SANRAL
SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD

BUILDING SOUTH AFRICA
THROUGH BETTER ROADS

THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

CONTRACT SANRAL C.002-053-2023/1

TRAINING AND CONSTRUCTION MANAGEMENT SERVICES FOR A COMMUNITY DEVELOPMENT PROJECT TO UPGRADE ACCESS ROADS IN AND AROUND KWAMHLANGA NEAR NATIONAL ROAD R573 SECTION 2 FROM KM8.60 TO KM13.00

PROJECT DOCUMENT

BASE DATE: **JANUARY 2026**

TENDER DOCUMENT
VOLUME 3
BOOK 3 OF 3

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 C.002-053-2023/1

TRAINING AND CONSTRUCTION MANAGEMENT SERVICES FOR A COMMUNITY DEVELOPMENT PROJECT TO UPGRADE ACCESS ROADS IN AND AROUND KWAMHLANGA NEAR NATIONAL ROAD R573 SECTION 2 FROM KM8.60 TO KM13.00 TO KM36.20

THIS DOCUMENT COMPILED BY:

The Regional Manager (Northern Region)
The South African National Roads Agency SOC Ltd
38 Ida Street
Menlo Park, Pretoria
0081UNDER THE DIRECTION OF:

The Regional Manager (Northern Region)
The South African National Roads Agency SOC Ltd
38 Ida Street
Menlo Park
Pretoria
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LIST OF CONTRACT DOCUMENTS

The following documents form part of this contract:

VOLUME 1: The Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer (1999), published by the Federation Internationale des Ingenieurs-Conseils (FIDIC) which the Tenderer shall purchase himself. (See note 1 below.)

VOLUME 2: The COTO Standard Specifications for Road and Bridge Works for South African Road Authorities (Draft Standard October 2020 edition), issued by the Committee of Transport Officials which the Tenderer shall obtain himself. (See Note 2 below.)

VOLUME 3: 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 Project 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 from the CIDB website.

http://www.cidb.org.za/News/Documents/Standard%20for%20Uniformity%20August%202019.pdf

VOLUME 4: The Road Works Drawings

Notes to Tenderers:

1. VOLUME 1

This Volume is obtainable from:

CESA
P. O. Box 68482, Bryanston, 2021
Tel: (011) 463 2022
Fax: (011) 463 7383
E-mail: general@cesa.co.za

2. VOLUME 2

This Volume is obtainable from SANRAL and can be downloaded free of charge from the SANRAL's website www.nra.co.za.

3. VOLUME 3

This Volume is issued at tender stage in electronic format and can be downloaded from the SANRAL's website.

The website contains the following files:

a) The full Project Document in pdf format (excluding the Standard Conditions of Tender).
b) The Returnable Forms in MS Word format.
c) The Pricing Data in MS Excel format.

The Standard Conditions of Tender may be downloaded from the CIDB website by means of the following link:

http://www.cidb.org.za/News/Documents/Standard%20for%20Uniformity%20August%202019.pdf

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

a) Returnable schedules relevant to the project.
b) Agreements and Contract Data.
c) Pricing Data.
d) Scope of Work.
e) Project Information.

4. Submission of Tender

Of the contract documents, only the following parts of VOLUME 3 needs to be submitted in (1) a printed and bound hard copy and (2) electronically on a flash drive marked "Main Tender", followed by the Tenderer's name, in a sealed envelope, in the following order:

a) Form of Offer (signed in hard copy and scanned as .pdf)
b) Returnable Schedules, attachments and certificates (hard copy and scanned as .pdf)
c) Pricing Schedule (completed in hard copy, scanned as .pdf and MS Excel copy).

5. Alternative Offers

For alternative offers the Tenderer shall submit the following additional documentation, in (1) a printed and bound hard copy and (2) electronically on a separate flash drive marked "Alternative", followed by the Tenderer name, in a sealed envelope in the following order:

a) Form of Offer (signed in hard copy and scanned as .pdf and state "Alternative Form of Offer")
b) Returnable Schedules, attachments and certificates (hard copy and scanned as .pdf)

c) Alternative Pricing Schedule (completed in hard copy, scanned as .pdf and MS Excel copy).

Information provided by a Tenderer over and above the above parts of Volume 3 shall be treated as information only and will only be bound into the Contract if the Tenderer notes on Form A4: Schedule of Variations or Deviations, that the information has a bearing on the tender price.

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PART C2: PRICING DATA

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C2.1 PRICING INSTRUCTIONS

C2.1.1 Measurement and payment shall be in accordance with:

a) the relevant provisions of the Standard Specifications as amended in the Scope of Works; and
b) the relevant provisions of the COTO Standard Specifications for Road and Bridge Works for South African Road Authorities (Draft Standard October 2020 edition), as amended in the Scope of Works,

whichever is relevant to the particular section.

C2.1.2 The units of measurement described in the Pricing Schedule are metric units. Abbreviations used in the Pricing Schedule are as follows:

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

C2.1.3 For the purposes of this Pricing Schedule, the following words shall have the meanings hereby assigned to them.

Unit: The unit of measurement for each item of work as defined in the Scope of Works.

Quantity: The number of units of work for each item as provided by the Employer or as tendered by the Service Provider.

Rate: The payment per unit of work for which a rate has been provided by the Employer or for which the Service Provider tenders to do the work.

Amount: The product of the quantity and the rate tendered for an item.

Lump Sum: An amount tendered for an item, the extent of which is described in the Pricing Schedule, the Scope of Work or elsewhere, but of which the quantity of work is not measured in units.

Provisional Sum:
An amount allowed for in the Pricing Schedule, for which the quantity of work is not known.

Prime Cost: Is a specific type of Provisional Sum where payment is made on the production of invoices showing the cost price of the implementation or installation of the service required. Services rendered in this manner carry a cost for which a rate or a lump sum is offered at tender stage to cover all the tenderer's handling, supervision and liability costs in providing the item or services.

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/QCTO accredited qualification on a specified NQF level.

C2.1.4 The quantities provided by the Employer in the Pricing Schedule are only approximate quantities. The quantities of work finally accepted and certified for payment, and not the quantities given in the Pricing Schedule, will be used to determine payments to the Service Provider.

The validity of the Contract shall in no way be affected by differences between the quantities in the Pricing Schedule and the quantities finally certified for payment. Work is valued at the rates or lump sums tendered.

C2.1.5 Rates and lump sums shall include full compensation for overheads, profits, incidentals, tax (other than VAT), etc., and for the completed items of work as specified in the Scope of Works and Contract Data and for all the risks, obligations and responsibilities specified in the General Conditions of Contract, Particular or Special Conditions of Contract, except in so far as the quantities given in the Pricing Schedule are only approximate.

C2.1.6 The tenderer shall fill in a quantity or a rate or a lump sum for each item where provision is made. Items against which no rate or lump sum has been entered in the tender will not be paid for when the work is executed, as payment for such work will be regarded as being covered by other rates or lump sums in the pricing schedule.

The tenderer shall fill in a rate against all items where the words "rate only" appears in the amount column. Although no work is foreseen under such item and no quantities are consequently given in the quantity column, the tendered rate shall apply should work under this item actually be required. Tenders should note the provisions of clause C2.1.10 of this preamble.

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

C2.1.7 The short descriptions of the payment items in the Pricing Schedule are only given to identify the items and to provide specific details. Reference shall, *inter alia*, be made to the Contract Data, General Conditions of Contract and Particular/Special Conditions of Contract and Scope of Works for more detailed information regarding the extent of work entailed under each item.

C2.1.8 Where so indicated under measurement and payment, prices or rates will be subject to adjustment for escalation as provided for below:

a) The prices or rates shall be fixed for the first 12-month period determined from the tender base date and no change during this period will be allowed for escalation.
b) On the 12-month anniversary date of the Contract base date the rates or sums shall be adjusted by the 12-month year on year CPI index (as published in the monthly bulletin PO141. of Statistics South Africa under table B) and fixed at this value for the following 12-month period. Subsequent 12-month periods shall be dealt with on the same basis.
c) Adjustment of lump sum prices for escalation shall only be applicable to that portion of the relevant Service which is incomplete at the end of the 12-month anniversary date and shall not be applicable to any progress payments already claimed.

Adjustment for escalation shall only be applicable for services or portions thereof, that are still within the prescribed programme and any approved extensions of time.

C2.1.9 Interim payments for lump sum payment items may be permitted. Such interim payments shall however be limited to proven progress achieved for that service deliverable. The sum of any progress payments made under a lump sum payment item shall be deducted prior to calculating any adjustments for escalation as described in clause C2.1.6 above.

C2.1.10 Provisional and Prime Cost Sums: Each Sum shall only be used, in whole or in part, in accordance with the Employer's instructions and the Contract Price shall be adjusted accordingly. The total sum paid to the Service Provider shall include only such amounts, for the work, supplies or services to which the Sum relates, as the Employer shall have instructed.

For each Sum, the Employer may instruct plant, materials or services to be procured by the Service Provider in accordance with the Employer's policies, and for which there shall be included in the Contract Price:

a) The actual amounts paid (or due to be paid) by the Service Provider under the Sum, and
b) An item for compilation and printing of procurement documentation, quotation/tender process and evaluation, and all overhead charges and profit, tendered in the Pricing Schedule. Provided that for Prime Cost Sums only, where a percentage mark-up or lump sum mark-up is tendered, which shall exclude profit.

The Service Provider shall produce all quotations, invoices, vouchers and accounts or receipts in substantiation of any claim under a Sum.

Any percentage adjustment or lump sum mark-up against the Sum for handling fee, profits, etc. shall not be negative.

C2.1.11 Subject to the conditions stated in Clause C2.1.12 below, the rates and lump sums filled in by the tenderer in the pricing schedule shall be final and binding when submitting the tender and may not be adjusted should there be any mistakes in the extensions thereof and in the total sums appearing in the tender. Should there be any discrepancies between the tender sum and the correctly extended and totalled pricing schedule, the rates and the lump sums will be regarded as being correct, and the Employer shall have the right to adjust the tender sum to reconcile the tender sum with the total of the pricing schedule. In such an event, the tenderer will be consulted but, failing agreement between the parties, the decision of the Employer shall be final and binding. Adjustment of the tender sum will take place prior to the signing of the contract. In their own interest tenderers must make doubly sure of the correctness of their tendered rates and lump sums, the extensions and the tender sum.

C2.1.12 A tender shall be deemed non-responsive if the unit rates or lump sums for some of the items in the Pricing Schedule are, in the opinion of the Employer, unreasonable or out of proportion, and if the tenderer fails, within a period of seven (7) days of having been notified

in writing by the Employer to adjust the unit rates or lump sums for such items, to make such adjustments.

C2.1.13 All rates and sums of money quoted in the Pricing Schedule shall be in South African Rand and whole cents

C2.1.14 The item numbers appearing in the Pricing Schedule refer to the corresponding item numbers in the Scope of Work.

C2.2 PRICING SCHEDULE (INCORPORATING SBD3)

SCHEDULE A

GENERAL REQUIREMENTS AND TRAINING AND SKILLS DEVELOPMENT PROGRAMME

SCHEDULE B

CONSTRUCTION OF THE WORKS (COTO) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE WORKS FOR SOUTH AFRICAN ROAD AUTHORITIES (DRAFT STANDARD OCTOBER 2020 EDITION).

SCHEDULE C

STAKEHOLDER AND COMMUNITY LIAISON, AND TARGETED LABOUR AND TARGETED ENTERPRISES SELECTION AND UTILISATION.

C2.3 SUMMARY OF PRICING SCHEDULE

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..... R .....

(from page …….)

SCHEDULE B: CONSTRUCTION OF THE WORKS

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..... R .....

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SUBTOTAL ..... R .....

VALUE ADDED TAX:

15% of Subtotal ..... R .....

TOTAL CARRIED TO C.1.1.1: FORM OF OFFER R .....

PART C3: SCOPE OF WORK

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SECTION A: GENERAL REQUIREMENTS AND TRAINING AND SKILLS DEVELOPMENT PROGRAMME

A1001 SCOPE OF WORK

The Contractor's Scope of Work primarily entails the training and skills development of members of an identified Community, as well as Trainee Targeted Enterprises selected from this Community, whom will become his Targeted Enterprise subcontractors and whom he shall manage and mentor during the construction phase.

The construction phase entails overseeing the construction of infrastructure, by Trainee Targeted Enterprises, that promotes the access, mobility and road safety of the identified Community, in relation to the National Road Network. The Contractor thus have primarily a training and construction management role.

To enhance the utilisation and development of Targeted Labour from the identified Community, care has been taken during the design of the Works to ensure that it can be constructed by means of labour enhanced construction methods (LECM) and the Contractor shall apply such labour enhanced methods.

A1002 DEFINITIONS

Unless inconsistent with the context, in these specifications, the following terms, words or expressions shall have the meanings hereby assigned to them:

a) Accreditation

The certification, for a set period, of a person, a body or an institution to have the capacity to fulfil a particular function within the quality assurance system set up by the SAQA/QCTO.

b) Business Coaching

Business coaching establishes an atmosphere of mutual trust, respect, responsibility and accountability to motivate the 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.

c) Construction Education and Training Authority (CETA)

The Construction Education and Training Authority (CETA) was established in terms of the Skills Development Act, Act 97 of 1998. It provides skills development services to the construction sector, to implement the objectives of the National Skills Development Strategy and to ensure that people obtain the critical or scarce skills that are needed to build the capacity of the construction sector to become economically sustainable and globally competitive.

d) Contractor's Construction Management Staff

i) <u>Construction Manager</u>

The Contractor's full-time staff member who manages the practical training and construction of the Works. He also develops and supports Trainees through mentoring, providing guidance and coaching Trainee Targeted Enterprises and other Targeted Enterprises.

ii) Construction Mentor
The person who mentors and oversees Trainees during practical training and construction of the Works.

iii) Construction Supervisor
The person who directly supervises Trainees and who is the coordinator between the Construction Manager and the Trainees during the construction of the Works.

e) Contractor's Training Staff

i) Assessor
A person registered with the relevant ETQA body to measure the achievement of specified NQF standards or qualifications.

ii) Moderator
A member of a body registered with the CETA to ensure that assessment of the outcomes described in the NQF standards and qualifications are fair, reliable and valid

iii) Practitioner
A person registered with the CETA to practice as a trainer or instructor of specific NQF Unit Standards.

iv) Training Provider
The person who coordinates and manages the training and skills development programme developed, or to be developed, for the project.

f) Education and Training Quality Assurance (ETQA) Body

The Education and Training Quality Assurance (ETQA) Body is the quality assurance body within the CETA whose purpose is to monitor and audit achievements in terms of standards or qualifications registered on the NQF.

g) 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.

h) Labour Enhanced Construction Methods (LECM)

Labour Enhanced Construction Methods (LECM) involve the use of an appropriate mix of labour and machines, with a preference for labour where technically and economically feasible, without compromising the quality of the product.

i) Local Community

South African Citizens, as defined in terms of the South African Citizenship Act, 1995 (Act 88 of 1995), who permanently reside within the Project Area(s) of the project.

j) Mentoring

Mentoring is a professional relationship in which an experienced business person assists another by giving advice and imparting their knowledge and wisdom in developing special skills and knowledge that will enhance the less experienced

person's professional and personal growth. The objective is to equip the business owner and his team to improve their decision-making skills, being focussed and make positive progress quickly.

k) Mobilisation Period

The period from the Commencement Date until the physical commencement of the Works, as defined in the Conditions of Contract.

l) National Qualifications Framework (NQF)

The National Qualifications Framework (NQF) is a comprehensive system for the classification, registration, publication and articulation of quality-assured national qualifications. It is the set of principles and guidelines by which records of learner achievement are registered to enable national recognition of acquired skills and knowledge, thereby ensuring an integrated system that encourages life-long learning.

m) Notional (or Learning) Hours of Training

The learning time that it is conceived it would take an average Trainee to meet the defined outcomes and includes concepts such as contact time, time spent in structured learning in the workplace and individual learning.

n) Portfolio of Evidence

A collection of written confirmation contained in a book or file that provides proof of a Trainee's progress towards achieving competency in a Traineeship or skills programme or part thereof, to be kept safe by the Training Provider for a period of at least 5 (five) years after completion of the Traineeship or skills programme or part thereof.

o) Project Area

The area:

i) through which the infrastructure under construction traverse; or
ii) within which the infrastructure under construction falls; or
iii) which is adjacent to and/or in proximity to project operations.

Based on resources and skills audits, and a market analysis, the Contractor, in liaison with the PLC, shall identify and agree the Project Area where preference will be given to the subcontracting of Trainee Targeted Enterprises, other Targeted Enterprises and Targeted Labour.

Because Community Development Projects are earmarked for an identified Community, the Project Area is very localised and typically comprise of:

a. a local municipality; and/or
b. town(s) within a local municipality; and/or
c. ward(s) within a local municipality; and/or even
d. villages within a rural area.

p) Project Liaison Committee (PLC)

The Committee that represents the project's Stakeholders and the Communities affected by the project.

Note:

i) Elected and/or nominated political office bearers shall not be members of the PLC.
ii) The Employer, Engineer and Contractor also become parties to this Committee at the relevant project stages and as far as it is within the scope of their respective roles and responsibilities.

q) Recognition of Prior Learning (RPL)

The comparison of the previous learning and experience of a Trainee, howsoever obtained, against the learning outcomes required for a specific qualification, and the acceptance for purposes of qualification of that which meets the requirements.

r) South African Qualifications Authority (SAQA/QCTO)

The South African Qualifications Authority (SAQA/QCTO) is a juristic person that is an entity given a legal personality by the law and that was established in terms of the South African Qualifications Authority Act, Act No. 58 of 1995. The SAQA/QCTO must develop and implement policy and criteria for the development, registration and publication of qualifications and part-qualifications.

s) Specific Outcomes

The knowledge, skills and values (demonstrated in context) which support one or more critical outcomes of a Unit Standard.

t) Targeted Enterprise

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;
ii) an EME or QSE which is at least 51% owned by black people who are youth;
iii) an EME or QSE which is at least 51% owned by black people who are women;
iv) an EME or QSE which is at least 51% owned by black people with disabilities;
v) an EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships;
vi) a cooperative which is at least 51% owned by black people;
vii) an EME or QSE which is at least 51% owned by black people who are military veterans; or
viii) more than one of the categories referred to in paragraphs i) to vii); and
ix) which is tax and COID compliant.

u) Targeted Labour

Persons:

i) who are employed by the Contractor or a Subcontractor in the performance of the Contract; and
ii) 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
iii) permanently reside in the Project Area(s) or who are recognized as being residents of the Project Area(s) based on identification and association with, and recognition by, the residents of the Project Area(s); and
iv) who are defined as a Target Group in the Contract Data.

v) Trainee Targeted Enterprise

A Targeted Enterprise as defined in t) above, but who participates in the project, and who is subcontracted to the Contractor, as a Trainee in the Contractor's Training and Skills Development Programme.

w) Traineeship (also Learnership)

A work-based training and learning programme which leads to a qualification registered on the NQF. Where reference is made to Traineeship it shall also mean Learnership.

x) Unit Standard

The registered statement of desired education and training outcomes and its associated assessment criteria, together with administrative and other information as specified in the regulations.

i) Unit Standard – Core
The compulsory learning required in a situation contextually relevant to a qualification.

ii) Unit Standard – Elective
A selection of additional credits at the level of the NQF specified from which a choice may be made to ensure that the purpose of the qualification and the minimum required number of credits for the qualification is achieved.

iii) Unit Standard – Fundamental
The learning which forms the foundation or basis needed to undertake the education, training or further learning required to obtain a qualification.

A1003 GENERAL REQUIREMENTS

A1003.01 Location of The Project

The proposed project is located at KwaMhlanga which is within the jurisdiction of the Thembisile Hani Local Municipality in the Mpumalanga Province. It is near to National Road R573, Section 2 from (km 13.00) to (km 8.60). A locality plan is included in Part C4: Appendix A of this document.

A1003.02 Description of the Project

Training and skills development forms an integral part of the Employer's Transformation Policy and Community Development Strategy and hence, it is important to the Employer that Communities and small, medium and micro enterprise (SMME) Contractors within local Communities are trained and equipped with skills that can be used to gain meaningful employment and secure contracting or subcontracting opportunities.

The purpose of this project is thus for a Training and Construction Manager to the training and construction management services for a community development project to upgrade access roads in and around KwaMhlanga, near National Road R.573, Section 2 from KM 8.60 to KM 13.00.

The Training and Skills Development Programme shall comprise of, amongst others, structured theoretical (classroom) training with an extensive practical (workplace) and developmental construction component.

The services required from the Contractor comprise the following components and phases, of which some will overlap in its execution.

a) Conduct Resources and Skills Audits, and Market Analysis

the Contractor shall conduct Resources and Skills Audits to determine the Targeted Enterprise capacity in the Project Area and the Community's levels of education, existing qualifications, and skills sets. It shall be followed by a Market Analysis of the area in which these Targeted Enterprises typically, or potentially could, operate.

b) Develop a Training and Skills Development Programme

Based on the Contractor's Resources and Skills Audits and Market Analysis, the Contractor shall develop a Training and Skills Development Programme as a basis for the project.

c) Select Beneficiaries of the Project

Beneficiaries of the project shall comprise Designated Groups and/or Targeted Enterprises from the Community, as identified via the Employer's Stakeholder and Community Liaison processes described in Part C3, Section D and shall include:

i) Trainee Targeted Enterprise Subcontractors (CIDB grades 1 to 4);
ii) Targeted Enterprise Suppliers, Service Providers and Subcontractors;
iii) Targeted Labour; and
iv) Community members or groups.

d) Conduct Theoretical (Classroom) Training

The theoretical training shall be SAQA/QCTO accredited programmes that include multiple, but related, Unit Standards which are relevant to the practical implementation component, i.e. the Works to be constructed. The theoretical, together with the practical, component of the project is aimed at achieving the training and skills development objectives of the Employer to lead towards Trainees obtaining a formal qualification in the Construction Industry and for Targeted Enterprises to improve their CIDB grading levels.

e) Conduct Practical (Workplace) Training

During the practical training phase of the project, the Construction Manager shall expose Trainees to the practical aspects of construction work under his direction. The Construction Manager shall supervise and closely monitor Trainees and shall train, coach, guide, mentor and assist Trainees in all aspects of the execution and management of a typical construction project. Amongst others, Trainees shall be developed in the planning of the Works, sourcing and ordering of materials, labour relations, monthly measurements and invoicing procedures.

f) Construction of the Works

An infrastructure construction component has been identified for the Community Development Project to facilitate the Training and Skills Development Programme.

This infrastructure component entails the upgrading of existing and/or the construction of approximately 4.5km of new internal access roads in KwaMhlanga, as part of the implementation of the Access Management Plans for the upgrade of National Road R.573, Section 2 from KM 8.60 to KM 13.00.

The construction Works consists, amongst others, of the following:

i) New gravel and/or interlocking block paved roads.
ii) Improvement of road surface stormwater drainage.
iii) Provision of new road signs.
iv) Training programs, e.g., SMME development, training and support.
v) Assist with professional services, e.g., planning, engineering, etc.
vi) Partnerships with learning institutions, e.g., TVET

The Works shall be constructed using the COTO Standard Specifications for Road and Bridge Works for South African Road Authorities (Draft Standard October 2020 edition), together with the:

a. Standard Amendments issued by COTO;
b. Project Specification Amendments to the COTO Standard Specifications; and
c. CIDB Labour-based Methods and Technologies for Employment Intensive Construction Works – A CIDB Guide to Best Practice

Care has been taken during the design of the Works to ensure that it can be constructed by means of labour enhanced construction methods and the Contractor shall apply such labour enhanced methods within the perimeters of the Specifications.

A1003.03 Time for Completion and Project Programme

a) Time for Completion

The Time for Completion of all phases of the project shall be 21 months from the Commencement Date of June 2026.

b) Project Programme

The Contractor shall programme his duties in such a manner to complete the various phases of the project within the indicative milestone dates specified below. The Employer's indicative programme for this project is depicted in **Table A1003.03(a)** below:

Table A1003.03(a): Indicative Programme

	Project Stage	**Completion Date**
A	Submission of Tenders	X *(February 2026)*
B	Appointment of Training and Construction Manager	X + 24 weeks
C	Project Hand-over meeting	X + 26 weeks *(14 days from award.)*
	Mobilisation Period commences	X + 26 weeks
D	First Progress Meeting	X + 30 weeks
E	Resources and Skills Audit and Market Analysis Report	X + 30 weeks
F	Training and Skills Development Programme Approval	X + 30 weeks
G	Selection of Beneficiaries of the Project Complete	X + 38 weeks
	Mobilisation Period ends	X + 38 weeks

H	Theoretical (Classroom) Training Complete	X + 52 weeks
I	Practical (Workplace) Training Complete	X + 66 weeks
J	Simulation Construction Complete	X + 80 weeks
K	Construction of the Works Complete	X + 110 weeks
L	Project Close-out	X + 162 weeks

The Contractor shall submit his draft programme, based on the indicative programme, for the Engineer's perusal at the project hand-over meeting.

The Contractor shall submit his final programme for the Engineer's approval at the first progress meeting.

A1003.04 Penalties and Delays

Penalties shall be applied for each calendar day by which the Contractor fails to meet the milestone dates as per the Contractor's approved Programme. The quantum of the penalty shall be as listed in the Contract Data, Clause 8.7.

The penalties and delay damages that are applicable on work undertaken by subcontractors that qualify in terms of the definition, and which has been sublet according to the specifications for the tender process, shall be the full responsibility of the Contractor.

A1003.05 Drawings

The drawings issued in electronic format on a Compact Disc as part of the tender documents, shall be used for tender purposes only.

The Contractor will be issued with the contract drawings in electronic format on a Compact Disc. Any prints which the Contractor may require shall be at his own cost.

Any information in the possession of the Contractor, which the Engineer requires to record as-built information, shall be supplied to the Engineer before the Taking-Over Certificate will be issued.

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

A1003.06 Contractor's Staff

The names of the Contractor's Key Persons are shown in Form C1.2.3 Contract Data: Information Provided by the Tenderer.

The Contractor's two leading Key Persons are the Training Provider and the Construction Manager. The roles of both these persons are described below and in the respective sections of Part C3.

a) Contractor's Training Staff

i) The Training Provider

The Contractor's Training Provider shall predominantly coordinate and manage the Training and Skills Development Programme of the project. If the Contractor is not also an accredited Training Service Provider, he shall subcontract an accredited

Training Service Provider by applying the Employer's Supply Chain Management Policy for second tier procurement.

ii) Practitioners, Assessors and Moderators

The Training Provider shall have under his management, or in his employ, Practitioners, Assessors and Moderators whom are registered with the CETA. Proof of accreditation and registration shall be current, valid and list the NQF levels and Unit Standards for which the Training Provider and his staff are accredited.

The training and competency levels required of the Training Provider and his staff are provided in **Table A1003.06(a)** below:

Table A1003.06(a): Qualifications and Experience Requirements for Training Staff

Designation	Qualification or Unit Standard No.	NQF Level	Credit	Minimum Relevant Experience (years)
Training Provider	Civil Engineering Qualification	5	N/A	10
Practitioner	Train the trainer; No 7384	4	16	None Specified
Assessor	Conduct outcome base assessment; No 115753	5	15	5
Moderator	Conduct moderation of outcome-based assessment; No 115759	6	10	5

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.

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 Provider may and shall therefore, when necessary, appoint Practitioners and Assessors on and ad hoc basis with the levels of experience which are required for the Unit Standards to be presented.

The Employer further requires that Assessors and Moderators shall have at least 5 (five) years' experience as a Site Agent, managing construction processes in the fields of roads maintenance, new roads construction, roads rehabilitation, structures, etc.

Provision for the Contractor's Training Staff has been made in Pricing Schedule A, under pay item A1000.01(a).

Provision for the establishment of the Contractor's Training Staff has been made in Pricing Schedule A, under pay item A1000.02(b).

b) Contractor's Construction Management Staff

i) The Construction Manager

The Construction Manager and his staff shall predominantly manage the practical training, construction of the Works and mentoring, development and support of the Trainees and Targeted Enterprises.

The Construction Manager is also the Contractor's Representative and shall maintain a full-time presence on site during the practical training and construction of the Works phases of the project.

ii) The Construction Mentor

The Construction Mentor is not listed as a Key Person for eligibility and functionality purposes but is an extension of the Construction Manager and it is recommended that 1 (one) Construction Mentor be provided for every 4 (four) Targeted Enterprises. The Construction Mentor shall maintain a full-time presence on site during the practical training and construction of the Works phases of the project.

iii) The Construction Supervisor

The Construction Supervisor is not listed as a Key Person for eligibility and functionality purposes but is an extension of the Construction Manager and Mentors. The Construction Supervisor does not only directly supervise Targeted Enterprises but is also the coordinator between the Targeted Enterprises and the Construction Manager. It is recommended that 1 (one) Construction Supervisor be provided for every 3 (three) Targeted Enterprises. The Construction Supervisor shall maintain a full-time presence on site during the construction of the Works phases of the project.

The Clerk of Works is not listed as a Key Person for eligibility and functionality purposes, but the Contractor shall have in his employ the number of Clerks of Works that is required to assist the Construction Manager with the Project Management and Administration of the Works. It is recommended that 1 (one) Clerk of Works be provided for every 12 (twelve) Targeted Enterprises. The Clerk of Works shall maintain a full-time presence on site during the practical training and construction of the Works phases of the project.

The minimum requirements with regards to qualification, registration and experience in the civil engineering or road construction field, for the Contractor's Construction Management staff shall be as stated in **Table A1003.06(b)** below, according to the CIDB contractor grading designation determined for the contract.

Table A1003.06(b): Qualifications and Experience Requirements for Construction Management Staff

Key Person	Contracts up to 6CE		Contracts 7CE or Higher	
	Minimum Technical Qualification or Registration	**Minimum Relevant Experience (years)[1]**	**Minimum Technical Qualification or Registration**	**Minimum Relevant Experience (years)[1]**
Professional Registered Person	None specified	None specified	PrEng or PrTech with ECSA[2] or PrCM with SACPCMP[3]	None specified
Contract Manager	SACPCMP as PrCM or ECSA as Pr. Tech Eng. or Pr. Techni	5	SACPCMP as PrCM or ECSA as Pr. Eng. or Pr. Tech Eng.	5

Construction Manager	SACPCMP as PrCM or ECSA as Pr. Eng. or Pr. Tech Eng. or Pr. Techni	5	SACPCMP as PrCM or ECSA as Pr. Eng. or Pr. Tech Eng. or Pr. Techni	8
			SACPCMP as PrCM or ECSA as Pr. Eng. or Pr. Tech Eng.	5
Construction Health and Safety Officer	CHSO with SACPCMP	As required by SACPCMP	CHSO with SACPCMP	As required by SACPCMP
Construction Mentor	None specified	8	None specified	8
	National Diploma Civil Engineering	3	National Diploma Civil Engineering	5
	NQF 5 in Civil Engineering	3	NQF 5 in Civil Engineering	5
Construction Supervisor	None specified	5	None specified	5
	National Diploma Civil Engineering	2	National Diploma Civil Engineering	3
	NQF 4 in Civil Engineering	2	NQF 4 in Civil Engineering	3
Clerk of Works	National Diploma Civil Engineering	2	National Diploma Civil Engineering	3

[1] Relevant experience is the actual number of years, measured from the date of acquiring the base qualification, working in the civil engineering or road construction field.
[2] Registered with the Engineering Council of South Africa (ECSA) or any other international body recognised by the Employer. Foreigners with permanent South African residence longer than 5 (five) years shall be ECSA registered.
[3] South African Council for Project and Construction Management Professions.

For any proposed change in Key Personnel during the contract, the Contractor shall submit to the Engineer for consent the name and details of the Key Person the Contractor proposes to appoint. The Contractor shall not, without the prior consent of the Engineer, revoke the appointment of the Contractor's Key Personnel or appoint a replacement.

Provision for the Contractor's Construction Management Staff has been made in Pricing Schedule A, under pay item A1000.01(b).

Provision for the establishment of the Contractor's Construction Management Staff during the training phases of the project has been made in Pricing Schedule A, under pay item A1000.02(c).

Provision for the Contractor's Construction Management Staff during the construction of the Works phase has been made in Pricing Schedule B, Section C1.3.

A1003.07 Meetings with the Engineer and the Employer

The Contractor shall conduct monthly project progress meetings with the Employer and the Engineer. These meetings shall take place on site, at the Contractor's Training Facility and later at his Camp Site. The progress of all aspects of the project shall be

discussed, as well as any contractual and technical issues that may have arisen since the previous project progress meeting.

Any matter that may impact on the project's budget and/or may lead to a Contractor's Claim shall be dealt with immediately and ad hoc meetings shall be arranged to resolve such matters.

A1003.08 Contractor's Training Facility and Camp Site

When selecting and/or establishing his Training Facility and Camp Site, the Contractor shall consider the advantages that will remain with the Community for permanent structures to be left standing.

The Contractor's Training Facilities and Camp Site may be the same building(s) and/or on the same site, or it may be separate buildings and/or on different sites, which-ever is most suitable to project circumstances.

a) Training Facility

The Contractor shall be responsible for providing everything necessary to offer the various theoretical and practical training, including:

i) a suitable venue with sufficient furniture, lighting and power for lectures,
ii) suitable ablution facilities with separate cubicles for both genders; and
iii) all necessary stationery, consumables and learning aids and material.

Provision for the Contractor's Training Facility has been made in Pricing Schedule A, under pay item A1000.02(a).

b) Camp Site

For both the practical training and construction of the Works phases of the project, the Contractor shall provide a suitable Camp Site to accommodate the Engineer and his staff, the Contractor's staff and the Contractor's subcontractors and labourers.

Provision for the Contractor's Camp Site and the Engineer's Site has been made in Pricing Schedule B, Section 1300 – Contractor's Establishment on Site and General Obligations, and Section 1400 – Housing, Offices and Laboratories for the Engineer's Site Personnel, respectively.

c) Electricity Supply and other Utility Services

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

A1003.09 Allowance for Other Contractors and Contracts

In addition to the requirements of Clause 4.6 of the FIDIC Conditions of Contract for Construction, 1999, the Contractor must take note of the presence of other Contractors on the site and make allowances for them on the site. This may involve adapting the Contractor's Programme to accommodate the work of other Contractors and ensuring access to their sites.

Although details of such contracts may not be known at the time of tender of this contract, it may include, *inter alia*, periodic maintenance, special maintenance, rehabilitation and upgrade contracts.

A1003.10 Targeted Procurement

The Employer is committed to the implementation of Government's policies and in turn expects the same from its Contractors. Thus, in addition to the Trainee Targeted Enterprises benefitting from this Community Development Project, to comply with the Employer's objectives of its preferential procurement policy, the Contractor shall utilise the Employer's targeted procurement procedure, which is the process used to create a demand for the services and supplies of, or to secure the participation of, Targeted Enterprises in contracts.

Accordingly, it is a requirement of this project that the Contractor is familiar with the specifications that relate to the transformation of the construction industry through the following:

a) adherence to the policies and initiatives of the Government;
b) employment of Targeted Enterprises as per the Contract Participation Goals stated in the Contract Data;
c) provision of mentoring, guidance and assistance to subcontracted Targeted Enterprises;
d) arrangement of engineering skills, entrepreneurial skills and generic skills training programmes for subcontracted Targeted Enterprises; and
e) liaison with government institutions and community-based structures.

Part C3, Section D, describes the Employer's requirements for the subcontracting of Targeted Enterprises in detail and provision is made in Pricing Schedule C for the subcontracting of Targeted Enterprises other than the Trainee Targeted Enterprises.

A1003.11 Changes to Scope of Work

It is a condition of this contract that the Employer reserves the right to limit the total expenditure on the Works due to possible budget constraints. Should the tender sum exceed the budgeted amount, the scope of the works may be reduced at any time before or during the contract period to ensure that the final contract amount does not exceed the budgeted amount.

A1003.12 Legal Requirements

The following Acts and associated Regulations and Codes, as amended from time to time, are predominant amongst those which apply to the construction industry, and shall apply to the contract. They are listed here for reference purposes only:

a) Constitution of the Republic of South Africa (Act No. 108 of 1996);
b) Public Finance Management Act (Act No. 1 of 1999);
c) Preferential Procurement Policy Framework Act (Act No. 5 of 2000);
d) Broad-Based Black Economic Empowerment Act (Act No. 53 of 2003);
e) Construction Industry Development Board Act (Act No. 38 of 2000) and its Regulations;
f) Occupational Health and Safety Act (Act No. 85 of 1993) and its Regulations;
g) Compensation for Occupational Injuries and Diseases Act (Act No. 130 of 1993);
h) Rates for wages and conditions of labour agreed by the Bargaining Council for the Civil Engineering Industry in terms of the Labour Relations Act (Act No. 66 of 1995);
i) National Water Act (Act No. 36 of 1998);
j) National Veld and Forest Fire Act (Act No. 101 of 1998);
k) National Environmental Management: Biodiversity Act (Act No. 10 of 2004);

l) National Environmental Management: Waste Act (Act No. 59 of 2008);
m) National Environmental Management: Integrated Coastal Management Act (Act No. 24 of 2008);
n) National Environmental Management Act (Act No. 107 of 1998);
o) Conservation Of Agricultural Resources Act (Act No. 43 of 1983); and
p) National Environmental Management: Air Quality Act (Act No 39 of 2004).
q) Skills Development Act (Act No 97 of 1998).

In addition to the above, in terms of National Treasury Instruction No. 3 of 2014/2015 with reference to the Public Finance Management Act (Act No 1 of 1999), and its 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.

A1003.13 Environmental Management

The Contractor shall be responsible for construction according to an Environmental Management Plan in terms of Part C3, Section C of the Scope of Work.

The Contractor must take the utmost care to minimise the impact of his establishment and other construction activities on the environment and must adhere to the requirements as set out in Part C3, Section C of the Scope of Work. Where the Contractor fails to adhere to these requirements, the specifications in Part C3, Section C, provide the methodology of the remedy.

Provision for the Contractor's Environmental Management obligations has been made in Pricing Schedule B.

A1003.14 Occupational Health and Safety

In terms of the Construction Regulation 2014, 5(1)(b) of the Occupational Health and Safety Act (Act No 85 of 1993), the South African National Roads Agency SOC Limited, as the Employer, is required to compile a specification on health and safety for the project. Part C3, Section E of the Scope of Work contains the specification that regulates the Contractor's construction methods to ensure health and safety of his employees, subcontractors and the public.

Provision for the Contractor's Occupational Health and Safety obligations has been made in Pricing Schedule B.

A1003.15 Contractor Performance and Project Reporting

a) Contractor Performance Reports

The Engineer is responsible for the completion of the contractor performance reports on behalf of the Employer. These reports will be completed monthly and on issuing the Taking-Over Certificate.

The standard for contractor performance reports provides for a uniform and consistent method of assessment of the performance of the Contractor with respect to the following project parameters regarding the Contractor meeting his contractual obligations and achievement of targets:

i) time management;
ii) cost management;
iii) quality management;
iv) health and safety management;

v) management of site conditions; and
vi) management of subcontractors (including payment).

Each performance report will be discussed with the Contractor, who will be given an opportunity to comment on the assessment. The Engineer must respond to any issues raised by the Contractor in writing, and the Contractor's comments and the written response by the Engineer must form part of the contractor performance report. The contractor performance report will be signed off by the Employer.

The monthly contractor performance reports and other inputs from the Engineer will be used to monitor and evaluate the Contractor's performance throughout the contract.

b) 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 its personnel to make technical decisions more quickly and efficiently. Refer to Part C3, Section B of the Scope of Works for details of the ITIS.

A1003.16 Local Production and Content

The Department of Trade and Industry in consultation with National Treasury has designated the construction sector and determined the stipulated minimum threshold for steel products and component for construction for the state procurement for local production and content. Part C3, Section B of the Scope of Work contains the specifications for local production and content.

A1004 TRAINING AND SKILLS DEVELOPMENT PROGRAMME

The Contractor shall, in collaboration with the Employer, the Engineer and the Project Liaison Committee (PLC), develop the Training and Skills Development Programme and submit it at the first Progress Meeting for the Engineer's approval.

Developing and executing the Training and Skills Development Programme shall consist of the following phases:

a) Conduct Resources and Skills Audits and a Market Analysis.
b) Identify Project Area and Designated Groups who shall benefit from the Programme.
c) Finalise and approve the Training and Skills Development Programme.
d) Select Trainees and Trainee Targeted Enterprises to participate in the Programme.
e) Conduct theoretical (classroom) training.
f) Conduct practical (workplace) Training.
g) Construction Simulation phase.
h) Construction of the Works phase.

A1004.01 Resources and Skills Audits, and Market Analysis

Prior to developing the Training and Skills Development Programme, the Contractor shall conduct Resources and Skills Audits of the identified Community and the Targeted Enterprises residing within the Project Area.

The Resources and Skills Audits shall be followed by a Market Analysis of the construction industry within the geographical area where the Targeted Enterprises could potentially operate.

a) Resources Audit

To determine the Targeted Enterprise subcontractor capacity in the Project Area, the Contractor shall conduct a Resources Audit within the greater project area. The Contractor shall consult, as a minimum, the National Treasury's CSD (to be obtained from the Employer) and the CIDB contractor database. Other databases, e.g. the Local Municipality's Economic Development department's database, may also be considered.

This Resources Audit shall inform the Contractor what CIDB contractor grading Targeted Enterprises are available within the greater project area, which in turn will guide the Contractor, in consultation with the PLC, to establish the boundaries of the Project Area and to identify the criteria for the different beneficiary groups of the project, i.e. Trainee Targeted Enterprises, other Targeted Enterprises and Community groups and/or members.

In addition, the Contractor shall conduct a Resource Audit of Targeted Enterprise Suppliers and Service Providers available within the Project Area. Knowledge of the availability of plant, equipment, material and service providers will enable the Contractor to ensure that as much as possible of the total economic spend on the project remains within the community.

The Resources Audit shall be presented to the Employer, the Engineer and the PLC as an Interim Report and shall become a chapter of the Training and Skills Development Programme.

Provision for the Resources Audit Chapter has been made in Pricing Schedule A, under pay item A1000.03(a).

b) Skills Audit

Following the Resources Audit, the Contractor shall conduct a Skills Audit of these resources, as well as of the Community in general. The purpose of the audit is to determine the Targeted Enterprises' and the Community's levels of education, existing qualifications, Recognised Prior Learning and skills sets and competencies, which in turn will inform the details of the Training and Skills Development Programme.

The Skills Audit shall be presented to the Employer, the Engineer and the PLC as an Interim Report and shall become a chapter of the Training and Skills Development Programme.

Provision for the Skills Audit Chapter has been made in Pricing Schedule A, under pay item A1000.03(b).

c) Market Analysis

The Contractor shall conduct a Market Analysis of the construction industry within the geographical area where the identified resources typically would, or potentially could, operate.

The Market Analysis shall entail a quantitative and qualitative assessment of the market, establishing its size both in volume and in value. Amongst others, factors to consider includes:

i) the various client and/or customer segments;
ii) client and/or customer assignment and/or buying patterns;
iii) supplier power and services availability;

iv) identification of competitors;
v) analysis of the economic environment;
vi) economic feasibility or profitability; and
vii) regulations and barriers to entry.

The Market Analysis will assist the Contractor to identify the Targeted Enterprises that will benefit most from the Training and Skills Development Programme from a market feasibility point of view and it will inform the content of the Training and Skills Development Programme.

The Market Analysis shall be presented to the Employer, the Engineer and the PLC as an Interim Report and shall become a chapter of the Training and Skills Development Programme.

Provision for the Market Analysis has been made in Pricing Schedule A, under pay item A1000.03(c).

A1004.02 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.

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 Traineeship 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 approved by the Employer and the Engineer and agreed by the PLC before any training commence.

Provision for the Training and Skills Development Programme has been made in Pricing Schedule A, under pay item A1000.03(d).

A1004.03 General Requirements of the Training and Skills Development Programme

a) Training Variety

The Training and Skills Development Programme shall make provision for a variety of training options to ensure that all beneficiary types, as listed below, are provided with training and skills development opportunities. The Programme shall, amongst others, make provision for:

i) Trainee Targeted Enterprises (CIDB grades 1 to 4);
ii) Targeted Enterprise Suppliers, Service Providers and Subcontractors;
iii) Targeted Labour;
iv) Interns (Students) completing their national diplomas;
v) Graduates (Candidates) towards registration in a professional category; and
vi) Community members and/or groups.

All theoretical training provided, and its practical components, shall be SAQA/QCTO accredited and shall be a combination of:

b. technical,

c. entrepreneurial and
d. generic training

as informed by the resources and skills audits and market analysis.

b) Training for Trainee Targeted Enterprises

One of the primary objectives of Community Development Projects is to offer a full Traineeship experience to Trainee Targeted Enterprises, which requires a minimum period of 18 to 24 months of theoretical and practical training combined.

The Training and Skills Development Programme shall thus consist of Traineeships that include multiple, but related Unit Standards which:

i) are relevant to the Works to be constructed,
ii) are aimed at achieving the skills development objectives of the Employer, and
iii) leads towards a formal qualification in the Construction Industry.

Traineeships shall include both the theoretical and practical components of each Unit Standard taught and shall be in accordance with the various laws and regulations contained in the SAQA/QCTO statutes.

In smaller Community Development Projects with a shorter duration, it is recognised that the Training and Skills Development Programme may consist of several Unit Standards but totalling insufficient credits for a full Traineeship qualification. Nevertheless, the Training Provider shall ensure that the competencies and credits achieved in the Progamme, contribute to a full Traineeship by a later acquisition of the outstanding Unit Standards required for the full Traineeship.

The details of the training to be provided to Trainee Targeted Enterprises are further described in the relevant paragraphs of Part C, Section A of the Scope of Work.

Provision for the training to be provided to Trainee Targeted Enterprises has been made in Pricing Schedule A, under pay item A1000.04(a)(i) to (iv).

c) Training for Targeted Enterprise Suppliers, Service Providers and Subcontractors

Targeted Enterprise Suppliers, Service Providers and Sub-contractors that has been appointed in terms of the Contract Participation Goal (CPG) as a percentage of the value of Pricing Schedules A (Training and Construction Management) and C (Stakeholder and Community Liaison) shall also be provided with training based on the Resources and Skills Audit and Market Analysis.

Although the CIDB Standard for Developing Skills though infrastructure Contracts, Government Gazette No. 36760 of August 2013, is not applicable to this Contract type, the Employer requires the Contractor to follow the principles of these Standards for the training of Targeted Enterprise Suppliers, Service Providers and Subcontractors.

The training to be provided shall thus be one, or a combination of, the following learning methods:

i) Work related theoretical and practical training from selected Unit Standards;
ii) Structured workplace learning towards the attainment of a part or a full occupational qualification;
iii) Structured workplace learning for apprentices or other artisan Trainees towards the attainment of a trade qualification leading to a listed trade

(Government Gazette No. 35625 of 31 August 2012) subject to at least 60 percent (%) of the artisan Trainees being holders of public FET college qualifications.

The type of training to be provided may include relevant construction methods and technical skills, but to provide for Suppliers and Service Providers, it may also include training and skills development which are supportive to the Construction Industry, such as:

a. Safety and Security training for Site Safety Service Provider;
b. Road and Traffic Safety training for Site Traffic Service Provider.
c. Pre-cast Concrete training for pre-cast material Supplier, and many more.

The following conditions shall apply in terms of training limitations and eligibility for Targeted Enterprise Suppliers, Service Providers and Subcontractors:

i. No single method shall contribute to more than 75 percent (%) of the Provisional Sum provided for the training of Targeted Enterprises Suppliers, Service Providers and Subcontractors.
ii. Permanently employed Trainees may not account for more than 33 percent (%) of the Provisional Sum provided for the training of Targeted Enterprises Suppliers, Service Providers and Subcontractors.
iii. Not more than one method may be applied to any individual Trainee concurrently.
iv. The Contractor may source Trainees from a Skills Development Agency recognised by the CIDB.
v. All Trainees shall be registered with a construction Skills Development Agency recognised by the CIDB.

Provision for the training to be provided to Targeted Enterprise Suppliers, Service Providers and Subcontractors, other than Trainee Targeted Enterprises, has been made in Pricing Schedule A, under pay item A1000.04(b).

d) Training for Targeted Labour

It is anticipated that the Trainee Targeted Enterprises, Targeted Enterprise Suppliers, Service Providers and Subcontractors, as well as the Contractor, will have Targeted Labourers in their employ. These Labourers shall also be provided with training based on the Resources and Skills Audit and Market Analysis.

Similar to that of Targeted Enterprises, the training to be provided shall be one, or a combination of, the following learning methods:

i) Work related theoretical and practical training from selected Unit Standards;
ii) Structured workplace learning towards the attainment of a part or a full occupational qualification;
iii) Structured workplace learning for apprentices or other artisan Trainees towards the attainment of a trade qualification leading to a listed trade (Government Gazette No. 35625 of 31 August 2012) subject to at least 60 percent (%) of the artisan Trainees being holders of public FET college qualifications.

The selected Unit Standard training to be provided to Targeted Labour shall equip them with the technical skills that is relevant to the tasks assigned to them. These Unit Standards are typically road construction methods on NQF level 2.

Targeted Labour shall also receive generic skills training as identified during the Contractor's Resources and Skills Audits and may, amongst others, include:

a. First aid training;
b. Road safety training;
c. Environmental management training; etc.

The same conditions (limitations and eligibility) shall apply to Targeted Labour training as listed for Targeted Enterprises in paragraph A1004.03(b) above.

Provision for the training to be provided to Targeted Labour has been made in Pricing Schedule A, under pay item A1000.04(c).

e) Interns (Students) Completing their National Diplomas

The Employer requires of the Training and Skills Development Programme to include for the holistic development of skills in the Construction Industry.

Thus, in addition to Targeted Enterprises and Targeted Labour, the Contractor shall provide work integrated learning opportunities for University of Technology or Comprehensive University students towards completing their National Diplomas.

This learning opportunity shall apply to P1 and P2 Trainees, or Trainees with a 240 credits qualification. Both permanently employed and temporary employed Trainees shall be considered for this learning opportunity.

Provision for the integrated learning opportunities to be provided to Interns completing their National Diplomas has been made in Pricing Schedule A, under pay item A1000.04(d).

f) Graduates (Candidates) towards Registration in a Professional Category

In alliance with the Employer's requirement for the holistic development of skills in the Construction Industry, the Contractor shall also provide structed workplace learning opportunities for Graduates towards registration in a professional category by a statutory council as listed in Table 1 of the CIDB Standard for Developing Skills through Infrastructure Contracts.

This learning opportunity shall apply to Graduates with a 480 credits qualification. Both permanently employed and temporary employed Trainees shall be considered for this learning opportunity.

Provision for the structured workplace learning opportunities to be provided to Graduates towards registration in a professional category has been made in Pricing Schedule A, under pay item A1000.04(e).

g) Community Members and/or Groups

Based on the Resources and Skills Audits and the Market Analysis, and in consultation with the PLC, the Contractor shall provide structured, SAQA/QCTO accredited, training to Community Members and/or Groups within the Project Area.

Although training and skills development in support of the Construction Industry is encourage, it is not compulsory that the training and skills development opportunities provided to Community Members and/or Groups are construction related.

The aim is to provide training and develop the skills of the Community to enhance the employability of Community members and to enhance the sustainability of the Community as a whole. Examples of training possibilities are given below:

i) Local emerging businesses can be identified for entrepreneurial training, e.g. the local stationary supplier or catering cooperate.
ii) Local emerging businesses can be identified for technical training, e.g. the local mechanical services provider or sewing cooperate.
iii) Groups within the Community can be identified for general training, e.g. computer skills for unemployed matriculants, HIV/Aids prevention training for local social workers, road safety training for school groups, and many more.

Provision for structured, SAQA/QCTO accredited training to be provided to Community Members and/or Groups has been made in Pricing Schedule A, under pay item A1000.04(f).

h) Selection of Unit Standards

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 Contractor's Training Provider shall apply the SAQA/QCTO Traineeship criteria of which the basic elements are listed below to demonstrate the Employer's requirements:

i) Minimum number of credits for a qualification;
ii) Fundamental Unit Standards and credit values;
iii) Core Unit Standards and credit values;
iv) Elective Units Standards and credit values;
v) Assumption that NQF Level 3 literacy, numeracy, and computer competencies exist;
vi) Recognised Prior Learning processes; and
vii) Exit level outcomes.

The above criteria are not exhaustive, and the Training Provider shall apply the processes and procedures required by the relevant SAQA/QCTO and other related legislation pertinent to training. The Training Provider shall regularly consult the SAQA/QCTO website (www.SAQA/QCTO.org.za) to ensure that the most current Unit Standards are presented. If a conflict arises, the legislated requirements shall apply.

While structuring the Traineeship offerings, the Training Provider shall distinguish between the levels of learning required. The bulk of the training shall focus on NQF Levels 3 and 4. NQF Levels 2 and 5 training is not anticipated but may be suitable in some instances. Typical qualification titles for the respective NQF Levels that may be considered for inclusion into the Training and Skills Development Programme are listed in **Table A1004.03(a)** below:

Table 1004.03(a): Typical Qualification Titles*

NQF Level	Qualification	Name	Approximate Credits
2	National Certificate	Road Construction	120
2	National Certificate	Construction: Roadworks	120
2	National Certificate	Construction Contracting	120
3	National Certificate	Building and Civil construction	150

4	National Certificate	Supervision of Construction Processes	180
5	National Diploma	Management of Civil Engineering Construction Processes	210

* The Training Provider shall regularly consult the SAQA/QCTO website (www.SAQA/QCTO.org.za) to ensure that the most current Qualifications and Unit Standards are presented with the adequate number of minimum credits to obtain the Qualification.

It shall 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 Employer and the Engineer and shall not be implemented without prior approval.

i) Learning Material

Learning material is required for each Unit Standard. This learning material is the equivalent of prescribed text books for other qualifications. Each Trainee shall receive a copy of the learning material to learn the contents and to use it as reference source after obtaining the qualification.

The SAQA/QCTO Unit Standard curriculums define the contents of the learning material. The learning material shall not only comply with the SAQA/QCTO and CETA guidelines but shall be technically and practically aligned to road construction and road maintenance. Any input from a subject matter expert required to ensure the appropriateness of the learning material’s contents shall be included in the Contractor’s costs for compiling the learning material.

The Unit Standard requirements to be addressed in learning material, as outlined by the SAQA/QCTO Unit Standard curriculums, are amongst others, the following:

i) The purpose of the Unit Standard;
ii) The specific outcomes (typically 4 per Unit Standard);
iii) The assessment criteria (typically 4 per specific outcome);
iv) The range as is defined for each specific outcome;
v) The critical cross-field outcomes for the Unit Standard;
vi) The Unit Standard essential embedded knowledge.

A1005 METHOD STATEMENTS FOR TRAINING STAGES

The Contractor shall, before commencing with the Training and Skills Development Programme, demonstrate to the Employer and the Engineer how he intends to execute each of the respective training offerings.

A1005.01 Contents and Submission of Method Statements

The Contractor shall provide the Engineer with a method statement, describing the detail of, amongst others, the following components of the training:

d) A time schedule of the different training offerings;
e) A time schedule of the phases of the different training offerings;
f) Details of the training logistics, e.g. venue, transport, etc.
g) Identification and selection of Trainees;
h) Registration of Trainees;
i) Induction of Trainees;
j) Details of the theoretical training execution;

k) Details of the practical training execution;
l) Trainee workbooks and logbooks;
m) Assessment and moderating stages and arrangements, etc.

It is anticipated that the time schedule and training methodologies of individual training offerings may vary depending on the progress made by Trainees and the identification of subsequent training needs based on continuous Trainee assessments. It is thus not expected of the Contractor to submit a complete set of method statements prior to commencement of the Training and Skills Development Programme, but method statements for individual training stages shall be submitted for the Engineer's approval at least 10 (ten) calendar days prior to its commencement.

The Employer's minimum requirements for the most critical components to be outlined in the Method Statements are elaborated on in the sections below.

A1005.02 Selection of Trainees

To complete a Traineeship successfully requires minimum literacy and numeracy competencies as defined by SAQA/QCTO. Once the Designated Groups to participate in the project has been identified by the Stakeholder and Community engagement processes described in Part C3, Section D of the Scope of the Work, the Contractor's Training Provider shall utilise the Skills Audit and conduct additional skills analysis to benchmark the literacy and numeracy levels of the potential Trainees. The Training Provider shall thus make provision for baseline assessments such as conducting Recognised Prior Learning enquiries and tests.

This information shall guide the Training Provider in finalising the Trainee selection methodology(ies) and process(ess), which shall be approved by the Employer and the Engineer and agreed by the PLC.

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.

Since the selection of Trainees forms part of the Stakeholder and Community engagement processes, described in Part C, Section D of the Scope of the Work, provision for payment has been made in Pricing Schedule C, pay item D10.06.

Note:
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.

A1005.03 Registration of Trainees

The first day of any level of training, be it a full Traineeship or a single Unit Standard, shall be allocated to registering, inducting and providing information to Trainees. The registration process shall, amongst others, include the following:

a) Capture Trainees' personal details for populating the national database on Traineeship training.
b) Capture Trainees' banking details for the electronic transfer of stipends and later payments for work undertaken.
    i) All payments to Trainees shall be by electronic transfers or direct deposits into Trainees' bank accounts.

ii) The Contractor shall assist Trainees that do not have bank accounts, to open bank accounts.

c) Formalise the parties' commitment to the Training Programme by signing an agreement between the Contractor and the Trainee.

Provision for the Registration of Trainee Targeted Enterprises has been made in Pricing Schedule A, under pay item A1000.05(a).

The Registration of beneficiaries, other than the Trainee Targeted Enterprises shall be paid from the Provisional Sum provided in Pricing Schedule A, under pay item A1000.04(b) to (f).

A1005.04 Induction of Trainees

Induction means explaining to Trainees the purpose of the Training Programme, what is expected of them during the theoretical (classroom) training, as well as during the practical (work place) training. It includes agreeing codes of ethics, behaviour etc. The following items for inclusion in the induction are pointers and not the only aspects to be imparted:

a) Stipend payments (amount per day, per full training day attended in classroom, and only if found competent).
b) Working and training days and hours as a contractor would be working or not working.
c) Number and duration of comfort and lunch breaks (lunch will be provided during classroom training only).
d) Types of absenteeism and treatment thereof as a contractor would treat such absenteeism.
e) Disciplinary code and grievance procedure (explained and a copy handed to each Trainee with a signed copy retained by Training Provider).
f) Trainees found not competent after the first training offering shall be allowed one repeat training offering. Thereafter, Trainees that are still found not competent shall be disqualified from the Training Program.
g) The Contractor's insurances that are in place during the theoretical and practical training phases.
h) UIF is not applicable to any stage or phase of the Training Programme.
i) A detailed explanation of SAQA/QCTO and CETA functions and responsibilities, as well as training processes and procedures.
j) Roles and responsibilities of Trainees and the Contractor and his Training Provider, Practitioners, Assessors and Moderators.
k) An explanation of Unit Standards and its division into fundamental, core and elective units.
l) An explanation and breakdown of Unit Standard credits and how it builds toward an accredited qualification.
m) The approximate ratio between theoretical and practical training and how it overlaps.
n) An explanation of the Unit Standard exit outcomes.

Provision for the induction of Trainee Targeted Enterprises has been made in Pricing Schedule A, under pay item A1000.05(b).

The induction of beneficiaries, other than the Trainee Targeted Enterprises shall be paid from the Provisional Sum provided in Pricing Schedule A, under pay item A1000.04(b) to (f).

A1006 THEORETICAL TRAINING

A1006.01 Number of Trainees per Contact Session

Experience has shown that the optimal number of Trainees per contact session is 12 (twelve) Trainees per Practitioner or Assessor.

Smaller Trainee numbers tend to be not feasible to the Contractor from an economical point of view, whereas larger groups of up to a maximum of 20 (twenty) Trainees can be accommodated if during the second learning session of the day, i.e. the afternoon learning application session, the Practitioner is assisted by an Assessor. For groups of more than 20 (twenty) Trainees per Unit Standard, the group shall be divided and taught in two separate groups.

For this project, a minimum number of 19 Trainee Targeted Enterprises between CIDB grades 1 to 4 shall benefit from the project and at least 2 (two) persons shall be trained from each Trainee Targeted Enterprise. The minimum number of Trainees to be trained in the respective categories are listed in Table A1006.01(a) below:

Table A1006.01(a): Minimum Number of Trainees to be Trained

Trainee Category	Level of Training	No of Persons
Full Traineeships for Trainee Targeted Enterprises.	NQF level 3.	*19* (one person per Trainee Targeted Enterprise).
Full Traineeships for Trainee Targeted Enterprises	NQF level 4.	*19* (one person per Trainee Targeted Enterprise).

A minimum number of Trainee Targeted Enterprises to be provided with NQF level 2 training is not stipulated, but provision has been made to provide NQF level 2 training on an ad hoc basis in Pricing Schedule A, under pay item A1000.04(a)(i).

Provision to provide full Traineeships to Trainee Targeted Enterprises on NQF level 3 has been made in Pricing Schedule A, under pay item A1000.04(a)(ii).

Provision to provide full Traineeships to Trainee Targeted Enterprises on NQF level 4 has been made in Pricing Schedule A, under pay item A1000.04(a)(iii).

A minimum number of Trainee Targeted Enterprises to be provided with NQF level 5 training is not stipulated, but provision has been made to provide NQF level 5 training on an ad hoc basis in Pricing Schedule A, under pay item A1000.04(a)(iv).

Theoretical, NQF levels 2 to 5 training 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 item A1000.04(b) to (f).

A1006.02 Trainees' Learning Aids, Training Material and Workplace Documentation

a) Stationary and Learning Aids

Trainees shall be issued with a stationary or learning aids pack, which shall be replenished as required during both the theoretical and practical training components, to participate actively in the training experience. For up to NQF 3 training, a basic pocket calculator shall be included in the stationary pack, while NQF 4 Trainees shall receive a basic scientific calculator.

In addition to the stationary pack, Trainees shall also be provided with other learning and workplace aids as required by the Unit Standard. Examples of such learning and workplace aids are scale rulers, GPS devices, computing equipment, etc.

Provision for the Stationary and Learning Aids of the Trainee Targeted Enterprises has been made in Pricing Schedule A, under pay item A1000.05(c).

Stationary 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 A1000.04(b) to (f).

b) Learning Material, Workbooks and Logbooks

Before the training of a Unit Standard commence, the following learning material needs to be available and/or issued to Trainees:

i) Unit Standard learning material;
ii) Unit Standard Trainees' Workbook;
iii) Unit Standard Trainees' Logbook;
iv) Unit Standard Practitioner's visual training aids and/or demonstration tools; and
v) Unit Standard Assessor's guide.

The requirements for and/or utilisation of the listed learning material are discussed in detail in the relevant sections of the Scope of Work.

Provision for the Learning Material, Workbooks and Logbooks of the Trainee Targeted Enterprises has been made in Pricing Schedule A, under pay item A1000.05(d).

Learning Material, Workbooks and Logbooks 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 item A1000.04(b) to (f).

c) Contract and Specification Documents

During theoretical (classroom) training and practical (workplace) training, Trainees will be referred to contract documentation and quality specifications. Trainees enrolled in the NQF 4, full Traineeships shall be issued with one set of this documentation, which as a minimum, shall include the following:

i) FIDIC Short Form of Contract (green book);
ii) COTO Standard Specifications for Road and Bridge Works for State Road Authorities;
iii) CIDB best practice documents as appropriate to this project; and
iv) Guidelines for the implementation of Labour-Intensive Infrastructure Projects under the Expanded Public Works Programme (EPWP) (Second Edition – July 2005).

Provision for Contract and Specification Documents for Trainee Targeted Enterprises has been made in Pricing Schedule A, under pay item A1000.05(e).

Contract and Specification Documents 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 item A1000.04(b) to (f).

A1006.03 Theoretical Training Programme

Theoretical (classroom) training shall be conducted according to the programme explained to Trainees during the induction. This programme shall be displayed on a notice board in the training room and shall be tracked weekly and updated if necessary.

The training programme shall be in a bar chart format (MS Projects or similar) taking cognisance of the construction industry's typical non-working days. The basis of the programme shall be to conduct training in the classroom at an average of 3 (three) credits per work day.

A1006.04 Scheduling of Training Sessions

Each Unit Standard training has a theory content (lecturing) and a learning application element (examples and exercises). Experience has shown that Trainees perform best if the theory content is lectured during the morning contact session, while the practical element is conducted during the afternoon contact session.

During the afternoon practical sessions, the Trainee will display his competence in the Trainee's Workbook by recording actions, methods, calculations, etc. for compiling his Portfolio of Evidence.

The Contractor is advised to complete the training of a Unit Standard uninterrupted. Training is proofed to be less effective if a part of the training is done and then interrupted to only continue a week or weeks later.

A1006.05 Trainees' Portfolio of Evidence and Workbooks

Each Trainee must compile a Portfolio of Evidence. The Portfolio of Evidence serves as proof of the Trainees' competence and will be assessed and moderated by an Assessor and/or Moderator. The Contractor shall keep record of the Portfolio of Evidence for a period of at least 5 (five) years after the training has been completed or partially completed.

The Trainees' Workbook is a tool to record that the work has been done and that the Trainee is competent in doing the work. The Workbook forms an integral part of the Trainees' Portfolio of Evidence. For each Unit Standard, Trainees will keep a Workbook for the theoretical (classroom) component and the practical (workplace) component.

Over and above the Trainees' Workbook, any other documentary proof relevant to the Unit Standard and assisting in illustrating the competence of the Trainee, must be filed in the Portfolio of Evidence.

A1006.06 Assessing Trainees' Progress

The Assessor, whether permanently on the training project or not, shall assess Trainees' competence in a Unit Standard within 3 (three) working days after completion of the Unit Standard's training. The Assessor shall advise the Training Provider and the affected Trainees of the need for repeat training as soon as possible and the Training Provider shall schedule repeat training as soon as possible.

The Assessor shall maintain his portfolio of assessment of Trainees and keep it updated and available for Moderating.

No additional pay item has been provided for repeat training and it must be included in the Contractor's tenderer training rates.

A1007 PRACTICAL TRAINING

Once a Trainee has been found competent for the theoretical component, he must be declared competent for the practical component before he can be declared competent for the Unit Standard.

Hence, Trainees will be expected to demonstrate their competence in a practical situation that integrates the assessment of all specific outcomes, for all Unit Standards in the Traineeship Programme.

All the Contractors' construction expenses and profit during the Practical Training and Training Test Section phases have been quantified and provided for in Pricing Schedule A. This includes Preliminary and General costs, site camp, plant, material, labour, PPE and any other costs that would be incurred by a Contractor and his sub-contractors to construct the Works.

Other than the Contractor's construction expenses and profit, quantified and provided for in Pricing Schedule B, provision has been made in Pricing Schedule A, under pay item A1000.06 for the Contractor to execute all his responsibilities towards Trainee Targeted Enterprises during the Practical Training phase as described in this Part C, Section A1007 of the Scope of the Work.

Amongst others, these responsibilities include 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.

No additional provision has been made for the Contractor's responsibilities towards other Targeted Enterprises and Labour during the Practical Training phase and it must be included in the Contractor's rates tendered in Pricing Schedule B.

A1007.01 Workplace Experience Requirements

Trainees shall spend at least 10 (ten) times the Unit Standard credit value in notional hours in a workplace environment, e.g. if a Unit Standard consists of 3 (three) credits, the Trainee shall spend 3 x 10 (30) notional hours in a workplace environment to qualify for an assessment of his competence in the Unit Standard.

A1007.02 Keeping a Logbook and Assessment

Trainees shall be issued with a Logbook and the necessary stationary to capture his workplace experience during the practical training. Trainees shall keep a diary of their workplace experience and file any proof of their experience in their Portfolio of Evidence.

During or on completion of the practical training, the Portfolio of Evidence shall be assessed by and assessor to rate the Trainee's competency acquired in the workplace environment.

Provision for the Logbooks of the Trainee Targeted Enterprises has already been made in Pricing Schedule A, under pay item A1000.05(d).

Provision for the Logbooks 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 item A1000.04(b) to (f).

A1007.03 Training Test Sections

Trainees shall be trained in practical construction techniques by constructing Training Test Sections for each construction activity. The Construction Manager shall ensure that Trainees are knowledgeable and adequately trained in the detail of constructing the Training Test Sections.

Training Test Sections must not be confused with Trial Sections as specified in COTO. The objective of the Training Test Section is to perfect and embed the method described in the relevant NQF Unit Standard to guarantee the product specification as per COTO.

The list below contains recommended good practice techniques that should be applied to every Training Test Section.

a) Trainees' Responsibilities

Trainees shall:

i) execute the work during the Training Test Section phase.
ii) rotate tasks to ensure that every Trainee gain experience in every activity.
iii) study and interpret the requirements, specification, drawings and instructions prior to attempting the Training Test Section.
iv) list pertinent points, i.e. tolerances and discuss their interpretation of the work with the Construction Manager.

b) Construction Manager's Responsibilities

The Construction Manager shall:

i) issue Trainees with personal protective equipment (PPE) prior to them commencing their practical training.
ii) timeously order or obtain plant, human resources and material for the Training Test Section.
iii) set a date and the place for constructing the Training Test Section and invite all Trainees and relevant personnel to attend.
iv) explain the lines of communication during the Training Test Section. Only the Construction Manager shall relay any instruction or proposal to amend the construction method during the Training Test Section.
v) explain the purpose of the Training Test Section and the construction method to achieve the specified product in a cost-effective manner.
vi) explain the method statement to Trainees, taking care to ensure that they fully understand what is being explained to them. If necessary, the Construction Manager shall repeat the process to be undertaken and arrange for translation into the Trainees' home language.
vii) demonstrate to Trainees, the actual practical process and repeat it as often as is necessary until the desired result is achieved.

A1007.04 Workplace Experience Outcomes

Outcomes from the Training Test Sections shall provide Trainees with the following experiences:

a) Familiarity with the use of all tools and small plant;
b) Exposure to the daily servicing needed of small plant;
c) Understanding that tasks are achievable and reasonable;
d) Understanding the importance of materials handling and batching techniques;
e) Knowledge of the end-product specifications and how it is checked and recorded;
f) The impact that a change in the method has on output, including failure to achieve a task.
g) Obtaining and understanding of the requirements needed to tender for construction activities to be used during the construction period.

A1007.05 Integrated Summative Assessment and Moderation

The last and final phase of assessment for total competence per Unit Standard and/or the full Traineeship is the integrated summative assessment and the moderation and verification by CETA.

Integrated summative assessment means the combination of results of the theoretical assessment from the classroom training plus the practical assessment from the workplace training.

This NQF training is an outcome-based qualification which means that Trainees can perform as required by the Unit Standard and are, to all intents and purposes, prospective contractors.

A1008 CONTRACTOR'S RESPONSIBILITIES TOWARDS TRAINEES

In addition to the specifications for training above, the Contractor shall also undertake the duties described under this section relating to Trainees' welfare during training.

A1008.01 Trainee Welfare

a) Travel and Accommodation

During the training phases of the project, Trainees shall be responsible for their travel and accommodation arrangements to and from the training facility and the camp site at their own cost.

During the practical training phase of the project, the Contractor shall, however, provide transportation to and from the training facility or the camp site to the place where the practical training shall take place.

The cost to transport Trainees during the practical training phase shall be included in the Contractor's rates for the relevant elements of the Works to be constructed during the practical training phase as if the Trainees are his own employees.

In choosing the training facility and camp site's location, the Contractor shall take cognisance of Trainees' travel and accommodation challenges.

b) Sustenance

Trainees shall receive the following sustenance during the theoretical training phase of the project:

i) A choice of tea, coffee or fruit juice and a nutritious snack during the morning comfort break.
ii) A choice of tea, coffee or fruit juice and a nutritious lunch pack during the lunch break.
iii) A choice of tea, coffee or fruit juice only during the afternoon comfort break.
iv) Potable or bottled water shall be at Trainees' disposal at all times.

All sustenance shall be procured from local Targeted Enterprise Suppliers and Service Providers.

Provision for the Sustenance of Trainee Targeted Enterprises has been made in Pricing Schedule A, under pay item A1000.07(a).

Provision for the Sustenance of beneficiaries, other than the Trainee Targeted Enterprises shall be paid from the Provisional Sum provided in Pricing Schedule A, under pay item A1000.04(b) to (f).

A1008.02 Trainee Stipends

The Contractor shall pay Trainees the legislated daily stipend in accordance with the Basic Conditions of Employment Act (Act No. 75 of 1997), as amended and as per its most recent learnership allowances table. Payment of stipends shall be applicable:

a) during both the theoretical (classroom) and practical (workplace) training phases;
b) only if the Trainee was present for the full duration of the training on the day; and
c) only if the Trainee was found competent on completion of the Unit Standard.

Stipends shall be payable monthly and into the Trainees' bank accounts.

It shall be clearly explained to Trainees that when Training Test Sections are carried out, they will continue to be paid a stipend, because even though permanent work may be the result, it is the practical component of the Unit Standard and it is a training experience.

Just as for the theoretical training component, Trainees will only be paid the stipend if they can demonstrate that they are competent in the practical execution of the Unit Standard.

Provision for the Stipends of Trainee Targeted Enterprises has been made in Pricing Schedule A, under pay item A1000.06(b).

Provision for the Stipends of beneficiaries, other than the Trainee Targeted Enterprises shall be paid from the Provisional Sum provided in Pricing Schedule A, under pay item A1000.04(b) to (f).

A1009 CONSTRUCTION SIMULATION

All the Contractor's construction expenses and profit during the Construction Simulation phase have been quantified and provided for in Pricing Schedule B. This includes Preliminary and General costs, site camp, plant, material, labour, PPE and any other costs that would be incurred by a Contractor and his Subcontractors to construct the Works.

Other than the Contractor's construction expenses and profit, quantified and provided for in Pricing Schedule B, provision has been made in Pricing Schedule A, under pay item A1000.08 for the Contractor to execute all his responsibilities towards Trainee Targeted Enterprises as described in this Part C, Section A1009 of the Scope of the Work.

Amongst others, these responsibilities include 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.

No additional provision has been made for the Contractor's responsibilities towards other Targeted Enterprises and Labour during the Construction Simulation phase and it must be included in the Contractor's rates tendered in Pricing Schedule B.

A1009.01 Purpose and Outcomes of the Construction Simulation Phase

The purpose of the Construction Simulation phase is for the Trainee Targeted Enterprises to conduct actual construction work in a controlled setting, which simulates a real contracting environment. The following outcomes are expected:

a) Establish a degree of independence to perform as an emerging contractor.

b) Develop the capabilities of tendering for and completing specified construction work.
c) Develop confidence with weekly and monthly planning.
d) Develop confidence with the setting of group and individual tasks.
e) Develop confidence with usage of construction material.
f) Develop confidence in the operation and maintenance of plant.
g) Improve capability to measure the tasks and work completed.
h) Improve capability to incorporation measured work into a payment certificate.
i) Improve capability to calculate daily work costing and profitability.
j) Develop an understanding of the discipline required for maximum productivity.
k) Develop confidence in reporting of progress in typical construction formats.

Continuing mentorship, coaching and guidance during this project phase is critical to embed the prior learning received and to develop Trainee Targeted Enterprises beyond the learning experience.

A1009.02 Execution of the Construction Simulation Phase

a) Responsibilities of the Trainee Targeted Enterprises

The Trainee Target Enterprise Owner or his Supervisor shall:

i) price a bill of quantities for a section of construction work and/or tasks as if he is tendering competitively for the work;
ii) establish a construction team based on his experience from the Training Test Sections on what is practical achievable and profitable.
iii) train his construction team, consisting of Target Labour, to perform the construction tasks to the required standards.
iv) Supervise his construction team and take responsibility for the quality and standard of the work that they produce.

b) Responsibilities of the Construction Manager

Prior to, and during the, commencement of the Construction Simulation, the Construction Manager shall:

i) discuss the priced bills of quantities with the Trainee Targeted Enterprises in a classroom setting and agree on the rates to be paid for work done during this phase. All Trainee Targeted Enterprises shall be paid the same rates for the same pay items.
ii) assist Trainee Targeted Enterprises to schedule work activities for the sections of work assigned to them and agree on the construction methods to apply.
iii) plan with each Trainee Targeted Enterprise what plant, material and labour he would require for constructing the work in accordance to the agreed construction methods.
iv) plan with each Trainee Targeted Enterprise how and from where to arrange and procure his plant, material and labour.

To ensure that Trainee Targeted Enterprises receive the maximum benefit skills development experience during the Construction Simulation phase, the Construction Manager shall provide extensive administration and financial management support. Every work day shall commence with a site meeting to discuss, amongst others, the following:

a. Progress made the previous work day;
b. Productivity outputs obtained during the previous work day.
c. How productivity outputs impact on cost and profitability.
d. Planning of resources and construction for the day ahead.

e. The most feasible construction method for the work planned for the day.

c) Payment for Work Completed

During the Construction Simulation phase, the Trainee Targeted Enterprises are expected to operate as if they are proper contractors.

Stipends will no longer be paid and Trainee Targeted Enterprises shall be paid for the work according to tasks or quantities completed and as per the agreed rates.

With the assistance of the Construction Manager and Construction Mentors, Trainee Targeted Enterprises shall compile a Simulation Payment Certificate as if he sourced and paid plant, material and labour himself.

However, the Contractor shall procure plant, material and labour on behalf of the Trainee Targeted Enterprises and shall pay Suppliers, Service Providers and Labour directly. The Construction Manager shall pay the balance of the Simulation Payment Certificate into the bank accounts of the Trainee Targeted Enterprises on receipt of their invoices.

A1010 CONSTRUCTION MANAGEMENT AND CONSTRUCTION OF THE WORKS

All the Contractors construction expenses and profit during the Construction of the Works phase have been quantified and provided for in Pricing Schedule B. This includes Preliminary and General costs, site camp, plant, material, labour, PPE and any other costs that would be incurred by a Contractor to construct the Works.

Other than the Contractor's construction expenses and profit, quantified and provided for in Pricing Schedule B, provision has been made in Pricing Schedule A, under pay item A1000.09 for the Contractor to execute all his responsibilities towards Trainee Targeted Enterprises as described in this Part C, Section A1010 of the Scope of the Work.

Amongst others, these responsibilities include Trainee Target Enterprises' competency review, 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.

No additional provision has been made for the Contractor's responsibilities towards other Targeted Enterprises and Labour during the Construction Simulation phase and it must be included in the Contractor's rates tendered in Pricing Schedule B.

A1010.01 Subcontracting Work to Trainee Targeted Enterprises

Once the Construction Simulation phase has been completed, Trainee Targeted Enterprises shall have the opportunity to tender for construction work packages and enter into formal subcontract agreements with the Construction Manager as detailed in Part C, Section D of the Scope of the Work.

The Trainee Targeted Enterprises shall, however, remain Trainees in the sense that they still must complete the notional hours required by the NQF level 3, 4 and 5 Unit Standards to be found competent in these Unit Standards. Thus, although the principles of subcontracting to Targeted Enterprises, as detailed in Part C, Section D of the Scope of Work, shall apply, every Trainee Targeted Enterprise shall be awarded at least 1 (one) subcontract package to ensure that they receive the practical exposure to complete a Full Traineeship.

a) Trainee Target Enterprises' Competency Review

During the Construction Simulation period, Trainee Targeted Enterprises demonstrated their competency to operate as contractors and taking responsibility for all aspects of planning, procuring and managing plant, material and labour.

In awarding subcontract packages to Trainee Targeted Enterprises, the Construction Manager shall review Trainees' ability to combine all learning experiences into that of a competent contractor. Following this review, the Construction Manager, in consultation with the Engineer, shall award construction packages to Trainee Targeted Enterprises to ensure that they receive the full benefit of the practical training experience.

b) Form of Subcontract Agreement

The subcontract shall be the FIDIC Short Form of Contract (green book) as prescribed in Part C, Section D of the Scope of Work.

The Works shall be constructed in accordance with the COTO Standard Specifications for Road and Bridge Works for State Road Authorities.

c) Payment for Work Completed

Trainee Targeted Enterprises shall be paid for tasks or quantities completed at the agreed rates and in terms of the subcontract agreement.

The Contractor shall no longer procure plant, material or labour on behalf of the Trainee Targeted Enterprises and shall not pay Suppliers, Service Providers or Labour directly and on behalf of the Trainee Targeted Enterprises.

Trainee Targeted Enterprises shall compile their Payment Certificates, which shall include for plant, material and labour and which shall, after checking and agreeing the quantities between the parties, be paid by the Contractor on receipt of the Trainee Targeted Enterprises' invoices.

If the Contractor did procure any plant, material or labour on behalf of a Trainee Targeted Enterprise, the cost of such procurement shall not be offset against the Payment Certificate. The Contractor shall pay the full value of the Payment Certificate and then issue the Trainee Targeted Enterprise with an invoice for the Contractor's cost incurred.

A1010.02 Construction Mentoring

During the construction of the Works the Contractor shall continue his training duties, but in a mentoring capacity. Amongst others, the Construction Manager shall continue with the following activities:

a) Coach, guide and mentor Trainee Targeted Enterprises continuously;
b) Supervise construction activities and be responsible for the standard and quality of the Works constructed.
c) Ensure that Trainee Targeted Enterprises are registered and comply with all relevant statutory requirements, e.g.

    i) South African Revenue Service
    ii) National Treasury's Central Supplier Database
    iii) Compensation for Occupational Injuries and Deceases Act
    iv) Rates for wages and conditions of labour agreed by the Bargaining Council for the Civil Engineering Industry.

v) Construction Industry Development Board
vi) Occupational Health and Safety Regulations
vii) Environmental Management Regulations

d) If requested or required, assist Trainee Targeted Enterprises to schedule work activities and decide on construction methods to apply.
e) If requested or required, assist Trainee Targeted Enterprises to plan and procure their plant, material and labour.
d) Assist Trainee Targeted Enterprises to determine production rates required and obtained to optimise profitability.
e) Assist Trainee Targeted Enterprises to measure the works and quantify it in a payment certificate for invoicing.
f) Any other support to Trainee Targeted Enterprises to enhance the success of their business.

The Construction Manager shall conduct bi-weekly technical meetings with the Trainee Targeted Enterprises to introduce them to the industry norm of monthly cost and management meetings at which allowable versus cost issues are thoroughly explored.

A1010.03 Construction Management

The Construction Manager shall be responsible for day to day management of Trainee Targeted Enterprises and construction of the Works in a manner that is expected from a competent Contractor. He shall keep a daily site diary, receive and execute instructions from the Engineer and give and monitor instructions to the Trainee Targeted Enterprises.

Regular audits, but not less than quarterly, shall be conducted by the Employer to ensure compliance with financial and progress accounting, as well as compliance with Occupational Health and Safety and Environmental Management legislation.

A1011 MEASUREMENT AND PAYMENT

The Contractor shall submit monthly payment certificates with supporting documentation to the Engineer on the date and in the format as required by the Employer. Supporting documents shall, amongst others, include the payment certificates and invoices of Trainee Targeted Enterprises and progress reports. Once the Engineer has agreed and certified the payment certificate, it shall be submitted to the Employer with his accompanying invoice for payment.

Item	Description		Unit
A1000.01	**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)
		(iv) Clerks of Works	Lump Sum (LS)

The unit of measurement for pay item A1000.01(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 project, 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 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 items A1000.01(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 project, 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 project 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 A1000.01(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 project, 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 project. The total duration and intervals that the Construction Manager spend on the project 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 A1000.01(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 project, 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 the Scope of Work. However, the number of staff and the time and intervals that they spend on the project 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 project.

The number of staff and the total duration and intervals that Construction Mentors, Supervisors and Clerks of Works spend on the project 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.

Establishment of the Contractor's Training and Construction Management staff during the training phases of the project is provided for in Pricing Schedule A, under pay items A1000.02(b) and (c).

Establishment of the Contractor's Construction Management staff during the construction of the Work phase of the project is provided for in Pricing Schedule B, Section 1300.

Contract price adjustment shall be applicable to pay items A1000.01(a) and (b) and its subitems in accordance with Clause C2.1.8.

Interim payments shall be applicable to pay items A1000.1(a) and (b) and its subitems in accordance with Clause C2.1.9

Item	Description		Unit
A1000.02	**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 project phases, including PPE.	Lump Sum (LS)
	(c)	Establishment of the Contractor's Construction Management Staff during the Training phases of the project, including PPE.	Lump Sum (LS)

The unit of measurement for pay items A1000.02(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 project 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, projectors, 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.

Contract price adjustment shall be applicable to pay items A1000.02(a) to (c) and its subitems in accordance with Clause C2.1.8.

Interim payments shall be applicable to pay items A1000.02(a) to (c) in accordance with Clause C2.1.9

Item	Description		Unit
A1000.03	**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	Lump Sum (LS)

The unit of measurement for pay items A1000.03(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.

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.

Contract price adjustment shall not be applicable to pay items A1000.03(a) to (d).

Interim payments shall not be applicable to pay items A1000.3(a) to (d), but shall be claimable on approval of the Training and Skills Development Programme.

Item	Description		Unit
A1000.04	**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 Enterprise Suppliers, Service Providers and Subcontractors	Provisional (Prov.) Sum
		(ii) Handling cost and profit i.r.o. item A1000.04(b)(i)	Percentage (%)

	(c)	(i)	Targeted Labour	Provisional (Prov.) Sum
		(ii)	Handling cost and profit i.r.o. item A1000.04(c)(i)	Percentage (%)
	(d)	(i)	Interns (Students) Completing their National Diplomas	Provisional (Prov.) Sum
		(ii)	Handling cost and profit i.r.o. item A1000.04(d)(i)	Percentage (%)
	(e)	(i)	Graduates (Candidates) towards Registration in a Professional Category	Provisional (Prov.) Sum
		(ii)	Handling cost and profit i.r.o. item A1000.04(e)(i)	Percentage (%)
	(f)	(i)	Community Members and/or Groups	Provisional (Prov.) Sum
		(ii)	Handling cost and profit i.r.o. item A1000.04(f)(i)	Percentage (%)

The unit of measurement for pay items A1000.04(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/QCTO accredited qualification on a specified NQF level. It shall provide for all the Contractor's costs to provide SAQA/QCTO accredited NQF level 2 to 5 training that has not been provided for under pay items:

A1000.01 Contractor's Staff and
A1000.02 Contractor's Training Facility and Establishment of Staff
A1000.05 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.

Contract price adjustment shall be applicable to pay items A1000.04(a)(i) to (iv) in accordance with Clause C2.1.8.

The unit of measurement for pay items A1000.04(b)(i), (c)(i), (d)(i), (e)(i) to (f)(i) shall be the Provisional Sum. The Provisional Sum shall provide for all the Contractor's costs to provide SAQA/QCTO accredited NQF level 2 to 5 technical, entrepreneurial and generic training to Targeted Enterprise Suppliers, Service Providers and Subcontractors, Targeted Labour, Interns, Graduates and Community members and groups.

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 A1000.04(b)(ii), (c)(ii), (d)(ii), (e)(ii) to (f)(ii) shall be the Percentage (%). The Percentage shall provide for all the Contractor's costs and profit associated with the training of Targeted Enterprise Suppliers, Service Providers and Subcontractors, Targeted Labour, Interns, Graduates and Community members and groups.

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, projectors, appliances, connections, classroom furniture and any other training aids, including PPE, required for the training.

Contract price adjustment shall not be applicable to pay items A1000.04(b) to (f) and its subitems.

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. The Provisional Sums shall be paid in accordance with Clause C2.1.10.

Item	Description		Unit
A1000.05	**Theoretical (Classroom) Training**		
	(a)	Registration of Trainees	Lump Sum (LS)
	(b)	Induction of Trainees	Lump Sum (LS)
	(c)	Stationary 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 A1000.05(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 in Pricing Schedule A, under pay items A1000.04(b) to (f). The Lump Sum tendered for pay item A1000.05(a) shall serve as a bench mark rate for the utilisation of the Provisional Sum.

The unit of measurement for pay item A1000.05(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 in Pricing Schedule A, under pay items A1000.04(b) to (f). The Lump Sum tendered for pay item A1000.05(b) shall serve as a bench mark rate for the utilisation of the Provisional Sum

The unit of measurement for pay item A1000.05(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 Stationary and Learning Aids that they require to complete SAQA/QCTO accredited training, on the relevant NQF levels, successfully.

Stationary 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 A1000.04(b) to (f). The Lump Sum tendered for pay item A1000.05(c) shall serve as a bench mark rate for the utilisation of the Provisional Sum

The unit of measurement for pay item A1000.05(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/QCTO 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 in Pricing Schedule A, under pay items A1000.04(b) to (f). The Lump Sum tendered for pay item A1000.05(d) shall serve as a bench mark rate for the utilisation of the Provisional Sum

The unit of measurement for pay item A1000.05(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/QCTO 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 in Pricing Schedule A, under pay items A1000.04(b) to (f). The Lump Sum tendered for pay item A1000.05(e) shall serve as a bench mark rate for the utilisation of the Provisional Sum.

Contract price adjustment shall be applicable to pay items A1000.04(a) to (e) in accordance with Clause C2.1.8.

A1000.06	**Practical (Workplace) Training**	**Lump Sum (LS)**

The unit of measurement for pay item A1000.06 shall be the Lump Sum (LS). The Lump Sum tendered shall provide for all the Contractor's costs, other than construction expenses and profit, to provide Trainee Targeted Enterprises with the Practical Training that they require to complete SAQA/QCTO 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.

Contract price adjustment shall be applicable to pay item A1000.06 in accordance with Clause C2.1.8.

Interim payments shall be applicable to pay item A1000.06 in accordance with Clause C2.1.9

A1000.07	**Contractor's Responsibilities Towards Trainees**			
	(a)	(i)	Trainee Sustenance	Prime Cost (PC) Sum
		(ii)	Handling cost and profit i.r.o. item A1000.07(a)(i)	Percentage (%)
	(b)	(i)	Trainee Stipends	Prime Cost (PC) Sum
		(ii)	Handling cost and profit i.r.o. item A1000.07(b)(i)	Percentage (%)

The unit of measurement for pay item A1000.07(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 project.

The unit of measurement for pay items A1000.07(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 A1000.04(b) to (f). The Prime Cost Sums utilised under pay item A1000.07(a)(i) shall serve as a bench mark rate for the utilisation of the Provisional Sum

The unit of measurement for pay item A1000.07(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 project in accordance with the Basic conditions of Employment Act (Act no. 75 of 1997).

The unit of measurement for pay items A1000.07(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 project, 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 in Pricing Schedule A, under pay items A1000.04(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.

Contract price adjustment shall not be applicable to pay items A1000.07(a) and (b), and its subitems.

The Prime Cost Sum shall be paid in accordance with Clause C2.1.10.

A1000.08	**Construction Simulation Phase**	**Lump Sum (LS)**

The unit of measurement for pay item A1000.08 shall be the Lump Sum (LS). The Lump Sum tendered shall provide for all the Contractor's costs, other than construction expenses and profit, to provide Trainee Targeted Enterprises with the Construction Simulation experience that they require to complete SAQA/QCTO 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.

Contract price adjustment shall be applicable to pay item A1000.08 in accordance with Clause C2.1.8.

Interim payments shall be applicable to pay item A1000.08 in accordance with Clause C2.1.9

A1000.09	**Construction Management Phase**	**Lump Sum (LS)**

The unit of measurement for pay item A1000.09 shall be the Lump Sum (LS). The Lump Sum tendered shall provide for all the Contractor's costs, other than construction expenses and profit, 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.

Contract price adjustment shall be applicable to pay item A1000.09 in accordance with Clause C2.1.8.

Interim payments shall be applicable to pay item A1000.09 in accordance with Clause C2.1.9

SECTION B1: STANDARD AMENDMENTS ISSUED BY COTO

Notes to tenderer:

1. The Standard Specifications for Road and Bridge Works for South African Road Authorities (Draft Standard October 2020 edition) prepared by the Committee of Transport Officials, (COTO), as amended, shall apply to this contract. The amendments are those issued by COTO and reproduced in Section B1, together with additional amendments as set out in Section B2 and Project specific Specification Data as set out in Section B3.

As at ***January 2026*** no amendments have been issued.by COTO.

SECTION B2: PROJECT SPECIFICATION AMENDMENTS TO THE COTO STANDARD SPECIFICATIONS

Notes to tenderer:

1. This Section B2 contains amendments to the Standard Specification, including additional clauses, amendment to clauses or deletion of clauses and specifications, required for this particular contract. Where the Standard Specifications allow a choice to be specified in the Contract Documentation or Project Specifications, between alternative materials or methods of construction, and for additional requirements to be specified to suit a particular contract, these selections are not made in this Section B2. Details of such alternatives or additional requirements applicable to this contract are contained in Section B2: Specification Data. Section B2 also contains project specific sections for Sections C, D and E.

2. The number of each clause and each payment item in this part of the project specifications follows the numbering format of the standard specifications.

SECTION B2: PROJECT SPECIFICATION

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PART C: MEASUREMENT AND PAYMENT

C1.1.3 PAYMENT

C1.1.3.5 Payment for materials on the Site

In the last sentence of the 1st paragraph, delete the following:

", or, in the case of crushed stone which has not been purchased but has been produced on the site, at 80% of a fair evaluation of such crushed material".

Add the following new subclauses:

"**C1.1.3.9 Reduced payments for substandard work**

Where provision for reduced payments for sub-standard work is made in the Contract Documentation, acceptance of reduce payment for substandard work may be accepted by the Engineer subject to prior approval by the Employer.

C1.1.3.10 Procurement of sub-services and omitted rates (Second tier procurement)

Second tier procurement include the procurement of any work where either the particulars of the work is not scheduled and priced, or where the process of procurement of the sub-service provider is specified elsewhere in the contract specification. It includes the procurement of work where rates have been omitted or where allowance for the work is made under a Provisional sum or Prime sum item or where allowance for the work is made under a Provisional sum or Prime sum item but the particulars of the work is not scheduled, or where work is instructed under clause 13[Variations and Adjustments] or where work is to be performed by Targeted Enterprises.

The following procurement methods is to be followed as appropriate:

a) Where the particulars of the work is not scheduled but existing rates for similar work exist in the contract and the work can therefore be executed by the contractor or his sub-contractor at the existing contract rates.

No separate procurement process is required. The work is to be quantified and scheduled utilising existing rates and approved through the Works Authorisation process.

b) Where the payment calculation is based on a formula specified in the contract document, or

where the payment rate is pre-determined or fixed by the client.

No separate procurement process is required. The work is to be quantified and approved through the Works Authorisation process.

c) Where the supplier is not selected by the contractor and actual cost is reimbursable and no procurement process is possible.

No separate procurement process is required. The work is invoiced by supplier on completion and approved through the Works Authorisation process at the end of the contract.

d) Where there are omitted items as part of the existing scheduled scope of work and no existing rates for similar work exist in the contract, or

where there are no existing rates for the materials to be supplied and suitable rates for material to be determined.

A proposal for a new rate shall be submitted by the contractor and evaluated by the engineer, by comparing with either adjusted relevant rates in the contract, or by comparing with similar rates on similar contracts, or by comparing three informal quotes to substantiate the rate. The new agreed rate is approved through the Works Authorisation process.

e) Where the particulars of the work is not scheduled and the estimated cost of the work (including VAT and excluding Contract Price Adjustment) is equal or less than R500,000.00 and there are no existing rates for similar work and the contractor's proposal submitted in terms of FIDIC Variation 13.1 is not accepted and the work is to be performed by a sub-contractor.

A minimum of three quotations shall be obtained from Targeted Enterprises (as defined in Section D1000). The following is the minimum requirements for this process:

- Prequalification for BEE level 1 or 2 and EME or QSE (Approval to deviate must be granted by the Employer, based on market research)
- Quotation to include form of quotation, CSD registration, CIDB (where applicable),

A Works Authorisation shall be approved prior to execution of the work.

f) Where the particulars of the work is not scheduled and the estimated cost of the work is more than R500,000.00 (including VAT and excluding Contract Price Adjustment) and there are no existing rates for similar work and the contractor's proposal submitted in terms of FIDIC Variation 13.1 is not accepted and the work is to be performed by a sub-contractor.

The work is to be procured through a tender process. The following is the minimum requirements for this process:

- Prequalification for BEE level 1 or 2 and EME or QSE (Approval to deviate must be granted by the Employer, based on market research)
- Tenders to close at the relevant site offices at a specific date and time
- Tender documents to include form of Offer, CSD registration, Tax compliance, CIDB (where applicable), SBD1, SBD 4, SBD 8, SBD 9, SBD 6.2, BEE certificate, Form A2.2
- Tenders to be evaluated on price and preference
- Evaluation by contractor for review by engineer

A Works Authorisation shall be approved prior to execution of the work.

g) Where the particulars of the work is identified by the contractor to be performed by subcontractors who are Targeted Enterprises to form part of the specified Contract Participation Goals for Targeted Enterprises.

The work is to be procured as per the process specified in clause D1007.

h) Where the work is unforeseen, urgent and the relevant procurement method as indicated above will result in a delay to the contract and payment for a claim for extension of time and/or cost, or

where the above procurement methods are not applicable or cannot fully be complied with.

The Employer will determine the most appropriate procurement process to be followed and approved through the Works Authorisation process."

SECTION 1.2: GENERAL REQUIREMENTS AND PROVISIONS

PART A: SPECIFICATIONS

A1.2.3 GENERAL

A1.2.3.15 Routine maintenance

Add the following new paragraph:

The riding quality of gravel deviations shall comply with the following:
Level of Serviceability 3 of TRH 20 Table 4.

Add the following new subclause:

"**A1.2.3.24 Reference Manuals, other specifications and test methods**

In various chapters of this Standard Specification, reference is made to Manuals, other specifications, and test methods. If not otherwise indicated in the Contract Documentation, the latest published Manual, other specification, and test methods at time of close of tender will apply. Any changes to be implemented on a project because of revisions to manuals, other specifications and test methods, will be handled in terms of the Conditions of Contract.

Certain TRH and TMH documents are published as SABITA Manuals/TRH or SABITA Manuals/TMH publications. Where reference is made to the TRH or TMH document, it shall be read as referring to the latest version of the SABITA Manual/TRH publication or SABITA Manual/TMH publication, respectively."

A1.2.7 EXECUTION OF THE WORKS

A1.2.7.1 Programme of work

a) General

Add the following new paragraphs:

"The contractor shall note that the examination of a road with a view to rehabilitation is normally undertaken a considerable period of time before the commencement of the contract, and that conditions may subsequently change. The engineer will make further examinations during the period of contract, and, depending on the results of such examinations, the quantities of any items of work may be drastically increased or decreased.

The contractor shall base his initial programme for road rehabilitation on the scope of the work as described in the project specifications on the quantities contained in the Pricing Schedule (Part C2)."

PART C: MEASUREMENT AND PAYMENT

Add the following new pay item:

"Item Unit

C1.2.10 Dispute Adjudication Board (DAB)

C1.2.10.1 Employer's contribution to DAB (50%) ..... prime cost (PC) sum"

SECTION 1.3: CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS

-

PART C: MEASUREMENT AND PAYMENT

Item Unit

C1.3.1 The Contractor's general obligations

Delete subitem C1.3.1.3 and replace with the following:

"C1.3.1.3 Time related obligations:
a) Mobilisation period ..... month
b) Execution of the works ..... month"

Add the following pay subitems:

"C1.3.1.4 Suspension Cost
a) De-establishment ..... Number
b) Re-establishment ..... Number
c) Suspension period ..... month
d) Engineer's cost ..... prime cost sum (PC) sum

*Under the heading "*Item C1.3.1.3*", delete the 2nd paragraph and replace with the following:*

"The contract rate shall include full compensation for that part of the Contractor's general obligations which are mainly a function of construction time. The contract rate shall be deemed to include, hire costs or cost of ownership or minimum hourly charges (standing time costs) per month for Contractor's Equipment. The contract rate will be paid monthly, pro rata for parts of a month, from the Commencement Date in terms of the Contract Documentation until the end of the Mobilisation Period for item C1.3.1.3(a). For item C1.3.1.3(b) the contract rate will be paid monthly, pro rata for parts of a month, from the end of Mobilisation Period until the end of the original Contract Period specified for completion of the Works."

Add the following new paragraphs:

"Item C1.3.1.4

The rates tendered under subitem C1.3.1.4 shall represent full compensation for all Costs for Suspension of Work and all Costs during Suspension of Works as per amended Condition of Contract clause 8.9.

Payment of subitems C1.3.1.4(a) and C1.3.1.4(b) shall be made for the number of de-establishments and re-establishments of all Personnel and Goods (Contractor's Equipment, Materials, Plant and Temporary Works) as instructed by the Engineer. Payment of subitems C1.3.1.4(a) and C1.3.1.4(b) shall not apply during the Mobilisation Period.

Payment of subitem C1.3.1.4(c) shall be made monthly, pro rata for parts of a month, from the date on which the Contractor has suspended progress of all of the Works in terms of Conditions of Contract clause 8.8 and commenced with de-establishment of the site, until permission or instruction to proceed in terms of Conditions of Contract clause 8.12 is given. Payment of subitem C1.3.1.4(c) shall not apply during the Mobilisation Period.

The Prime Sum in subitem C1.3.1.4(d) is provided to cover the cost of the Engineer during the period of suspension of the works. The amounts certified by the Employer shall be made to the Engineer, within 30 days of it being certified by the Employer."

Add the following items:

"Item **Unit**

PC1.3.3 Accommodation of design changes on site

PC1.3.3.1 (a) Topographical survey:

(i) Survey .....prime cost (PC) sum
(ii) Handling cost and profit i.r.o sub-item PC1.3.3.1(a) ..percentage (%)

(b) Contractor's provision for design changes:

(i) Determining alternative route alignment ..... provisional sum
(ii) Defining and quantifying property access change … provisional sum
(iii) Materials investigation ..... provisional sum

(iv) Handling cost and profit in respect of sub-item PC1.3.3.1(b)(i) and PC1.3.3.1(b)(ii) ..... percentage (%)

(v) Handling cost and profit in respect of sub-item PC1.3.3.1(b)(iii) ..... ……percentage (%)

(c) Provision for access relocation

(i) Provision for access relocation ..... provisional sum
(ii) Handling cost and profit in respect of sub-item PC1.3.3.1(c)(i) ..... percentage (%)

The prime cost items shall be paid in accordance with the provisions of sub-clause 13.5 of the FIDIC Conditions of Contract. The tendered percentage is a percentage of the amount actually spent under the prime-cost items, which shall include full compensation for the profit in connection with providing the specified service.

Item PC1.3.3.1 (a)(i) covers the required cost of topographical survey to finalise design levels before commencement of the works.

The provisional sums make allowance for the design changes which will be required before the works commence and shall be paid in accordance with the provisions of sub-clause 13.5 of the FIDIC Conditions of Contract.

Sub-items PC1.3.3.1(b)(i) & PC1.3.3.1(b)(ii) may be undertaken by a sub-consultant/contractor appointed by the contractor. Sub-items PC1.3.3.1(b)(i) & PC1.3.3.1(b)(ii) require a report to be submitted to the Engineer for approval with all proposed design changes relating to alignment and property access. The report shall include, and is not limited to, the consideration of changes to drainage, services affected in the area, works quantities to be amended in the BOQ, cost implications, and where required a pricing schedule with items, quantities and rates to justify the use of the provisional sum. The consideration of changes should not result in additional land acquisition by the Employer.

For sub-item PC1.3.3.1(b)(ii), the works are limited to allowing access up to the property boundary and changes to property walls/fences and gates. The report and quantified works by the contractor shall take cognisance of the limit of the works and will not include any further works within the property itself. No land acquisitions activities are included in this process.

Sub-item PC1.3.3.1(b)(iii) shall be utilised for materials investigation to finalise the pavement structure and materials available for the contract. All test results shall be coordinated in a report, including a proposed pavement solution, which shall be submitted to the Engineer for approval. Payment of the provisional sum for the investigation and report just occur once the report has been approved by the Engineer."

The provisional sum under sub-item PC1.3.3.1(c)(i) makes allowance for all works (labour and material) related to the relocation of existing property access position, where applicable and includes for the dismantling/demolition of existing property boundary fencing and/or gates, closure of existing access by erection of like fence, re-erection/construction of like fence or gate at the new access position as agreed with the property owner, including of construction of like driveway/path access at the new access position.

The percentage under sub-items PC1.3.3.1(a)(ii), PC1.3.3.1(b)(iv), PC1.3.3.1(b)(v) and PC1.3.3.1(c)(ii) is a percentage of the amount spent under items PC1.3.3.1(a)(i), PC1.3.3.1(b)(i) & PC1.3.3.1(b)(ii), PC1.3.3.1(b)(iii) and PC1.3.3.1(c)(i) respectively which shall include full compensation for all handling costs, profit and all other charges with arranging and carrying out the works."

- SECTION 1.4: FACILITIES FOR THE ENGINEER

PART A: **SPECIFICATIONS**

A1.4.3 GENERAL

In the last sentence of the 7th paragraph delete: "not later than six weeks after the Contract commencement date" *and replace with*: "not later than the end of the Mobilisation period as defined in sub-clause 8.1 of the FIDIC Conditions of Contract"

COTO CHAPTER 2: SERVICES

SECTION 2.1: GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES

-

PART A: SPECIFICATION

A2.1.3 GENERAL

A2.1.3.2 Location, identification, protection and relocation of existing services

b) Location of existing services

Delete A2.1.3.2 a) and replace with the following:

Services in the project area are unknown, thus before any work can commence, the contractor shall verify the services in the vicinity of the works (type and actual position of each service) and bring this to the attention of the engineer.

-

COTO CHAPTER 3: DRAINAGE

PART C: MEASUREMENT AND PAYMENT

Add the following item:

Item **Unit**

"PC3.3.17 Concrete drift:

(i) 3 m wide road ..... No.

(ii) 4 m wide road ..... No.

(iii) 6 m wide road ..... No."

"The tendered rate for each drift shall include full compensation for the necessary excavation, preparation of in-situ founding material, backfilling, compaction, formwork, reinforcement, finishing and curing of cast in situ concrete, all complete as per drawing no.: 60487450-5-1-C-DA-115"

COTO CHAPTER 4: EARTHWORKS AND PAVEMENT LAYERS: MATERIALS

There are no amendments to this Chapter

COTO CHAPTER 5: EARTHWORKS AND PAVEMENT LAYERS: CONSTRUCTION

PART A: SPECIFICATION

A5.3.8 WORKMANSHIP

A5.3.8.5 Surface regularity

Add the following to the 1st paragraph:

"The surface regularity shall be assessed on the final prepared layer after all excess fines have been swept off the surface."

PART C: MEASUREMENT AND PAYMENT

Add the following items:

"Item	Description	Unit
"**PC5.3.2.2**	**Construction of layers using labour enhancement:**	
	(o) Upper subbase gravel layer (chemically stabilised), (150mm layer thickness) compacted to 95% of MDD	cubic metre (m^3)

The unit of measurement shall be the cubic metre of material in the compacted layer, calculated using the layer work dimensions given in the drawing no.: 60487450-4-1C-BA-101.

The tendered rates shall include full compensation for spreading the material, for breaking down oversize gravel material using one normal grid rolling operation or an equivalent operation, for removal of up to 5 % of the compacted layer volume of oversize material that cannot be broken down, for adding water for compaction purposes, for mixing, for levelling, for compacting to the specified density and for finishing the layers in accordance with the specifications.

The tendered rates shall also include for the removal of all material in the windrow after the compaction of the layer has been completed.

Item	Description	Unit
PC5.4.18	**Curing by covering with hessian, canvas or gunny bags……**	**(m^2)**

The unit of measurement shall be square metre of the total area of the layer to be stabilised.

The tendered rate shall include full compensation for supplying and applying the material, including the cost of regularly supplying and applying water during the curing period. The tendered rate shall also include for, supervision, labour, equipment, tools and incidentals for completing the specified work.

COTO CHAPTER 6: CONCRETE LAYERS

SECTION 6.1: PAVER LAID CONCRETE LAYERS

-

PART A: SPECIFICATION

A6.1.5 MATERIALS

A6.1.5.1 Cementitious materials

In the 2nd paragraph insert:

"the quantity of supplementary cementitious materials be limited to", *after* "… may be used subject to".

A6.1.6 CONSTRUCTION EQUIPMENT

A6.1.6.2 Concrete batching plant

In the 1st sentence of the 2nd paragraph delete the following:

*"*Where concrete is supplied by a commercial source outside the direct control of the Engineer*".*

A6.1.7 EXECUTION OF THE WORKS

A6.1.7.4 Joint forming

A6.1.8 WORKMANSHIP

c) Construction tolerances

(vii) Surface regularity

Add the following new paragraph:

*"*Any adjustment in the payment for the concrete layer will be made by multiplying the full payment value for each 100 m section, (for all the relevant payment items for this work) by the payment adjustment factor derived from Table A9.1.8-3. The payment adjustment shall apply to the total concrete layer width placed over the 100 m sections in question."

PART C: MEASUREMENT AND PAYMENT

(iii) Items that will not be measured separately

Additional trial sections

COTO CHAPTER 7: MAINTENANCE AND REPAIR OF CONCRETE LAYERS

SECTION 7.1: REPLACEMENT OF EXISTING JOINT SEALANT

-

PART D: GUARANTEES AND COMPLIANCE CERTIFICATES

D7.1.8 WORKMANSHIP

D7.1.8.8 Alternative materials and design

Add the following to the end of the 1st paragraph as part of the 1st sentence:

*"*and in addition to the postulated tender*"*.

D7.1.8.9 Work on behalf of Employer

In the 2nd sentence of the 1st paragraph delete: "(cost plus 15%)".

COTO CHAPTER 8: PRETREATMENT AND REPAIR OF EXISTING LAYERS

SECTION 8.1: PRIME COAT

-

PART A: SPECIFICATION

A8.1.5 MATERIALS

A8.1.5.1 Bituminous material

*In Table A8.1.5-1 Delete "*the excavated area*" in the table caption and heading*.

A8.1.8 WORKMANSHIP

A8.1.8.2 Testing

*Replace the last sentence of the 1st paragraph with the following: "*Unless agreed in advance and in writing, the Contractor shall only spray when the Engineer's representative is present.*"*

COTO CHAPTER 9: ASPHALT LAYERS

There are no amendments to this Chapter

COTO CHAPTER 10: SURFACE TREATMENTS

SECTION 10.1: GENERAL REQUIREMENTS FOR SURFACE TREATMENTS

-

PART D: GUARANTEES AND COMPLIANCE CERTIFICATES

D10.1.5 VISUALLY ASSESSED PROPERTIES

D10.1.5.4 Acceptance criteria

*In note 3 below Table D10.1.5-3, delete "*May 2016*" and replace with "*Latest version*".*

COTO CHAPTER 11: ANCILLARY ROAD WORKS

SECTION 11.4: ROAD RESTRAINT SYSTEMS

-

PART C: MEASUREMENT AND PAYMENT

Item	Unit

C11.4.2 Performance based vehicle restraint systems

Where the Concrete barrier system is utilised as temporary restraint systems for Traffic Accommodation and scheduled under C1.5 in the Pricing Schedule, the unit of measure shall be metre.month.

COTO CHAPTER 12: GEOTECHNICAL APPLICATIONS

SECTION 12.6: MECHANICALLY STABILISED EARTH AND GABIONS

-

PART A: SPECIFICATION

A12.6.8 WORKMANSHIP

A12.6.8.1 MSE Walls

b) Concrete facings

*Replace the letter "*W*" with "*durability*" in the first sentence.*

COTO CHAPTER 13: STRUCTURES

SECTION 13.4: CONCRETE

-

PART A: SPECIFICATION

A13.4.2 DEFINITIONS

Fresh phase of concrete

*Add the following at the end of the definition of "*Fresh phase of concrete*":*

*"*This is also known as the plastic phase.*"*.

*Add the following definition between "*Fresh phase of concrete*" and "*Hardened phase of concrete*":*

"**Hydration or curing phase** – this is concrete that is no longer a semi-liquid but has not yet reached a solid state."

A13.4.7 EXECUTION OF THE WORKS

A13.4.7.12 Placing and Compaction

b) Placing

Delete the 3rd sentence of the 1st paragraph and replace with the following:

*"*The Contractor shall not be permitted to pour unless the specific method statement for that pour has been accepted by the Engineer.*"*

COTO CHAPTER 14: REPAIR AND REHABILITATION OF STRUCTURES

There are no amendments to this Chapter

COTO CHAPTER 20: QUALITY ASSURANCE

SECTION 20.1: TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP

-

PART A: SPECIFICATION

Replace all references to "TMH5" *in this section with:* "SABITA Manual 37 (Latest Edition)".

A20.1.2 DEFINITIONS

Independent site laboratory

*In the definition of "*Independent site laboratory*", add the following:*

*"*Independent Site laboratory in COTO is equivalent to the combined laboratory in the Employer documentation*"*

A20.1.7 ACCEPTANCE CONTROL BY STATISTICAL JUDGEMENT PRINCIPLES

A20.1.7.2 Taking samples

a) Stratified random sampling

Add the following new paragraph:

"Where the SARDS Laboratory module is used, the sampling locations must be as per the software. The Engineer may specify additional sampling locations."

b) Minimum samples per lot

Add the following new paragraph:

*"*Where the SARDS Laboratory module is used, the number of samples per lot must be as per the software, as a minimum. The Engineer may specify additional numbers of samples.
The Number of samples must be sufficient to meet the requirements of TMH5.*"*

PART C: MEASUREMENT AND PAYMENT

Replace item C20.1.2.2 with the following:

Item	Unit

C20.1.2 Special tests requested by the Engineer

"PC20.1.2.2 Employer's contribution to other special tests:

(a) Acceptance control, including products and mix designs… prime cost (PC) sum.

"The Prime Cost in item C20.1.2.2 (a) provided to cover acceptance control, acceptance of products and acceptance of mix designs as requested by the Engineer for the Works and carried out by the Contractor. All testing to be undertaken by a SANAS accredited laboratory"

(b) Handling costs and profit in respect of item PC20.1.2.2.

"The charge or mark-up tendered or allowed for is a percentage of the amount actually paid under the prime cost item. The percentage shall cover all the Contractors' sourcing, handling, supervision, profit, payment of the service provider and liability costs in providing the services. The Contractor shall arrange with the service provider to forward the test results directly to the Engineer and will forfeit his mark-up when the service provider is not paid in time."

SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

SECTION B3: SPECIFICATION DATA

Notes to tenderer:

1. **In certain clauses, the Standard Specifications allow a choice to be specified in the Contract Documentation or Project Specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternatives or additional requirements applicable to this contract are contained in this Section B: Specification Data.**

2. **The number of each clause and each payment item in this part of the project specifications follows the numbering format of the COTO standard specifications.**

- COTO CHAPTER 1: GENERAL

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
1			**GENERAL**	
	A1.1		**GENERAL PREAMBLE**	
		A1.1.2	**DEFINITIONS**	
			Conditions of Contract	The Conditions of Contract for Construction for Building and Engineering Works designed by the Employer as published by the International Federation of Consulting Engineers First Edition 1999, shall apply.
			Site / Site of the Works	The limits of construction is provided in Drawing 60487450-5-1-C-AD-002
	C1.1		**GENERAL PREAMBLE**	
	A1.2		**GENERAL REQUIREMENTS AND PROVISIONS**	
		A1.2.3	**GENERAL**	
			A1.2.3.3 Environmental management	The requirements of the Environmental Officer is indicated in Section C.
			A1.2.3.4 Extension of time for delays caused by rainfall	
			c) Method 3 (Critical path method without consequential delays)	Method 3 (Critical path method without consequential delays) is specified. The value of “N” is 24.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				In calculations of payment for approved extensions of time granted for delays caused by rainfall, payment will be made utilising the applicable payment items for which the unit of measurement is "month" but excluding payment items with negative rates and non-applicable payment items such as pay item C1.3.1.4.
			A1.2.3.5 Handing-over of the Site of the Works	The conditions for handing-over of the Site of the Works are as follows: a) Sequence The entire extent of the site will be handed over on the date of Right of Access to Site. b) Temporary deviations The maximum length of a temporary deviation should not exceed 500 m, while the total number of temporary deviations should not exceed 14 No. c) Half or partial width sections The maximum length of a partial width section should not exceed 500 m, while the total number of partial width sections should not exceed 14 No. d) Unrestricted sections Not applicable. e) Routine Maintenance The Contractor shall take over the maintenance responsibility on the date of Access to site but may liaise with the routine maintenance contractor

<table>
<tr><th>CH</th><th>SEC</th><th>CL</th><th>SUB-CLAUSE</th><th>SPECIFICATION DATA</th></tr>
<tr><td></td><td></td><td></td><td></td><td>by arranging a transition period immediately after the Access to site to allow sufficient time to muster his resources required for routine maintenance of the road. However, the transition period may not extend beyond the end of the Mobilisation Period defined in sub-clause 8.1 of the FIDIC Conditions of Contract and C1.2.2 Contract Data.

f) Other
None.</td></tr>
<tr><td></td><td></td><td></td><td>A1.2.3.9 Monthly reports</td><td>Other information to be included in monthly progress reports are as follows:
a) Information as required in terms of Conditions of Contract Clause 4.21
b) Aerial progress footage (images and video): The images and video shall cover the full extent of the Works and the resolution of the images shall be of sufficient quality to clearly identify all elements of the Works.</td></tr>
<tr><td></td><td></td><td></td><td>A1.2.3.10 Notices, signs and advertisements</td><td>Details of the contract sign board is provided in Drawing 60487450-5-1-C-DA-101.</td></tr>
<tr><td></td><td></td><td></td><td>A1.2.3.12 Ownership of assets and disposal of non-usable assets</td><td>The Non-usable assets to be disposed by the Contractor is listed in the following disposal plan:

Disposal plan
<table>
<tr><th>Asset description</th><th>Estimated quantity</th><th>Disposal requirement</th></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>CH</th><th>SEC</th><th>CL</th><th>SUB-CLAUSE</th><th colspan="3">SPECIFICATION DATA</th></tr>
<tr><td></td><td></td><td></td><td></td><td>a. Temporary traffic accommodation signs</td><td>All traffic accommodation that are on site at the end of the contract</td><td>The signs become the property of the contractor and shall be removed from site. A negative rate may be tendered where allowed for in the schedule of quantities.</td></tr>
<tr><td></td><td></td><td></td><td>A1.2.3.13 Prevention of damage to nearby properties and services</td><td colspan="3">Structures that could be affected by excessive ground vibrations is listed in the following table:

<table>
<tr><td>Structure</td><td>Type</td><td>Location</td></tr>
<tr><td>Building</td><td>House(s) / Business(es)</td><td>House(s) located along SR D31 between KM 0.080 to KM 0.140 & KM 0.150 to KM 0.340</td></tr>
<tr><td>Building</td><td>House(s) / Business(es)</td><td>House(s) located along SR D30 between KM 0.020 to</td></tr>
</table></td></tr>
</table>

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA		
						KM 0.100 & KM 0.120 to 0.192
				Building	House(s) / Business(es)	House(s) located along SR D29 between KM 0.000 to KM 0.034
				Building	House(s) / Business(es)	House(s) located along SR D1 between KM 0.000 to KM 0.180
				Building	House(s) / Business(es)	House(s) located along SR D28 between KM 0.000 to KM 0.035
				Building	House(s) / Business(es)	House(s) located along SR D27 between KM 0.000 to KM 0.040
				Building	House(s) / Business(es)	House(s) located along SR D25 between KM 0.000 to KM 0.081

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA		
				Building	House(s) / Business(es)	House(s) located along SR D26 between KM 0.010 to KM 0.080
				Building	House(s) / Business(es)	House(s) located along SR D2 between KM 0.000 to KM 0.010
				Building	House(s) / Business(es)	House(s) located along SR D4 between KM 0.040 to KM 0.100 & KM 0.200 to KM 0.253
				Building	House(s) / Business(es)	House(s) located along SR D5 between KM 0.000 to KM 0.242
				Building	House(s) / Business(es)	House(s) located along SR D6 between KM 0.000 to KM 0.268
				Building	House(s) / Business(es)	House(s) located along SR D22 between KM 0.000 to KM 0.196

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA		
				Building	House(s) / Business(es)	House(s) located along SR D23 between KM 0.020 to KM 0.090
				Building	House(s) / Business(es)	House(s) located along SR D24 between KM 0.000 to KM 0.156
				Building	House(s) / Business(es)	House(s) located along SR D32 between KM 0.000 to KM 0.019
				Building	House(s) / Business(es)	House(s) located along SR D19 between KM 0.000 to KM 0.191
				Building	House(s) / Business(es)	House(s) located along SR D20 between KM 0.000 to KM 0.060
				Building	House(s) / Business(es)	House(s) located along SR D21

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA		
						between KM 0.000 to KM 0.274
				Building	House(s) / Business(es)	House(s) located along SR D17 between KM 0.000 to KM 0.048
				Building	House(s) / Business(es)	House(s) located along SR D7 between KM 0.026 to KM 0.040
				Building	House(s) / Business(es)	House(s) located along SR D8 between KM 0.000 to KM 0.210
				Building	House(s) / Business(es)	House(s) located along SR D9 between KM 0.000 to KM 0.033
				Building	House(s) / Business(es)	House(s) located along SR D15 between KM 0.000 to KM 0.034
				Building	House(s) / Business(es)	House(s) located along SR D16

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA		
						between KM 0.000 to KM 0.312
				Building	House(s) / Business(es)	House(s) located along SR D14 between KM 0.000 to KM 0.150
				Building	House(s) / Business(es)	House(s) located along SR D13 between KM 0.000 to KM 0.520
				Building	House(s) / Business(es)	House(s) located along SR D12 between KM 0.000 to KM 0.039
				Building	House(s) / Business(es)	House(s) located along SR D11 between KM 0.000 to KM 0.055
				Building	House(s) / Business(es)	House(s) located along SR D10 between KM 0.000 to KM 0.080

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A1.2.3.18 Stakeholder liaison	Additional requirements related to structured engagement with project Stakeholders and affected Communities, as well as guidance on the selection and the enhanced utilisation and development of Targeted Labour and Targeted Enterprises is provided in Section D1000.
			A1.2.3.20 Road safety audits	A Work zone traffic management audit as well as a Pre-opening stage road safety audit, shall be carried out.
			A1.2.3.22 Wayleaves/Agreements and Permits	The Contractor shall be responsible for applying for the following wayleaves: NB.: Services in the project area are unknown, thus before any work can commence, the Contractor shall verify the services in the vicinity of the works (type and actual position of each service) and bring this to the attention of the Engineer. The Contractor will thus be responsible for identifying existing services, within the vicinity of the Works and obtain the wayleaves/agreements with the relevant service owner.
		A1.2.7	**EXECUTION OF THE WORKS**	
			A1.2.7.1 Programme of work	
			a) General	A scheme 2 programme shall apply.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			b) Scheme 2	The programme shall be drawn up or be compatible with a licenced copy of the latest version of MS Project. Additional schedules, other than required in terms of Conditions of Contract Clause 8.3, to be provided are not applicable.
			A1.2.7.4 Work on, over, under or adjacent to utilities	Refer to COTO Chapter 2 as amended in the project specifications.
	A1.3		**CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS**	
		A1.3.3	**GENERAL**	
			A1.3.3.1 Construction camps	The Contractor is responsible to identify a suitable location for the establishment of the construction camp.
	A1.4		**FACILITIES FOR THE ENGINEER**	
		A1.4.3	**GENERAL**	The Contractor is responsible to identify a suitable location for the establishment of the construction camp. Three possible sites shall be proposed to the Engineer, and each shall have sufficient space to accommodate the Engineers Offices, Boardroom, Parking and accommodation.
		A1.4.7	**EXECUTION OF THE WORKS**	

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A1.4.7.1 Offices and laboratories	
			b) Offices	Refer to Drawing No.: 60487450-5-1-C-DA-111
			f) Ablution unit	Refer to Drawing No.: 60487450-5-1-C-DA-111
			A1.4.7.2 Housing	
			a) Prefabricated houses	
			A1.4.7.3 Services	
			b) Water, electricity and gas	As per the COTO Standard Specification
			A1.4.7.5 Office staff	An office secretary/receptionist is to be provided.
	A1.5		**ACCOMMODATION OF TRAFFIC**	
		A1.5.7	**EXECUTION OF THE WORKS**	
			A1.5.7.3 Accommodation of traffic where the road is constructed in half or partial widths	The length of the half or partial width construction sections where the traffic can only pass in one direction at a time shall not exceed 0.5km. The number of one-ways sections under construction at any one time shall not exceed 11 No. No STOP / GO one-way traffic sections shall be in operation and two-way traffic shall be accommodated safely within the contract limits during the following additional periods: 01 December to 15 January.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				No utility service-related works shall be done from the 1st of November up to the end of the holiday peak season period.
			A1.5.7.10 Construction of temporary deviations	
			d) Earthworks and pavement layers for temporary deviations	Rip and recompact in-situ material to 93% of MDD Wearing Course -100 mm thick natural gravel or crushed material, except calcrete compacted to 95% of MDD Wearing course to conform to Table A4.1.5-11 of Chapter 4 of COTO.
	A1.7		**LOADING AND HAULING**	
		A1.7.7	**EXECUTION OF THE WORKS**	The Contractor must provide the Engineer with the certified carrying capacity of each vehicle before any construction materials can be transported.

- COTO CHAPTER 2: SERVICES

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
2			**SERVICES**	
	A2.1		**GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES**	
		A2.1.1	**SCOPE**	
			A2.1.1.2 Location, identification, protection and relocation of existing services	Services in the project area are unknown, thus before any work can commence, the Contractor shall verify the services in the vicinity of the works (type and actual position of each service) and bring this to the attention of the Engineer. The Contractor will be responsible for obtaining the necessary approvals/agreements from the service owner and for all work related to the protection or relocation of existing services, forming part of the Works.
		A2.1.2	**DEFINITIONS**	Services in the project area are unknown, thus before any work can commence, the Contractor shall verify the services in the vicinity of the works (type and actual position of each service) and bring this to the attention of the Engineer.
		A2.1.3	**GENERAL**	
			A2.1.3.1 Installation of new services	Position of new services (stormwater culvert and service duct crossing) to be confirmed by the Engineer on site.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A2.1.3.2 Location, identification, protection and relocation of existing services	
			a) Existing as-built records	Services in the project area are unknown, thus before any work can commence, the Contractor shall verify the services in the vicinity of the works (type and actual position of each service) and bring this to the attention of the Engineer.
			b) Location of existing services	Services in the project area are unknown, thus before any work can commence, the contractor shall verify the services in the vicinity of the works (type and actual position of each service) and bring this to the attention of the Engineer. The location of services to be determined making use of Ground Penetrating Radar.
			d) Protection of services	
			(ii) Protection	The location of existing services to be undertaken by means of ground penetrating radar and hand excavation.
			(iv) Relocation	The relocation of services is to be negotiated upon verification thereof by the Contractor. Timelines for relocation of services to be communicated with Services Providers in accordance with the approved Construction Programme.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				No services connections or down time shall be permitted after 1 November up 15 January.
			A2.1.3.3 Safety, Method Statements, safeguarding the works and accommodation of traffic	In accordance with approved OHS specification.
			a) Safety and Method Statements	In accordance with approved OHS specification.
			c) Accommodation of traffic	In accordance with approved Accommodation of Traffic drawings and OHS specification.
			A2.1.3.5 Programming for services	
			a) Trenching and installation sequence	All ducts and pipe culverts to be installed by trench methods.
			A2.1.3.6 Provision of record drawings and details	Surveyor to be registered with PLATO.
		A2.1.4	**DESIGN BY CONTRACTOR / PERFORMANCE BASED SYSTEMS**	
			A2.1.4.1 Temporary works	Temporary works relating to Services shall be designed and installed by the Contractor as required to construct the permanent works.
		A2.1.5	**MATERIALS**	
			A2.1.5.1 Trench backfill material	In accordance with the standard specification
		A2.1.6	**CONSTRUCTION EQUIPMENT**	

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A2.1.6.1 Excavation equipment	Refer to Drawing Nos.: 60474750-5-1-C-DA-103; 60487450-5-1-C-104 & 60487450-5-1-C-DA-106
		A2.1.7	**EXECUTION OF THE WORKS**	
			A2.1.7.1 Trenching for Services	
			h) Excavation	Refer to Drawing Nos.: 60474750-5-1-C-DA-103; 60487450-5-1-C-104 & 60487450-5-1-C-DA-106
			j) Excavation using Labour Enhanced Construction Methods	Excavation to be undertaken by labour enhanced construction methods.
			k) Excavations outside the normal trench profile	Excavations outside the normal trench profile will include headwalls and wing walls. ***Sewer from the property will be measured and paid for separately from trench excavations***
			n) Erosion protection with sandbags	Sandbags shall be used in trenches to prevent the ingress of water and / or erosion during construction of the completed works***.***
			p) Preparation of the bottom of trenches	Trenches to be excavated to a depth of 100mm below the pipe invert levels for services.
			r) Dealing with water	
			(i) Contractor's obligations for dealing with water	The Contractor is responsible to take adequate precautions to control the inflow of water into trenches and deemed to be covered within the tendered rates.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A2.1.7.2 Reinstatement of existing roads and existing road furniture	
			d) Reinstatement of unpaved areas	Topsoil (75mm thick) to be placed over affected area and grassed.
			A2.1.7.6 Ownership, removal and disposal of existing service materials	Contractor shall become the owner of specific recovered service materials and shall be responsible for the disposal of the materials and for providing the Engineer with a full record of the disposal of the materials for control purposes.
		A2.1.8	**WORKMANSHIP**	
			A2.1.8.2 Compaction	
			a) Relative density compaction control	DCP compaction quality control shall only be permitted in areas falling outside the road reserve.
			c) DCP compaction control	DCP compaction quality control shall only be permitted in areas falling outside the road reserve. Refer to the standard specification.
	B2.1		**GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES PART B: LABOUR ENHANCEMENT**	
		B2.1.1	**SCOPE**	Labour enhanced construction methods shall be used.
	C2.1		**GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES**	

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			PART C: MEASUREMENT AND PAYMENT	
			(ii) Notes on measurement and pay items	Trench depths should be measured from the surface of the ground along the centre-line of the trench to the bottom of the specified bedding layer.
		C2.1.6	**Trench excavation (in soft material)**	"The tendered rates shall include full compensation for setting out, clearing and grubbing the trench areas except for trees with a girth larger than 1,0 m, the temporary removal of improvements from the line of the trench, the removal and stacking of any surfacing and paving material as applicable, for excavating the trench, preparing the bottom of the trench, separating topsoil, material unsuitable for backfill and selected backfill material, for safeguarding and keeping the excavations safe, which includes the provision, installation and later removal of temporary timbering, shoring and strutting, dealing with any surface or subsurface water and for the temporary stockpiling of material"
		C2.1.8	**Excavations outside the normal trench profile**	"The tendered rate shall include full compensation for excavating outside the normal trench profile, trimming the excavations, preparing the bottom of the excavation, separating any material unsuitable for backfill from selected backfill material, keeping excavations safe, dealing with any surface or subsurface water and for the temporary stockpiling of material"
		C2.1.9	**Trench excavation using labour enhanced construction methods**	"The tendered rates shall include full compensation for setting out, clearing and grubbing the trench areas except for trees with a girth larger than 1,0 m, the temporary removal of improvements from the line of the trench, the removal and stacking of any surfacing and paving material as applicable, for

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				excavating the trench, preparing the bottom of the trench, separating topsoil, material unsuitable for backfill and selected backfill material, for safeguarding and keeping the excavations safe, which includes the provision, installation and later removal of temporary timbering, shoring and strutting, dealing with any surface or subsurface water and for the temporary stockpiling of material"
		C2.1.16	**Subsurface drains in trench bottoms (Contract Documentation reference or drawing number indicated)**	Refer to Drawing Nos.: 60487450-5-1-DA-106 & 60487450-5-1-DA-107
		C2.1.17	**Removal and disposal of spoil material from trench excavations:**	Contractor is responsible to identify suitable spoil sites.
	D2.1		**GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES PART D: GUARANTEES AND COMPLIANCE CERTIFICATES**	
	A2.2		**DRY SERVICES**	
		A2.2.1	**SCOPE**	Refer to Drawing Nos.: 60487450-5-1-C-DA-103 & 60487450-5-1-C-DA-104
			A2.2.1.1 General note	In certain SANS documents referred to in this Section the term "specified in the scope of work" is used. For the purposes of this specification the term shall be deemed to mean "specified in the Contract Documentation".
		A2.2.5	**MATERIALS**	The following U-PVC ducts shall be installed:

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				110 mm Class 6
			A2.2.5.1 Ducts and sleeves	
			b) High Density Polyethylene (HDPE) ducts	
			g) End caps or plugs	Cement and sand plug or suitable wood stopper.
			h) Draw wires and marker tapes	Two strands of 2,5 galvanised steel wire
			A2.2.5.2 Bedding	In accordance with the standard specification.
			A2.2.5.3 Backfill	
			a) Backfill for trenched (excluding micro or mini trenching)	In accordance with the standard specification.
			A2.2.5.4 Cable duct markers	Refer to Drawing Nos.: 60487450-5-1-C-DA-103 & 60487450-5-1-C-DA-104
			A2.2.5.5 Concrete	All concrete required for duct installation shall comply with the strength class C25/30-20
		A2.2.7	**EXECUTION OF THE WORKS**	
			A2.2.7.2 Duct installation by methods other than by micro or mini trenching	
			a) Trench widths for duct installations	Trench widths to comply with the requirements of Clause 4.2.1 and Figure 1 of SANS 2001-DP3.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			b) Bedding and compaction of bedding	In accordance with the standard specification.
			A2.2.7.4 Duct markers	
			c) Road crossing markers	Refer to Drawing Nos.: 60487450-5-1-C-DA-103 & 60487450-5-1-C-DA-104
		A2.2.8	**WORKMANSHIP**	
			A2.2.8.2 Proving ducts	
			a) Standard proving requirements	In accordance with the standard specification.
	C2.2		**DRY SERVICES** **PART C: MEASUREMENT AND PAYMENT**	
		C2.2.6	**Duct accessories (markers, marking, draw wires and end caps etc.)**	The tendered rates shall include full compensation for the manufacture, delivery and installation of the markers, draw wires, end caps, plugs or other accessories complete as specified or for completing the marking on kerbs as specified.

- COTO CHAPTER 3: DRAINAGE

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
3			**DRAINAGE**	
	A3.1		**DRAINS**	
		A3.1.5	**MATERIALS**	
			A3.1.5.2 Subsoil Drainage Materials **a) Pipes**	150 mm internal diameter U-PVC slotted or perforated pipe complying to SANS 791 or SANS 1601.
	A3.2		**CULVERTS**	
		A3.2.3	**GENERAL**	
			A3.2.3.1 Types of culverts	Concrete pipe culverts Class 50D (Spigot & socket with rubber O-rings) Concrete pipe culverts Class 100D (Spigot & socket with rubber O-rings) Rectangular portal culverts Class 175S Rectangular portal culverts Class 200S
	A3.3		**CONCRETE KERBING AND CHANNELING, ASPHALT BERMS, CHUTES, DOWNPIPES, AS WELL AS CONCRETE, STONE PITCHED AND GABION LININGS FOR OPEN DRAINS**	
		A3.3.7	**EXECUTION OF THE WORKS**	
			A3.3.7.1 Drainage structures	
			a) Prefabricated concrete kerbing and channelling	Refer to Drawing No.: 60487450-5-1-C-DA-105

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			i) Stone pitched open drains	Refer to Drawing No.: 60487450-5-1-C-DA-115
	C3.3	**PC3.3.17**		Concrete Drifts to be in accordance to Drawing No.: 60487450-5-1-C-DA-115

- COTO CHAPTER 4: EARTHWORKS AND PAVEMENT LAYERS: MATERIALS

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
4			**EARTHWORKS AND PAVEMENT LAYERS: MATERIALS**	
	A4.1		**BORROW MATERIALS**	
		A4.1.3	**GENERAL**	
			A4.1.3.1 Employer identified borrow pits and quarries	No borrow pits or quarries have been secured by the Employer. Fill material, subject to testing on site and approval by the Engineer, conforming to the required quality to be sourced from the road prism or alternatively from commercial sources. Subbase and base material to be sourced commercially. Existing established commercial sources, for the project area include Afrimat in Marble Hall, Geyser (west of Groblersdal) and Ferro Quarry in Pretoria.
			A4.1.3.2 Contractor identified borrow pits and quarries	The Contractor may propose complaint (licenced) alternative borrow-pits or quarries subject to approval by the Engineer.
	A4.2		**CUT MATERIALS**	
		A4.2.7	**EXECUTION OF WORKS**	
			A4.2.7.1 Excavation operations	

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			h) Excavation of material in cuttings	Refer to Drawing No.: 60487450-5-1-C-BA-101
			i) Excavation of material in box cuts	Refer to Drawing No.: 60487450-5-1-C-BA-101
			k) Selection and the use of the cut material	Fill material, subject to testing on site and approval by the Engineer, conforming to the required quality to be sourced from the road prism.
			n) Finishing of the side slopes of cuttings and designated excavations (*para 1)*	In accordance with the standard specifications. No permanent slope stability measures are required.
	A4.3		**EXISTING ROAD MATERIALS**	
		A4.3.3	**GENERAL**	
			A4.3.3.1 Employer identified existing road materials	Fill material, subject to testing on site and approval by the Engineer, conforming to the required quality to be sourced from the road prism or alternatively from commercial sources.
	A4.4		**COMMERCIAL MATERIALS**	
		A4.4.3	**GENERAL**	
			A4.4.3.1 Employer identified commercial materials	
			a) Materials from commercial suppliers	The following material shall be sourced commercially: Gravel wearing course for rural and urban roads complying to Table A4.1.5-11 of the standard specifications.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				G6 quality material for stabilised subbase complying to Table A4.1.5.7 of the standard specifications. G7 quality material for fill complying to Table A4.1.5.6 of the standard specifications. Existing established commercial sources, for the project area include: Afrimat in Marble Hall, Geyser (west of Groblersdal) Corner of Railway Street East and Harm Oost Avenue Tel: 079 107 5463; and Ferro Quarry in Pretoria North N1, Montana Park Tel.: 012 133 0003

- COTO CHAPTER 5: EARTHWORKS AND PAVEMENT LAYERS: CONSTRUCTION

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
5			**EARTHWORKS AND PAVEMENT LAYERS: CONSTRUCTION**	
	A5.1		**ROADBED**	
		A5.1.2	**DEFINITIONS**	
			Batter	Slope gradients to be 1V:1H
		A5.1.3	**GENERAL**	
			A5.1.3.1 Roadbed material Investigation	Prior to the commencement of roadbed treatment, the Contractor shall undertake additional testing of the in-situ material and the quality of material confirmed. Upon receipt of the test results, the Engineer shall confirm the appropriate roadbed treatment, which is expected to be either in-situ treatment by ripping and recompaction or construction of a pioneer layer using hard unweathered rock, generally in the size range of 100 mm to 500 mm (max) and a lack of material finer than 50 mm.
		A5.1.5	**MATERIALS**	
			A5.1.5.2 Topsoil	Limited topsoil available within the road prism. Contractor will be required to source additional topsoil from approved sources, as required.
			A5.1.5.3 Collapsing soil material	No areas of collapsible soil have been identified.
		A5.1.6	**CONSTRUCTION EQUIPMENT**	In accordance with the standard specifications.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				HEIC not applicable.
		A5.1.7	**EXECUTION OF WORKS**	
			A5.1.7.1 Clearing and grubbing	Material obtained from clearing and grubbing shall be removed from site to approved disposal site.
			A5.1.7.2 Removal and conservation of topsoil from roadbed	In accordance with the standard specifications.
			A5.1.7.3 Normal roadbed treatment	
			a) Construction overview	Should the in-situ roadbed material be non-cohesive rip and recompact 150mm and compact to 93% of MDD. If the in-situ roadbed material is cohesive the area is to be bladed with a gum-guard and compacted to 93% of MDD.
			b) Removal of unsuitable roadbed material	Should unsuitable material be encountered, the material should be removed to a designated spoil site as instructed by the Engineer.
			c) Percentage of Max Dry density (MDD)	The depth of roadbed treatment shall be 150mm and shall be compacted to 93% of MDD.
			f) Hard material	In-situ treatment by drilling and splitting the material using non-explosive, rock-breaking products.
			(i) In situ treatment by ripping	In accordance with the standard specifications. Shales and mudrock to be removed to an approved site.
			g) Inactive clay and normal clay	Removal and replacement with suitable material.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			(iii) Removal of material	Replacement by minimum G9 quality material to a maximum depth of 450 mm, as instructed by the Engineer.
			h) Active Clay	Treatment of active clays in the roadbed shall be by Alternative 2 – Removal of active clay and replacement with suitable material.
			(ii) Alternative 2 – Roadbed construction by removal of active clay	Replacement by minimum G9 quality material to a minimum depth of 750 mm and compacted to 93% of maximum dry density in 150 mm lifts, as instructed by the Engineer.
			i) Construction of a pioneer layer	Pioneer layer to be constructed where the founding material is soft and saturated, as instructed by the Engineer. Material shall consist of unweathered rock, generally in the size range of 100 mm to 500 mm (max) and a lack of material finer than 50 mm.
		A5.1.8	**WORKMANSHIP**	
			A5.1.8.2 Compaction requirements	Stratified random sampling methods shall be used for determining the sample/test position.
	C5.1		**ROADBED** **PART C: MEASUREMENT AND PAYMENT**	
		C5.1.13	**Construction of a levelling layer**	Measurement shall be by average end areas method
	A5.2		**FILL**	
		A5.2.3	**GENERAL**	
			A5.2.3.1 Fill Dimensions and shape	Refer to Drawing No.: 60487450-5-1-C-BA-101

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A5.2.3.3 Fill layer thickness	Fill layer shall be constructed using G7 quality material constructed in layers no greater than 200mm and no less than 100mm thick.
			A5.2.3.4 Fill compaction classification	
			a) MDD compaction	
			(ii) Normal fill and Coarse Fill	93% of MDD
		A5.2.5	**MATERIALS**	
			A5.2.5.2 Use of fill materials	Fill layer shall be constructed using G7 quality material constructed in layers no greater than 200mm and no less than 100mm thick.
		A5.2.7	**EXECUTION OF THE WORKS**	
			A5.2.7.3 Benching for fill construction	Benching of fill layers shall be not more than 500 mm steps into the natural cross fall of the treated roadbed.
			A5.2.7.4 Widening of fills	Benching of new fill layers into existing fills shall not be more than 500 mm steps. All unsuitable material from cutting the benches shall be removed to an approved spoil site as instructed by the Engineer.
		A5.2.8	**WORKMANSHIP**	
			A5.2.8.2 Materials Quality and compaction requirements	Normal fill to be compacted to 93% of MDD.
			Table A5.2.8-1	Normal fill to be compacted to 93% of MDD.
	A5.3		**ROAD PAVEMENT LAYERS**	
		A5.3.3	**GENERAL**	

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A5.3.3.3 Requirements prior to the construction of any pavement layer	The Contractor shall obtain the approval of the underlying layer from the Engineer, prior to the construction of any subsequent pavement layer.
			A5.3.3.4 Compaction of pavement layer material	Compaction requirements are as follows: Stabilised subbase: 95% of MDD Gravel wearing course: 95% of MDD
			A5.3.3.8 Pavement Layer Drainage	Refer to Drawing Nos.: 60487450-5-1-C-DA-106 & 60487450-5-1-C-DA-107
		A5.3.5	**MATERIALS**	
			A5.3.5.1 Material information	Refer to Drawing No.: 60487450-5-1-C-BA-101
			A5.3.5.2 Pavement Layer thickness and compaction requirements	
			a) Pavement layer thickness requirements	Refer to Drawing No.: 60487450-5-1-C-BA-101
			b) Gravel and soil pavement layer compaction requirements (G4B to G9 material)	Refer to Drawing No.: 60487450-5-1-C-BA-101
		A5.3.7	**EXECUTION OF WORKS**	
			A5.3.7.12 Construction of trial sections	
			a) Trial Sections	Trial sections will be required for the stabilised subbase layer. The length and width of the trial section shall be as follows:

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				C4 Stabilised subbase: 100m long x 4m wide (approximate).
		A5.3.8	**WORKMANSHIP**	
			A5.3.8.4 Construction tolerances for pavement layers	No layers less than 150mm specified thus no specific tolerance required other than that as per the standard specifications.
			d) Width tolerances	Refer to Drawing No.: 60487450-5-1-C-BA-101
			A5.3.8.5 Surface regularity	Using 3,0 m straight-edge or rolling straight-edge.
	B5.3		**ROAD PAVEMENT LAYERS PART B: LABOUR ENHANCEMENT**	
		B5.3.5	**MATERIALS**	
			B5.3.5.1 Material Information	Refer to Drawing No.: 60487450-5-1-C-BA-101
			B5.3.5.2 Pavement layer thickness and compaction requirements	
			a) Pavement layer thickness requirements	Refer to Drawing No.: 60487450-5-1-C-BA-101
			b) Gravel and soil pavement layer compaction requirements (G4B to G9 material)	Refer to Drawing No.: 60487450-5-1-C-BA-101
		B5.3.7	**EXECUTION OF WORKS**	
			B5.3.7.1 Controlling pavement layer thickness	In accordance with the standard specifications.
	C5.3		**ROAD PAVEMENT LAYERS**	

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			PART C: MEASUREMENT AND PAYMENT	
		C5.3.1	**Compiling and implementing M&U plans for the construction of all the pavement layers**	One M&U plan for each layer shall be required.
	A5.4		**STABILISATION**	
		A5.4.3	**GENERAL**	
			A5.4.3.2 Work in restricted areas	No additional payment will be made for work in restricted areas.
			A5.4.3.3 Construction limitations	
			e) Traffic limitations	No additional traffic or construction equipment shall be allowed to travel over the compacted stabilised layer during the specified curing period.
		A5.4.5	**MATERIALS**	
			A5.4.5.1 General	Refer to Drawing No.: 60487450-5-1-C-BA-101
			A5.4.5.3 Cementitious stabilising agents	CEM II B-L 32.5N Nominal cement content: 3% (to be verified by stabilization design)
		A5.4.6	**CONSTRUCTION EQUIPMENT**	Curing of stabilised subbase shall be undertaken with a damp protective layer curing in accordance to A5.4.7.7 b), or curing by covering with damp hessian, canvas or gunny bags. Watering for curing of compacted stabilised layer shall not be done by side-spraying tankers travelling off the layer.
		A5.4.7	**EXECUTION OF THE WORKS**	

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A5.4.7.1 Construction of a trial section	Trial sections will be required for the stabilised subbase layer. The length and width of the trial section shall be as follows: C4 Stabilised subbase: 100m long x 4m wide (approximate)
			A5.4.7.7: Protection and curing of chemically stabilised layers	Method (b): Damp protective layer curing, shall be used or curing by covering with damp hessian, canvas or gunny bags.

- COTO CHAPTER 6: CONCRETE LAYERS

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
6			**CONCRETE LAYERS**	
	A6.2		**SEGMENTAL BLOCK PAVING LAYERS**	
		A6.2.5	**MATERIALS**	
			A6.2.5.1 Paving blocks	The paving blocks shall be of class 30/2.0, type S-A and thickness 60 mm or 80 mm as per Drawing No.: 60487450-5-1-C-BA-101.
			A6.2.5.4 Concrete beams, kerbs and channelling	Prefabricated kerbing and channelling shall comply with the requirements of Section A3.3 and B3.3 of Chapter 3.
		A6.2.7	**EXECUTION OF THE WORKS**	
			A6.2.7.1 Preparing the underlying layers.	The underlying pavement layers shall be constructed and prepared in accordance to Chapter 4 and Chapter 5 of the standard specifications.
			A6.2.7.4 Laying of the blocks.	The laying pattern and dimensions 60mm BLOCK PAVING (CLASS 30/2.0 SANS1058, TYPE S-A, LAID IN HERRINGBONE PATTERN, 80mm BLOCK PAVING (CLASS 30/2.0 SANS1058, TYPE S-A, LAID IN HERRINGBONE PATTERN,
	D6.2		**SEGMENTAL BLOCK PAVING LAYERS PART D: GUARANTEES AND COMPLIANCE CERTIFICATES**	Contractor to provide the Engineer with certificate of compliance with SANS 1058 and guarantee from proposed supplier, for approval.

- COTO CHAPTER 11: ANCILLARY ROAD WORKS

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
11			**ANCILLARY ROAD WORKS**	
	A11.6		**ROAD SIGNS**	
		A11.6.1	**SCOPE**	Traffic signs will be erected in accordance with the standard specifications. Refer also to Drawing Nos.: 60487450-5-1-C-DA-112; 60487450-5-1-C-DA-113 & 60487450-5-1-C-DA-114
		A11.6.7	**EXECUTION OF THE WORKS**	
			A11.6.7.1 Classification of Materials	Overbreak shall be filled by the contractor and shall not be measurable for payment.
			A11.6.7.3 Road sign faces and painting	
			b) Preparing surfaces and applying paint and retro-reflective sheeting	Aluminium road signs will not require painting.
			A11.6.7.5 Erecting road signs	
			a) Position	Position of road signs to be confirmed by the Engineer on site.
			b) Excavation and backfilling	Holes to be backfilled using soilcrete:. Refer to Drawing No.: 60487450-5-1-C-DA-113

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A11.6.7.7 Dismantling, storing and re-erecting existing road signs	Road signs that are no longer required will be dismantled and removed from site. Dismantling of signs shall include sign panels and sign supports.
	C11.6		**ROAD SIGNS** **PART C: MEASUREMENT AND PAYMENT**	
			ii) Notes on measurement and pay items	Excavations will be measured from the ground surface.
			iii) Items that will not be measured separately	No separate payment will be made for backfilling excess excavations, disposing of surplus material etc.

- COTO CHAPTER 12: GEOTECHNICAL APPLICATIONS

<table>
<tr><th>CH</th><th>SEC</th><th>CL</th><th>SUB-CLAUSE</th><th>SPECIFICATION DATA</th></tr>
<tr><td>12</td><td></td><td></td><td>GEOTECHNICAL APPLICATIONS</td><td></td></tr>
<tr><td></td><td>A12.11</td><td></td><td>GEOSYNTHETICS</td><td></td></tr>
<tr><td></td><td></td><td>A12.11.5</td><td>MATERIALS</td><td></td></tr>
<tr><td></td><td></td><td></td><td>A12.11.5.1 General</td><td>Synthetic fibre fabric filter in accordance with the following:

Penetration load – SANS 12236: 2013
Puncture resistance – SANS 13433: 2013
Water percolation – SANS 11058: 2013
Tensile strength – SANS 1525: 2013</td></tr>
<tr><td></td><td></td><td></td><td>PA12.11.5.4 Grade Classification</td><td>Table A12.11.5-1 shall be used for determining the grade of the geosynthetics:

TABLE A12.11.5-1: Grade Classification of Geosynthetics

<table>
<tr><th rowspan="2">Property</th><th colspan="3">GRADE</th></tr>
<tr><th>1</th><th>2</th><th>3</th></tr>
<tr><td>Penetration load (CBR)</td><td>3500</td><td>2400</td><td>1500</td></tr>
</table>
</td></tr>
</table>

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA				
				(minimum), N Test Method: SANS 12236: 2013				
				Puncture resistance (maximum), mm Test Method: SANS 13433: 2013	***18***	***26***	***32***	
				Water percolation (minimum), l/m²/s Test Method: SANS 11058: 2013	***40***	***40***	***40***	
				Tensile strength (minimum) kN/m Test Method: SANS 1525: 2013	***16***	***12***	***7***	

- COTO CHAPTER 20: QUALITY ASSURANCE

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
20			**QUALITY ASSURANCE**	
	A20.1		**TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP**	
		A20.1.3	**TESTING METHODS**	
			A20.1.3.3 The Costs of Testing	
			a) Material and workmanship for quality control	Process control testing is carried out by the Contractor and deemed to be included in the rates. Acceptance control testing is carried out by the Engineer and the costs thereof borne by the Employer.

- SANRAL STANDARD SPECIFICATION SECTIONS

SECTION	CL	SUB-CLAUSE	SPECIFICATION DATA
SECTION C		**ENVIRONMENTAL MANAGEMENT PLAN**	
	C1004	**ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS**	
		(d) The Designated Environmental Officer (DEO)	DEO Means: Designated Environmental Officer
	C1007	**ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES**	
		(h) On site plant	
		(ii) Asphalt plant	Not applicable.
	C1008	**AREAS OF SPECIFIC IMPORTANCE**	Not applicable.
	C1012	**PROJECT SPECIFIC CONDITIONS**	Not applicable.
SECTION D		**STAKEHOLDER AND COMMUNITY LIAISON AND TARGETED LABOUR AND TARGETED ENTERPRISES UTILISATION AND DEVELOPMENT**	
	D1002	**DEFINITIONS AND APPLICABLE LEGISLATION**	
		D1002.01 Definitions	
		(p) Target Area(s)	For Targeted Labour: Thembisile Hani Local Municipality.

		(u) Targeted Labour	Target Group for Targeted Labour: a. black designated groups (As per latest PPPFA Regulations); b. black people; c. women; d. people with disabilities
	D1003	**TARGET GROUP PARTICIPATION**	
		D1003.04 Contract Participation Goal (CPG)	
		CPG for Targeted Labour:	Minimum of 10% of the Final Contract Value by the end of the contract to Targeted Labour The Final Contract Value include the value of scheduled work and extra work but exclude any Contract Price Adjustment and adjustments for reduced payments, Rise and Fall, Retention Money, Penalties and VAT
		Targeted Labour minimum contributions by the following Target Groups:	
		a. black designated groups; (i) Black people who are youth	40% of targeted labour value
		(ii) Black people who are persons with disabilities	0.5% of targeted labour value
		b. Black women;	40% of targeted labour value

		CPG for Targeted Enterprise	**Sub-contracting of the work in Pricing Schedules A (Training and Construction Management) and C (Stakeholder and Community Liaison) to Targeted Enterprises:** 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. **Sub-contracting of the work in Pricing Schedule B (Construction of the Works) to Targeted Enterprises:** It is a requirement of this project that the successful Tenderer, irrespective of its B-BBEE contributor level and designated sector (EME, QSE or Generic), subcontract the following percentages of the work in Pricing Schedule B to Targeted Enterprises, as defined in the Specification Data, by the end of the Contract: If the tendering entity has less than 51% black ownership, a minimum of ninety percent (90%) of the work shall be subcontracted to Targeted Enterprises. If the tendering entity has equal to, or more than, 51% black ownership, a minimum of eighty-five percent (85%) of the work shall be subcontracted to Targeted Enterprises.

			If the tendering entity has equal to, or more than, 51% black women or black youth ownership, a minimum of eighty percent (80%) of the work shall be subcontracted to Targeted Enterprises. The Final Contract Value include the value of scheduled work and extra work but exclude any Contract Price Adjustment and adjustments for reduced payments, Rise and Fall, Retention Money, Penalties and VAT.
		Targeted Enterprise minimum contribution by the following Target Groups:	
		i) Targeted Enterprise with ≥51% ownership by Youth	Minimum of 40% of the Final Contract Value
		ii) Targeted Enterprise with ≥51% ownership by Women	Minimum of 40% of the Final Contract Value
		iii) Targeted Enterprise with ≥51% ownership by Military veterans	Minimum of 1% of the Final Contract Value
		iv) Targeted Enterprise with ≥51% ownership by Disabled persons (Differently abled)	Minimum of 0.5% of the Final Contract Value
		v) Targeted Enterprise with CIDB 1 or 2 grading	Minimum of 40% of the Final Contract Value
		vi) Targeted Enterprise with CIDB 3 or 4 grading	Minimum of 40% of the Final Contract Value
	D1009	**WORK SUITABLE FOR EXECUTION BY TARGETED ENTERPRISES**	Due to the nature of the project, most works types forming the scope of works for the project may be executed by Targeted Enterprises. Refer to Section D1009 for these works types.

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 policy has developed this Environmental Management Plan (EMPl) as a tool for continual improvement in environmental performance.

This EMPl prescribes the methods by which proper environmental controls are to be implemented by the Contractor. The duration over which the Contractor's controls shall be in place cover the construction period of the project as well as the limited time after contract completion defined by the Conditions of Contract for Construction for Building and Engineering Works Designed by SANRAL (1999 edition) published by the Federation Internationale des Ingenieurs-Conseils (FIDIC) as the Defects Notification Period (maintenance period).

The provisions of this EMPl 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 Environmental Management Programme (EMPr). In the event that any conflict occurs between the terms of the EMPl and the project specifications or environmental authorisation, the terms herein shall be subordinate.

The EMPl 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 EMPl and/or environmental authorisation cannot occur without being submitted to SANRAL who will manage the process of amending the EMPl.

The EMPl 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 regulations. 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 the National Department of Environmental Affairs, (DEA), 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 Programme (EMPr)*:* the embodiment of this EMPl to ensure that undue or reasonably avoidable adverse impacts of a development are prevented, and to ensure that positive impacts are enhanced. It thus addresses the how, when, who, where and what of integrating environmental mitigation and monitoring measures through identified projects.

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 relevant 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 EMPl, the site includes areas outside of, but adjacent to, the road reserve that may be affected by construction activities.

Spoil material: is material 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 is considered as waste material that 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 EMPl, 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 EMPl are legally binding in terms of this contract. In the event that any rights and obligations contained in this EMPl 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 EMPl 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 EMPl 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 EMPI, 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 EMPI shall be included.

The Contractor shall receive and implement any instruction issued by the Engineer relating to compliance with the EMPI 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 EMPI 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 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 EMPI. 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 diploma 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 EMPI the DEO shall also provide full cooperation whenever the Contractor is subjected to regular environmental audits.

(e) Environmental Control Officer (ECO)

The Environmental Control Officer (ECO) is an independent environmental specialist appointed by 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 EMPI 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; and

(iv) The environmental benefits of improved personnel performance.

(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 commonest 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	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 &/or livelihood; change in land use;
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 the General Authorisation.

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 instruction 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 means such as water spray vehicles 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 undertake a study 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 in this study, 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) <u>Site Plan</u>

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 wetland 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 Agriculture, Forestry and Fisheries.

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.

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. 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. 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 'waste' 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 strictly 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 the 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 considered to be 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 EMPl. 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. 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 EMPI, 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 the 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 500m 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 EMPl, 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 EMPI, 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**

TABLE 7/1: MECHANISMS THAT CAUSE ENVIRONMENTAL IMPACTS DURING CONSTRUCTION ACTIVITIES

Section	***Contents***	***Environmental Impacts***				
		Pollution Type	***Deformation of Landscape***	***Soil*** erosion	Alien Vegetation	Sensitive Areas
1300	Camp Establishment	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Not applicable.
1400	Housing, Offices and laboratories	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Not applicable.
1500	Accommodation of Traffic	Waste treatment Hazardous waste Water supply Spillage Storage Noise/lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas Maintenance of windrows	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Not applicable.
1600	Overhaul	Spillage Storage	Turning circles Parking areas	Restrict access to sensitive areas	Protection of indigenous vegetation	Not applicable.

Section	***Contents***	***Environmental Impacts***				
		Pollution Type	***Deformation of Landscape***	***Soil*** erosion	Alien Vegetation	Sensitive Areas
		Noise/lights Dust control Exhaust fumes Washing waste			Preserve topsoil	
1700	Clearing and grubbing	Waste treatment Hazardous waste Water supply Noise /lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Protection of indigenous vegetation Preserve topsoil	Not applicable.
2100 - 2400	Drainage	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Not applicable.
3100	Borrow pits	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Not applicable.

Section	***Contents***	***Environmental Impacts***				
		Pollution Type	***Deformation of Landscape***	***Soil*** erosion	Alien Vegetation	Sensitive Areas
3200	Stockpiling	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Not applicable.
3300	Mass Earthworks	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Not applicable.
3400 - 3900	Pavement layers	Waste treatment Hazardous waste Water supply Spillage Storage Noise / lights Dust control	Selection of site Preserve indigenous vegetation Preserve topsoil Demarcate sensitive areas Maintenance of windrows	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Not applicable.

Section	***Contents***	***Environmental Impacts***				
		Pollution Type	***Deformation of Landscape***	***Soil*** erosion	Alien Vegetation	Sensitive Areas
4100	Asphalt works / sealing operations	Waste treatment Hazardous waste Water supply Spillage Storage Noise / lights Dust control Smoke control Storage of materials	Selection of site Preserve indigenous vegetation Preserve topsoil Turning circles Parking areas	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil	Not applicable.
5000	Ancillary roadworks	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Not applicable.
6000	Structures	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Not applicable.

Section	***Contents***	***Environmental Impacts***				
		Pollution Type	***Deformation of Landscape***	***Soil*** erosion	Alien Vegetation	Sensitive Areas
7000	Concrete pavements etc.	Waste treatment Hazardous waste Water supply Spillage Storage	Selection of site Preserve indigenous vegetation Preserve topsoil	Selection of site Preserve indigenous vegetation Preserve topsoil	Preserve indigenous vegetation Preserve topsoil Management of weeds	Not applicable.

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.

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:

1. *Establish project liaison committees (PLCs) in each project to create a platform for project liaison, works execution, sub-contracting and employment facilitation.*
2. *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.*
3. *Project Liaison Officer (PLO) selection to be done under the auspices of the PLC.*
4. *Definition of a target area (sometimes referred to as a local area or traffic area) to be done under the auspices of the PLC.*
5. *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.*
6. *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.*
7. *Handover of signed-off databases for subcontracting and labour to contractor for open tender process and recruitment respectively done by the PLC.*
8. *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.*
9. *Appeals on the tender process to be escalated to SANRAL for an independent review.*
10. *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.*
11. *Contractor development support and training to be coordinated and conducted, ahead under the auspices of the PLC, prior to project commencement.*
12. *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.*
13. *Formal contracting arrangements to be ensured for all projects.*
14. *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:

a) Community[1]

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.

b) 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.

c) Contract Participation Goal (CPG)[2]

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:
   a. 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
   b. 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.

d) 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 Annexure X1 for the CPG Plan format.

e) Contract Participation Performance (CPP)

The measure of the Contractor's progress in achieving the CPG.

f) Contract Skills Development Goals (CSDG)[3]

[1] 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.

[2] 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.

[3] CIDB Standard for Developing Skills through Infrastructure Contracts, 23 August 2013.

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.

g) Designated Group[4]

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);

h) 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.

i) 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 Permanent Works, which period (duration) is stated in the Contract Data.

j) 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.

k) Project Liaison Committee (PLC)[5]

[4] Preferential Procurement Regulations, 2017, Government Gazette N. 40553, 20 January 2017.

[5] CIDB Standard for Minimum Requirements for Engaging Contractors and Sub-Contractors on construction Works Contracts, 31 October 2017.

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.

l) Project Liaison Officer (PLO)[6]

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.

m) Stakeholders[7]

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.

n) Subcontractor

An entity appointed by the Contractor to execute a portion of the Works as defined in the Conditions of Contract.

o) 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;

[6] CIDB Standard for Minimum Requirements for Engaging Contractors and Sub-Contractors on construction Works Contracts, 31 October 2017; CLO definition.

[7] Derived from SANRAL communication Policy, March 2018.

v) one or more of the areas listed in the definition of Designated Groups.

p) Targeted Enterprise[8]

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.

q) 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 Targeted Enterprise Construction Manager also mentors, guides and coaches the Targeted Enterprises.

r) 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.

s) 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.

t) Targeted Labour[9]

Persons:

i) who are employed by the Contractor or a Subcontractor (including Targeted Enterprise Subcontractors) in the performance of the Contract; and
ii) 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

[8] Preferential Procurement Regulations, 2017 Pertaining to the Preferential; Procurement Framework Act, Act no 5 of 2000.

[9] SANS 10845-7:2015, definition 2.12

iii) 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
iv) who are stated as being Targeted Labour in the Specification Data.

u) 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.

v) 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.

w) 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.

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); and
g) The Skills Development Act, 1998 (Act No. 97 of 1998).
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:

i) employ Targeted Labour from the Target Area(s) as stated in the Specification Data; and
ii) subcontract Targeted Enterprises as stated in the Specification Data; and
iii) 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.

a) 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.

b) 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.

c) 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.

d) 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:

CPG_{Total} = Final Contract Value x [$TL_{Total\%}$ + ($TE_{Total\%}$ - Targeted Labour employed by the Targeted Enterprises))

where

Final Contract Value = 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 scheduled work 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:

CPP = CPG_{Actual}
= total monetary value (excluding VAT) of Targeted Labour employed by the Contractor + total monetary value (excluding VAT) of Targeted Enterprises contribution, including Targeted Labour employed by the Targeted Enterprises.

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 Commencement Date. 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:

a) CPP Bonus

The bonus = 0.05 x (CPP – CPG_{Total})

Any bonus due (or portion thereof) shall be calculated on the Final Contract Value (excluding CPA). No bonus shall apply if either the Targeted Labour, Targeted Enterprises and/or any individual sub-targets for Target Groups are not reached.

b) 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 x ((TL – TG) + Sum (TL $_n$ – TG $_n$) - 1.2 x 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 (excluding VAT).
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.
(TL $_n$ - 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 x ((TE – TGE) + Sum (TE $_n$ – TGE $_n$) - 1.2 x TE mv - 1.2 x 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 (excluding VAT).
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.
(TE $_n$ – 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.

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 Employers 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.

Annexure X2 - SANRAL Project Liaison Committee Guidelines, is included in Part C4 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 Annexure X3, 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.

a) 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.

b) 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 construe 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:

i) 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.

ii) 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

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:
   a. Schedule meetings;
   b. Compile meeting agendas;
   c. Compile document packages for meetings;
   d. Distribute minutes of meetings;
   e. Assist representatives of project Stakeholders and affected Community to formulate their communication to the PLC in writing;
   f. Distribute written communication between the parties to the PLC;
   g. Keep records of all PLC correspondence and documentation; and
   h. 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:
    a. the basic Scope of the Works and how it will affect the Community;
    b. the project programme and regular progress updates;
    c. the anticipated employment and subcontracting opportunities;
    d. the project programme as it pertains to the employment of Targeted Labour and subcontracting of Targeted Enterprises;
    e. Occupational Health and Safety precautions; and
    f. 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 in 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 Contract 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 Works. Its duration is defined in the Contract Data.

Access to site for the Commencement of the Permanent 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 the Contract Documentation, Part C3, Section 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:

a) 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 Annexure X1 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.

An extension of the Mobilisation Period will not form grounds for an extension of the Contract duration and hence, any costs incurred by the Contractor for an extension of the Mobilisation Period shall be for the Contractors cost.

Should an extension of the Mobilisation Period result in a delay of the Contract, the Employer's delay penalties shall apply.

b) 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.

c) 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.

d) 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.

e) 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:

a) obtain an understanding of the Community's skills, both academically and occupationally,
b) obtain and understanding of the resources within the Community, i.e. Targeted Enterprise availability and capabilities,
c) establish the CPG targets for Targeted Enterprises and Targeted Labour for inclusion of the Specification Data; and
d) 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:

a) 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.

b) 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.

c) 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 has 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 Annexure X4 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:

a) Tender Preparation

i) 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 has 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.

ii) 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.

iii) 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:

a. evaluation and selection criteria such as eligibility, preference and functionality.
b. compliance requirements such as CSD and CIDB registration, tax clearance and COID.
c. the anticipated scope of the works to be undertaken.

iv) 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.

v) 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.

vi) 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.

vii) 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.

viii) 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.

ix) 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 Annexure X4).

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.

b) Tender Process

i) 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 and any other place or medium as agreed with the PLC.

If the Employer have a pro-forma Tender Notice available, the Contractor shall use this document.

ii) 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:

Name TBC
Cell phone TBC E-mail TBC

Notes of this training session shall be distributed to all attend's ees 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.

iii) 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.

iv) 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.

v) 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.

c) 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 the Contract Documentation, Part C3, Section D.

The Contractor shall evaluate the tenders based on (1) Eligibility, (2) Functionality, (3) Price and Preference, and (4) Compliance.

i) Stage 1 – Eligibility

Tenderers shall be checked for their eligibility to tender for the advertised subcontract packages based on the following eligibility criteria:

a. Proof that the Tenderer is registered with the CIDB (if applicable).
b. Proof that the Tenderer is registered on National Treasury's CSD.
c. Proof that the Tenderer is registered with the CIPC.
d. Proof that the Tenderer is a level 1 to 4 B-BBEE contributor.
e. 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.

ii) 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 (Annexure X4) 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

1. 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:

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 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.

iii) 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.

iv) 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 CE 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.

d) Appoint successful Targeted Enterprises

i) 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.

ii) Negotiating tender sum and/or rates with Targeted Enterprises.

i. 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:

i. 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
ii. 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 tenderers 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 is more than 15% higher than what are deemed market related by the Engineer.

iii) 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. 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.

a. 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.
b. 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.

iv) Payment to the Contractor

ii. 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.
iii. 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.

v) 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 Contractors approved Training and Skills Development Programme (see Section D1010).

a) TE Construction Manager's Qualifications and Experience

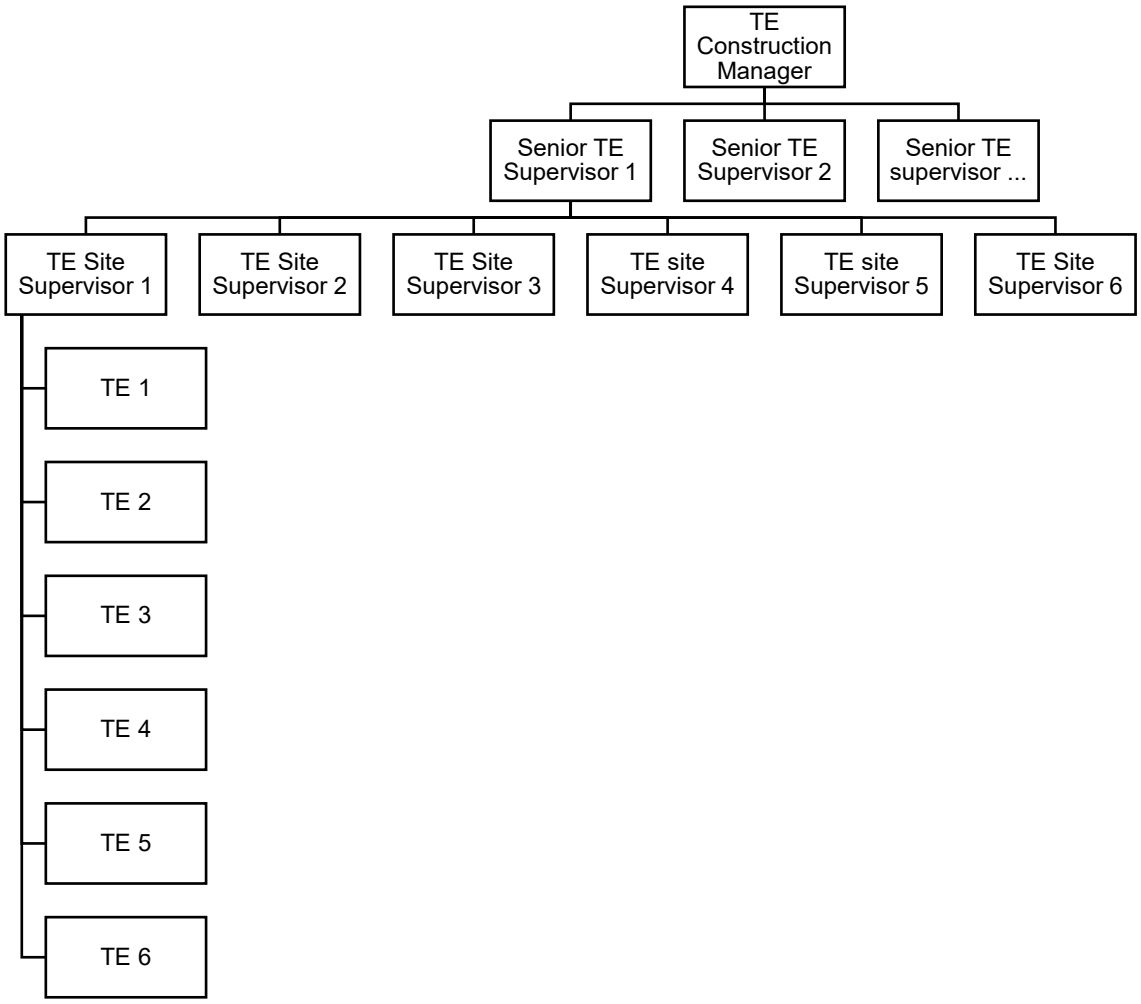
The TE Construction Manager shall have as a minimum a National Diploma: Management of Civil Engineering Construction Processes (NQF Level 5) or an equivalent qualification.

He 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.

b) 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.

a) 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.

b) 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.

a) 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 PC1.3.1 of the COTO specification payment items, i.e.:

C1.3.1.1 paid in 3 instalments of 50%, 35% and 15%;
C1.3.1.2 paid as a percentage of the total value progressively per certificate;
C1.3.1.3 paid monthly for the sub-contractor's contract duration.

D1008.05 Quality of Work and Performance of Targeted Enterprises

a) 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 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.

b) 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:

i) Deliver acceptable standard of work as set out in the specifications;
ii) Progress in accordance with the time constraints in the subcontract agreement;
iii) Punctual and full payment of the workforce and suppliers;
iv) Site safety; and
v) Accommodation of traffic.

c) 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 is 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) Provision of traffic control facilities.
c) Management of traffic control facilities and traffic safety as part of the accommodation of traffic.
d) Construction and clearing of drains.
e) Installation of prefabricated culverts including inlet and outlet structures.
f) Concrete channelling and concrete linings for open drains.
g) Construction of concrete paving, kerbs and channels.
h) Pitching, stonework and protection against erosion.
i) Road signs.
j) Finishing the road and road reserve.
k) Site Security Services.
l) Haulage of materials.
m) Supply of plant.
n) Supply of fuel.

From the above work items, the following have been identified as suitable for execution by CIDB CE1 and CE2 Targeted Enterprises:

a. Side drains.
b. Construction and clearing of drains.
c. Any other work identified by the Employer to be executed in the Target Area.

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

Other than providing training to Trainee Targeted Enterprises as provided for in Part C3, Section A1004 to A1009, the Contractor's Training and Skills Development Programme (see Part C3, Section A1004) shall also make provision for the training of other Targeted Enterprises and Targeted Labour.

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.

a) 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.

b) 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
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 and 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 Leanerships 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/QCTO) statutes.

a) 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 Progamme 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/QCTO Learnership criteria of which the basic elements are listed below to demonstrate the Employer's requirements:

i) Minimum credits for qualification;
ii) Fundamental Unit Standards and credit values;
iii) Core Unit Standards and credit values;
iv) Elective Units Standards and credit values;
v) Assumption that NQF Level 3 literacy, numeracy, and computer competencies exist;
vi) RPL processes;
vii) 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/QCTO and other related legislation pertinent to training. The Training Service Provider shall regularly consult the SAQA/QCTO website (www.SAQA/QCTO.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:

a.	NQF Level 3	National Certificate:	Construction Roadworks.
b.	NQF Level 4	National Certificate:	Supervision of Construction Processes
c.	NQF Level 4	National Certificate:	Business Management
d.	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.

b) Selection of Trainees

To complete a Learnership successfully requires minimum literacy and numeracy competencies as defined by SAQA/QCTO. 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(ess). 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.

c) Learning Material

Learning material is required for each Unit Standard. This learning material is the equivalent of prescribed textbooks for other qualifications. Each Trainees shall receive a copy of the learning material to learn the contents and to use it as reference source after obtaining the qualification.

The SAQA/QCTO Unit Standard curriculums define the contents of the learning material. The learning material shall not only comply with the SAQA/QCTO 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 a 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/QCTO Unit Standard curriculums are, amongst others, the following:

i) purpose of the Unit Standard;
ii) specific outcomes (typically 4 per Unit Standard);
iii) assessment criteria (typically 4 per specific outcome);
iv) range as is defined for each specific outcome;
v) critical cross-field outcomes for the Unit Standard;
vi) Unit Standard essential embedded knowledge.

d) 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 be the relevant academic institution.

e) 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 the following modules:

i) Basic hygiene and HIV/AIDS awareness;
ii) Road safety;
iii) Basic management of the environment;
iv) Tourism awareness and opportunities;
v) Managing personal finance;
vi) Adult Basic Education and Training (ABET);
vii) 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.

f) 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 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 PL. Trainees selected from the Community shall receive formal skills training in a programmed and progressive manner in compliance with subclause (d). 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.

g) Training Facilities

The Contractor shall be responsible for providing everything necessary to offer the various training workshops and modules including:

i) a suitable venue with sufficient furniture, lighting and power,
ii) all necessary stationery consumables and study material,
iii) transport for attendees.

D1011 LABOUR ENHANCED CONSTRUCTION

This Contract is a Community Development Project with the aim to enhance the utilisation and development of local resources in the Project Area. The Works shall thus be constructed by labour enhanced construction methods in as far as it is possible and feasible.

Where the specified work allows for a choice between mechanical or labour enhanced means, the latter shall be utilised.

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 MEASUREMENT AND PAYMENT

Item **Unit**

D10.01 Target Group Participation

(a)	Contract Participation Performance bonus.	Prime Cost (PC) Sum

The prime cost sum for item D10.01(a) shall cover any CPP bonus due as specified in clause D1003(e). 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**

D10.02 Stakeholder and Community Liaison and Social Facilitation

(a)	Cost of liaison, social facilitation and PLC support.	Prime Cost (PC) Sum
(b)	Handling cost and profit in respect of sub-item D10.02(a).	Percentage (%)

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**

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

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(a) 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.

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.

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 subitem 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)

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		
	(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 (%)
(c)	Other costs during training.		Provisional (Prov) sum
(d)	Training venue.		Lump sum

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 pro-rata payments made for partial months for training provided based on 23 workdays 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:

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.

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 pro rata 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.

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*.

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 of the company and provision must be made to review the policy regularly 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/QCTO 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 conformances
- 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)

Appointment	Legal Reference
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)
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/worksite, 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 end 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 Mandatary 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/indent.

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 C.002-053-2023/1, which must be adhered to in addition to minimum legislative requirements.

a) **Baseline Risk Assessment**

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:

Activity	**Associated Hazards**	**Associated Risks**	**Risk Rating High Medium Low**
Site establishment	Extreme temperatures; Pesticides, herbicides, dust. Snakes, bees, spiders, vermin (rats & mice); Portable electrical equipment;	Heat exhaustion; Dehydration; Poisoning; Fatality / Serious health effect; Silicosis; Electrical shock;	M

Activity	**Associated Hazards**	**Associated Risks**	**Risk Rating High Medium Low**
	Electrical hand tools; Lifting equipment; Aggrieved members of the public.	Personal Injuries; Falling objects; Strikes / riots	
Security	Aggrieved members of the public; Uncontrolled people	Protest Riots Theft	M
Loading / Unloading of materials / plant & equipment from trucks	Lifting equipment; Inexperience operators; Inexperienced workers;	Material / plant falling from height; Operator losing control; Employees under / close to suspended loads.	M
Transportation of personnel / materials	Overloaded vehicles; Transportation of workers in vehicles not designed to transport people; Transporting vehicle defective / not roadworthy	Operator losing control of vehicle; Vehicle overturning; Vehicle accidents; Fatality; Serious injuries	H
Erection of temporary site offices / Laboratory	Extreme temperatures; Pesticides, herbicides, dust, cement; Snakes, bees, spiders, vermin (rats & mice); Portable electrical equipment; Electrical hand tools; Lifting equipment; Temporary works;	Heat exhaustion; Poisoning; Fatality / Serious health effect; Silicosis; Electrical shock; Personal Injuries; Falling objects; Strikes / riots	M

Activity	**Associated Hazards**	**Associated Risks**	**Risk Rating High Medium Low**
	Aggrieved members of the public.		
Working with and handling of hazardous / flammable / toxic materials	Hazardous, flammable and toxic substances	Chemical burns; Fire; Serious injuries; Fatalities	M
Disposal of waste materials	Hazardous waste	Environmental pollution Re-use of containers can have serious health effect on people or fatal.	H
Traffic accommodation / calming	Public vehicles; Extreme temperatures Stop & Go	Employees run over by public vehicles – serious injuries /fatalities Heat exhaustion Public not adhering to stop & go signals / try to bypass stop & go – fatality / serious injuries / vehicle accidents.	H
Working in elevated positions - Working at heights, on slopes, next to excavations, on trucks.	Defective / Inadequate equipment; Improper use or non-use of fall protection equipment; Environmental conditions – rain / strong wind, lighting; Live electrical power lines; Suspension trauma.	Inadequate protection of employees against falls; Electrical Shock; Electrical arching; Slippery work surfaces; Fatality / serious injuries;	H

Activity	**Associated Hazards**	**Associated Risks**	**Risk Rating High Medium Low**
Stockpiling	Material falling from stockpile	Serious personal injuries; Material damage	M
Operations involving Noise	Noise	Noise induced hearing loss	M
Operations involving Vibration	Vibration	Damage to joints, muscles, circulation and sensory nerves.	M
Working near existing services – overhead/underground power cables; telecommunication cables	Electricity	Electrical Shock; Electrical arching; Fire; Burns Fatality Serious injury	H
Working with portable electrical equipment – grinders, circular saws, generators	Electricity Electrical tools Portable electrical equipment	Electrical shock Cuts Personal injuries	M
Lifting / Lowering operations	Elevated objects Lifting machines Improper rigging Electrical cables	Lifting machine / crane overturning; Falling objects Dropped loads Strong winds Loads striking personnel, vehicles or equipment. People working underneath High voltage power lines may arch onto crane boom.	H

Activity	**Associated Hazards**	**Associated Risks**	**Risk Rating High Medium Low**
Driving and operation of construction vehicles and mobile plant	Distracted drivers; Recklessness; Impaired driving; Poor visibility; Poor road conditions; Unsecured loads; Uncontrolled vehicle entry; Equipment failure; Public vehicles; Uneven ground surfaces	Fatalities; Serious injuries; Crashes; Vehicles, plant and equipment damage; Workers not seen by operators; Workers working too close to mobile plant and vehicles; Construction vehicles & mobile plant not road worthy / defective; Roll over of construction vehicles / plant.	H
Excavation work	Unstable ground Underground electrical cables; Underground pipelines; Excavation equipment, construction vehicles & plant.	Cave-ins; People falling into excavation; Workers buried in excavation due to cave-ins; Construction vehicles / plant falling into excavation; Fatalities; Serious injuries	H
Work adjacent or near traffic	Public vehicles	Workers not attentive to approaching vehicles. Drivers not slowing down to indicated speed limit.	H

Activity	**Associated Hazards**	**Associated Risks**	**Risk Rating High Medium Low**
		Drivers losing control of their vehicles.	
Temporary works – Form work & support work	Temporary works	Falls from height; Collapse of temporary work overloading	H
Work adjacent to public property	Construction plant and equipment; Excavation activities; Demolition activities;	Injury to public persons; Damage to public property and assets;	H
Protection of public H&S	Unprotected temporary works; Stockpiles; Incomplete structures.	Public persons accessing construction area, stockpiles and incomplete structures. Fatality / Serious injury to public persons	H
Welfare facilities – drinking water; eating facilities; sanitary facilities	Water not suitable for human consumption; Shortage of water; Hazardous substances; Environmental impact.	Serious health effects; Dehydration Environmental pollution	M
Working in the environment	Bees Snakes Spiders Lighting Strong winds Heavy rain Hot/cold conditions	Poisoning; Fatality / Serious health effect; Electrical shock / burns; Personal Injuries; Slips; Drowning; Heat exhaustion; Dehydration;	M

Activity	**Associated Hazards**	**Associated Risks**	**Risk Rating High Medium Low**
	Hazardous biological agents	Serious health effects; Fatality; Pandemic; Epidemic	H

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 protected 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 boxed 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 operators 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 is 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.

G1000 LOCAL PRODUCTION AND CONTENT

G1001 SCOPE

The Department of Trade and Industry in consultation with National Treasury has designated the construction sector and determined the stipulated minimum threshold for steel products and component for construction for the state procurement for local production and content.

This sections provides the requirements for local production and content for the contract.

G1002 PRODUCT DESIGNATION

The products and components for local content and production for construction are as follows:

G1002.01 Steel

Only locally produced or locally manufactured steel products and components for construction with a minimum threshold for local content and production as stipulated below will be considered.

Table 1a: Minimum local content for Steel Value-added Products

Steel Construction Materials	Components	Local Content Threshold
Fabricated Structural Steel	Latticed steelwork, reinforcement steel, columns, beams, plate girders, rafters, bracing, cladding supports, stair stringers & treads, ladders, steel flooring, floor grating, hand railing and balustrading, scaffolding, ducting, gutters, launders, downpipes and trusses	100%
Joining/Connecting Components	Gussets, cleats, stiffeners, splices, cranks, kinks, doglegs, spacers, tabs and brackets	100%
Frames	Doors and windows	100%
Roof and Cladding	Bare steel cladding, galvanised steel cladding and colour coated cladding	100%
Fasteners	Bolts, nuts, rivets and nails	100%
Wire Products	All fencing products, all barbed wire and mesh fencing, fabric/mesh reinforcing, gabions, wire rope/strand and chains, welding electrodes, nails/tacks, springs and screws	100%
Ducting and Structural Pipework	Non-conveyance tubing fabricated from steel sheeting and plate with structural supports	100%
Gutters, downpipes & launders	Fabricated materials made from sheeting associated with roof drainage systems	100%

Table 1b: Minimum local content for Primary Steel Products

Steel Construction Materials	Local Content Threshold
Plates (>4,5mm thick and supplied in flat pieces)	100%
Sheets (<4,5mm thick and supplied in coils)	100%
Galvanised and Colour Coated coils	100%
Wire Rod and Drawn Wire	100%
Sections (Channels, Angles, I-Beams and H-Beams)	100%
Reinforcing bars	100%

In the designation, imported inputs raw materials (i.e. zinc and additives in the surface preparation and protection process (cleaning and coating/galvanising)) used in the production of steel products and components for the construction are deemed as locally manufactured input materials.

The imported input raw material, as specified above, used in the manufacture and production of steel products and components for construction will be deemed to have been sourced locally for the purposes of calculating local content.

G1002.02 Electrical and telecommunication cables

Only locally produced or locally manufactured electrical and telecommunication cables for construction with a minimum threshold for local content and production as stipulated below will be considered.

Electrical Cables: cables used for power transmission	
Cable Products	**Stipulated minimum threshold**
Low Voltage	90%
Low Cost Reticulation	90%
Medium & High Voltage	90%
ACR	90%

Telecom Cables: cables used for telecommunications	
Cable Products	**Stipulated minimum threshold**
Optical Fibre Cables	90%
Copper Telecom Cables	90%

Excluded in the designation are mainly primary steel, copper, aluminum, polyvinyl chloride (PVC), cross-linked polyethylene (XLPE), aramid yarn, and optical fibre used for fabrication of cable products. This is to encourage local manufactures to seek the best global competitive prices for primary materials hence the competitive imported materials used in the manufacture of cables will be deemed to have been sourced locally for the purposes of calculating local content.

G1002.03 Yellow metal equipment

Only locally produced or locally manufactured Yellow metal equipment for construction with a minimum threshold (based on the cost of the locally produced portion of the equipment relative to the cost of the equipment) for local content and production as stipulated below will be considered.

Yellow Metal Equipment

Equipment type	**Stipulated minimum threshold**
Articulated dump truck (ADT)	60%
Tractor loader backhoe (TLB)	60%
Front end loader (FEL)	60%

G1003 COMPLIANCE

Contractors may not subcontract any work in such a manner that the local production and content of the designated products does not meet the specified thresholds.

The completed Form A3.5 (SBD6.2): Declaration Certificate for Local Production and Content for Designated Sectors and Form A3.6: Local Content Declaration: Summary Schedule (Annexure C), submitted by the Contractor are included as part of the contract in Part C5 Annexure.

The Department of Trade and Industry will undertake compliance audits with a view to monitor the implementation of the industrial development strategies.

G1004 MEASUREMENT AND PAYMENT

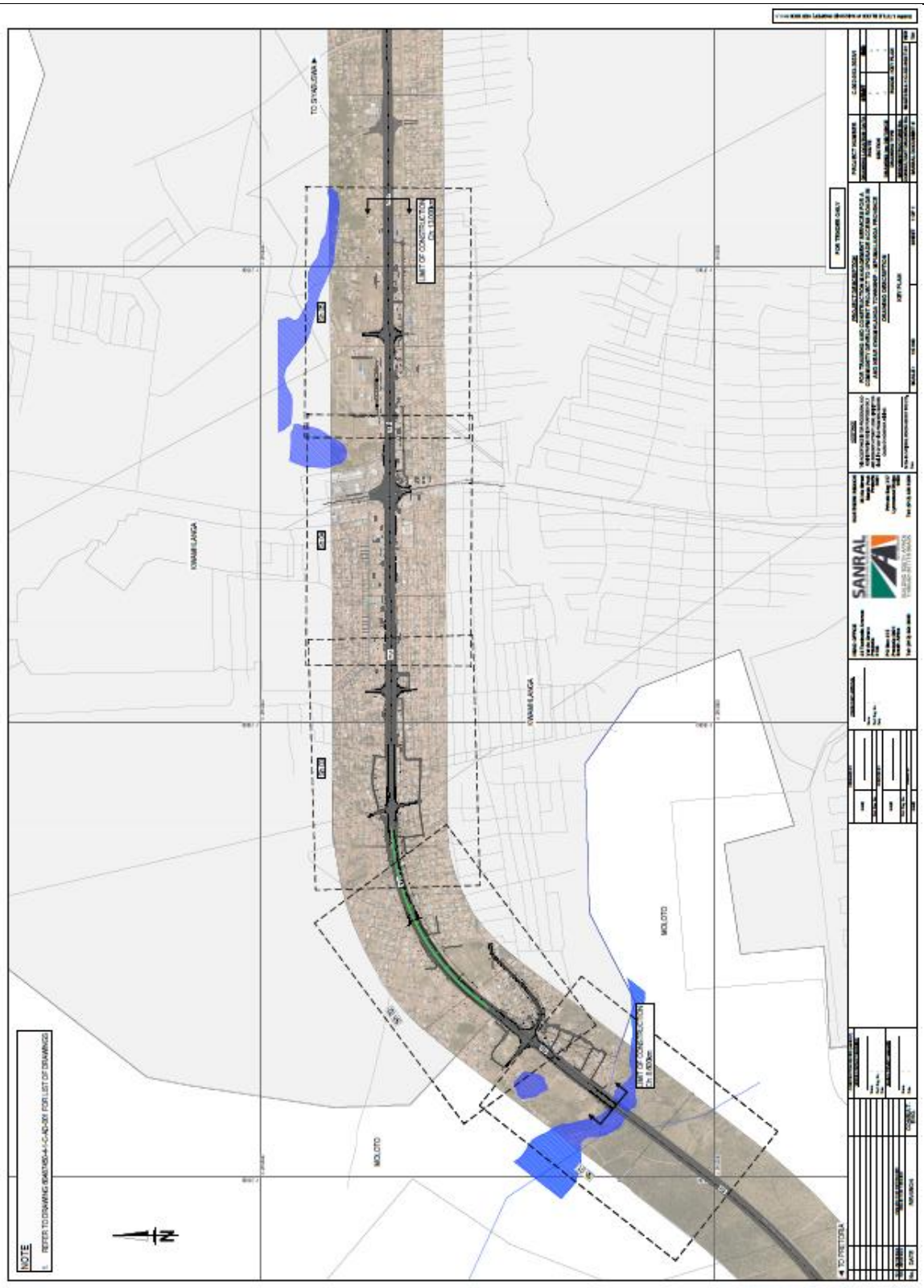
The Contractor shall not be separately reimbursed or compensated in respect of compliance with the provisions of this clause C3.6. All costs incurred in this regard shall be considered to be included in the rates tendered for the various items of work listed in the Pricing Schedule.

PART C4: SITE INFORMATION

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C4.1 LOCALITY PLAN



CONTRACT SANRAL C.002-053-2023/1

TRAINING AND CONSTRUCTION MANAGEMENT SERVICES FOR A COMMUNITY DEVELOPMENT PRO TO UPGRADE ACCESS ROADS IN AND AROUND KWAMHLANGA NEAR NATIONAL ROAD R573 SECTI FROM KM8.60 TO KM13.00

LOCALITY PLAN

C4.2 GENERAL ROUTINE ROAD MAINTENANCE INFORMATION

The Access Roads, adjacent to the R.573, Section 2 fall under the jurisdiction of the Thembisile Hani Local Municipality.

C4.3 BACKGROUND

The upgrade of access roads forms part of the larger overarching objective of the Employer, which is to improve mobility and road safety along the R573. The R573 will be upgraded to a four-lane single carriageway road divided by a median barrier. As a result, the majority of existing informal accesses to the R573 will be closed and with formalised road intersection constructed, linking the adjacent access road network to the R573 through a combination of roundabouts, butterfly intersections and left-in left-out intersections, in accordance with the approved Access Management Plan (AMP). Hence, upgrades are required to the adjacent access road network, where direct access from properties to the R573 will be affected.

C4.4. GENERAL DESCRIPTION OF THE PROJECT

The R573 is located north-east of Pretoria stretching from Pretoria to Marble Hall, while traversing through the Gauteng, Mpumalanga and Limpopo Provinces. Section 2 of the R573 is located in the Mpumalanga Province, starting at Moloto (km 0.000) and terminating at Moteti (km 48.557 at the intersection of the R567).

The route traverses flat to rolling terrain, mostly through built up areas, both formal and informal. The open land between the built-up areas is used mainly for informal farming, except at km 29.5 (Klipspruit Experimental Farm), where no formal agricultural activities are currently undertaken.

For this contract, the scope of works primarily will include the training and skills development of members of the Community, as well as Trainee Targeted Enterprises selected from the Community, from within the Target Area, who will become the Contractors Targeted Enterprise subcontractors and whom the Contractor shall manage and mentor for the construction works related to the upgrading of access roads in and around Tweefontein, near the R573 between KM13.00 to KM 24.70.

Alignments for the access road upgrades largely follow existing road alignments (predominantly gravel tracks), where possible, although new alignments are also required, where spatial constraints exist, due to historical informal township urbanisation.

The upgrades will consist of a combination of 3m wide gravel access roads, 4m wide interlocking block paving roads and 6m wide interlocking block paving roads, along with associated road stormwater drainage infrastructure, consisting primarily of open systems discharging at surface or

tying into the existing municipal network, where possible. Ancillary works include the erection of road signs and stone pitching.

Existing services within the project area is unknown, thus prior to any work commencing, the Contractor will need to verify any services in the vicinity of the works (type and position). The Contractor will therefore need to obtain all necessary approvals from the Service Provider for all work related to the protection and/or relocation of existing services, forming part of the works.

Materials investigations along the alignments for the access roads upgrades is not available. Therefore, the in-situ material will need to be tested on site and approved by the Engineer, prior to incorporation into the works. Further no borrow-pits have been secured by the Employer within proximity of the site. The Contractor may identify his own compliant and licenced fill material sources, subject to testing and approval by the Engineer. Subbase and base road layer material is to be sourced commercially, from either sources identified by the Employer, or other compliant commercial or private / non-commercial material sources identified by the Contractor or alternatively the Contractor's own sources, subject to testing and approval by the Engineer.

The pavement designs are summarised below.

LAYER WORKS FOR GRAVEL ROADS	
LAYER NO.	**DESCRIPTION**
1	100mm thick Gravel Wearing Course (Rural and urban roads as per COTO Table A4.1.5-11, Requirements for gravel wearing course material other than calcrete) compacted to 95% of MDD, CBR ≥ 15% at 95%, PI on the P0.425 fraction 6-12)
2	G7 Fill, constructed in layers no greater than 200mm and no less than 100mm thick, compacted to 93% of MDD, CBR ≥ 15% at 93%
3	150mm thick rip and recompact in-situ material (G9 or better), compacted to 93% of MDD, CBR ≥ 7% at 93%

LAYER WORKS FOR 60mm BLOCK PAVING	
LAYER NO.	**DESCRIPTION**
A	60mm thick Block Paving (Class 30/2.0 SANS1058, Type S-A, laid in herringbone pattern
B	20mm thick Bedding Sand (Bedding and jointing sand to be in accordance with A6.2.5 Materials of the standard specification
C	150mm thick C4 stabilised natural gravel, compacted to 95% of MDD ,UCS min 0.75 MPa and max 3.0 MPa at 100% of MDD & ITS min 200 kPa and max 450 kPa at 100% of MDD
D	G7 Fill, constructed in layers no greater than 200mm and no less than 100mm thick, compacted to 93% of MDD, CBR ≥ 15% at 93%
E	150mm thick rip and recompact in-situ material (G9 or better), compacted to 93% of MDD, CBR ≥ 7% at 93%

LAYER WORKS FOR 80mm BLOCK PAVING	
LAYER NO.	**DESCRIPTION**
A	80mm thick Block Paving (Class 30/2.0 SANS1058, Type S-A, laid in herringbone pattern
B	20mm thick Bedding Sand (Bedding and jointing sand to be in accordance with A6.2.5 Materials of the standard specification

C	150mm thick C4 stabilised natural gravel, compacted to 95% of MDD ,UCS min 0.75 MPa and max 3.0 MPa at 100% of MDD & ITS min 200 kPa and max 450 kPa at 100% of MDD
D	G7 Fill, constructed in layers no greater than 200mm and no less than 100mm thick, compacted to 93% of MDD, CBR ≥ 15% at 93%
E	150mm thick rip and recompact in-situ material (G9 or better), compacted to 93% of MDD, CBR ≥ 7% at 93%

ACCESS ROADS DIMENSIONS (LENGTH AND WIDTH)

The upgrades will consist of a combination of 3m wide gravel access roads, 4m wide interlocking block paving roads and 6m wide interlocking block paving roads.

Type	**Chainage (m)**		**Length (m)**	**Width (m)**	**3m Gravel**	**4m Surfaced Road**	**6m Surfaced Road**
	From	**To**					
Gravel Road	0	276	276	3	276		
Gravel Road	0	185	185	3	185		
Surfaced Road	0	242	242	4		242	
Surfaced Road	0	253	253	4		253	
Surfaced Road	0	249	249	4		249	
Surfaced Road	0	27	27	4		27	
Surfaced Road	0	57	57	4		57	
Surfaced Road	57	242	185	6			185
Surfaced Road	0	33	33	6			33
Surfaced Road	0	139	139	4		139	
Surfaced Road	0	55	55	4		55	
Surfaced Road	0	39	39	4		39	
Surfaced Road	0	405	405	4		405	

Surfaced Road	0	159	159	4		159	
Surfaced Road	0	34	34	4		34	
Surfaced Road	0	322	322	4		322	
Surfaced Road	0	95	95	4		95	
Surfaced Road	0	56	56	4		56	
Surfaced Road	0	49	49	4		49	
Surfaced Road	0	75	75	4		75	
Gravel Road	0	67	67	3	67		
Surfaced Road	0	190	190	4		190	
Surfaced Road	0	336	336	4		336	
Gravel Road	0	196	196	3	196		
Gravel Road	0	45	45	3	45		
Surfaced Road	0	90	90	4		90	
Surfaced Road	0	157	157	4		157	
Gravel Road	0	87	87	3	87		
Gravel Road	0	77	77	3	77		
Gravel Road	0	74	74	3	74		
Surfaced Road	0	35	35	4		35	
Surfaced Road	0	49	49	4		49	

Gravel Road	0	96	96	3	96		
Surfaced Road	0	544	544	4		544	
Gravel Road	0	103	103	3	103		
Gravel Road	0	154	154	3	154		
TOTAL LENGTH					1 360	3 657	218

C4.5 CLIMATE

The weather station at Marble Hall is the closest station to the site. The climate here is classified as BSk by the Köppen-Geiger system. The average annual temperature is 20.2°C and the average yearly rainfall is 793 mm.

C4.6 EXTENT OF CONSTRUCTION WORKS

A key objective of the project is to undertake as much of the construction activities using labour enhanced techniques. The extent of the access road upgrades, broadly includes the following components:

- Contractor's establishment on site and general obligations;
- The identification, protection and/or relocation of services;
- Accommodation of the Engineers site personnel;
- Construction and maintenance of temporary access road deviations;
- Accommodation of traffic;
- Clear and grubbing;
- Excavation of open and side drains where required;
- Installation of new pipe and box culverts, including inlet and outlet structures;
- Installation of subsoil drainage, where required;
- Installation of cable ducts, where required;
- Construction of pipe and box culverts, including inlet and outlet structures, where required;
- Construction of concrete drifts, where required;
- Testing of in-situ material;
- Roadbed preparation and treatment, which may include:
    - Ripping and recompaction of in-situ material;
    - In-situ treatment by drilling and splitting hard material using non-explosive, rockbreaking products;
    - Construction of a pioneer layer in soft and saturated material; and - Removal and replacement of unsuitable material.
- Sourcing of material from compliant borrow areas and commercial sources;

- Construction of road pavement layers:
  - Gravel roads:
    - Construction of G7 fill; and
    - Construction of gravel wearing course.
  - Block Paving roads:
    - Construction of G7 fill;
    - Construction and removal of trial section for stabilised C4 subbase layer, including mix design;
    - Construction of stabilised C4 subbase layer, including curing with a damp protective layer in accordance to A5.4.7.7 b)), or curing by covering with damp hessian, canvas or gunny bags.;
    - Application of herbicide and ant poison; and
    - Construction of block paving, including bedding layer and jointing sand
- Testing of all constructed road pavement layers; acceptance control testing will be done by an external site/commercial lab - provision under items in consultant document C3.9.1(c) - off-site testing and Contractor document PC20.1.2.2 special tests requested by the engineer (a) Acceptance. control, including products and mix designs and Process control will be done by the Contractor and included in his rates.
- Construction of concrete lined side drains, down-chutes and concrete kerbing and/or channelling;
- Construction of grouted stone pitching in areas identified, where drainage improvements are required;
- Finishing-off fill slopes; and
- Erection of road signage.

ANNEXURES TO CONTRACT DOCUMENT

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ADDENDA: COPIES OF ALL ADDENDAS ISSUED
FORM A3.1 (SBD4): COMPULSORY DECLARATION
FORM A3.2 (SBD9): CERTIFICATE OF INDEPENDENT TENDER
FORM A3.3 (SBD8): DECLARATION OF TENDERER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES
FORM A3.4: REGISTRATION ON NATIONAL TREASURY CENTRAL SUPPLIER DATABASE
FORM A3.5 (SBD6.2): DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT FOR DESIGNATED SECTORS
FORM A3.6: LOCAL CONTENT DECLARATION: SUMMARY SCHEDULE (ANNEXURE C)
FORM A6 (SBD2): CERTIFICATE OF TAX COMPLIANCE
FORM A7 CERTIFICATE OF INSURANCE COVER
FORM A11: REGISTRATION WITH CIDB
FORM A13 (SBD6.1): TENDERER'S B-BBEE VERIFICATION CERTIFICATE
FORM A14 (SBD1) INVITATION TO BID
FORM C2: SCHEDULE OF SPECIAL MATERIALS
FORM C3: ORGANISATIONAL STRUCTURE
FORM C4: KEY PERSONNEL EXPERIENCE - CONTRACTS MANAGER
FORM C5: KEY PERSONNEL EXPERIENCE - CONTRACTOR'S REPRESENTATIVE
FORM C6: KEY PERSONNEL EXPERIENCE - CONSTRUCTION HEALTH AND SAFETY OFFICER (CHSO) WITHIN COMPANY
FORM C7: KEY PERSONNEL EXPERIENCE - TARGETED GROUP DEVELOPMENT COORDINATOR
FORM C8: REGISTERED PERSON WITHIN THE COMPANY
LETTER OF ACCEPTANCE BY SANRAL
LETTER OF ACKNOWLEDGEMENT BY CONTRACTOR

Note to tenderer:

The Annexure will include completed returnable schedules and correspondence which form part of the contract.