit Level Risk	Risk No.	Task / Situation	What are the hazards? <i>What aspects of work could harm workers or the public?</i>	Risk event / description <i>What can go wrong?</i>	Impact / and or consequences <i>How can these hazards harm workers or the public and what are the consequences that can result?</i>	Risk Owner (Name, Position Title)	Inherent Risk			Existing Controls	Current Residual Risk			Summary Action Plan	Status Comments	
							Consequence (select from drop down list)	Likelihood (select from drop down list)	Risk Level (auto-filled)		Consequence (select from drop down list)	Likelihood (select from drop down list)	Risk Level (auto-filled)			
Project	A16	Working or driving in extremely dusty and noisy environment.	Dust. Noise.	Over-exposure to dust & noise. Poor visibility. Poor concentration.	Noise-induced hearing loss. Restrictive lung diseases.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Wear safety goggles.Wear dust masks where the risk indicate as such.Avoid playing loud music in the vehicle, plant and machinery.	Minor	Unlikely	Low			
Project	A17	Working or driving in adverse weather conditions	Flash floods. Electrical storms / thunder storms. Strong wind / dust storms.	Swept away by floods when condition arise suddenly. Debris blown around. Unable to drive if visibility affected.	Multiple and disabling injuries. Fatality. Property damage. Fires.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">An emergency plan is to be written with a clear response strategy / plan to a specific adverse weather condition and must be communicated to personnel on site (as part of the site H&S management plan).At the sign of adverse weather approaching or on receiving a warning, personnel on site to evacuate to a safe shelter until the adverse weather has cleared.Check weather forecast / areas that may be effected by sudden and heavy rainfall e.g. low lying areas, dry river beds etc.Avoid driving into low flowing waters.	Minor	Unlikely	Low			
Project	A18	Traffic control and management on site.	Site traffic. Poor sign posting of traffic control and traffic management. Speed limits not displayed.	Motor vehicle accidents. Employees or public being knocked down by traffic passing by.	Disabling injury or fatality. Damage to property.	Principal Contractor & Appointed Supervisor	Catastrophic	Possible	Critical	<ul style="list-style-type: none">Put up the temporary construction signage at a correct / safe distance to alert the road users about construction activities ahead.Implement stop / go process to control traffic if one lane is used for coming and going traffic.Post flag men / women to slow down the traffic.	Moderate	Unlikely	Medium			
Project	A19	Crossing of lanes with traffic moving through lanes without stopping (Fast lane / Shesha lane - e-tag lane).	Public traffic / vehicles	Employees or public member being knocked down by traffic	Disabling injury or fatality. Damage to property.	Principal Contractor & Appointed Supervisor	Catastrophic	Possible	Critical	<ul style="list-style-type: none">Stop and checke for traffic before crossing any lane at toll plaza are.Ensure it is clear at the shesha lane before crossing.Do not use cell phone or any object that may distract your concentration when crossing lanes.Wear reflective jacket to be visible to motorists.Similar precautions adhered to during the day, should be practised in the event when crossing lanes at night.Cross the shesha lane only if it is safe to do so.						
		Health														
Project	A20	Drinking unclean water contaminated with cholera, bacteria, mosquito carrying malaria.	Cholera. Bacteria. Malaria.	Exposure to unclean water therefore contracting cholera. Being bitten by mosquito carrying malaria.	Yellow fever. Cholera and similar diseases. Serious illnesses. Malaria.	Principal Contractor & Appointed Supervisor	Major	Likely	High	<ul style="list-style-type: none">Ensure that water is clean and safe to drink at unfamiliar areas.Report any abnormalities regarding potable drinkable water.Keep bottled water at hand when travelling in areas where it could be unsafe to drink water from the area.Apply mosquito repellent.Wear long pants and long sleeve clothes to cover your skin.	Minor	Unlikely	Low			
Project	A21	Working in areas where HIV prevalence is high	HIV/Aids virus.	Unsafe social behaviours. Being involved in unsafe sexual practices that transmit HIV/AIDS virus.	Acquired Immunodeficiency Syndrome (AIDS).	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Train site employees on how to treat persons with HIV/AIDS.Employees to avoid being involved with multiple partners and practicing unprotected sex.Topic to be included in induction training.	Minor	Unlikely	Low			
Project	A22	Working with sand containing silica.	Silica sand.	Exposure to respirable silica dust.	Respiratory disease. Silicosis.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Wear FFP2 type dust mask to protect against respirable Silica dust.	Minor	Unlikely	Low			
Project	A23	Working on site and exposed to Hazardous Biological Agents:	<ul style="list-style-type: none">Viruses.Toxins from biological sources.Spores.Fungi.Pathogenic micro-organisms.Bio-active substances.	Falling sick when the biological agent enters the body through: <ul style="list-style-type: none">respiratory tract,digestive tracttransmission via bodily fluids,or coming in contact with contaminated objects.	Body allergic reaction Infections in the respiratory tract and or digestive tract Diarrhoea Dehydration for loosing body fluids	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	Respiratory infection <ul style="list-style-type: none">Get all necessary vaccinations, including your annual flu vaccine.Wash your hands regularly before eating, especially after you've been in a public place.Avoid touching your face to prevent germs from entering your system.Eat a diet rich in vitamins and minerals.Cover your nose and mouth with when you cough or sneeze.Avoid close contact with sick people Digestive infection <ul style="list-style-type: none">Proper hygiene etiquette of hand-washing.Disinfect contaminated surfaces with bleach.Wash clothing that has contaminated soil.Identify infected employees and implement extended infection control.						
Project	A24	Working in the midst of exposure to Covid-19.	Covid-19 droplets / virus. Contaminated surfaces.	Exposure to Covid-19 virus / droplets which remains on commonly touched surfaces such as door handles, hand rails, table surfaces and similar surfaces. Exposure to Covid-19 due to close contact with a C-19 positive case.	Covid-19 (mild to serious symptoms). Potential fatality.	Principal Contractor & Appointed Supervisor	Major	Possible	Critical	<ul style="list-style-type: none">Keep social distance of two arm lengths apart.Wear a clean mask.Sanitize with alcohol based sanitizer.Adhere to health screening (answer symptom questionnaire and taking of temperatures) before entering site.Practice personal hygiene wash hands regularly.Vaccinated staff.						
		General Site Office														
Project	A25	Poor and insufficient access control to the office.	Uninvited visitors and members of public. Visitor not accounted for.	Not knowing if there are visitors during emergency evacuations. Visitors to the site office not knowing what to do in the event of an emergency evacuation.	Robbery. Theft of personal belongings or company property. Injury to visitor.	Principal Contractor & Appointed Supervisor	Moderate	Unlikely	Medium	<ul style="list-style-type: none">Office project admin to be informed about the appointment when the visitor is expected.Appropriate site personnel member to attend to the visitor and accompany them at all times.Office project admin to ensure that all site personnel and visitors sign in and out in order to keep track of their whereabouts.Office project admin to inform visitors of the emergency evacuation procedures on site.	Moderate	Unlikely	Low			
Project	A26	Leaving home or site after normal working hours.	Secluded areas. Quite streets. Perpetrators.	Being accosted especially when it is dark.	Robbery. Theft of personal belongings. Car hijack.	Principal Contractor & Appointed Supervisor	Major	Possible	High	<ul style="list-style-type: none">When working after hours ensure that the access door to the project office is locked.When leaving the office call a family member or friend to let them know that you are leaving the office.Also call the security personnel to let them know you are leaving the office.	Major	Possible	Medium			
Project	A27	Not adhering to standard health and safety warnings on site.	Electricity. Unknown hazards / conditions. Hazardous conditions or equipment. Slippery floors. Complacency.	Warning signs not in place or persons not adhering to warnings signs, resulting in exposure to hazards such as slippery floors, contact with unsafe electricity, moving parts on machinery etc.	Sprain & strain. Burns. Fatality.	Principal Contractor & Appointed Supervisor	Major	Possible	High	<ul style="list-style-type: none">Ensure that warnings are displayed and visible to site personnel and visitors to the office.Always adhere to rules and requirements on site.Report any unsafe condition or when you observe unsafe acts.Relevant topic to be covered in induction training.	Moderate	Possible	Medium			
		Investigations and Inspection														
Project	A28	Working (doing inspection) during adverse / extreme weather & site conditions	Heat. Cold. Direct exposure to sun rays - UV radiation.	Over-exposure to extreme weather conditions.	Sunburn. Heat exhaustion. Dehydration. Hypothermia.	Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Determine the need, issue and wear correct PPE for protection against direct exposure such as e.g. sunscreen / long sleeve protection / sun brim or hats.During extreme heat conditions drink at least enough water & take regular breaks.Wear warm clothes during cold conditions.	Minor	Unlikely	Low			
Project	A29	Working or walking on site	Dangerous fauna & flora.	Exposure to poison or irritants from local flora. Being attacked or bitten by fauna. Bees, snakes etc. present in culverts	Dermatitis. Allergic reactions. Cytotoxic and neurotoxic reactions.	Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Conduct proper observation before entering culvertsWear PPE that provide appropriate protection.Insect repellent, availability of antiseptic creams if already bitten.If poisonous snakes / scorpions in area - these should be known and correct PPE worn.Sufficient first aid to be readily available.Get immediate medical attention when bitten by a poisonous snake, spider or insect.Never suck poison out of a wound.Have Toolbox Talks on snake management.	Minor	Unlikely	Low			

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Project	A30	Working on, or using / climbing step ladders or fixed ladders.	Unsafe ladders rungs. Use of ladders unsafely. Working on ladder without anyone holding it.	Fall from the ladder. Ladder rung breaks.	Serious or disabling injuries. Fractures. Sprain. Strain.	Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">• Ensure extension ladders are restrained top and bottom.• General rule of thumb, extension ladders should be inclined at one horizontal and four vertical, and should protrude a minimum of 900mm above step on/off point.• Ensure step ladders are balanced and stable before using - make use of a person to hold onto the ladder.• Avoid climbing ladders with muddy shoes or anything that can cause your step to slip.• Ensure three-point contact is maintained at all times when climbing ladder.	Minor	Unlikely	Low					
	A31	Doing inspections and stepping on uneven walkways	Uneven surfaces & sloped areas.	Not paying attention or using unsafe walkways can result in slips, trips & falls.	Sprain & strains. Bruises. Cuts.	Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">• Wear safety shoes with sole that has proper grip.• Assess site specific hazards in the daily Take 5.• Be cautious and mind your steps when walking on site.								
	A32	Working close to water & waterways.	Water with microorganisms. Slippery walkways.	Exposure to water with microorganisms. The water environment may cause slippery surfaces. Falling in water potential for drowning.	Drowning. Sprain & strains. Bruises & cuts. Typhoid. Diarrhoea. Other water-borne disease.	Appointed Supervisor	Catastrophic	Possible	Critical	<ul style="list-style-type: none">• Ensure that any work platform over water is stable and has adequate protection to prevent falling e.g. handrails or the use of fall-harnesses attached to secure anchor points.• Suitable equipment such as approved life jackets should be provided and worn when working near water.• Extra precautions should be taken where there is a risk of falling into very cold water.• Working alone is not permitted on, over or adjacent to any body of water.• Ensure the work areas are maintained free of trip hazards.• Look out for water conditions such as tides, currents and weather changes.• Identifv edge of embankment and keep safe distance away.								
		Entering confined space doing inspections																
Project	A33	Entry into confined space, chambers & culverts. Accumulation of water, moisture and organic matter resulting in an area becoming a confinded space (methane build-up and/or carbon dioxide build-up) that would not normally be classified as one.	Poor illumination. Awkward postures. Poor ventilation. Cramped environments. Oxygen deficient atmosphere.	Being confronted with unforeseen dangers in confined space. Working in restricted area.	Muscle strain. Multiple injuries. Fatalities. Work-related Musculo-skeletal disorder.	Principal Contractor & Appointed Supervisor	Catastrophic	Possible	Critical	<ul style="list-style-type: none">• Determine if it is a confined space. If so, follow confined spaces rules on site.• Identify edge of embankment / pits / chambers and keep safe distance away.• Ensure that there is easy access. Otherwise, wait until it is provided or do not enter.• Create as much noise as possible before entering chamber to warn wild animals of your approach.• Do not enter or immediately exit chamber if there is evidence of snakes or dangerous animals within chamber.• Speak to project senior/manager to gain full understanding of what natural threats are expected on site and include these in the project ERP.• Always ensure there is a lookout (person) outside the chamber.• Where there may be air contaminants, use the calibrated air monitor while in confined space.	Moderate	Unlikely	Medium					
		Plant and machinery operation during design phase and operation/supervision																
Project	A34	Excavation and digging test pits – locating existing underground services, gas, telecommunications, electrical supply, sewage lines.	TLB. Excavator. Water pipe under immense pressure. Gas. Pick and shovel. Uric acid, faecal matter from sewage.	Damage to and exposure to unknown underground services such as electrical cables, sewage ,gas or water pipes.	Explosion. Flood. Burns. Environment pollution. Infections & waterborne diseases.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">• Pre-assessment of the site and information from the client on location of existing underground services.• Re-locate test pits to prevent damage.• Obtain permit to excavate.	Minor	Unlikely	Low					
Project	A35	Test pitting and excavations - hand excavation using pick and shovel.	Pick. Shovel.	Incorrect posture when using hand tools. Working too close to each - accidental striking of body parts. Dismantling of an unstable loose pick head.	Muscles being overstrained and fatigued. Multiple body injuries	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">• No substandard tools to be used.• Leave enough safe space between workers.• Tools to be inspected before use.• Maintain the correct posture when excavating• Protective gloves to be worn.	Minor	Unlikely	Low					
Project	A36	Test pitting and excavations (mechanical) - in public vicinity / on roadway.	TLB. Excavator. Bob-cat. Front End Loader (FEL).	Workers, visitors or members of public getting too close to the open pits or excavation. Slipping / tripping and falling in the trench. Inattention or not visible enough to traffic and movement of plant.	Vehicle accidents. Multiple and fatal incidents.	Principal Contractor & Appointed Supervisor	Catastrophic	Possible	Critical	<ul style="list-style-type: none">• Excavations and test pits to be adequately demarcated with appropriate barricading to prevent any person from entering the excavated area, specially where it is close to local communities and left open overnight.• Competent person to be present during excavation and backfilling.• Always face traffic whilst working.• Wear high-visibility clothing.• Have a traffic management plan in place.• Traffic to be calmed by flagmen.• Be vigilant when doing visual inspections.• Never work alone on a busy road.	Moderate	Unlikely	Medium					
Project	A37	Test pitting and excavations - substandard TLB & other moving machinery.	TLB. Excavator. Insufficient awareness of man-machine interface. Unlicensed operator.	Being driven over by TLB, front-end loader, excavator or low bed truck or other mobile plant. Breakdown of substandard TLB leading to delays in production. Moving machinery / vehicle get too close to excavation. Wall collapse or machinery / vehicle can fall in the trench.	Multiple body injuries or fatality.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">• Spotter to ensure a safe distance between personnel and machine operator.• Trench to be adequately demarcated / barricaded to prevent vehicles and machinery from getting too close.• Spoil material to be stored 1.5 meters away from trench edge.• Consider using stop blocks for wheels of plant / vehicles to limit mobility of vehicles close to an excavation.	Minor	Unlikely	Low					
Project	A38	Test pitting and excavations - more than 1.5 meter deep.	TLB. Excavator. Low bed truck. Insufficient awareness of man-machine interface.	Site team members, visitors or members of the public walking and operating too close to the excavation edge. Trench wall collapse.	Engulfment of workers. Fatality. Disabling injury.	Principal Contractor & Appointed Supervisor	Catastrophic	Possible	Critical	<ul style="list-style-type: none">• Excavations and pits to be adequately demarcated with hard barricading to prevent any person from entering the excavated area, especially where it is close to local communities.• Excavation to be inspected and permission to be granted by an excavation competent person before anyone enters the excavation.• Ensure bracing, shoring or sloping of excavation has been done.• Ensure no load, material, plant or equipment is placed or moved near the edge of any excavation to prevent any possible collapse.• All excavated materials must be discharged not closer than 1.5 m from the edge of the excavation.• For long excavations provide an emergency escape route every 6m.• Excavation work to be done under the supervision of a competent person, who must be present at all times, also during backfilling operations.• Report any crack or soil collapse immediately to your Supervisor.• Ensure an additional person is standing outside the excavation as an lookout and first responder in case of an emergency.• Always wear full PPE.	Moderate	Unlikely	Medium					
Project	A39	Test pitting and excavations - accessing into excavation.	Unsafe access	Slips and falls.	Fractures. Injuries and multiple body injuries.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">• Provide safe access to the trench.• Use a secured step ladder when entering into the trench.• Implement trench entry register.• Inspect the trench before employees enter.	Minor	Unlikely	Low					

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Project	A40	Loud noise, excessive vibration while doing inspection.	Noise. Vibrations.	Exposure to loud noise and prolonged vibrations.	Noise induced hearing loss. Loud noise cause insomnia which contributes to fatigue. Vibration syndrome - pain, and flushing.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Wear hearing protection suitable for the type of noise / correct attenuation.Ensure that tool are main Hand-Arm Vibration Syndrome (HAVS).	Minor	Unlikely	Low			
Project	A41	Manual handling of items / objects.	Objects / items.	Exposure to ergonomic risks, incorrect lifting of items resulting in injury to the back.	Work related muscular skeletal disorder.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Two employees should lift items heavier than 25 kg.Bend appropriately to avoid hurting your back.Lift with balanced knees.	Minor	Unlikely	Low			
Project	A42	High & Low voltage power lines – Overhead & underground.	High & Low voltage power lines.	Exposure to live power cables or high voltage current jumping from cables to employees who are very close to it.	Electrocution. Burns. Disabling injury. Fatality.	Principal Contractor & Appointed Supervisor	Catastrophic	Possible	Critical	<ul style="list-style-type: none">Keep safe distance / adequate clearance from live electric cables either underground or overhead.Obtain permit / PM to inform ESKOM when working close to live electric cables.Where possible, isolate the powerline before working too close to it.	Moderate	Unlikely	Medium			
Project	A43	Use of portable electrical equipment.	Electricity. Angle grinder. Electrical drilling machine. Circular saw. Generator.	Poor maintenance or incorrect use of portable electrical equipment may lead to unsafe conditions and behaviour. Not able to control the equipment / loss of control. Exposed to carbon monoxide from generator.	Electrocution. Cuts. Amputations. Asphyxiation.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Inspect the portable electrical equipment before use to check defects.Employees operating portable electrical equipment should be competent to do so.Generator to be used outside where there is adequate ventilation.	Minor	Unlikely	Low			
Project	A44	Welding activities	Toxic welding fumes. Welding sparks. Welding arc light. Ultraviolet radiation. Noise. Welding heat, hot surfaces. Ergonomics.	Over exposure to welding fumes & arc light.	Irritation to the throat and larger airways in the lungs. Dryness of the throat. Coughing or tightness in the chest. Acute irritant-induced asthma. Metal fume fever. Acute pneumonia. Arc eyes.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Competent welders to do the work.Welders to wear welding helmets, leather aprons or hand shields with filter lenses and cover plates.Welding to be done at the open well ventilated area.LP gas to be used at well ventilated area.	Minor	Unlikely	Low			
Project	A45	Use of LP gas torches and appliances.	LP gas. Ergonomics.	Over exposure to LP gas.	Irritation to the throat and larger airways in the lungs. Dryness of the throat. Coughing or tightness in the chest. Acute irritant-induced asthma. Metal fume fever. Acute pneumonia. Arc eyes.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Ensure employees help each other when lifting items heavier than 25 kg.Wear safety gloves when manual lifting items.	Minor	Unlikely	Low			
Project	A46	Loading and off-loading of trucks (manual) - manual handling of aggregate / sand and other materials delivery.	Heavy material. Ergonomics. Aggregate sand.	lifting items on awkward position. Lifting heavy items alone. Offloading aggregate sand using shovel alone.	Back injury. Pinch points. Work related muscular skeletal disorder.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Ensure employees help each other when lifting items heavier than 25 kg.Employees to rest when offloading the sand / aggregate from the trucks.	Minor	Unlikely	Low			
Project	A47	Driving and operation of construction vehicles. - Parking of vehicles and mobile plant. - Towing of vehicles and mobile plant etc.	Trenching machine. Excavator. Bomag roller. Plate compactor. Front end loader. Mobile cranes. Truck mounted crane. Ancillary lifting tackle. Grader.	Reckless driving or operating behaviour. Unauthorized operating of the plant and machinery.	Vehicle / plant accident. Disabling injury. Motor vehicle accident. Property damage. Delay to project delivery.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Vehicles to be serviced and maintained as per manufacturer’s requirements and inspected for roadworthiness on regular basis.Vehicles to be operated by authorized, competent and appointed operators.Select correct type of vehicle for the terrain and ensure you are trained to drive the type of vehicle.Complete Journey Management Plan as required.	Minor	Unlikely	Low			
Project	A48	Layering and bedding.	Mobile plant and machinery.	Over exposure to noise. Over exposure to dust. Exposure to vibration.	Noise induced hearing loss. Respiratory disease. Vibration syndrome on hand / fingers.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Wear correct hand gloves.Wear appropriate hearing protective devices.Wear FFP2 dust masks.Practice proper communication with team members.	Minor	Unlikely	Low			
Project	A49	Installation of pipes in trenches.	Suspended loads. Mobile crane / pipe layer. Substandard lifting equipment. Incompetent lifting operator. Lifting activity without rigger or banksman. Unchecked and unstable trench walls.	Exposure to nip / pinch points. Breaking of lifting equipment. Trench wall collapse. Losing control of the lift or load resulting in dropped loads.	Disabling injury. Fatality. Damage to equipment and material.	Principal Contractor & Appointed Supervisor	Catastrophic	Possible	Critical	<ul style="list-style-type: none">Wear appropriate gloves for handling pipes.Ensure the pipes are lifted by a competent person.Lifting equipment to be check prior to use.Trench wall spoil material to be placed 1,5 meters away from trench edge.Trench wall to be battered.	Moderate	Unlikely	Medium			
Project	A50	Pressure testing of pipelines.	Huge amount of water under pressure in the pipe. Unstable wet trench walls.	Water pipe rupture and release of too much water in the trench. Trench walls collapse.	Drowning. Fatality. Disabling injury.	Principal Contractor & Appointed Supervisor	Catastrophic	Possible	Critical	<ul style="list-style-type: none">Ensure the pipe is tested within its capacity to carry the bars.Keep away from a water pipe under pressure	Moderate	Unlikely	Medium			
Project	A51	Gabion work.	Gabion boulders. Wet cement / grout.	Exposure to nip / pinch points. Fall of rocks. Wet cement reach the skin of the hand.	Fractures. Disabling injury. Skin irritation from cement.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Wear gloves when working with rocks.Ensure the gabions are placed tight close to each other to avoid falling.	Minor	Unlikely	Low			
Project	A52	Use of explosives.	Explosives. Unauthorized or incompetent person working with explosives. Undetonated charged explosive. Flying debris / objects. Cement dust / total inhalable dust.	Unintentionally detonate charges. Exploding of undetonated charge. Over-charging.	Disabling injury. Fatality. Amputation. Property damage.	Principal Contractor & Appointed Supervisor	Catastrophic	Possible	Critical	<ul style="list-style-type: none">Obtain permit to use explosives and transporting detonators.Explosive to be handled by competent blaster.Demarcate and communicate intention of blasting (area and time).	Moderate	Unlikely	Medium			
Project	A53	Erecting formwork and support work (temporary works) including scaffolding.	Scaffold material. Working at height.	Improperly erected platform collapse. Collapse of scaffolding.	Disabling injury. Fatality. Fractures. Property damage.	Principal Contractor & Appointed Supervisor	Catastrophic	Possible	Critical	<ul style="list-style-type: none">Adequate and safety clearance should be adhered to for low and high hanging overhead powerlines.Obtain permit to work close to power lines.	Moderate	Unlikely	Medium			
Project	A54	Demolition work.	Dust. Noise. Collapsing walls or parts of structures.	Persons exposed to flying objects and debris. Walls may fall not according to plan.	Eye injury. Respiratory disease. Disabling injury.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Access platform to be erected by competent scaffold erector.Use complete scaffold parts according to SANS 10085-1:2004.	Minor	Unlikely	Low			
Project	A55	Bulk mixing plant.	Cement dust. Wet cement / grout. Slippery surfaces. Noise.	Exposure to wet cement or grout, over exposure to respirable cement dust and spillage of wet cement mixture or grout on the ground. Slip and fall.	Skin irritation. Lung cancer. Sprains, strains and fracture.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	<ul style="list-style-type: none">Wear safety googles.Wear FFP2 dust mask.Keep clear of walls that may collapse due to demolition.	Minor	Unlikely	Low			

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		Working with Chemicals / Radioactive material															
Project	A56	Working with hot materials / hazardous chemical substance - raking of hot asphalt.	Hot materials - asphalt. Chemicals.	Accidental touch of hot asphalt or hot asphalt enter safety shoes.	Skin, feet injury. Hand burns.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	• Wear appropriate long sleeve PVC gloves when working with chemicals. • Follow correct instruction on how to handle, store and first aid measures on the Material Safety Data Sheet of the hot material - asphalt.	Minor	Unlikely	Low				
Project	A57	Use of radioactive equipment - Troxler.	Radiation.	Prolonged exposure to radiation when Troxler is testing density.	Cancer when it affects cell Deoxyribonucleic acid (DNA. Affects reproduction.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	• Stay clear from the operating Troxler. • Use signage to alert the personnel about Troxler. • Storage & maintenance protocols. • Leak tests.	Minor	Unlikely	Low				
Project	A58	Working with / handle chemicals / flammable materials.	Flammable material. Petrol. Diesel. Cement. Asphalt. Bituminous material and similar.	Improper handling of chemicals and storing of incompatible chemicals. Non adherence to MSDS storage requirements.	Fires. Burns. Third degree burns. Explosion. Damage to property.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	• Use the flammable material, store it according to the material safety data sheet. • Wear proper PPE as per the MSDS. • Store compatible chemicals next to each other. • Chemicals should be stored at well ventilated area. • Fire extinguisher to be placed outside the chemical store. • Chemical store to always be locked. • Wear appropriate PPE when working with bitumen material.	Minor	Unlikely	Low				
		Environmental															
Project	A59	Design or supervision and related activities in the environment.	Poor awareness of environmental impact. Poorly maintained plant and machinery leaking oil.	Environment pollution may lead to contamination of natural water course. Plant and equipment emitting excessive fumes or smoke to the atmosphere. Illegal dumping / disposal of chemical waste or spillage of oil - chemicals on the ground / soil.	Affect ozone layer. Harm to flora and fauna. Contaminated soil and water sources.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	• Ensure that environment is protected by using the proper rubble bins / skip for waste disposal. • Chemicals should be disposed according to their material safety data sheet. • Plant / equipment utilized on site should be serviced within required intervals to avoid emission of excessive fumes or smoke to the atmosphere. • No chemical should be disposed of towards the natural water stream.	Minor	Unlikely	Low				
		Security and riots															
Project	A60	Management of personal safety & security risks.	Criminals. Perpetrators.	Driving late at night, with unlocked car doors and open windows. Valuables visible to criminals.	Robbed of personal belongings. Hijacked or kidnapped for a ransom.	Principal Contractor & Appointed Supervisor	Moderate	Almost Certain	High	• Ensure vehicle windows are closed when driving along the road. • Keep valuables out of sight (including laptops) of criminals / thieves. • Lock your vehicle or plant / machinery if not attended by anyone. • Know your security company numbers in case you need escort.	Minor	Unlikely	Low				
Project	A61	Pre-warning of potential riots in the site area.	Disgruntled public protestors.	Pre-warning not heeded in time, resulting in delayed action and Site employees unable to evacuate safely. Confrontations. Caught up in the middle of the strike.	Property damage. Body injury.	Principal Contractor & Appointed Supervisor	Moderate	Possible	Medium	• An emergency preparedness and response plan (EPRP) for the project office. • Established emergency team for the office.	Minor	Unlikely	Low				
Project	A62			Single point of accountability (SPOA) / emergency coordinator not in office to implement the emergency preparedness and response plan.	Injury to employees.	Principal Contractor & Appointed Supervisor	Moderate	Possible	Medium	• EPRP is in place but called into effect by a SPOA.	Minor	Unlikely	Low				
Project	A63	Disruption to services in the site area (water / electricity / road / cellphone towers) for a prolonged period.	Disgruntled public protestors.	Employees unable to use facilities, unable to access or leave the project office etc.	Services down in the area.	Principal Contractor & Appointed Supervisor	Major	Possible	High	• Work from accommodation / home.	Moderate	Unlikely	Medium				
	A64			Shortage of fuel for site vehicles.	Low production turn around.	Principal Contractor & Appointed Supervisor	Moderate	Unlikely	High	• Limited amount of fuel available.	Moderate	Unlikely	Medium				
Project	A65	Crowd gathers near site project office.	Disgruntled public protestors.	Employees can't leave the site office.	Employees panicking thus behaving recklessly due to fight or flee mode.	Principal Contractor & Appointed Supervisor	Moderate	Possible	Medium	• Established EPRP for the site office.	Minor	Unlikely	Low				
				Employees leave the site office on foot.	Employees caught in the potential riots.	Principal Contractor & Appointed Supervisor	Moderate	Possible	Medium	• Established EPRP for the site office.	Minor	Unlikely	Low				
				Employees leave the site office via their normal routes.	Employees caught in the potential riots.	Principal Contractor & Appointed Supervisor	Moderate	Possible	Medium	• Established EPRP for the site office.	Minor	Unlikely	Low				
Project	A66	Crowd invades site project office.	Disgruntled public protestors.	A disgruntled crowd gathers unannounced and blocks off exits from site. Site management not cooperating with the crowd.	Property damage. Injuries to site employees.	Principal Contractor & Appointed Supervisor	Major	Possible	High	• Established EPRP for the site office.	Moderate	Unlikely	Medium				
				Persons coming to the site office with public transport that is not operational.	Injuries to site employees. Aggravated injuries & trauma.	Principal Contractor & Appointed Supervisor	Major	Possible	High	• Emergency team should ensure that all employees leave the building and the parking areas safely.	Moderate	Unlikely	Medium				
	A67	When a security related emergency occurs.	Blocked access for emergency services	Ambulance/ emergency services cannot access the area / building resulting in delayed treatment and aggravated injuries. Staff not able to evacuate site.	Aggravated injuries and potential fatality.	Principal Contractor & Appointed Supervisor	Major	Possible	High	• First aiders & fire fighters. • Emergency response plan.	Moderate	Unlikely	Medium				
Project		Insurance company's requirements for site not in place.	Poor insurance administration	Insurance requirements not implemented / adhered to on site	Losses that site is not covered for.	Principal Contractor & Appointed Supervisor	Major	Possible	High	• Insurance cover / SASRIA covers all moveable assets.	Moderate	Unlikely	Medium				
Project	A68	Nearby suburbs / town to the project invaded / services disrupted in the area.	Disgruntled public protestors.	Invasion and service disruption affecting site	Site employees without services and essentials and unable to work.	Principal Contractor & Appointed Supervisor	Major	Possible	High	• Securing essential areas with additional security.	Moderate	Unlikely	Medium				
Risk assessment training & sign off																	
	Name and Surname		Signature	Date		Name and Surname		Signature	Date								
1					16												
2					17												
3					18												
4					19												
5					20												
6					21												
7					22												
8					23												

b) **Daily Site Attendance Register**

The Principal Contractor shall keep a daily site register so as to be able to identify the entire Contractors personnel on site in case of an emergency or evacuation situation. The attendance register must include permanent as well as temporary workers working on the site.

All contractors shall report to security/reception upon arrival at site. The Principal Contractor will only grant first time access to work on the site if all required documentation has been provided by the contractor and has been approved by the Principal Contractor.

All site visitors, suppliers and any new contractors shall report to security/reception upon arrival at site. All visitors need to sign an attendance register when visiting the site. Visitors include all persons which are not permanently working on the site but excludes temporary site workers. Visitors must undergo site induction training before they are allowed on site to make them aware of the site dangers.

c) **Emergency Numbers / Emergency Evacuation**

A list with emergency numbers must be readily available to first aiders and supervisors. Emergency numbers must be site specific and must display the nearest emergency facilities.

The Principal Contractor shall identify and formulate emergency procedures in the event an incident does occur. The emergency procedures thus identified shall also be included in The Principal Contractor's OH&S plan and communicated as part of induction training. It is the responsibility of the first aid worker, together with the construction supervisor, to make an assessment regarding the severity of injuries and which actions are appropriate. For example: transfer to a medical facility by ambulance or helicopter.

The Principal Contractor must implement an emergency evacuation procedure on site to ensure that in case of an emergency, all staff will leave their place of work when the emergency siren is sound and proceed to the designated emergency assembly point. The emergency assembly point at the site office must display the sign "Emergency Assembly Point".

An evacuation route diagram must be displayed and visible at strategic points in the site office buildings and on notice boards.

All staff working on site must be given awareness training on the emergency evacuation procedure and evacuation drills must be exercised to ensure all staff know the correct procedure to follow in case of an emergency.

d) **Site Security**

Certain areas where work must be carried out, is recognized unsafe areas and certain other areas may from time to time become unsafe, due to 3rd party actions. The Principal Contractor must, as far as reasonably possible, anticipate unsafe areas and must ensure that his site staff is safe from 3rd party actions, which include but is not limited to:

- Unrests,
- Violent Demonstrations,
- Theft,
- Injury to staff due to 3rd party actions.

The Principal Contractor must, when work is to be carried out in the above-mentioned areas, make provision for security services to accompany site staff during the execution of their work, as The Principal Contractor is responsible for the Health, Safety and Security of his own staff. The provision for security services must form part of The Principal Contractors tender.

e) **Personal Protective Equipment**

Comply with General Safety Regulations, Section 2

The Principal Contractor shall identify the hazards in the workplace and follow the hierarchy of controls to prevent incidents. Where possible, hazards must be eliminated or, where impracticable,

mitigate the hazards through implementing control measures. Where mitigated hazards still pose a risk to the health and safety of workers, take steps to protect workers and make it possible for them to work safely and without risk to their health under the hazardous conditions, by wearing personal protective equipment and clothing.

Personal protective equipment (PPE) should, however, be the last resort and there should always first be an attempt to apply engineering and other solutions to mitigate hazardous situations before the wearing of PPE is considered. The hierarchy of hazard control must be followed before the option of personal protective equipment is considered. The following hierarchy of controls must be followed:

- Elimination
- Passive Controls
 - Substitution – Using a cherry picker or man-lift instead of a ladder.
 - Engineering Controls – Installing barrier railings; Installing stairs instead of using vertical ladders.
- Active Controls
 - Administrative policies and procedures
 - Personal protective equipment

Where it is not possible to create an absolutely safe and healthy workplace, the Principal Contractor shall inform employees regarding this and issue, free of charge, suitable equipment to protect them from any hazards being present and that allows them to work safely and without risk to health in the hazardous environment.

It is a further requirement that the Principal Contractor maintain the said equipment, that he instructs and trains the employees in the use of the equipment and ensures that the prescribed equipment is used by the employee/s.

Employees do not have the right to refuse to use/wear the equipment prescribed by the Employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other reason, the employee cannot be allowed to continue working under the hazardous condition/s for which the equipment was prescribed but an alternative solution has to be found that may include relocating the employee.

The Principal Contractor shall include in his OH&S plan the PPE he intends issuing to his employees for use during construction and the sanctions he intends to apply in cases of non-conformance by his employees. Conformance to the wearing of PPE shall be discussed at the DSTI and Toolbox Talk meetings.

The Principal Contractor shall ensure that all his personnel, excluding those who are permanently office bound, are equipped with reflective safety jackets and that these are worn at all times when working on site. Any person found not wearing a reflective jacket on site must be removed from the site until such time as he is in possession of and wearing a reflective jacket. Reflective safety jackets shall be kept in good condition and any jackets that are ineffective must immediately be replaced by The Principal Contractor.

f) Site Supervision

Comply with Construction Regulation, Section 8.

The Principal Contractor shall appoint a competent Construction Manager who shall be responsible for the construction activities and for ensuring occupational health and safety compliance on the construction site.

g) Working in Elevated Positions

Comply with Construction Regulation, Section 10

The Principal Contractor shall ensure that a fall protection plan, developed by a competent person who is designated as the Fall Protection Plan Developer, is available on site and understood by all employees who will be working in elevated positions.

All employees working in elevated positions shall protect themselves from falls by wearing a full body harness and the lanyard shall be attached as far as possible above the head of the worker to a life-line or other approved and anchor point indicated in the fall protection plan.

In addition to obvious elevated work activities, work activities which include:

- Working on the edge of an excavation where there is a risk of falling into the excavation; or
- Work on the edge of a vertical drop where there is a risk of falling;

shall be considered work in elevated positions and Section 10 of the Construction Regulations must be adhered to at all times. The hierarchy of controls must be implemented when such activities are carried out. As a minimum the employee must wear PPE as identified in the risk assessment, which shall include a full body harness.

h) Structures

Comply with Construction Regulations, Section 11.

The Principal Contractor shall ensure that all practicable measures are taken to prevent the uncontrolled collapse of new or existing structures or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work. No structure may be loaded in a manner which would render it unsafe.

When a structure is of temporary nature, all conditions as required by the Construction Regulations Section 12 - Temporary Works, must also be complied with.

i) Excavations

Comply with Construction Regulations, Section 13

The Principal Contractor shall ensure that all excavations are carried out under the supervision of a competent person who has been appointed in writing as Excavation Supervisor.

The Principal Contractor must evaluate the stability of the ground before excavation work begins as well as during excavation work.

Excavations must be barricaded to prevent unauthorized access.

Material removed from excavations, as well as heavy machinery and construction vehicles, must not be closer than 1 meter to the edge of the excavation, to prevent additional loads on the excavation edge, which could cause cave-ins, to prevent construction vehicles from falling into the excavation and to prevent the accumulation of carbon monoxide gas inside the excavation.

The principal contractor and its contractors must cause every excavation which is accessible to the public or which is adjacent to the public roads or thoroughfares, or whereby the safety of persons may be endangered, to be –

- Adequately protected by a barrier or fence and as close to the excavation as is practicable; and
- Provided with warning illuminants or any other boundary indicators that are clearly visible at night or when visibility is poor.

People working in the excavation must be adequately protected from cave-ins, by means of protection systems such as trench boxes and shielding and must have a safe means of access into the excavation and egress from the excavation.

j) Scaffolding

Comply with Construction Regulations, Section 16, General Safety Regulations, Section 6 and SANS 10085 – The Design, erection, use and inspection of access scaffolding

The Principal Contractor shall appoint a competent person in writing as scaffolding Supervisor. Scaffolding Inspectors and Scaffolding Erectors must be trained and found competent to carry out scaffolding work. It is important to note that only competent scaffold erectors are allowed to build

the scaffolding. The scaffold inspector is not allowed to build the scaffold with the scaffold erector team.

Scaffolding shall be erected according to SANS 10085 and shall be tagged "Unsafe for use" while it is being build and "Safe for Use" after inspection indicated that the scaffold is safe to use. The inspection of the scaffold shall be in writing and proof thereof shall be available for any user of the scaffold as well as for audit purposes.

Scaffold left erected while The Principal Contractor is not in attendance, must be tagged with a "Not Safe for Use" tag and all reasonably practicable measures must be taken to prevent unauthorised access to the scaffold.

Scaffold must be inspected by the competent scaffold inspector on completion of the scaffold build, weekly thereafter or following severe weather conditions.

Hazards such as overhead power lines must be identified before the scaffold is build and must be reflected in the risk assessment.

When using mobile scaffold, employees and materials must be removed from scaffold before moving the mobile scaffold. Hazards such as overhead power lines must be identified before moving mobile scaffold and must reflect in the risk assessment.

k) Suspended Platforms

Comply with Construction Regulation, Section 17, SANS 10295-2 - Suspended access equipment Part 2: Temporary suspended platforms (TSPs)

All suspended platform work must be carried out under the supervision of a competent appointed Suspended Platform Supervisor. Suspended platform erectors, operators and inspectors must be competent.

The Principal Contractor must be in possession of a certificate of design for the use of the suspended platform system.

l) Cranes

Comply with Construction Regulation, Section 22, Driven Machinery Regulation, Section 18.

Crane operators must be trained and found competent to operate the particular type of lifting machine and have a valid operator's card. The crane operator must be in possession of a valid medical certificate of fitness, issued by an occupational health practitioner.

The wind factor should always be taken into consideration when operating cranes and a wind speed device must be fitted so that it provides the operator with an audible warning when the speed exceeds the safe lifting speed. Upon noticing that the wind speed is equal or more than the specified speed limit, the operator should stop immediately.

m) Construction Vehicles & Mobile Equipment

Comply with Construction Regulation, Section 23, National Road Traffic Act, 1996

Construction vehicle operators must have received training to operate the class of construction vehicle or mobile equipment and must be in possession of an operator's card as proof of competency. Construction vehicle operators must be authorised in writing and have a medical certificate of fitness issued by an occupational health practitioner to operate the construction vehicle and/or mobile equipment.

All construction vehicles operating on a public road, must be roadworthy, licenced and when operated on a public road, comply with the National Road traffic Act.

n) Electrical Equipment

Comply with Construction Regulations, Section 24.

The Principal Contractor shall take adequate steps to ascertain the presence of and guard against danger to workers from electrical cables or apparatus which is under, over or on the site.

The exact location of underground electric power cables must be determined before any excavators are used for excavation purposes.

The location of overhead electrical cables must be assessed when working with cranes and lifting equipment. Injury may be possible from touching the electrical cables with the crane boom, or from arching when the crane boom comes too close to the electrical cable.

All temporary electrical installations must be inspected at least once a week by a competent person and the records of the inspections must be recorded in a register which must be kept on site.

Electrical machinery and extension cords must be in a serviceable condition and must be inspected on a daily basis before use on a construction site by the authorised operator and the inspection checklist must be kept on the construction site.

Comply with Electrical Installation Regulations.

All electrical installations shall be inspected and approved by an accredited electrical inspector and a valid Certificate of Compliance must be issued for the installation.

All electrical installations carried out on site (permanent and temporary) must be in accordance and comply with the Electrical Installation Regulations.

All power supplies and generating units must be fitted with a functional earth leakage device.

o) Temporary Storage of Flammable Liquids

Comply with Construction Regulation, Section 25 and General Safety Regulations, Section 4

The Principal Contractor must ensure storage areas of flammable liquids are well ventilated and “No Smoking” signs are placed at the entrances and ventilation ducts of the storage areas. Firefighting equipment must be available in suitable positions around the storage areas.

The Principal Contractor must ensure that good housekeeping is practiced in and around the flammable storage areas.

p) Water Environments

Comply with Construction Regulation, Section 26.

The Principal Contractor must ensure that a lifejacket forms part of the employees PPE and is worn when the employee is exposed to the risk of drowning, by falling into water.

The risk assessment must make provision for the rescuing of persons in danger of drowning and for preventing employees from falling into the water.

When working next to a river, the Principal Contractor shall put a system in place to monitor the river water level in order to evacuate employee in case of a flood.

When working over water environments, Section 10 of the Construction Regulations – Fall Protection will also apply.

q) Housekeeping

Comply with Construction Regulation, Section 27, Environmental Regulations for Workplaces, Section 6(3).

The Principal Contractor shall ensure that suitable and acceptable housekeeping is continuously implemented and maintained on the construction site. Off-cuts and waste must be removed as soon as practicable.

r) Stacking & Storage of Material, Plant & Equipment

Comply with Construction Regulations, Section 28 and General Safety Regulations, Section 8.

The Principal Contractor shall appoint a competent person in writing with the duty of supervising all stacking and storage operations on site.

Stacking shall only take place in areas specifically demarcated for this purpose. Circular items must be secured with wedges or chocks.

Items removed from a stack shall only take place from the topmost layer of the stack.

Stacks shall not obstruct any fire extinguishing equipment, first aid equipment, electrical switchgear (DB Boxes) and ventilation or lighting installations.

Unstable stacks must be broken down immediately.

s) **Fire Precautions**

Comply with Construction Regulation, Section 29.

The Principal Contractor must provide his own firefighting equipment that is within the service date and safe for use. Firefighting equipment must be on a register and inspected by a competent person who has been appointed in writing.

Suitable and sufficient fire extinguishing equipment must be placed at strategic locations and a sufficient number of firefighters must be available, which must be trained in the use of it.

t) **Intoxicating Liquor and Drugs**

Comply with General Safety Regulations, Section 2A.

The principal Contractor must compile a Substance Abuse Policy, which must be communicated to all employees. This policy should form part of the induction material for employees as well as visitors.

The Substance Abuse Policy should set the limit for intoxication to zero in order to complement a vision of zero tolerance.

Any person found to be intoxicated, or consuming intoxicating liquor or illegal drugs, shall not be allowed onto the premises and/or must be removed from the premises.

The Principal Contractor has the right to test any person entering the premises for intoxicating liquor or illegal drugs and may refuse entrance on the basis of the outcome of the test.

The Principal Contractor shall ensure that employees taking prescription medicine informs the Principal Contractor of such and shall ensure that the side effect of such medicine does not constitute a hazard to the employee himself or people working with, or in close proximity to the employee.

u) **Confined Space Work & Tunnelling**

Comply with Construction Regulation, Section 15 and General Safety Regulations, Section 5.

The Principal Contractor shall ensure that only authorized persons enter confined spaces.

An entrance log must be kept to ensure people are not left inside the confined space. Adequate air monitoring must be carried out before entering the confined space. When air monitoring indicated the oxygen to be less than 20% by volume, the confined space must be purged and ventilated to obtain a safe atmosphere or self-contained breathing apparatus must be used.

v) **Site Services**

The Principal Contractor shall provide and maintain on the site adequate facilities for employees to use, which must be serviced and kept sanitary and hygienic at all. The following site services should be taken not of:

i) Drinking Water

The Principal Contractor must ensure that an adequate supply of potable drinking water is available for all persons engaged in managing and working on the construction site and, if necessary, similar facilities elsewhere for such personnel off the site. Employees working in hot conditions must consume enough water per hour to prevent dehydration.

Where water is unsafe for human consumption, it must be so indicated by means of adequate signage.

ii) Accommodation

The Principal Contractor shall comply with the requirements of Construction Regulation 30 with regards to employee's accommodation. Reasonable and suitable living accommodation must be provided to employees who are far removed from their homes.

iii) Sanitary Facilities

The Principal Contractor shall comply with the requirements of Construction Regulation 30 with regards to employee's sanitary facilities. Sanitary facilities must be positioned in close proximity of the work area. Sanitary facilities must be serviced regularly and kept in a clean and hygienic condition.

w) **Traffic Accommodation**

The Principal Contractor must develop a clear Traffic Management Plan, which must be approved by the Engineer. Traffic must be organized and controlled in accordance to the Traffic Management Plan and any work area must have adequate signage, signaling or other control arrangements to guard against the dangers relating to the movement of vehicles. Where reasonably practicable, solid barriers must be placed between workers and traffic passing by.

When the Principal Contractor is executing night work, permission should be obtained from the Engineer. The Principal Contractor must put in place visible or reflective signs that can be seen by motorist at a distance. If a stop and go method is used flag persons must be properly trained on how to control the traffic.

PART C4: SITE INFORMATION

PART C4 – SITE INFORMATION

The contents of all site information for contract SANRAL N.001-192-2018/1 for the Operations and Maintenance of N1 South and R30 Toll Plazas on National Route N1 South and R30 in the Project Information Document (Volume 4) are as follows:

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