SANRAL
SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD

Reg.No.1998/009584/30

BUILDING SOUTH AFRICA
THROUGH BETTER ROADS

THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

CONTRACT SANRAL R.531-020-2026/1

R531 SECTION 2 - EMERGENCY REPAIR OF DAMAGED STEEL RIBBED PIPE CULVERT AT KM 6.9 AND SINKHOLE AT KM 11

PROJECT DOCUMENT

DATE: MAY 2026

TENDER DOCUMENT
VOLUME 3
BOOK 3 OF 3
PRICING DATA, SCOPE OF WORKS, PROJECT INFORMATION, ANNEXURES

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

NAME OF TENDERER: ……..

Set sequential number

CONTRACT SANRAL SANRAL R.531-020-2026/1

FOR

R531 SECTION 2 - EMERGENCY REPAIR OF DAMAGED STEEL RIBBED PIPE CULVERT AT KM 6.9 AND SINKHOLE AT KM 11

PROJECT DOCUMENT

DATE: MAY 2026
TENDER DOCUMENT
VOLUME 3
BOOK 3 OF 3
PRICING DATA, SCOPE OF WORKS, PROJECT INFORMATION, ANNEXURES

THIS DOCUMENT COMPILED UNDER THE DIRECTION OF THE PROVINCIAL HEAD
THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

The Provincial Head (Limpopo)
The South African National Roads Agency SOC Ltd
38 Ida Street,
Menlo Park,
Pretoria,
0081

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 indicated in Book 1.

Volume 4: The road works drawings.

Volume 5: The structural drawings.

Volume 6: Materials investigation and utilisation. (NOT APPLICABLE)

Volume 7: Environmental Management Plan report. (NOT APPLICABLE)

TABLE OF CONTENTS **PAGE**

PART C2:	**PRICING DATA**	**C3-1**
PART C3:	**SCOPE OF WORKS**	**C3-11**
PART C4:	**PROJECT INFORMATION**	**C3-253**
PART C5:	**ANNEXURES**	**C3-349**

PART C2: PRICING DATA

PART C2: PRICING DATA

TABLE OF CONTENTS **PAGE**

C2.1 PRICING INSTRUCTIONS....C3-3
C2.2 PRICING SCHEDULE (INCORPORATING SBD3)....C3-5
C2.3 SUMMARY OF PRICING SCHEDULE C3-10

C2.1 PRICING INSTRUCTIONS

C2.1.1 Measurement and payment shall be in accordance with the relevant provisions of Chapter 1, Section C1.1 of the COTO Standard Specification for Road and Bridge Works for South African Road Authorities (Draft Standard October 2020 edition) or as amended in the Scope of Works.

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

%	=	percent
h	=	hour
ha	=	hectare
kg	=	kilogram
kl	=	kilolitre
km	=	kilometre
l	=	litre
m	=	metre
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
PC Sum	=	prime cost sum
R/only	=	Rate only
t	=	ton (1000kg) or tonne

C2.1.3 For the purpose of the Pricing Schedule, the following words shall have the meanings assigned to them:

Unit: The unit of measurement for each item of work as defined in the COTO Standard Specification for Road and Bridge Works for South African Road Authorities (Draft Standard October 2020 edition).

Quantity: The number of units of work for each item.

Rate: The payment per unit of work for which the Service Provider tenders to do the work.

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

C2.1.4 Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.

C2.1.5 It will be assumed that prices included in the Pricing Schedule are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to www.sabs.co.za for information standards)

C2.1.6 The prices and rates in the Pricing Schedule are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices will be used as a basis for assessment of payment for additional work that may have to be carried out. The Contractor shall submit to the Engineer within 28 days after the Commencement Date a full breakdown of all rates. The rates are to

be clearly referenced to the relevant payitem numbers, with each rate broken down into its labour, materials, plant, fuel, overhead charges and profit components.

C2.1.7 Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount tendered such items.

C2.1.8 A single lump sum will apply should a number of items be grouped together for pricing purposes.

C2.1.9 The quantities set out in the Pricing Schedule are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in the Pricing Schedule.

C2.1.10 Reasonable compensation will be received where no payitem appears in the Pricing Schedule in respect of work required in terms of the Contract and which is not covered in any other payitem.

C2.1.11 The short descriptions of the items of payment given in the Pricing Schedule are only for the purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work.

C2.1.12 The item numbers appearing in the Pricing Schedule refer to the corresponding item numbers in the COTO Standard Specification for Road and Bridge Works for South African Road Authorities (Draft Standard October 2020 edition). Where a standard COTO payitem is amended or a new payitem added, the item number is preceded by the letter “P” in the Pricing Schedule.

C2.1.13 The pricing schedules are provided electronically. A printout of the entire completed pricing schedule must be signed and scanned and saved in .pdf format, and an electronic copy of the priced pricing schedule must be saved in Excel format and the printed copy bound. In the event of any discrepancy between the signed .pdf copy, and the electronically submitted copy in Excel format and the printed hard copy, the tender rates in the printed hard copy will govern. The item numbers and description of the printed hard copy document will govern. For all addenda issued relating to the pricing schedule, the item numbers, description and quantities of the issued document will govern.

C2.2 PRICING SCHEDULE (INCORPORATING SBD3)

SCHEDULE A

ROADWORKS

Note to tenderer:

Schedule A is contained in the Pricing Schedule in Excel format distributed as part of Volume 3 of the Tender Documents.

SCHEDULE B

CULVERTS

Note to tenderer:

Schedule B is contained in the Pricing Schedule in Excel format distributed as part of Volume 3 of the Tender Documents.

SCHEDULE D

STAKEHOLDER AND COMMUNITY LIAISON, AND TARGETED LABOUR AND TARGETED ENTERPRISES UTILISATION AND DEVELOPMENT

Note to tenderer:

Schedule D is contained in the Pricing Schedule in Excel format distributed as part of Volume 3 of the Tender Documents.

CALCULATION OF TENDER SUM

C2.3 SUMMARY OF PRICING SCHEDULE

CONTRACT SANRAL SANRAL R.531-020-2026/1
FOR THE R531 SECTION 2 - EMERGENCY REPAIR OF DAMAGED STEEL RIBBED PIPE CULVERT AT KM 6.9 AND SINKHOLE AT KM 11

SCHEDULE A1: GENERAL ..... R .....

SCHEDULE A2: ROADWORKS – KM 6.94 ..... R .....

SCHEDULE A3: ROADWORKS – KM 11.4 ..... R .....

SCHEDULE B1: CULVERT – KM 6.94 ..... R .....

SCHEDULE B2: CULVERT – KM 11.4 ..... R .....

SCHEDULE D: STAKEHOLDER AND COMMUNITY LIAISON, AND TARGETED LABOUR AND TARGETED ENTERPRISES UTILISATION AND DEVELOPMENT ..... R .....

SUBTOTAL A ..... R .....

VALUE ADDED TAX:

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

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

SIGNED BY TENDERER: .....

PART C3: SCOPE OF WORKS

TABLE OF CONTENTS PAGE

SECTION A1: STANDARD AMENDMENTS ISSUED BY COTO C3-13
SECTION A2: PROJECT SPECIFICATION AMENDMENTS TO THE COTO STANDARD SPECIFICATIONS C3-14
SECTION B: SPECIFICATION DATA C3-88
SECTION C: ENVIRONMENTAL MANAGEMENT PLAN C3-115
SECTION D: STAKEHOLDER AND COMMUNITY LIAISON, AND TARGETED LABOUR AND TARGETED ENTERPRISES UTILISATION AND DEVELOPMENT C3-134
SECTION E: REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS C3-194
SECTION F: PROJECT SPECIFICATION AMENDMENTS TO THE STANDARD SPECIFICATIONS FOR ..... C3-ERROR! BOOKMARK NOT DEFINED.

SECTION A1: 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 A1, together with additional amendments as set out in Section A2 and Project specific Specification Data as set out in Section B.**

As at May 2026 no amendments have been issued.by COTO.

SECTION A2: PROJECT SPECIFICATION AMENDMENTS TO THE COTO STANDARD SPECIFICATIONS

Notes to tenderer:

1. **This Section A2 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 A2. Details of such alternatives or additional requirements applicable to this contract are contained in Section B: Specification Data. Section B 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.**

TABLE OF CONTENTS **PAGE**

COTO CHAPTER 1: GENERAL C3-16
COTO CHAPTER 2: SERVICES C3-24
COTO CHAPTER 3: DRAINAGE C3-25
COTO CHAPTER 4: EARTHWORKS AND PAVEMENT LAYERS: MATERIALS C3-26
COTO CHAPTER 5: EARTHWORKS AND PAVEMENT LAYERS: CONSTRUCTION C3-28
COTO CHAPTER 6: CONCRETE LAYERS C3-62
COTO CHAPTER 7: MAINTENANCE AND REPAIR OF CONCRETE LAYERS C3-63
COTO CHAPTER 8: PRETREATMENT AND REPAIR OF EXISTING LAYERS C3-66
COTO CHAPTER 9: ASPHALT LAYERS C3-67
COTO CHAPTER 10: SURFACE TREATMENTS C3-73
COTO CHAPTER 11: ANCILLARY ROAD WORKS C3-78
COTO CHAPTER 12: GEOTECHNICAL APPLICATIONS C3-80
COTO CHAPTER 13: STRUCTURES C3-82
COTO CHAPTER 14: REPAIR AND REHABILITATION OF STRUCTURES C3-84
COTO CHAPTER 20: QUALITY ASSURANCE C3-85

COTO CHAPTER 1: GENERAL

SECTION 1.1: GENERAL PREAMBLE

PART A: SPECIFICATIONS

A1.1.2 DEFINITIONS

*Replace the Definition for "*Site / Site of the Works*" with the following:*
"Site / Site of the Works - shall mean the entire road reserve (both new and existing), inclusive of road junctions and property accesses, required for construction of the Works as defined by the limits of construction given in the Contract Documentation. It shall also include areas within statutory building lines where work has to be carried out, and any additional lengths of road required for the placement of advanced warning road signs and/or traffic accommodation measures beyond the limits of construction as shown on the drawings. The Site shall also include areas outside of the road reserve required for Construction camps, Engineer's site facilities, Borrow pit areas or quarry areas, haulage and access roads, temporary deviations, storage areas, spoil areas and stockpile areas. The exact extent of the limits of the construction will be verified once the Site is handed over to the Contractor."

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 reduced 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 include the procurement of work where rates have been omitted or where allowance for the work is made under a Provisional sum or Prime cost sum item or where allowance for the work is made under a Provisional sum or Prime cost 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/or 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 R1,000,000.00 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 Targeted Enterprise. (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 R1,000,000.00 (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 Targeted Enterprise. (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 (Invitation to Bid), SBD 6.2 (Local Content), BEE certificate, Form A2.2 (Certificate of Single Tender submission)
- 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 paragraphs:

"The Contractor's responsibility for routine maintenance on this contract is indicated in the Contract Documentation."

The backfilling for patching shall be done as indicated in the Contract Documentation.

The riding quality of gravel deviations shall comply with the requirements indicated in the Contract Documentation."

Add the following new subclause after A1.2.3.23:

"**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 as a result 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)."

Add the following new sub-clause (e):

"e) Specified programmed activities

Where specific activities are indicated in the Contract Documentation to be completed within a specified duration or by a specified date, the Contractor shall programme and complete the items of Work as specified. Failure to comply will result in intra-programme charges."

PART C: MEASUREMENT AND PAYMENT

(ii) Items that will not be measured separately

Replace the wording of item 8 with the following:
*"*8. The design of all temporary work and the construction of all temporary work, unless otherwise indicated in the Contract Documentation.*"*

Item **Unit**

C1.2.7 Road safety audits

*In the wording of item C1.2.7.2, replace "*C1.2.6.1*" with "*C1.2.7.1*".*

*In the wording of item C1.2.7.4, replace "*C1.2.6.3*" with "*C1.2.7.3*".*

*In the 4th paragraph of the item description, replace "*C1.2.7.2*" with "*C1.2.7.3*".*

Add the following new pay items:

"Item **Unit**

C1.2.10 Dispute Adjudication Board (DAB)

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

The unit of measurement for item C1.2.10.1 is the prime cost sum. Payment of the prime cost sum shall be in terms of FIDIC Clause 13.5 for 50% of the amounts invoiced from the appointed DAB. No sum for overhead charges and profit in terms of FIDIC Clause 13.5(ii) is payable for this item.

SECTION 1.3: CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS

PART A: SPECIFICATIONS

A1.3.2 DEFINITIONS

General Obligations

*In the 2nd bullet delete: "*when or where necessary*".*

PART C: MEASUREMENT AND PAYMENT

Item **Unit**

C1.3.1 The Contractor's general obligations

Delete subitem C1.3.1.1 and replace with the following:

"C1.3.1.1 Fixed obligations:
- a) Mobilisation period ..... lump sum
- b) Execution of the works ..... lump sum"

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 (PC) sum
- e) Handling cost, profit and all other charges in respect of item C1.3.1.4(d) ..... percentage"

*Under the heading "*Item C1.3.1.1*", delete the 2nd paragraph and replace with the following:*

"Payment of subitem C1.3.1.1(a) will be made in two instalments, as follows:
- The first instalment, 80% of the lump sum, will be paid in the 1st interim payment certificate, after the Contractor has made a substantial start with the requirements of the Mobilisation Period.
- The second and final instalment, 20% of the lump sum, will be paid on completion of the Mobilisation Period after the Letter of Access to Site, has been issued.

The rate tendered under subitem C1.3.1.1(a) shall not exceed 15% of subitem C1.3.1.3(b) and shall represent full compensation for all fixed Costs during the Mobilisation Period, and no other fixed Costs shall be payable.

Payment of subitem C1.3.1.1(b) will be made in three instalments, as follows:
- The first instalment, 50 % of the lump sum, will be paid after the Contractor has completed the establishment of the construction camps, site offices, laboratories and housing, has provided the personnel, staff and equipment required to commence the Works in accordance with all the specified requirements and has made a substantial start with construction of the Works in accordance with the approved programme.
- The second instalment, 35 % of the lump sum, will be paid when the value of the Work done reaches one half of the Contract Amount, excluding contingencies and price adjustments in terms of the Contract Documentation.
- The third and final instalment, 15 % of the lump sum, will be paid when the Works have been completed and taken over by the Employer."

*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, leasing costs, hire costs or cost of ownership per month for Contractor's Equipment. For subitem C1.3.1.3(a) 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. The rate tendered under subitem C1.3.1.3(a) shall represent full compensation for all Costs during the Mobilisation Period, and no other monthly Costs shall be payable. For subitem 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 period, and no other Costs (including other monthly costs) shall be payable.

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 cost 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.

The percentage under item C1.3.1.4(e) is a percentage of the amount spent under item C1.3.1.4(d) which shall include full compensation for all handling costs, profit and all other charges in connection with arranging payment to the Engineer."

SECTION 1.4: FACILITIES FOR THE ENGINEER

PART A: SPECIFICATIONS

A1.4.3 GENERAL

In the 7th paragraph, delete: "All the site accommodation, laboratory and office buildings shall be provided as soon as possible after the Contractor has been given possession of the site of the Works and not later than six weeks after the Contract commencement date.",

and replace with the following: "All the site accommodation, laboratory and office buildings shall be provided as soon as possible after the Contractor has been given possession of the site of the Works but not later than six weeks after the Letter of Access has been issued.

A1.4.7 EXECUTION OF THE WORKS

A1.4.7.1 Offices and laboratories

b) Offices

Insert the following new sub-clause:

" ● Where required by the Engineer, the Contractor shall provide and install a projector and screen in the board room. The projector and screen shall be ceiling mounted.".

PART C: MEASUREMENT AND PAYMENT

Item	**Unit**

C1.4.3 Items measured by numbers

Add the following new subitem C1.4.3.39:

"C1.4.3.39 Projector and screen (*size stated*) ..... number (No)"

SECTION 1.5: ACCOMMODATION OF TRAFFIC

PART A: SPECIFICATIONS

A1.5.7 EXECUTION OF THE WORKS

A1.5.7.10 Construction of temporary deviations

a) General

Delete the last paragraph and replace with the following:

"The proposed location, layout, temporary drainage, earthworks, pavement layers, surfacing and ancillary works details of all temporary deviations, including the signage and road marking required, shall be agreed with the Engineer before construction of any temporary deviation commences.".

b) Drainage works for temporary deviations

*In the 2nd paragraph in the 1st sentence delete "*specified*" and replace with:* "approved".

g) Removal of temporary deviations

Add the following to the end of the 1st paragraph:

"After removal of the temporary deviation the final levelling and scarifying of the deviation area shall be carried out as specified in Clause A11.9.7.2."

A1.5.7.11 Temporary traffic control facilities

f) Temporary road markings and road studs

Add the following at the end of the 3rd paragraph:

"Where temporary road markings is required in a different position than the existing road markings, on a pavement layer that is not the final surfacing, the existing road markings is to be removed from the road surface by means of sand blasting or water jetting, or covering using slurry, after assessment of the effectiveness of the method and its effect on the existing pavement and approved by the Engineer.
Clause A1.5.3.7 shall also apply for non-compliance to this clause and if the existing road markings is not effectively removed or removed by an un-approved method.".

PART C: MEASUREMENT AND PAYMENT

(iii) Items to be measured and paid for using items specified elsewhere in the specifications

*In Table C1.5-1 for the "Temporary deviations" Activity, add reference to "*A1.5.7.10*" under Section 1.5 reference, and add reference to "*Chapter 11*" under Section item reference.*

Item **Unit**

C1.5.4 Construction of temporary deviations

*In the last sentence of the item description, after the words "…*include full compensation for the*", add the following: "*design and the*".*

Item **Unit**

C1.5.6 Removal of temporary deviations

Add the following at the end of the item description:

*"*After removal of the temporary deviation the final levelling and scarifying of the temporary deviation area shall be measured and paid for under pay item C11.9.2."

Item **Unit**

C1.5.8 Traffic safety officer

*Replace the Unit of "*Man-month*" with the Unit "*month*".*

SECTION 1.6: CLEARING AND GRUBBING

PART C: MEASUREMENT AND PAYMENT

(iii) Items to be measured and paid for using items specified elsewhere in the specifications

*In Table C1.6-1 for the Preparation of topsoil stockpile sites activity, delete reference to "*Chapter 11*" and replace with "*Chapter 4*".*

COTO CHAPTER 2: SERVICES

There are no amendments to this Chapter

COTO CHAPTER 3: DRAINAGE

SECTION 3.1: DRAINS

PART C: MEASUREMENT AND PAYMENT

Item	Description	Unit
C3.1.5	**Impermeable backfilling to subsoil drainage systems**	

In item C3.1.5.2, replace: "G5 material", *with:* "G5A material".

SECTION 3.2: CULVERTS

PART C: MEASUREMENT AND PAYMENT

Item	Description	Unit
C3.2.2	**Backfilling**	
C3.2.2.3	Extra over sub-items C3.2.2.1 and C3.2.2.2 for soil cement backfilling	

*In sub-item (a), delete "*of 3% cement*".*

*In sub-item (b), delete "*of 3% cement*".*

Item	Description	Unit
C3.2.13	**Removing and relaying existing culverts**	

In the 2nd paragraph of the item description, delete the wording:
"transporting for a haul distance within 5,0 km without additional payment,",
and replace with the following:
*"*transporting over a distance of less than and up to 1,0 km,"

COTO CHAPTER 4: EARTHWORKS AND PAVEMENT LAYERS: MATERIALS

SECTION 4.1: BORROW MATERIALS

PART A: SPECIFICATIONS

A4.1.7 EXECUTION OF THE WORKS

A4.1.7.2 Borrow pit and quarry operations

b) Classes of excavation

(iv) Hard excavation

*In the 2nd bullet after: "*Ripping with a bulldozer*" add the following*:

"Ripping shall be carried out on typically moderately weathered soft rock (soft rock as defined in Section 12.1 Table A12.1.7-1) that can be efficiently ripped by a bulldozer with a weight of at least 35 tons and minimum nett power of 220 kW."

g) Selection and excavation of material in borrow pits

In the 6th paragraph, delete the last sentence and replace with the following:

"Any material so altered shall be replaced by the Contractor at no cost to the Employer."

PART C: MEASUREMENT AND PAYMENT

Item	Description	Unit

C4.1.7 Producing the material by

Add the following before the 1st paragraph:

"The material produced by each method is scheduled as sub-items under each method in the pricing schedule.".

Add the following after the 4th paragraph:

"The quantities for surface seal material shall be calculated from the specified application rate converted to loose volume. The quantities for slurry, asphalt or concrete material shall be calculated from the percentage of material in the approved compacted layer.".

SECTION 4.2: CUT MATERIALS

PART A: SPECIFICATIONS

A4.2.3 GENERAL

A4.2.3.2 Contractor prepared plans for cuttings

In 1st paragraph at the end of the last sentence, add the following as part of the last sentence:

", unless otherwise indicated in the Contract Documentation."

SECTION 4.4: COMMERCIAL MATERIALS

PART A: SPECIFICATIONS

A4.4.7 EXECUTION OF THE WORKS

A4.4.7.1 Selection (design) of the stabilising agent content

c) Cementitious stabilising agent for chemical stabilisation

Step 2: Determine the Initial Consumption of Stabiliser (ICS) of the material.

Add the following after the 1st paragraph:

"The ICS shall be determined for more than one stabilizer agent and the stabilizer agent to be utilised in Step 3 shall be selected by the Engineer based on the ICS results."

PART A: SPECIFICATION

A5.3.7 EXECUTION OF THE WORKS

A5.3.7.8 Slush-compaction of a G1 crushed stone base layer

*In the 6th paragraph in the 4th sentence, delete "*indicative*" and replace with "*required*".*

A5.3.8 WORKMANSHIP

A5.3.8.4 Construction tolerances for pavement layers

Add the following as a new sub-clause:

"f) Surface texture

The maximum volumetric texture depth (measured as described in SANS 3001-BT11) of the base, shall be as specified in Table A5.3.8-7, for the different seal types to be placed on the base.

Table A5.3.8-7: Maximum texture of base

Surfacing type	**Max texture depth of the base**
Single seal with 10 mm aggregate	0,8
Single seal with 10 mm aggregate (with cover spray)	1,0
Single seal with 14 mm aggregate	0,8
Single seal with 14 mm aggregate (with cover spray)	1,5
Single seal with 14 mm aggregate (with Bitumen rubber)	1,2
Double seal with 10 mm aggregate and sand	1,0
Double seal with 14 mm aggregate and sand	1,5
Cape Seal with 10 mm aggregate and one layer of slurry	1,5
Cape Seal with 14 mm aggregate and one layer of slurry	2,0
Cape Seal with 20 mm aggregate and two layers of slurry	2,5
Double seal with 14 mm aggregate and a layer of 7 mm aggregate	1,5
Double seal with 14 mm aggregate and a layer of 5 mm aggregate	1,5
Double seal with 20 mm aggregate and a layer of 10 mm aggregate	2,0
Double seal with 20 mm aggregate and a layer of 7 mm aggregate	2,0
Double seal with 20 mm aggregate and two layers of 7 mm aggregate	1,5
Other surfacing type (as indicated in the Contact Documentation)	As specified in the Contract Documentation"

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."

c) By using a profiler

Below Table A5.3.8-6, add the following notes:
*"*Notes:
1. The applicable Adjustment factors are indicated in the Contract Documentation.

2. Adjustment factors for “Reworked or Recycled Base” is applicable where only the base layer is reworked or recycled.
3. Adjustment factors for “Recycle existing layers and new base layer” is applicable where one or more of the existing layers is reworked or recycled and a new base layer is imported.
4. Adjustment factors for “New pavement construction” is applicable where two or more new pavement layers are imported.”

In the paragraph following Table A3.5.8--6, delete the following: " for payment items *** _____ “, *and replace with the following*: “for payment items as specified in the Contract Documentation”.

In the last paragraph, delete the following: “(***Note to compiler: Insert the relevant base layer construction pay items but exclude pay items for additives such as cement and bitumen)*”.*

PART C: MEASUREMENT AND PAYMENT

Item	Description	Unit

C5.5.20 Material shortfall or make-up material

In the 2nd paragraph of the item description, delete the wording:
“procuring,”.

Add the following new Section 5.6

“SECTION 5.6: CONSTRUCTION OF PAVEMENT LAYERS USING COLD IN-SITU STABILISATION WITH A MATERIAL COMPATIBLE NANO MODIFIED EMULSION (MC-NME) STABILISING AGENT

PART A: SPECIFICATION

A5.6.1 SCOPE

This section covers work required for the construction of new roads (including upgrading of existing unpaved roads) or the rehabilitation of the upper pavement layers (base and sub-base) using the cold in-situ recycling process with (a) labour-intensive construction methods with a mixture of conventional equipment (b) conventional equipment, i.e., water-cart, grader(s) and compaction equipment (c) recycler and (d) central mixing plant. The construction of new pavement layers, using a MC-NME stabilising agent (or alternative stabilising additive) in an emulsified state (to be applied together with the construction water), is aimed at the use of naturally available materials (often in-situ) from the area of the road that can cost-effectively be utilised in the upper pavement layers.

The use of a MC-NME stabilising agent for the rehabilitation of existing roads is aimed at the optimum use of damaged or weathered in-situ materials in a cold in-situ recycling process. This may include a pre-stabilisation process of the milling and breaking-up of existing pavement layers (e.g., existing surfacing) and the mixing of the milled materials, with or without the addition of new materials to achieve a uniformly mixed material to be stabilised with the MC-NME. In such cases, the size diameter of the pre-milled materials should not exceed a third of the total thickness of the layer that is to be stabilised in-situ. After a homogeneous mix has been achieved, the material is stabilised in place with the MC-NME stabilising agent to produce a homogenous mix, which is spread, cut to level and compacted to the required specification. This section also covers the use of an applicable prime as a temporary surface for early trafficking. It is important to note that the prime must also be Material Compatible (MC) with the NME stabilising agent to ensure adequate adhesion.

A5.6.2 DEFINITIONS

The relevant definitions in the standard specification are applicable. Additional definitions for this Section are included here.

Conventional equipment – this is equipment that is normally used for the construction of the Works, including graders, water-bowsers and compaction equipment. This equipment excludes equipment specifically designed and used for in-situ reconstruction works and/or for the recycling of materials.

Pavement rehabilitation – involve measures used to improve, strengthen or salvage existing deficient road pavement structures so that these can continue (with adequate maintenance) to carry traffic at adequate speed, safety and comfort in a cost-effective way (refer draft TRH12 – Road pavement rehabilitation investigations and design). Road pavement rehabilitation may involve various options, including:

- Complete pavement reconstruction;
- Partial reconstruction or in-situ recycling involving the strengthening of existing pavement layers, with or without an applicable stabilising agent before re-surfacing;
- Asphalt and/or granular layers with a suitable wearing course (surfacing);
- Concrete inlays and overlays;
- Levelling courses;
- Resealing with or without rut-filling;
- Improvement or provision of drainage (surface and/or sub-surface, and
- Any combination of the identified options as specified in the Contract Documentation.

MC-NME – Material Compatible New Modified Emulsion (MC-NME) - where an emulsion is defined as any additive in the form of a solution, including any additive added to the construction water, including (but not limited to):

- Bitumen emulsions with/without a Material Compatible modified emulsifying agent (e.g., aggregate adhesive, water-repellent agents (e.g., organo-functional-silanes) and/or with the addition of polymers (micro- and or nano-polymers);
- Polymers (micro- and/or nano-polymers) with/without a Material Compatible modified emulsifying agent (e.g., aggregate adhesive, water-repellent agents (e.g., organo-functional-silanes), or
- Any “alternative” rock/aggregate/soil Material Compatible stabilising agent.

Reference to an NME stabilising agent will be interpreted as to have the same definition as that of a MC-NME.

Slushing - the process of wetting the surface of a compacted layer accompanied by rolling with a smooth-drum roller and/or a pneumatic tyre roller to generate saturated fine material, a slush, on the upper surface of the compacted layer.

Uniform pavement section - a uniform pavement section has pavement layers with similar layer materials characteristics, similar layer bearing capacity properties and similar layer thicknesses throughout the section. A pavement section is considered as uniform when the Coefficient of Variation (CoV) of the measured properties is less than ± 25 per cent. Uniform pavement sections shall be clearly identified in the Contract Documentation.

In-situ materials – materials within the existing pavement structure. In the case of an unpaved road in-situ materials would refer to the existing granular materials comprising the unsurfaced road.

A5.6.3 GENERAL

A5.6.3.1 Traffic accommodation

The traffic accommodation arrangements required during construction of roadworks in urban and rural areas are specified in Chapter 1 of the specifications.

A5.6.3.2 Material selection

The material specifications in this section refer to:

- Reclaimed material from existing pavements shall be utilised as specified in the Contract Documentation. All reclaimed material from existing pavements, shall be broken down and oversize material removed, to comply with the maximum size and grading requirements for the particular use of the reclaimed material as specified in the Contract Documentation;

- Material Compatible Nano Modified Emulsion (MC-NME) shall be material sourced by the Contractor whereby the Contractor will take full responsibility and liability for using a stabilising agent not meeting the END-PRODUCT specification, and
- Material classifications must be in line with design specifications and material classification as contained in the Contract documents.

A5.6.3.3 Construction limitations

The Contractor shall arrange the processing and stabilisation of pavement layer operations in such a manner as to minimise the disruption of public traffic. Every effort shall be made to ensure that the safety of the travelling public on existing roads is prioritised throughout the site of the works at all times. In-situ processing and stabilisation operations shall be carefully planned and executed following the following limitations:

(a) Individual work areas shall be clearly demarcated with traffic signs, delineators and traffic control facilities as specified.

(b) Individual work areas shall be planned in such a manner that all processing and stabilisation of pavement layers and the compaction thereof as specified in Clause A5.6.7.13 be completed within the same day or period specified.

(c) No priming shall be done unless the processed and stabilised pavement layers have been tested, inspected and accepted by the Engineer. In cases where access needs to be given to the public, priming will be done on the instruction of the Engineer. With the enrichment of the processed and stabilised layers, light traffic (urban) can be allowed to use an un-primed layer with confidence, depending on the characteristics of the materials and the NME stabilising agent used, without any serious damage being inflicted on the stabilised layers. In such cases, the same procedures should be followed before priming and/or surfacing as discussed with light traffic being allowed to use a primed surfacing.

(d) Within each working area, the contractor shall make adequate provision for drainage of milled, excavated and/or asphalt overlay areas where water can pond or be contained within or on a road layer surface. No separate payment item will be made for the provision and use of standby pumps and de-watering equipment for cutting drainage slots and/or channels to effectively drain the roadway surface as instructed by the Engineer in the interests of safety for the travelling public. The Contractor shall make allowance for this drainage in this tendered rate.

(e) Delineators shall be placed along each longitudinal step exceeding 30 mm between adjacent lanes of the roadway. The maximum allowable step within a lane opened to traffic shall be restricted to 40 mm. If, due to plant breakdown or other unforeseen circumstances, a longitudinal or transverse step higher than 20 mm occurs within a lane, the strip shall be feathered off using quick-drying NME slurry or compacted asphalt over a distance of 500 mm to the satisfaction of the Engineer.

(f) In the event of rain occurring during the stabilisation process, the work must be stopped and the area must be sealed using a single roller pass. The continuation and stabilisation using the MC-NME stabilising agent shall only commence when the moisture content of the area has reduced to the level it was before it started raining or to an acceptable level with the necessary adjustments in the construction water and the NME stabilising agent as a percentage of the construction water.

A5.6.3.4 Weather limitations

No in-situ processing and stabilisation of materials shall commence if the threat of rain is present. The in- situ moisture condition should allow for the dilution of the NME in the construction water as described. Materials earmarked for stabilisation should be allowed to reach a moisture condition that allows for the mixing of the stabilising agent at the required moisture content. The ripping of the materials and exposure thereof to sunny conditions could assist with the natural drying of materials before the processing and stabilisation are to proceed.

A5.6.3.5 Protection and Maintenance

The Contractor shall protect the completed base layer from all damage until the surfacing is complete, or if opened to traffic, ensure that the surfacing complies with the required condition to the satisfaction of the Engineer. Any damage occurring to the completed base or any defects that may develop due to faulty workmanship shall be made good by the Contractor at his own cost and to the satisfaction of the Engineer.

Repairs shall be made in a manner approved by the Engineer to ensure an even and uniform surface.

During the working and construction of the base layer, precautionary measures shall be taken to prevent kerbs and channelling and concrete works from being damaged or shifted. Care shall be taken to protect all pre-cast units from chipping and breakage. Concrete kerbing and channelling, as well as other structures adjacent to the road, shall be protected against staining, by the NME product and the subsequent surfacing of the road. Any work stained by the NME and/or surfacing shall be broken down and replaced unless all such NME or surfacing material is completely removed so as not to show any stains. Painting over stained work will not be allowed.

Where the cold in-situ processing and stabilisation are to be carried out at existing structures, care shall be exercised to avoid damage to concrete elements, expansion joints, manholes, catch-pits, etc. Damage caused to any element forming part of the permanent works shall be repaired by the Contractor at his own cost.

Damaged caused by the Contractor through careless operations shall be repaired at his own costs. New construction shall be done following the drawings and the Specifications. The Contractor will be held responsible for the timely adjustment of all covers and frames in advance of surrounding construction, whether they are indicated on the drawings or by the Engineer or not. No claims for delays arising from the failure of the Contractor to affect the necessary adjustments in good time will be allowed.

The type of surfacing and selection of the binder or modified binder should allow for evaporation of moisture to continue (similar to any other type of pavement layer (e.g. granular, cement stabilised, etc.) that will continue to dry and reach an equilibrium moisture content due to evaporation over a period of at least two seasons). It should be noted that some modified binders inhibit the ability of the evaporation of moisture to occur, leading to the trapping of and concentration of moisture underneath the surfacing and formation of water below the surfacing which could result in early problems in terms of stripping of the surfacing and/or, in the case of chip-seals, punching of the stone (chips) into the base, resulting in severe bleeding of the surfacing and early failure (refer SABITA Manuel TG1 – The use of Modified Bituminous Binders in Road Construction - Table 12 : Advantages and disadvantages of modified binders compared with conventional binders).

A5.6.3.6 Construction Tolerances and Finish Requirements

Care shall be exercised to avoid damage to any concrete elements, expansion joints, joint nosing, manholes, kerbing, catch pits and any other roadside furniture during reconstruction of the layers. Damage caused to any element forming part of the permanent works **shall be repaired by the contractor at his own cost.**

A5.6.3.7 Programme of reconstruction work

All reconstruction work shall only take place in accordance with the accepted reconstruction programme which the Contractor shall compile and submit to the Engineer prior to commencing the reconstruction of each uniform road pavement section. The programme shall be updated and the updated programme shall be submitted to the Engineer at the end of each week.

Prior to the start of each single operation of work, the Contractor shall prepare a M&U plan detailing proposals for the work. This plan shall at least include the following:

- Overall layout of the length and width of road intended to be reconstructed during the single- operation. The width shall be divided into the number of parallel cuts required to achieve the specified width of treatment;
- Location of and overlap width (minimum overlap of 200 mm) at each longitudinal joint between adjacent cuts;
- Location of the inner and outer wheel paths of each construction lane affected by the reconstruction;
- Sequence and length of each cut to be reconstructed before starting on the adjacent or following cut, and

- Estimate of the time required for the reconstruction along each cut and for finishing off the work.

A5.6.3.8 Contractor plans for the reconstruction of existing roadworks

The Contractor shall prepare and submit an M&U plan for the RR of existing roadworks to ensure that it is worked in a sustainable and sensitive manner, to ensure that the environmental impact is minimised, that material use and haulage are optimised and that the work is carried out in a cost- effective manner.

The M&U plan shall at least take cognizance of the following and provide detail of the following as appropriate:
The pavement layer construction/rehabilitation programme;

- A method statement and programme for the construction of each of the pavement layers including the reclaiming of existing road materials, the breaking down and processing in-place of an existing pavement layer and the completion of each layer;
- Details of the programme for the movement of materials to ensure that the material is not handled unnecessarily;
- The survey methods to be used to set out and control the levels and width of the pavement layers for each processed layer;
- A method statement for the construction of a trial section using a recycler;
- A method statement of how oversize material will be dealt with;
- Measures to comply with the general and specific conditions of the road environmental management plan;
- Measures to comply with the latest applicable Construction Regulations;
- Measures to comply with safety regulations and obligations in terms of the latest Occupational Health and Safety Act;
- The full quality and process control testing detail for the applicable materials tests along with the frequency and quantity of such testing for each constructed section of each layer to ensure full compliance of the constructed layer in terms of compaction density, material quality and stabilisation testing (visual and laboratory), and
- Procedure for the regular monitoring, auditing and reporting.

The RR of an existing pavement layer shall only commence once the Contractor's M&U plan for that layer has been reviewed and accepted by the Engineer.

A5.6.4 DESIGN BY THE CONTRACTOR / PERFORMANCE BASED SYSTEMS

The Contractor will take full responsibility and liability for using a stabilising agent not meeting the END PRODUCT SPECIFICATION (EPS).

During the design phase, the Design Engineer must test and ensure that products are available that will meet the specifications with the given NAGM or mixture of materials (e.g., milled surfacing with NAGM base layer with/without additional NAGM).

A5.6.5 MATERIALS

The use of a MC-NME stabilising agent (or alternative stabilising additive/product) aims to optimally use naturally available material (new or in-situ) in the upper pavement layers of a road meeting the minimum design requirements as specified in Table **A5.6.5/1** (applicable during construction for quality control and use during the detailed material design in the laboratory as detailed).

TABLE A5.6.5/1: Standard specifications for MC-NME stabilised materials

Test or Indicator	Material[1]	Material classification			
		NME1	NME2	NME3	NME4
Minimum material requirements before stabilisation and/or treatment (Natural materials)					
Material spec. (minimum) Unstabilised material: Soaked CBR2 (%) (CBR as % of MDD)	NG /(CS)	> 45[2] (95%) ACV < 30%	> 25[2] (95%)	> 10[2] (93%)	> 7[2] (93%)
Grading Modulus (GM)	NG	> 1.5	> 1.0	-	-
	GS	NA	> 1.0	-	-
Sieve analysis: % < 0.075 mm ($P_{0.075}$)	ALL	< 25%	< 25%	< 35%	< 50%
XRD scans: - Total sample - 0.075 mm fraction ($P_{0.075}$)	ALL ALL	Required Required	Required Required	Required Required	Required Required
% Material passing 2 µm ($P_{0.002}$) (e.g. Clay & Mica & Talc) as a % of Material (with Talc <10%) (XRD-scans of the material passing the 0.075 mm sieve are used to determine the % clay, mica and talc in the material – In this case $P_{0.002} = P_{0.075}$ x (P_{clay}, etc. in $P_{0.075}$)	MC-NME stabilisation with micro-meter (µm) emulsion particle sizes				
	ALL	< 15%	< 15%	< 15%	< 15%
	MC-NME stabilisation with emulsion containing micro-scale as well as nano-scale participles (adjusted according to material grading)				
	ALL	NA	< 35%	< 35%	< 35%
	MC-NME stabilisation with emulsion containing nano-scale and pico-scale particles (grading adjustments) together with technologies addressing workability of materials on site				
	ALL	NA	NA	< 35%	< 35%
Material specifications after stabilisation and/or treatment					
In-situ density to be required after stabilisation and compaction (% of MDD)	Base	> 100%	> 100%	> 98%	> 97%
	Sub-base	NA	> 98%	> 97%	> 95%
DCP(DN mm/blow) (Quality control in field testing - base only) (stabilised and compacted = wet; 7 days cured = dry)	DCP-DN	NA	NA	< 2.6 (wet) < 2.0 (dry)	< 3.5 (wet) < 2.3 (dry)
Density (% of MDD) (for laboratory testing)		> 100%	> 100%	> 100%	> 100%
*UCS_{wet} (kPa) (150 mm Φ Sample)	**Design[3]**	**> 2 500**	**> 1 500**	**> 1 000**	**> 750**
	Construction[4]	**> 2 200**	**> 1 200[5]**	**> 700[5]**	**> 450[5]**
Retained Compressive Strength (RCS): (UCS_{wet}/UCS_{dry}) (%)	RCS	> 85	> 75	> 70	> 65
RCS in relation to minimum $UCS_{wet(criteria)}$ = $RCS_{effective}$ = (RCS x ($UCS_{wet}/UCS_{wet(criteria)}$)) (%)	RCS-E	> 100	> 90	> 85	> 80
*ITS_{wet} (kPa) (150 mm Φ Sample)	**Design[3]**	**> 240**	**> 200**	**> 160**	**> 120**
	Construction[4]	**> 220**	**> 180[5]**	**> 140[5]**	**> 100[5]**
Retained Tensile strength (RTS): ITS_{wet}/ITS_{dry} (%)	RTS	> 85	> 75	> 70	> 65
RTS in relation to minimum $ITS_{wet(criteria)}$ = $RTS_{effective}$ = ((RTS x ($ITS_{wet}/ITS_{wet(criteria)}$)) (%)	RTS-R	> 100	> 90	> 85	> 80

[1]CS – crushed stone; NG – natural gravel; GS – gravel soil, and SSSC – sand, silty sand, silt, clay
[2]CBR only used as reference to traditionally used test procedures as a broad first indicator
*Definitions: UCS = Unconfined Compressive Strength; ITS = Indirect Tensile Strength);
UCS_{dry}; ITS_{dry} = testing after rapid curing; UCS_{wet}; ITS_{wet} = testing after rapid curing and 4 hours in water (as per test procedure specified for the testing of cementitious stabilising agents (SANS 3001-GR32:2010, 2010));
Design[3] = Minimum criteria to be met in the laboratory during the design phase
Construction[4] = Minimum criteria to be met during construction as part of quality control
[5]Criteria based on reference TG2 (Asphalt Academy, 2009)
$RCS_{effective}$ and $ITS_{effective}$ are used to obtain and effective Material Classification, i.e., NME1 to NME4

The aim is to cost-effectively utilise NAGM as an alternative to new crushed-stone materials in both the upgrading of existing unpaved roads, design and construction of new roads as well as the rehabilitation of existing pavements, through the improvement of appropriate available materials normally considered to be “non-standard”, “marginal”, “low-cost”, or even “sub-standard” in terms of the standard material indicator tests.

A MC-NME stabilising agent will be able to neutralise the effect and possible negative impact of secondary minerals formed during weathering as a result of chemical decomposition and nullify any possible risk associated with the use of the potentially water sensitive natural materials by meeting the material classification criteria specified in Table **A5.6.5/1** for the design material class (NME1 to NME4).

Materials from existing pavement layers shall be classified as follows for excavation and processing purposes:

A5.6.5.1 Existing bituminous materials

Bituminous material shall be an asphalt surfacing or a bituminous seal from an existing layer. Where the asphalt surfacing and bituminous seal are recycled together with the underlying layers, the mixture will not be classified as bituminous material.

A5.6.5.2 Granular Materials

The base and sub-base pavement layers in the existing pavement shall be classified as granular materials. Granular material shall include crushed stone, gravel soil and natural gravel and can consist of cemented or non-cemented material. Crushed stone obtained from existing pavements and processed as gravel material will be paid for as gravel material and not as crushed stone.

The mixture of bituminous material (RA) and base and sub-base material shall be classified as granular material.

A5.6.5.3 Extra material

Extra material as specified consists of:

(a) Naturally Available Granular Materials (NAGM) (and (if cost-effective) crushed stone materials). The pavement layers will be designed based on the requirements of the design traffic loadings and the material specifications required for the various pavement layers as designed, complying with Table **A5.6.5/1.**

(b) Crusher dust:
No crusher dust is to be used with an NME stabilising agent unless specified for that specific alternative stabilising agent.

(c) Gravel:
The gravel material shall be of a minimum quality as per Table **A5.6.5/1.** (Higher quality materials will normally require less of the MC-NME stabilising agent and/or the modifier contained withing the stabilising agent, depending on the inherent mineralogy.).

A5.6.5.4 Material stabilisation/improvement products/additives

(a) Stabilising Agent: MC-NME as defined in the preamble to the Project Specifications

During the Detailed Design Phase of the project, the Design Engineer must identify the potential use of an NME for the improvement of materials not adhering to the design characteristics and the volume of material for such stabilisation calculated for inclusion in the Bill of Quantities (BOQ). Contractors and their suppliers must show proof of concept and provide guarantees to the following:

The MC-NME stabilising agent must be environmentally stable and produce/release NO adverse negative substances during the process of hydrolysis (i.e., when mixed with the construction water) and condensation (i.e., when attachment to the material/soil occurs). A Safety Sheet to this effect must be produced by the supplier. The specified cold-mix NME must be stable in containers (i.e., flow-bins or tankers) on site (with or without minimum maintenance (e.g. weekly circulation of the stabilising agent - **the cost of which will be included in the cost of the stabilising agent**)) for a minimum period of at least 4 months. At all times during site storage, the MC-NME stabilising agent will be able to be used with the tested material to meet the applicable design criteria as contained in Tables **A5.6.5/1. The supplier/contractor shall take full responsibility (and cost implications) for using an NME stabilising agent resulting in inferior test results and/or stability as per Clause A5.6.4.**
The NME stabilising agent as provided by the contractor with his supplier as guaranteed by the contractor, must at all times meet the specified criteria for the specific pavement as contained in Tables **A5.6.5/1.** It should be **noted that different specifications are applicable for the design in the laboratory and quality control during construction** to allow for laboratory versus site variations and conditions. The prescribed test procedures are detailed in Clause **A5.6.9.2**.

The MC-NME stabilising agent must have a guaranteed minimum on-site storage stability exceeding **4 (four)** months and a workable Viscosity during all seasons of the year without pre-heating, allowing for the in-situ cold recycling of the available materials, taking into account storage at higher ambient temperatures during the summer months and possible cold temperatures during winter months. The contractor **will take full responsibility for maintaining the stabilising agent on-site to ensure that it will remain stable during storage with no visible separation and without an increase in viscosity during storage. The NME must meet the following minimum specifications proven by the supplier/contractor:**

- A guaranteed shelf life on-site (e.g., in flow bins if applicable) **exceeding (at least) 4 (four) months or as specified by the engineer**. (The shelf life can normally be increased to at least 6 to 12 months through the circulation of a quality MC-NME mix once a week using a normal circulation pump.)
- Laboratory test results using the prescribed rapid curing test procedure on available materials from site testing the UCS (dry and wet) and ITS (dry and wet) and meeting the required Retained Compression Strengths (RCS) (UCS_{wet}/UCS_{dry} in percentage) and Retained Tensile Strengths (RTS) (ITS_{wet}/ITS_{dry} in percentage), as well as the required Effective, Retained Compressive Strength ($RCS_{effective}$ = RCS x ($UCS_{wet}/UCS_{wet(criteria)}$)) and Effective Retained Tensile Strengths ($RTS_{effective}$=RTS x ($ITS_{wet}/ITS_{wet(criteria)}$)). **The $RCS_{effective}$ and $ITS_{effective}$ will be used for the material NME classification**. The average values of at least 3 tests shall be used to obtain the laboratory results. The laboratory results should meet the criteria for the design phase as contained in **Table A5.6.5/1** (the higher design criteria take into account variations between laboratory and on-site conditions). The $RCS_{effective}$ and $ITS_{effective}$ are used to get the Material class most closely associated with the NME stabilisation.
- Additional test samples shall be prepared and cured at 22-25°C for 28 days and retested. The test results should either show similar or higher results as tested after the initial rapid curing process as prescribed in Table **A5.6.5/1** to ensure that no negative mineral and or stabilising agent interaction or degeneration of polymers (where applicable) occurs.

The prepared MC-NME on site must be ready for immediate dispersion within the construction water (using a standard circulation pump) and ready for stabilisation. It is important to note that all containers and water tankers must be thoroughly cleaned before the MC-NME is added. Unclean (contaminated) equipment could result in activating any residual bituminous mix left in the container or water tanker when the MC-NME is added, resulting in an unusable sticky substance, such as balls or strings of bitumen. **Any losses occurred during construction due to the use of contaminated equipment will be at the cost of the contractor.**

(b) Additives for granular material stabilisation/treatment alternatives other than those defined in Item

The material stabilisation/treatment additive must have a guaranteed on-site stability exceeding 4 (four) months taking into account storage at high ambient temperatures during summer months and possible cold temperatures during winter months**. The supplier/contractor will take full responsibility for maintaining the stabilising additive/product on site to ensure that during storage, before application, the additive /product will remain stable with no visible separation of particles and without any change in measurable properties during storage (e.g., an increase in viscosity). The stabilised mix must meet the following minimum specifications proven to be the supplier/contractor:**

- A guaranteed shelf-life on-site (e.g., in flow bins if applicable) exceeding 4 (four) months. (The shelf-life can normally be increased to at least 6 to 12 months by maintaining the additive/product regularly as required by the supplier.);
- Laboratory test results using the prescribed rapid curing test procedure on available materials from site testing the UCS (dry and wet) and ITS (dry and wet) and meeting the required Retained Compression Strengths (RCS) (UCS_{wet}/UCS_{dry} in percentage) and Retained Tensile Strengths (RTS) (ITS_{wet}/ITS_{dry} in percentage), as well as the required Effective, Retained Compressive Strength ($RCS_{effective}$ = RCS x ($UCS_{wet}/UCS_{wet(criteria)}$)) and

Effective Retained Tensile Strengths ($RTS_{effective}$ = RTS x ($ITS_{wet}/ITS_{wet(criteria)}$)). **The $RCS_{effective}$ and $ITS_{effective}$ will be used for the material NME classification** The average values of at least 3 tests shall be used to obtain the laboratory results. The laboratory results should meet the criteria for the design phase as contained in Table A5.6.5/1 (the higher design criteria takes into account variations between laboratory and on-site conditions), and

- Additional test samples shall be prepared and cured at 22-25°C for 28 days and retested. The test results should either show similar or higher results as tested after the initial rapid curing process as contained in Table **A5.6.5/1** to ensure that no negative mineral and or stabilising additive/product interaction or degeneration of the additive/product (where applicable) occurs as an indication of durability.
  The prepared stabilising additive/product on-site must be ready for immediate dispersion within the construction water (using a standard circulation pump) ready for stabilisation or the supplier must clearly specify the process of application during the construction process to ensure that a uniform mix with uniform qualities is achieved. **The differences in methods of application will be to the cost of the contractor.**

It is important to note that all containers and water tankers must be thoroughly cleaned before any stabilising additive/product is added. Unclean (contaminated) equipment could result in the activating of any residual mix left in the container or water tanker when the stabilising additive/product is added, resulting in an unusable substance. **Any losses occurred during construction due to the use of contaminated equipment will be at the cost of the contractor.**

(c) Water

Water used for diluting the stabilising additive/product shall be potable water (clean and free from salts and contamination) that will cause the stabilising additive/product to be adversely affected by these chemical impurities. The stabilising additive/product will be tested for compatibility with the compaction water. Water must be potable and the pH shall not exceed 7 (or as required for the use of the specific stabilising additive/product). Should local sources be considered, prior laboratory testing to ensure acceptability will be required. The quality of the water must adhere to the requirements given in Table **A5.6.6.4/1**. **Any additional requirement for the construction water as required by the supplier of the stabilising additive/product will be the cost of the contractor.**

(d) Chemical modification of material

No additional chemical modification of the stabilised material will be allowed if not contained in the original specification. **In all cases, the requirements as given in Table A5.6.5/1 must be met.**

(e) Stabilisation of sub-base

In the case of the rehabilitation of an existing road or the construction of a new road, the sub-base shall conform to the requirements of the layer as per design. In all cases, the possible consequences and compatibility of the layer characteristics, in terms of the expected behaviour of the pavement structure as a whole, needs to be assessed by the Engineer.

A5.6.5.5 Composition of Recycled Mixes

During the rehabilitation of existing pavement layers, the recycled material shall consist of the existing surfacing (where present), granular material from existing pavement layers, additional material where required and an applicable NME stabilising agent/product. The actual composition of the mix shall be determined by design requirements. The NME stabilising agent with proof of concept will be provided by the contractor and approved by the Engineer to comply with the testing requirements as specified in Table A5.6.5/1 as obtained using the test methods as detailed under Item A5.6.9.2. Any NME stabilising agent not meeting the requirements of a specific layer during construction will be to the cost of the contractor.

Adjustments to the actual mix constituents are not normally required as it is already accounted for in the differences in specifications for the design versus in-field conditions during construction (some slight adjustments may be authorised by the Engineer, based on the results of the trial section taking into account additional factors such as equipment used, e.g. conventional equipment vs recycler vs central mixing plant and climatic conditions) – in all cases such adjustments must be authorised by the Engineer. The Engineer reserves the right to adjust the composition of the mix at any time should he deem it necessary. The Contractor and Supplier shall provide the Engineer with the proposed final mix proportions based on the required test results and the Engineer must approve the results before any materials are ordered. **The risk of alternative designs using any alternative additive/product not specified remains with the Contractor as per normal contract specifications.**

The average values for in-situ moisture contents shall be tested by the Contractor and confirmed by the Engineer prior to any work commencing on any specific day for adjustments in the amount of construction water together with the stabilising agent to be made if necessary.

Table A5.6.6.4/1: Water classification for Construction Testing

		Water Quality Classification Code						
		H0	H1	H2	H3	H4	H5	
Property	Unit	Pure water (AR)	Clean water (Rain)	Treated water (Municipal)	Silty (muddy) water with low salt content	Highly mineralised chloride sulphate water (brackish)	Waste brick, sewage, marsh, sea, etc. water	Method
PH*	-	7.0	5.7 – 7.9	4.5 – 6.5	4.5 – 8.5	9.0	-	SABS M113 SM 11 - 1990
Dissolved solids*	ppm	0	1000	1500	3000	-	-	SABS 213 SM213 - 1990
Total hardness*	-	None	None	Temporary	Temporary	Permanent	-	SABS 215 SM 215 - 1971
Suspended matter	ppm	0	2000	2000	5000	-	-	SABS 1049 SM 1049 - 1990
Electrical conductivity	mS/m	0	200	200	500	-	-	SABS 1057 SM 1057 – 1982
Sulphates (SO_4)	ppm	0	200	300	500	1000	-	SABS 212 SM 212 - 1971
Chlorides (Cl)	ppm	0	500	1000	3000	5000	-	SABS 202 SM 202 - 1983
Alkali Carbonates (CO_3) & Bicarbonates (HCO_3)	ppm	0	500	1000	1000	2000	-	SABS 241 - 999
Sugar	-	Negative	Negative	Negative	Negative	Negative	-	SABS 833
Quality of water required		Untreated layer works	a	a	a	a	Investigate effect on the quality	
		Chemically treated layer works	a	a	Investigate the effect on the quality of the stabilised material	Investigate the effect on the quality of the stablished material		
		Concrete mass	a	a	a	Investigate the effect on the quality		
		Concrete prestressed	a	a				
		Slurry & emulsion	a	a				
		Soil/gravel tests	a	a				
		Chemical or control tests	a	A				

References:
1. Concrete technology – Dr. S. Fulton (1989(
2. Materials Manual (PAWC)

A5.6.6 CONSTRUCTION EQUIPMENT

An NME stabilising agent is usually highly reactive. Hence, it is imperative that all storage tanks, water tanks, etc., must be thoroughly cleaned (normal good housekeeping site operations), with no residue from previous mixes present in these tanks. The contractor shall allow the engineer to inspect the equipment before use, to ensure that the equipment is suitable for use with the NME stabilising agent or any other alternative as submitted for use by the contractor and his supplier. In all cases the supplier shall ensure that the stabilising agent application is clearly specified and the contractor shall take full responsibility to meet the specifications of the supplier. The NME stabilising agent in use must be freely available to the Engineer to test for quality control purposes at any time.

A5.6.6.1 Conventional Plant

A heavy-duty motor-grader is an essential item of plant for NME stabilisation, irrespective of the combination of any of the other plant items used. This grader is required to pre-shape the material prior to being treated, for processing the material and thereafter, to cut the layer to final levels. Processing by grader includes mixing the material prior to treatment and mixing in of the NME diluted within the construction water or alternative additive/product as specified and guaranteed by the contractor and his supplier.

In the case of in-situ recycling of existing surfaced pavement layers, a milling machine will be required to adequately mill asphalt or multiple seals and/or high-strength cemented material to produce a material of a size suitable for the stabilisation or treatment with the stabilising agent. When in-situ material is to be supplemented with imported material, a milling machine can also be used effectively to blend the two materials after the correct quantity of additional material has been levelled out on top of the in-situ material and pre-shaped with a grader.

Alternatively, layers that have developed high in-situ strength can be broken down using a "woodpecker- type" attachment fitted to an excavator. The resulting chunks of pavement material can then be transported to a single-stage crusher to be crushed and transported back to the road for further processing**.**

A5.6.6.2 Recycling Equipment

The plant shall be so equipped that it will be able to recycle pavement layers to depths up to at least 300 mm in one operation. The plant shall be equipped so that the stabilising agent mixed in with the construction water as per calculations, can be added uniformly in a calibrated and controlled manner directly to the material being recycled or processed. Width reduction must be possible on the application nozzles when overlap recycling is done. The recycling depth shall be controlled electronically.

Pre-mixing of the layer(s) to be stabilised with the surfacing (when specified) will be done to ensure that a uniformly mixed layer is present before stabilisation with the recycler is to be done. In the case of the upgrading of an existing unpaved road, ripping the material to the specified depth should be done. Oversized material can be removed by labour-intensive hand picking before the layer is stabilised, although the recycler often breaks down this material if not too hard.

The direction and speed of the recycling machine and the speed of rotation of the scarifying drum shall be adjusted to obtain the required grading and sufficient mixing of all the components of the recycled material. The machine shall be capable of making a neat vertical cut at the outer edges when recycling the layer.

The recycler should, as a minimum, be equipped with:

- Self-cleaning nozzles, and
- Be equipped with a micro-computer, able to adjust the application of the water and stabilising agent according to the speed of the recycler – the proper working of this equipment is essential to ensure that the stabiliser is applied to specification. The Contractor shall ensure that equipment operators receive the necessary training to operate the equipment to enable the required specifications to be met.

The recycler will be pre-tested using clean water to ensure that all systems, as per specification, are in proper working order, that operators are fully trained and that the stabilising agent will be added as adjusted by the speed of the recycler.

A5.6.6.3 Water Tanker

Self-propelled water tankers, with a 15 000 L capacity, are essential plant items for the successful construction of a stabilised layer. In addition to supplying the stabilising agent/additive/product for mixing, water tankers are required to ensure proper finishing of the treated layer of material after the initial mixing and processing stage has been completed (AT NO STAGE SHOULD WATER WITHOUT THE STABILISING AGENT BE ADDED TO THE LAYER).

Sufficient construction water mixed with the stabilising agent must be added to the mix to account for a loss of moisture during processing, taking into account the equipment to be used and climatic conditions to ensure that compaction starts with the layer preferably at approximately OMC. (Results from detailed testing under actual as well as research conditions indicate that the OMC of the material is reduced by approximately 10 % when using a water-repellent modifier and that the moisture/density relationship may not be as critical compared with that of stabilisation without the NME stabilising agents not containing a water-repellent modification. Experience has shown that the best results are usually obtained when final compaction is achieved at a moisture level of 0.5 per cent to 1.0 per

cent below OMC (taking into account the total fluid content and not only the water content of the stabilising agent). Unusual high percentages of problematic minerals within the in-situ materials to be stabilised using an NME may require compaction to be done at lower moisture contents. In such cases trail sections are essential to determine optimum moisture contents for the stabilisation and compaction of the pavement layer(s). Sufficient water tankers must be provided to ensure that the processing of the material is a continuous procedure with no stopping to wait for a water tanker.

Where applicable, water tankers involved with the treatment and distribution of a stabilising agent should be earmarked only for the transportation of the stabilising agent in various stages of dilution as dictated by the in-situ moisture content of the material to be stabilised. In the case of NME stabilisation, it is recommended that a small percentage of the NME mixture be retained in the tanker in the cases of the use of conventional equipment to treat a “dry” surface before or during compaction when the moisture loss is deemed to be excessive for one or another reason that may occur in practice due to numerous unforeseen (e.g., weather) conditions. A surface is visually considered to be too dry when fine cracks appear directly behind the rollers. Supervision personnel must be on site during stabilisation operations to visually note any changes that may occur during the stabilisation process.

Due to material variations, some sections along a road may also contain excessive moisture. In these cases, a small “wave” will form in front of the compaction equipment. When this phenomenon is observed, the section should be ripped and allowed to expel some moisture (evaporation) before being recompacted. This operation should not exceed a period to the end of compaction of 6 hours. In all cases, reworked layers need to meet the material specifications as contained in Table **A5.6.5/1** for the material class specified. The contractor will take full responsibility for any reworking of the layer not meeting the required specifications.

All water tankers used for NME treatment must be equipped with a circulating pump system to circulate the diluted NME after standing for an extended period and for circulating during the dilution process – in all cases contractors will take full responsibility for the end product specifications to be met with maintenance being carried out as required. Water tankers must not be fitted with a conventional spray bar but with valves (such as a clam-lock valve) which will not easily clog. The application of the diluted NME is a cold process and a modified stabilising agent containing a water-repellent agent considerably reduces the possibility of blockages of the nozzles. However, it is the responsibility of the Contractor to ensure that no blockages occur during the stabilisation process, resulting in the uneven distribution of the stabilising agent. In cases where such blockages do occur, the Engineer will require the layer to be remixed using conventional equipment or that the layer be reworked in total. Tankers must be properly flushed should they need to stand empty for extended periods (e.g., overnight).

A5.6.6.4 Rollers

The equipment to be used for the conventional breaking-up and excavation of existing pavement layers will be determined by the size and depth of the pavement section to be processed or excavated, taking into consideration the fact that work may have to be carried out in restricted areas.

One heavy-duty grid roller and an adequately powered pneumatic tyre tractor that will pull the grid roller when fully loaded, or an equivalent self-propelled sheep foot roller, may be required in the case of very coarse material to break down the material suitable for the construction of the layer. The breaking down of the material should be done prior to the addition of the NME. During the NME stabilisation and compaction of the layer compaction equipment should be used with a minimum risk of further breaking down of the NAGM as new surface areas created after addition of the NME will not be covered by the water-proofing agent, resulting in a reduction of the test results. The use of a sheep-foot roller is not recommended for use for the final compaction of the layer stabilised with an NME stabilising agent.

The compaction of a stabilised base layer is normally adequately achieved with a vibratory smooth drum roller in combination with a pneumatic wheel roller to achieve a surfacing finish, meeting the required specifications of the layer in terms of density as well as a finish

suitable for a surfacing consisting of a chip seal only or even an NME slurry seal as per the design. It is the responsibility of the Contractor to ensure that operators of the compaction equipment are fully trained in the importance and effect of amplitude and frequency adjustments when compaction is done using vibratory rollers.

A5.6.6.5 General

Static tanks shall be provided to store sufficient quantities of the stabilising agent for the needs of the project. Normally such tanks will have a capacity of between 30 000 litres and 120 000 litres. Static tanks must be fitted with a circulating pump system that will enable the stored stabilising agent to be properly circulated from time to time in the static tank, as per the requirements of the supplier. These tanks must be fitted with a flowmeter to ensure that the required volume of the stabilising agent is carefully measured and added to the construction water.

A5.6.7 EXECUTION OF THE WORKS

A5.6.7.1 Removal of grass and weeds

Before commencing in-situ recycling, all grass, weeds, etc., encroaching into or onto the road surface or growing between the edge of the existing surfacing and kerbs, channels, etc., shall be removed.

A5.6.7.2 Preparing the pavement surface

Before any cold in-situ processing by any equipment may commence, the pavement surface shall be clean and free from any material that could be harmful to the execution of the works and affect the quality thereof.

For rehabilitation works, any asphaltic surface with granular sub-layers and/or cemented layers will be pre-milled before the preparation of the layer. Where specified/required, additional material shall be spread to the thickness and width as specified and milled together with the part of the existing pavement. The area to be processed shall be properly demarcated. No payment will be made for cold, in-situ reworking/processing of materials beyond the required width.

Before cold in-situ processing may commence, the moisture content of the in-situ materials to be reworked must be determined in an approved manner to determine the amount of water required to reach optimum moisture content. In the case of the measured moisture content exceeding the optimum by more than 0.5 per cent with the addition of the diluted stabilising agent, the layer shall be ripped and left to dry until the moisture content has reached an acceptable level before applying the stabilising agent and reaching the required moisture conditions.

A5.6.7.3 Construction in confined areas

In such an event where any material stabilisation as specified has to be executed in an area the width of which is less than 1.0 m or the length of which is less than 50 m and the area is less than 50 m2, it shall be classified as work in restricted areas.

A5.6.7.4 Recovery of bituminous material

When specified, existing bituminous material shall be milled out as indicated by the design. Excavated pavement material intended for reprocessing but which cannot be reprocessed in place or, in the opinion of the Engineer, cannot be windrowed next to the excavation, nor placed in position directly at any other place, and material intended for recycling or reprocessing in a plant, shall be transported to approved stockpiles with the written permission of the engineer.

Stockpile sites for material intended for recycling or reprocessing in a plant shall be set out at the corresponding mixing or crushing plant or at such other locations as approved by the engineer. The stockpile site shall be cleaned and all loose stones. Vegetation and other materials which may cause contamination shall be removed. The site shall be graded smooth with an adequate slope to ensure proper drainage of water.

The limits of milling shall be demarcated clearly and these limits shall not be exceeded by more than 100mm. Areas milled outside the specified limits shall be repaired by the Contractor at his own cost and to the satisfaction of the Engineer.

A5.6.7.5 Spreading of extra material on a layer before reprocessing

Where the existing road layer or surfacing level is too low, or existing material has to be spoiled due to unsuitability and/or where specified or instructed by the Engineer, suitable pavement material shall be added to the layer to make up the shortfall before the processing and stabilisation of the layer. Suitable pavement material for addition to make up a layer shortfall shall consist of NAGM as specified (and tested) as directed by the Engineer.

The extra pavement material shall be spread uniformly over the full area of the underlying shortfall layer by means of an approved type of mechanical spreader to such thickness as to comply with the requirements specified in Clause A5.6.3.6 after the final compaction. Segregation of the materials shall be avoided and the additional material shall be placed free from pockets of course and fine materials. Extra material shall only be spread on the section to be processed and stabilised and only immediately before the processing operation.

A5.6.7.6 Application of stabilising agent diluted with water

At no time whatsoever should an undiluted stabilising agent (such as an NME) be applied to the layer of material that is being processed. The NME must be added to the construction water (taking into account the total fluid content of the NME (a water-repellent modified emulsion effectively reduces the OMC of the material). Hence, not only the water percentage within the emulsion needs to be taken into account but the total fluid content, to ensure that the mix is properly distributed throughout the layer and that the compaction can be done to meet the specified density criteria. The supplied NME needs to be diluted by a factor of between 1:4 (1-part NME and three parts water) and 1:1 (50-50) to ensure proper distribution of the stabilising agent. A high percentage of fine material (in the order of more than 20 to 25 per cent passing the 0.075 mm sieve size), will normally require higher rates of dilution (depending on the particle sizes of the NME and the specifications of the supplier) to ensure that a thorough distribution of the stabilising agent is achieved.

Coating of all the granular particles within the layer will not take place when the NME is added separately to the construction water (as is possible with modern recycling equipment). Any “wetting” of material before stabilisation will be detrimental to the material adhesion between the aggregate and the stabilising agent to be achieved. As a consequence, the in-situ moisture content of the untreated layer must never be so high that it cannot accommodate the NME stabilising agent that has been distributed within the construction water. The construction water is effectively used as a carrier of the NME stabilising agent, ensuring that all granular particles within a layer will be covered.

A5.6.7.7 Pre-treating an unsurfaced base layer

A material-compatible designed NME stabilising agent will not require the pre-treatment of materials to account for “problem” minerals such as smectites, muscovite (Mica), etc. The NME must be tested to automatically address the presence of such minerals during the detailed design phase and must be specifically designed to neutralise the effect of these minerals. In cases with high contents of specifically identified minerals, a pre-treatment may be prescribed using an appropriate co-product prior to the stabilisation process. The identification of the need for pre-treatment shall be done as part of the detailed design process through the detailed testing of the mineral composition of available materials (using XRD- scans), to be used in the upgrading, construction or rehabilitation of a road pavement.

Testing during the design development stage was undertaken as given in the project information. However, the contractor is required to undertake testing to ensure material compatibility and performance with the NME product that is preferred by the Contractor.

A5.6.7.8 Breaking down of material using conventional methods

During rehabilitation works, the existing pavement material shall be broken down to the specified depth and processed in place either through pre-milling or ripping as previously discussed.

The ripped material shall then be broken down in situ with a fully loaded grid roller hauled by an adequately powered tractor. During the process of grid rolling and breaking the material, the material shall be windrowed constantly and any oversize material shall be removed.

Unsuitable material for sub-base and base shall, as directed by the Engineer, be removed and spoiled and will be paid under pay Item C5.6.9.

Where sub-base layers need to be constructed, the base material shall be windrowed to the side and the sub-base layer should be inspected first. After inspection by the Engineer, the demarcated sub-base area should be reworked and re-stabilised as per design or required by the Engineer.

A5.6.7.9 Adding diluted NME

The emulsion tanker supplying the diluted NME (containing the mix of the NME and the required construction water as measured and calculated) shall be equipped with an approved measuring device (e.g., dipstick) to enable the site staff to take control calibrated depth measurements at intervals specified by the Engineer. The material processing and stabilisation operation will be cancelled/interrupted by the Engineer until this required specification is met.

The method of introducing the various materials comprising the final mix shall be done as per design and subject to the Engineer's approval. Care shall be taken to prevent excessive loss of moisture between the time when the materials are mixed and when they are compacted on the road (taking into account climatic conditions as mentioned).

A5.6.7.10 Spreading

The recycled mix shall be spread and levelled with a motor grader to the required width and to such thickness as to comply with the requirements specified in Clause A5.6.9.1 before final compaction. Segregation of the materials shall be avoided and the layers shall be free of pockets of course or fine materials.

A5.6.7.11 Stabilisation

(i) Mixing Recycler

The recycled base/sub-base material, extra material, and NME stabilising agent diluted in the construction water shall be thoroughly mixed by the recycling mixing process with plant as specified in Clause A5.6.6.

The NME diluted in the construction water, shall be measured by mass and quantities, calculated in accordance with the formulas given in Clause A5.6.5.4. It shall be introduced continuously in a controlled manner into the material that is being stabilised, proportionally to the speed of the recycler, to ensure that the correct quantity of the stabilising agent is added to the full width of the section being recycled. Care should be taken that all nozzles are fully operational during the recycling process. In cases where an uneven distribution of the stabilising agent is noticed, the layer will be re-mixed using conventional blade mixing with graders, at no extra costs or reworked in total as per instruction of the Engineer at no additional costs.

(ii) Conventional Method

Blade mixing by grader is undertaken by using the blade to move the material from side to side. This mixing process is often supplemented with the use of ploughs and/or rotavators. Where the width of the treatment restricts the horizontal movement of the material, extra use should also be made of the grader rippers with specially designed "shoes" welded onto

the rippers. Such shoes are in the shape of a horizontal “V”, with the sharp end of the V pointing in the direction of travel of the grader. The rippers with their V-shaped shoes are lowered to the treated depth and the “fast forward” gear of the grader is used to plough through the layer. In this manner, the material is pushed aside, ensuring that proper mixing is achieved, even when working in confined widths.

The NME must first be diluted with the compaction water to a residual NME content of between a 1:1 to 1:4 dilution and applied in several applications onto the material over the width and length previously determined. Water tankers are used to apply the NME and the grader(s) must travel directly behind the water tanker, immediately covering the freshly sprayed NME with material, thereby preventing excessive loss of moisture and the NME from immediate breaking (where applicable). The volume of diluted NME applied is determined by the designed percentage of the NME, expressed as a percentage of the mass of the layer that is being treated.

Should weather conditions be particularly hot or dry, adjustments to the construction water must be made to ensure that the compaction moisture content (containing the NME stabilising agent) is achieved. This process is exactly the same as for the compaction of any granular layer, requiring the same care during construction to achieve the required densities.

Care should be taken to ensure that the diluted NME is applied in such a way that no rivulets are formed, that the NME does not run off the layer before it has been mixed into the layer and that the exact application rate is achieved.

During mixing, attention must be paid to the fluid content of the mix. The fluid content is the total quantity of fluid in the mix, including hygroscopic moisture, the diluted NME still in suspension and the water in the NME.

The addition of the post-mixed construction water (mixed with the NME stabilising agent) should not be so high as to result in deformation of the surface under final compaction. (Observed as a “wave” forming in front of the compaction equipment.) The required total mixed construction water as determined in the laboratory before the start of the stabilisation process may be amended based on on-site observations, allowing for the type of compaction equipment used.

Additional adjustments in the pre-mixed construction water may be required when working with porous materials. Such materials will absorb some water leading to a need for a higher percentage of pre-mixed water to achieve the required results. The design process, as recommended, should identify the presence of materials that will require higher than normal percentages of pre-mixed construction water. However, due to the limits to which pre-testing can be done, the Engineer on site should be aware of this possibility and require adjustments as recognised on site.
Where the existing asphalt surfacing or cemented base layer is being recycled with the underlying gravel layer using conventional construction equipment, the asphalt layer must first be milled off and left in a windrow on top of the granular base that is to be recycled. Once the asphalt layer has been milled off in this manner then the base layer can be milled or ripped and broken down. The stabilisation of the layer using a material-compatible NME should only commence once the milled asphalt layer and the existing gravel base material have been thoroughly blended to form a uniform material.

A5.6.7.12 Preparation before the stabilisation/treatment of the material

The following will need to be determined in advance for input into the Moisture Calculation Sheet:

- Length, width and depth of section to be stabilised; MOD, OMC and in-situ moisture content; Content of water tanker in litres; Water tanker volume will also need to be calibrated and marked out on a volume measuring gauge.

Preparation before stabilisation:

- Prior to applying the stabilising agent, the NME shall be mixed with water in the water tanker to form a diluted NME which, when applied to the material, will act as a carrier of the diluted NME to the soil fines.

- The Contractor shall determine the rate of dilution of the additive using the Moisture Calculation Sheet, which may range from 1 litre of NME to between (5 litres and 40 litres) of water depending on the type of material/soil, in-situ moisture content and percentage of the NME stabilisation required. This calculation sheet shall be submitted to the Engineer daily for approval, both before and after the completion of each section to be stabilised. Experience has shown that NME stabilised material/soil will reach optimum strength when final compaction is done at a moisture content of just below OMC taking into account the total fluid content (taking into consideration that a water- repellent modification will normally reduce the OMC by about 10 per cent - the contractor and his supplier will confirm the implications of any specific stabilising agent with the Engineer before the start of any operations to enable quality control to be effectively executed). To reach this target OMC, it may be necessary to apply 1.0 per cent to 2.0 per cent moisture above OMC (depending on climatic conditions which could result in the drying and loss of moisture due to evaporation during very hot conditions and the mixing equipment used – e.g., conventional grader mixing will take longer and will allow more moisture to escape (evaporate) than mixing with a recycler). Compaction at moisture conditions which are too low will lead to the formation of fine cracks (immediately visible after the roller) which will compromise the integrity of the top of the layer, resulting in the formation of a weak inter-layer at the top which may result in the failure of the seal by separation from the rest of the base layer (the appearance of fine “cracking” when compaction commences can be addressed through a further application of some diluted NME (kept in reserve in the water-tanker) which will increase the surface moisture to achieve the desired compaction densities and a uniform layer. Too high moisture conditions will be seen when the layer is moving in front of the roller (kneeing) – in these cases, the drying out of the layer may be required by ripping, drying and re-compaction (as per previous discussions and guidelines). Such operations should not exceed more than 6 hours. The following processes may be followed:
  1. The diluted NME may be sprayed onto the road surface using a spray bar fitted to the water tanker or by hand spraying in places with difficult access.
  2. Initial thorough and complete mixing of the NME with the construction water is essential. The NME products using a double emulsification process usually result in small particles that distribute easily through the construction water without much additional effort. However, it is the Contractor’s responsibility to ensure that the NME is evenly distributed within the construction water. In the cases where constant mixing of the stabilising agent with the construction water is required to prevent separation (usually a function of the particle size of the stabilising agent), an electrical or petrol-driven stirrer must be used. In such cases, the contractor must ensure that:
     (i) The pump has sufficient capacity to circulate the entire contents of the tank in 15 minutes;
     (ii) There are no internal baffles in the tank restricting circulation, and
     (ii) Before the commencement of spraying, the contents are circulated for at least 20 minutes.

A5.6.7.13 Compaction

The completed compacted layer shall have a minimum in-situ dry density as specified for the specific layer (as per the requirement of the designed layer as in Table A5.6.5.3/1 and Table A5.6.10). It shall be the responsibility of the Contractor to determine the maximum dry density and Optimum Moisture Content (OMC) of the material to be stabilised for purposes of quality control (compaction control). The Contractor may select any suitable compaction technique to achieve the required compaction, subject to the following conditions:

1. The initial compaction shall be carried out with plant, which achieves stability suitable for subsequent compaction, without causing undue displacement of the material or deformation of the layers. The rolling pattern shall be designed to retain the shape of the layers as far as possible;
2. The types and number of compaction equipment to be used and the amount of rolling to be done shall be such as to ensure that specified densities are obtained without damage being done to lower layers or structures. During compaction, the layer shall be maintained to the required shape and cross-section, and all holes, ruts and laminations shall be removed;

3. Compaction equipment shall be adequate for obtaining the specified density within the specified time limits;
4. The compaction equipment and techniques shall be capable of producing the specified surface finish and density without any interruption, and
5. Not more than four (4) hours shall elapse between the time of starting the mixing process and that of starting to compact the material.

From the time when the diluted NME is added, not more than six (6) hours shall elapse until the compaction has been finally completed.

It is important to note that when adding water to material only diluted NME should be used.

The only time when the clean water can be used on its own is **during the pre-wetting of the completed layer before priming if required as per specification, depending on the type of product and supplier specification. This information must be shared with the Engineer before the start of any works and tested as per a test section to ensure that materials are compatible and approved by the Engineer**.

At no time is it allowed to "cut back" materials, to achieve levels without remixing the layer – materials added by "cutting back" material will result in "biscuit" layers and the disintegration (breaking up) of the top of the layer. Under such circumstances, high penetration of the stone with associated bleeding within the wheel tracks will occur when a surfacing consisting of a seal is used. A ring and ball test performed on top of the base course before sealing should normally expose this weakness and potential risks. The normal criteria used to evaluate ring and ball tests are applicable.

A5.6.7.14 Rejected work

The Contractor shall note that should he fail to meet the specified requirements for the NME stabilised layer placed at ambient temperatures, he shall remove the unacceptable layer and **will rework or replace it with approved material as instructed by the Engineer, at his own costs.**

Reworking of an existing layer may be allowed by the Engineer by ripping of the stabilised layer, adding 50 per cent of the original NME stabilising agent (this may be a function of the characteristics of the stabilising agent used) and compaction at the required OMC as per the original process to achieve the required results. It should be noted that the OMC of the material may have changed due to the first NME application. The reduction of the OMC is a function of the mineralogy of the granular material used, but normally in the order of 10 per cent. **Such reworking of the layer will be at the risk of the Contractor who will not be paid extra for the reworking of rejected works.**

A5.6.7.15 Providing a temporary wearing course

Immediately after completion of the compaction described in subsection (l), a material-compatible prime shall be applied to the finished surface using a water truck, binder distributor or hand sprayer at a spray rate of 1 litre/m2 (or as specified for a specific supply). The spray rate may be adjusted by the Engineer following a trial section of not less than 100 m in length. Costing is to be done per constructed m2 and not per litre, accounting for differences in product requirements.

As an alternative, a 50:50 diluted NME may be sprayed onto the layer and compacted using a steel- wheeled roller with a mass of not less than 12 tons, and/or with pneumatic rollers.

The following process is to be followed:

- Immediately after compaction, slushing of the surface will commence: Spray 1 litre/m² of the diluted NME onto the surface followed immediately by further compaction utilizing a 13-ton vibratory roller that must follow directly behind the water cart. A 22-ton Pneumatic Tyre Roller (PTR) must then follow directly behind the vibratory roller;
- Turn around and on the same strip have the water cart first drench the surface with a further 1 litre/m² diluted NME. This time the pneumatic tyre roller follows directly behind the water cart and the vibratory roller follows closely behind the PTR. It is

important that the water cart and roller must work in close tandem at all times; to prevent any pick-up of the material by the drum of the vibratory roller (this is usually not a problem with the use of a material-compatible, water-repellent NME stabilising agent);

- Continue with the above points until the total area to be worked is completed, and
- The area treated with a prime (recommended a diluted (50:50) NME similar to that used in the stabilisation of the base layer) is to be kept closed to traffic for the prime to properly set and dry (until the top 50 mm of the layer has dried out) with a moisture content of < 50% of OMC. The time of required closure is dependent on the prevailing weather and may be as short as 1 hour in the case of a material-compatible, water-repellent NME. Due to the addition of the water-repellent modification of a stabilising agent, a hydrophobic material surface is created and water is effectively repelled from the layer. Hence, stabilised layers constructed using a water-repellent modifier in the NME stabilising agent normally dry much quicker than pavement layers treated using traditional emulsion stabilisation processes that depend only on evaporation as a method of drying. In dry and hot conditions, a pavement layer will dry sufficiently within less than 24 hours to reach 50 per cent of OMC. The final surface should be smooth, tightly knit and free of undulations, corrugations, holes, bumps or loose material.

The application of a compatible prime (i.e., a recommended compatible NME-based prime) at a time when the base has reached a moisture content of 50 per cent of OMC should prevent most damage under conditions of light trafficking in urban areas. Heavy brushing with soft bristles is recommended before the application of the prime to remove any dust or loose materials on the surface, not disturbing the surface itself. The instructions of the supplier should apply - the risk remains with the contractor to achieve an acceptable base condition after the application of the prime. Experience has shown that a material compatible with NME prime will dry within an hour. In cases where the surfacing is applied immediately, the prime may be substituted by an appropriately specified tack coat. However, this is only applicable to cases where the contractor can ensure that the surfacing material and equipment are available for immediate application of the surfacing.

A5.6.7.16 Reconstruction of pavement layers using conventional equipment

Uniform pavement sections shall be clearly identified and detailed in the Contract Documentation. In accord with these uniform pavement sections an in-place gravel base layer or crushed stone base layer may be specified in the Contract Documentation to be reconstructed using conventional construction equipment.

The Contractor shall first remove any asphalt surfacing to spoil or to stockpile as specified in the Contract Documentation before reconstructing the base layer. A bituminous seal surfacing is normally not removed before reconstructing the base layer unless specified otherwise in the Contract Documentation.

The exposed in-place gravel base layer or crushed stone base layer shall then be scarified to the full depth of the existing layer or to the depth as specified in the Contract Documentation. In order to comply with the grading specification in the Contract Documentation the scarified material shall then be broken down and all oversize material removed. Compliant material may also be added and thoroughly mixed in as specified in this Chapter if required to improve the grading and/or other properties of the in-place material or to increase the layer thickness as specified in the Contract Documentation.

The Contractor shall then reprocess the layer as specified for new pavement layers in this Chapter. All required stabilisation of material shall be done as specified in this Chapter.

A5.6.7.17 Reconstruction of pavement layers using a recycler

Uniform pavement sections shall be clearly identified and detailed in the Contract Documentation. In accord with these uniform sections an existing gravel or crushed stone layer may be specified in the Contract Documentation to be reconstructed in-place, using a recycler.

(a) Establishing construction levels – minor level changes

Before commencing any in-place reconstruction, the Contractor shall establish reference and level beacons for the setting-out and control of the works.

When only minor level changes (less than 15 mm up or down) will be made to the existing vertical alignment and/or to the road cross-fall or camber in order to restore the riding quality of the road, then new road design levels will not usually be provided in the Contract Documentation.

At each level control location, the Contractor shall record the existing road surface levels at the centre- line and at the outer limits of each lane including any surfaced shoulders. The Contractor shall use the existing road levels to determine the new construction levels along the centreline and the outer limits of each traffic lane and any surfaced shoulders. A line of best fit shall be used to determine the final levels for the reconstructed layer taking into account the following:

- The required camber or super elevation.
- The minimum requirements governing changes in the vertical alignment.
- The thickness of the existing layer to be reconstructed.
- Minimising the amount of preparatory work required ahead of reconstruction, such as minimising the importation of material.

At least two calendar weeks before reconstruction work is programmed to commence on any specific uniform pavement section, the Contractor shall submit the level proposals to the Engineer in sufficient detail to enable the proposed reconstruction levels to be reviewed. The detail shall incorporate a schedule as well as a drawing, of all the design levels and the grade lines respectively. Once agreement has been reached regarding the proposed levels, reconstruction work may commence.

The Contractor shall establish a series of level control poles placed at a constant offset on both sides of the road prior to commencing any construction work at a maximum interval as indicated in Table A5.3.8-2. The Engineer shall take control measurements to determine the accuracy and adequacy of the level control poles and shall instruct the Contractor to make any adjustments as required.

b) Establishing construction levels significant level changes

When significant level changes (more than 15 mm up or down) will be made to the vertical alignment and/or to the road cross-fall or camber, the reconstructed layers shall be reconstructed to new design levels provided in the Contract Documentation.

Before commencing any in-situ reconstruction, the Contractor shall establish reference and level beacons for the setting-out and control of the works.

The Contractor shall survey the existing road levels and compare these with the new design levels and prepare a schedule of the areas where there will be surplus material and of where there will be insufficient material. This schedule will be used to prepare a layer material transfer diagram which will enable the transfer of surplus reconstructed material to areas where there is a shortage of material. The material transfer diagram shall be submitted to the Engineer for review at least two calendar weeks before reconstruction work is programmed to commence on any specific uniform pavement section.

The Engineer shall subsequently instruct the Contractor regarding the proposed reuse or spoil of surplus material, or the need to import any additional new material prior to the commencement of the reconstruction work.

The Contractor shall establish a series of level control poles placed at a constant offset on both sides of the road prior to commencing any construction work at a maximum interval as indicated in Table A5.3.8-2. The Engineer shall take control measurements to determine the accuracy and adequacy of the level control poles and shall instruct the Contractor to make any adjustments as required.

c) **Preparation of the road surface**

Before any reconstruction work may commence, the surface of the existing road shall be prepared as follows:

- Remove all vegetation, dirt and other foreign matter including from any adjacent lanes or shoulders that are not to be reconstructed.
- Remove road studs from the full road width.
- Remove standing water.
- Establish an off-set reference line, for each cut, for the recycler to follow and ensure accurate steering.
- Record the location of all road marking features that will be obliterated by reconstruction.
- Mill off the asphalt or bituminous seal surfacing to spoil or stockpile where specified in the Contract Documentation.

A5.6.7.17 Disposal of surplus material

Recovered pavement material remains the property of the Employer. Surplus materials, including waste or oversized material, bladed or skimmed off the road, shall be stockpiled at designated areas within a free-haul radius of 5 km as directed by the Engineer with approval from the Client, considering environmental implications. Should the Employer decide not to use the surplus material, the Contractor shall then dispose of the material to the satisfaction of the Client within a free-haul distance of 5 km.

A5.6.7.18 Checking moisture content and surface condition before priming and/or surfacing

The mixing and placing of asphalt or seal will not be allowed if:

(i) Free water is present on the working surface or when rain is imminent – no surfacing will be allowed during adverse weather conditions as this could result in the detachment of the surfacing from the base layer;

(ii) The moisture content of the upper 50 mm of the recycled base exceeds 50 per cent of the Optimum Moisture Content (OMC);

(iii) Loose material is present on the surfacing - in cases where the base has been primed and exposed to trafficking, the surface needs to be cleaned of all loose material and any localised problem area repaired using an NME slurry mix (the same NME used for the stabilisation of the base layer) It is usually a good idea to prepare small quantities of slurry to ensure excellent bonding with the existing base layer).

A5.6.8 SETTING OUT OF THE WORKS

A5.6.8.1 Setting Out and Control of The Work

The Contractor shall establish his own reference and level beacons for the setting out and control of the works. The Contractor shall indicate his own reference and control beacons to the Engineer at least one week before the work is programmed to commence. The Engineer will take control measurements to determine the accuracy and adequacy of the reference/control beacons and may instruct the Contractor to correct any faulty work and to take and provide such additional measurements and details as may be deemed necessary. This survey work will not be measured and paid for directly and compensation for any work involved in staking or setting out will be deemed to be covered by the rates tendered and paid for the various items of work included in any contract. No payment will be made for any inconvenience or delay caused by compliance with these requirements.

A5.6.8.2 Trial Sections (Refer COTO, 2020)

Where ordered by the Engineer, the Contractor shall construct trial sections with the preferred material- compatible NME stabilising agent (first proven through laboratory testing as per the test protocol contained in A5.6.9.2), to evaluate in practice the construction process, the compatibility of materials and the ability of the modified stabilising agent to be able to meet the specified criteria as per Table A5.6.5/1. During the trial sections, any adjustments in terms of the addition of water and applicable OMC should be finalised. The latter is of importance, especially if layers above 150 mm thick are to be stabilised in one operation (not advised). The water released and repelled by the NME will

be pushed upwards towards the top part of the layer, requiring an adjustment in the pre-mixed construction water.

Trial sections shall be carried out at locations approved by the Engineer.

A5.6.8.3 Work Outside Normal Working Hours (Refer COTO, 2020)

Any work carried out outside of normal working hours must be approved by the Engineer. The Contractor shall give the Engineer at least 48 hours' notice of his intention to do work outside the normal working hours. The closure of traffic lanes will only be permitted during these times. The provision and layout of lighting for the works and warning lights for the accommodation of traffic shall be approved by the Engineer. No additional payment will be made for the provision of additional warning lights for work done outside of normal working hours. The Contractor shall allow for the provision, erection and maintenance of additional items required in his tendered rates.

A5.6.9 WORKMANSHIP

A5.6.9.1 Construction Tolerances and finish Requirements

(a) Construction tolerances (Refer COTO, 2020)

The applicable construction tolerances are the relevant tolerances indicated in the project specifications as related to the Category of Road. Where the existing granular base abuts kerbs or channels or New- Jersey barriers, the new work shall extend to the edge of these facilities.

Unless otherwise specified, the processed and stabilised base shall be constructed to the existing levels, cross-section profile and cross-fall to allow for a surfacing layer as specified.

(b) NME stabilising agents

The average rate of application of the diluted NME as measured at operating temperatures in the water cart shall be within 5 per cent of the specified rate of application.

(c) Uniformity of mix (chemical stabilisation)

Unless specified by a specific supplier and results proven as per specification, no additional chemical stabilisation agent (e.g., cement) is required with the use of a material-compatible NME stabilising agent.

(d) Statistical judgement schemes (Refer Chapter 20)

Routine inspections and tests will be carried out by the Engineer to determine the quality of the materials and workmanship for compliance with the requirements of this section.

The statistical judgement schemes to be used to determine whether the requirements specified are being complied with shall be those set out in the prescribed contract documents and/or design and quality control methods.

A5.6.9.2 Testing

(a) Testing

The Contractor shall give the Engineer at least 24 hours' notice of his intention to process/stabilise/recycle/rework any materials so that the actual process can be monitored and tested (quality control) by the Engineer. Unless otherwise agreed in advance, the Contractor shall only process/stabilise/recycle/rework any materials when the Engineer or his representative is present.

(b) Test Methods for determining UCS and ITS values – applicable during the design as well as quality control process. The number of tests done during construction as part of quality control will be done in accordance with the instructions of the engineer

The following material test methods shall be used for the testing of NME stabilising agents or equivalent (engineering properties in terms of UCS and ITS values):

- As an input into the testing of the UCS and ITS of the material, the Optimum Moisture Content (OMC) and Maximum Dry Density (MDD) are to be determined using normal prescribed test procedures (SANS 3001-GR51), and
- The testing of the Unconfined Compression Strength (UCS), and the Indirect Tensile Strength (ITS) of the stabilised materials shall be done according to the protocols prescribed in the following paragraphs.

In all the above test methods, the +37.5 mm material must be screened off and discarded. The aggregate passing the 37.5 mm sieve and retained on the 19.0 mm sieve must not be crushed and must be used in the testing process. A pH test must be performed to determine the acidity/alkalinity levels of the material.

The curing and testing process of the 152 mm diameter samples (127 mm high) shall be as follows:
The MC-NME stabilising agent is mixed in with the construction water and the sample is prepared at Optimum Moisture Content (OMC). For example, if the OMC of the material is 8 per cent and 1 per cent of the MC-NME stabilising agent is added and the in-situ moisture content is 3 per cent, the addition of (8 - 3) 5 per cent moisture should be added to the material to achieve OMC. The 5 per cent to be added will consist of a mixture of 4 per cent construction water and 1 per cent MC-NME as per the total requirement. (Accordingly, the total fluid content (i.e., the total percentage of the MC-NME) is added as part of the compaction water – not only the water percentage of the MC-NME).
No cement or lime is added to a material-compatible NME stabilised material (unless specified by the supplier). Hence, the samples are not placed in plastic bags to assist with the hydration of the cement (as per usual, Bituminous Stabilised Materials (BSM) designs, contain cement as an additive and hence, the samples need to be placed in plastic bags in the oven during the rapid curing process to assist in the hydration of the cement in the mix):

1. The prepared 152 mm diameter by 127 mm height samples are to be prepared as per SANS 3001 – GR 50: 2013 and SANS 3001 – GR51 with the following changes:
2. **When no cement is used as part of the stabilising agent the samples are not to be enclosed in a plastic bag. (Plastic covering is required when cement is included in the mix to assist in the hydration of the cement).**
3. Samples are cured for 24 hours in an oven at 22-25°C before being subjected to a “rapid curing” process in an oven for 48 hours at 40-45°C (temperatures in the oven should NOT exceed 50°C).
4. After 48 hours the samples must be allowed to “cool off” for twenty-four (24) hours. This is preferably to be done in the oven at 22-25°C for 24 hours (SANS 3001 – GR 50: 2013; SANS 3001 – GR51) .
5. Directly after the “cooling off” period, three (3) samples each must be crushed to determine the ITS and UCS values. The values obtained are called the DRY ITS and the DRY UCS values (as per the test procedure specified for the testing of cementitious stabilising agents (SANS 3001-GR53:2010, 2010 and SANS 3001-GR54:2014)).
6. Six (6) samples must be placed in a bath of water with a temperature of 22-25°C for four (4) hours (as per the test procedure specified for the testing of cementitious stabilising agents (SANS 3001-GR53:2010, 2010 and SANS 3001-GR54:2014)) and thereafter removed from the bath and allowed to drain off excess water before determining the wet ITS and wet UCS values. The values obtained are called the WET ITS and the WET UCS values.
7. If approved by the Engineer, the “wet” tests (UCS and ITS) may suffice during the quality control during construction. For the lower-order roads (Category D and E), DCP tests done (as specified in Tables C1002/1 and C1014/1 for the specific material class) at randomly selected spots, may be approved for quality control as approved by the Engineer.
8. During the design stage 3 samples, each (twelve (12) in total) must be preserved outside the moulds for 28 days at temperatures of 22-25º C. After 28 days the UCS

(wet and dry), as well as the ITS (wet and dry), should be tested as per the procedure described above. The results of the 28-day tests should not show a decrease in the tested values of the respective UCS and ITS tests (dry and wet) compared with results obtained after the rapid curing process (an increase in tested UCS and ITS values is normally expected with the use of a material-compatible MC-NME stabilising agent).

9. **It is important to note that sample preparation must be done in strict compliance with the prescribed procedures and NO deviation shall be allowed**, including:
   - 9.1 The moulds in which the samples are prepared are not to be **treated with grease or any other lubricant** to facilitate the easy removal of the sample as this could influence the loss of moisture or seal the sample and hence, the measurements of UCS and ITS;
   - 9.2 **No additional soaking of samples** in any "covering" liquid or any other material will be allowed as this will make any comparison and application of test requirements invalid and not comparable to what is practically achievable during construction,
   - 9.3 **Compaction of the samples** for testing will be done in strict compliance with the specified procedure in SANS 3001 – GR 50: 2013.

A5.6.10 TREATMENT OF RELATIVELY POOR-QUALITY IN-SITU MATERIALS AS A SUPPORTING FOUNDATION FOR THE CONSTRUCTION OF A MC-NME STABILISING LAYER OR PROTECTION OF GRAVEL SHOULDERS AGAINST EROSION OR GRAVEL PRESERVATION ON GRAVEL UNSURFACED ROADS

All preparations of the NME materials and construction processes and testing as per normal construction and rehabilitation of roads as discussed under items Table A5.6.9.2 also apply to the treatment of relatively poor in-situ materials to for a supporting foundation for the construction of an NME stabilised layer using NAGM. In such cases, Table A5.6.5/1 is supplemented by Table A5.6.10/1. This is also applicable for the treatment and protection of gravel shoulders against erosion and for gravel preservation on unsurfaced gravel roads.

In cases where the in-situ material consists of very fine materials (percentage passing the 0.075 mm sieve in excess of 50 per cent) the in-situ material may be treated with an NME consisting of a Nano- Polymer Nano-Silane (NME-NPNS) which is transparent in nature or slightly milky coloured, retaining the natural colour of the material treated. After compaction an application of a Micro Polymer Nano-Silane (NME-MPNS) should be applied to bind the surfacing together.

Table A5.6.10/1: Recommended material specifications for the treatment of relatively poor in-situ materials, gravel protection and gravel perseverance (Jordaan and Steyn, 2020))

Test or Indicator	Material[1]	Material classification MC-NME(NPNS)- EG5
Minimum material requirements before stabilisation and/or treatment (Natural materials)		
Material spec. (minimum) Unstabilised material: Soaked CBR (%)(CBR as % of MDD)	NG/GS/SSSG (CS)	-
Sieve analysis % passing the 0.075 mm sieve ($P_{0.075}$)		Required
XRD scans: - Total sample - 0.075 mm fraction		 Required Required
% Material passing 2 µm (P0.002) (e.g. Clay & Mica & Talc), with Talc <10%) (XRD-scans of the material passing the 0.075 mm sieve is recommended for use to determine the % clay, mica and talc in the material)	MC-NME stabilisation with emulsion particle size > 2 µm	
	ALL	< 15%
	MC-NME stabilisation with emulsion containing micro-scale as well as nano-scale particles (adjusted according to material grading)	
	ALL	< 35%
	MC-NME stabilisation using Nano Polymer with Nano Silane (NPNS) (special design and treatment)	
	ALL	< 35%
Material specifications after stabilisation and/or treatment		
In-situ density to be required after stabilisation and compaction (CBR as % of MDD) (minimum)	Base-layer	> 97%
	Support	> 95%
DCP(DN mm/blow)(Quality control in field testing - base only) (stabilised and compacted = wet; 7 days cured = dry)	Base-layer	< 3.5 (wet) < 2.3 (dry)
	Support	< 5.5 (wet) < 3.5 (dry)
Density (% of MDD) (for laboratory testing)		> 100%
*UCSwet (kPa) (150 mm Φ Sample)	**Design[3]**	**> 750**
	Construction[4]	**> 450**
Retained Compressive Strength (RCS) = (UCS_{wet}/UCS_{dry}) (%)	RTS	> 65
RCS in relation to minimum $UCS_{wet(criteria)}$ = $RCS_{effective}$ = (RCS x ($UCS_{wet}/UCS_{wet(criteria)}$)) (%)	RTS-E	> 75
*ITS_{wet} (kPa) (150 mm Φ Sample)	**Design[3]**	**> 70**
	Construction[4]	**> 50**
Retained Tensile strength (RTS) =: ITS_{wet}/ITS_{dry} (%)	RTS	**> 65**
RTS in relation to minimum $ITS_{wet(criteria)}$ = $RTS_{effective}$) = ((RTS x ($ITS_{wet}/ITS_{wet(criteria)}$)) (%)	RTS-E	**> 75**

[1]NG – Natural Gravel; GS – Gravel Soil, and SSSC – Sand, Silty sand, Silt, Clay.
Design[3] = Minimum criteria to be met in the laboratory during the design phase
Construction[4] = Minimum criteria to be met during construction as part of quality control

An NME consisting of a NPNS treatment can be done as a surface enrichment and strengthening action or used for the protection of gravel shoulders against water erosion or as a gravel preservation product for the protection of the gravel wearing courses on unsurfaced gravel roads. Treatment of the surfacing only can result in a relatively deep penetration (> 60 mm), to bind the surfacing together (especially where the in-situ material consists of a very fine material containing a high percentage of problematic material, presenting problems in terms of workability and compatibility. Such treatment will enable the formation of a supporting layer on which an NME layer can be constructed in a conventional way. The supporting layer should be bladed to the required geometric requirements before the NME-NPNS is applied and then compacted using a smooth drum roller.

The dilution of the NME-NPNS should be pre-determined through testing in a laboratory using a standard Marshall mould to ensure that a depth of penetration of 60 mm is achieved, binding the material together. Typically, dilution rates of 1 to 5; 1 to 10, 1 to15 and 1 to 20 (1 being the NME-NPNS diluted in various ratios in water) applied at a rate of about 2 litres/m2 (applicable application rates should preferably be established on a trail section). After application the layer should be compacted using a smooth drum roller.

For deeper penetrations and and/or treatment of a typical 150mm base/surfacing layer as part of a supporting layer, the in-situ material can be ripped, sprayed, grader mixed and bladed before compaction. The testing requirements shown in light yellow in Table A5.6.10/1 is not applicable to material testing in the field for the treatment of in-situ material

or gravel surfacings. Quality control of the treatment efficiency is to be done using the DCP penetration rate (mm/blow) of the treated layer. The curing of this layer should conform to the DCP-DN values as given in Table A5.6.10.

Quality control of an NME-NPNS can be done in the field on each container delivered on site by spraying the required dosage on a building sand placed in a Marshall mould (60 mm in depth). After 48 h in an oven at 40 – 45ºC, the total depth of the building sand in the Marshall mould should be bound together. Water placed on the bottom of the building sand in the Marshall mould should form droplets not penetrating the bound building sand as an indication of the waterproofing achieved with the supplied NPNS.

In the case of a 150mm deep treatment, enrichment surface sprays with NME-MPNS may be needed as a maintenance action.

The surface of the wearing course shall receive additional treatment as described under Item A5.6.7.15.

Additional protection of the surface can be provided by the application of an applicable seal, including an NME-MPNS sand seal, slurry or “clear seal” to maintain a natural look as may be required by any specific road agency. A clear seal consists of a combination of a water-repellent-modified graded polymer. The clear seal is applied as per product specifications using a diluted (as little as 5 per cent dilution dependent on the type and quality of the polymer) compatible water-repellent modified graded polymer (applied at 0.6 litre/m2 to 1.5 litre/m2) which is transparent when applied, similar to a traditional prime or enrichment layer, but with extended expected service life, especially on fine graded materials.

PART B: LABOUR ENHANCEMENT

B5.6.1 SCOPE

This Section covers the work requirements for the Reconstruction of existing road pavement layers. This section covers work required for the construction of new roads (including upgrading of existing unpaved roads) or the rehabilitation of the upper pavement layers (base and sub-base) using the cold in-situ recycling process with (a) labour-intensive construction methods with a mixture of conventional equipment (b) conventional equipment, i.e., water-cart, grader(s) and compaction equipment (b) recycler and (c) central mixing plant. A relatively large proportion of activities as defined in Part A under the various sections are therefore suitable for labour enhanced methods of construction.

B5.6.2 DEFINITIONS

Definitions as provided in Clause A5.6.2 apply.

B5.6.3 GENERAL

Any activity specified in Part A, where hand work is given as an alternative, shall be executed in such a way as to maximise labour.

B5.6.4 DESIGN BY CONTRACTOR/PERFORMANCE BASED SYSTEMS

The provisions of Part A shall apply.

B5.6.5 MATERIALS

The provisions of Part A shall apply.

B5.6.6 CONSTRUCTION EQUIPMENT

Where reference is made in Part A to appropriate equipment, the use of light equipment shall be evaluated during trial sections.

B5.6.7 EXECUTION OF THE WORKS

For the reconstruction of pavement layers, oversized material can be removed by labour-intensive hand picking before the layer is stabilised are suitable components for labour enhancement.

B5.6.8 WORKMANSHIP

The provisions of Part A shall apply.

PART C: MEASUREMENT AND PAYMENT

(i) Preamble

The tendered rate for each pay item shall include full compensation for providing, maintaining and decommissioning upon completion, of all the equipment, labour, tools, incidentals and supervision to carry out the activity or construct the works in the pay item, unless otherwise stated.

Any prime cost or provisional sums shall be paid in accordance with the provisions of the conditions of contract. The charge or mark-up tendered or allowed for is a percentage of the amount actually paid under the prime cost or provisional sum. This percentage shall cover all the Contractor's handling, supervision, profit and liability costs to provide the services in the prime cost or provisional sum pay item.

(ii) Items not measured in this Section

The following required activities will not be measured or paid for separately and the Contractor shall include the cost thereof in other items as deemed appropriate:

- Drainage and protection of the pavement layers from all damage that may occur for any reason until the Employer has taken over the works;
- Protection of all existing or new kerbs, channels, sidewalks, lined drains, catch pits, kerb inlets, gratings, culverts, bridges, structures, buildings, road signs, guard rails, street lights, fencing, service pipes or cables and any other items adjacent to, over or under the road that could be damaged by the Contractor's vehicles, construction equipment, or by public traffic being accommodated on or alongside the pavement layers, during the construction of the pavement layers, until the Employer has taken over the works;
- Repair of all damage to the existing pavement layers after access to the construction site has been given to the Contractor and that may occur before, during or after the construction of the reconstructed or rehabilitated pavement layers up until the Employer has taken over the works;
- Provision of additional material in excess of the compacted volume of the layers calculated using the layer dimensions given in the Contract Documentation for whatever reason including additional material required for the correct placing, mixing, levelling and compaction of the layers;
- The removal of oversize material up to 5% of the compacted layer volume;
- Construction of tie in joints to new or existing road layers or surfacing;
- The preparation and the inspection for cracks in an underlying layer after removal of a pavement layer;
- Excavation of benches in pavement layers when widening an existing pavement;
- The provision and maintenance of covers for stockpiled reclaimed materials;
- The provision of method statements and of the programme of reconstruction work along with regular updates of the programme, and
- The brooming during the slushing process whether by hand or by mechanical means.

(iii) Items to be measured and paid for using payment items specified elsewhere in the specifications

For activities in Table C5.6-1 payment items specified in other Chapters or Sections of the specification, where they relate to work under this Section, will be listed in the Pricing Schedule.

Table C5.6-1: Payment items from other Chapters or Sections

Activity	Clause reference	Section or Chapter
Traffic accommodation	A5.6.3.1	Section C1.5 of Chapter 1
Tack or prime a layer	A5.5.3.7	C9.1.3 of Chapter 9

(iv) Payment items specifically for this Section of the Specifications

Item Description Unit

C5.6.1 Compiling and implementing M&U plans for the reconstruction of an existing road pavement ..... number (No)

The unit of measurement shall be the number of M&U plans for the reconstruction work. Several plans shall be required as specified in Clauses A5.6.3.8.

The tendered rate shall include full compensation for gathering all information, compiling the plans and for ensuring the implementation of the plans during the RR construction work.

Item Description Unit

C5.6.2 Reconstruction preparatory work ..... km

The unit of measurement shall be the kilometre of uniform section of road to be reconstructed and rehabilitated, measured along the centre-line of the existing road. Each uniform section shall be measured separately. In the case of an undivided road carriageway this shall be measured once along the centreline. In the case of a divided road carriageway this shall be measured once along each carriageway separately.

The tendered rate shall include full compensation for undertaking all the work required in preparation for reconstruction. This work includes all survey and survey-related work such as setting out, checking the design levels and the approval of the final design levels.

This work also includes the removal of standing water, grass and weeds from the road surface including the shoulders.

Item Description Unit

C5.6.3 Establishment Of Plant

C5.6.3.1 Establishment of cold in-situ recycling equipment/plant on site .... Lump Sum
C5.6.3.2 Establishment of conventional equipment/plant on site ..... Lump Sum

The tendered lump sum shall include full compensation for the provision of any number of recycling machine(s)/plant on the section of the site and the subsequent removal thereof, including additional plant required for carrying out cold in-situ processing, stabilisation and compaction operations.

The lump sum will become payable after the cold in-situ processing and stabilisation work has been completed and the equipment has been removed from the site. Payment will only be made for either C5.6.3.1 or for C5.6.3.2 dependent on the Contractor's chosen method of construction.

Payment will not distinguish between the number of recycling machines or conventional units of equipment brought onto and/or removed from the site. No payment will be made for the replacement of the defective plant.

Item	Description	Unit

C5.6.4 Cold in-situ recycled granular layer treated

C5.6.4.1 Using a recycler:

(a) Base-layer (depth to be specified) compacted to the Specified Density (Table A5.6/1) using an NME or equivalent ..... cubic metre (m³)

(b) Sub Base-layer (depth to be specified) compacted to the specified density (Table A5.6.5/1)using an NME or equivalent ..... cubic metre (m³)

C5.6.4.2 Using a conventional plant:

(a) Base-layer (depth to be specified) compacted to the specified density (Table A5.6.5/1) using an NME or equivalent ..... cubic metre (m³)

(b) Sub Base-layer (depth to be specified) compacted to the specified density (Table A5.6.5/1) using an NME or equivalent ..... cubic metre (m³)

The unit of measurement shall be the cubic metre of pavement processed and stabilised to provide the recycled base and or sub-base layer as specified. Payment will only be made for either C5.6.4.1 or for C5.6.4.2 dependent on the Contractor's chosen method of construction.

The rate tendered shall include full compensation for the provision of all plant, labour, materials and all other incidentals necessary to produce the finished layer as specified but excluding the provision of the NME stabilising layer that shall be measured and paid for under item C5.6.5. The NME will consist of a material-compatible product as described in the preamble, which will be able to meet the required specifications (the Contractor will take responsibility for using a stabilising agent not meeting the minimum requirements in terms of stability resulting in inferior test results).

The tendered rate shall also include full compensation for the milling of existing pavement layers, blending of the materials in the nominal mix ratios specified, supply, diluting of the NME in potable water and mixing of the diluted NME, spreading and final blading of the recycled mix, compacting the material to the specified density and protecting and maintaining the work in accordance with the specifications.

The tendered rate shall also include full compensation for the cleaning of the surface and the referencing of lane and control survey markings as specified.
Where ordered by the Engineer for the processing and stabilisation of pavement layers to depths other than specified, the payment will be made on a pro-rata basis between the tendered rates for the nominal depths scheduled.

All failures due to the use of contaminated equipment (not thoroughly cleaned) will be for the cost of the Contractor.

Item	Description	Unit

C5.6.5 Nano Modified Emulsion (NME) or Equivalent ..... cubic metre (m³)

The unit of measurement shall be per cubic metre of the material stabilised (different stabilising agents may require different percentage additives to meet criteria) with the stabilising agent to be supplied to meet all the required criteria as specified and as instructed by the Engineer.

The tendered rate shall include full compensation for providing, diluting, mixing and applying the stabilising agent, irrespective of the rate of application. The material-compatible NME will be provided to the site by the supplier to meet the specifications. The Contractor will take full responsibility and liability for using a stabilising agent not meeting the END-PRODUCT specification. During the design phase, the Design Engineer should ensure that products are available that will meet the specifications with the given naturally available materials.

No chemical additives will normally be required with a material-compatible water-repellent NME stabilising agent. However, should the material characteristics dictate the use of any chemical additives the costs should be included in the tendered rate.

No pre-treatment of lime, etc. will be required with an NME stabilising agent. Some minerals may require pre-treatment with an appropriate / proven product. Payment is to be included as part of the tendered rate.

Item	Description	Unit

C5.6.6 Blading of surplus material to windrow ..... cubic metre (m³)

The unit of measurement shall be the cubic metre of surplus material bladed to the windrow as specified by the Engineer. The tendered rate shall include full compensation for all labour equipment and any other incidentals required for blading to a windrow of surplus material with a motor grader.

Item	Description	Unit

C5.6.7Removal from site of surplus material ..... cubic metre (m³)

The unit of measurement shall be the cubic metre of surplus material removed. The volume shall be determined as prescribed by the Engineer and shall be the loose volume in stockpiles or the equivalent thereof volume in hauling vehicles. Accurate load and haul sheets shall be kept on site and submitted to the Engineer. The tendered rate shall include full compensation for loading and transporting the surplus material to a designated spoil or stockpile site as approved by the client.

Item	Description	Unit

C5.6.8 Construction of a temporary wearing course ..... square metre (m²)

The unit of measurement shall be the square metres of stabilised base slushed in accordance with the requirements of section A5.6.7.15 of the Construction Documentation and the tendered rate shall include full compensation thereof.

Item	Description	Unit

C5.6.9 Trial sections where ordered (extra over items C5.6.4 and C5.6.5)

C5.6.9.1 Processing and stabilisation of layers ..... cubic metre (m³)

C5.6.9.2 Applying of prime, tack coat or surfacing layer ..... square metre (m²)

The unit of measurement for item C5.6.9.1 shall be the cubic metres of processed and stabilised pavement layers as per instruction.
The unit of measurement for item C5.6.9.2 shall be the square metres, independent of the applied surfacing as per instruction from the engineer.
The tendered rates shall include full compensation for the construction of the trial section of recycled pavement layers complete as specified.

Item	Description	Unit

C5.6.10 Extra over Item C5.6.4 for adding extra material to the layer

C5.6.10.1 Gravel Base of a required quality as per specification ..... cubic metre (m³)
C5.6.10.2 Gravel sub-base of a required quality as per specification .. cubic metre (m³)
C5.6.10.3 RA (when specified as per specific client) ..... cubic metre (m³)

The unit of measurement shall be the cubic metre of material added on the instruction of the Engineer, which quantity shall be taken as 70 per cent of the loose volume measured in trucks unless instructed by the Engineer that the quantity be determined by way of cross-sections. The tendered rate shall include full compensation for procuring and adding the

specified material to the layer, for spreading the material, for all haul and for other incidentals to add the material to the layer.

Item	Description	Unit

C5.6.11 Milling out existing bituminous material with an average milling depth

C5.6.11.1 Not exceeding 30 mm ..... cubic metre (m³)
C5.6.11.2 Exceeding 30 mm but not exceeding 60 mm ..... cubic metre (m³)
C5.6.11.3 Exceeding 60 mm ..... cubic metre (m³)

The unit of measurement shall be a cubic metre of asphalt milled out and removed to approved stockpiles. The tendered rate shall include the compensation for providing milling equipment and milling out the material to the specified depth and in accordance with the requirements for evenness and for all measurements, labour, supervision and incidentals tor executing the work and obtaining milled material which will comply with specified materials.

The tendered rate shall also include full compensation for trading and transporting the material to approved stockpiles tor a free-haul distance 1.0 km irrespective of the method of loading and for unloading of the material and placing it in stockpile, also tor screening out the oversize material if necessary. Separate payment will be made for preparing stockpile site.

Payment for milling the material will distinguish between the various average depths of excavation, irrespective of the required number of passes by the plant for milling out material.

Item	Description	Unit

C5.6.12 Providing the milling machine on the site (size indicated) ..... number (No)

The unit of measurement shall be the number of milling machines required and provided on the site.

The tendered rate shall include full compensation for all costs involved in moving of the milling machine irrespective of as to whether the machine is moved to a new section of the site or returned to a previous position for further work), as well as for all delays and production losses. Payment will not be made for moving for the purpose of maintenance and repairs or for replacement with another machine.

Item	Description	Unit

C5.6.13 Break down of in-situ material ..... cubic metre (m³)

The unit of measurement shall be the cubic meter of material measured after compaction. The quantity measured shall be computed by the method of average end areas from levelled cross-sections prepared from the existing road surface before any ripping or breaking down of the existing surface and base course has taken place. All measurements shall be neat and material placed in excess of the authorized cross-section will not be paid for. The tendered price shall include the ripping, breaking down, preparing, processing, shaping and watering of the materials to the specified densities.

Item	Description	Unit

C5.6.14 Application of NPNS surface treatments

C5.6.14.1 Application of a NPNS as a prime or “clear seal” ..... square metre (m²)
C5.6.14.2 Application of a NPNS in-situ materials treatment ..... square metre (m²)
C5.6.14.3 Application of a NPNS gravel surfacing treatment ..... square metre (m²)

Rates should include the provision of the materials and suitable distribution equipment able to apply the specified NPNS surface treatments to meet the required specifications and at the required rate.

Item	Description	Unit
C5.6.15	Application of MPNS surface treatments	
C5.6.15.1	Application of a MPNS as a prime or “clear seal”	square metre (m²)
C5.6.15.2	Application of a MPNS in-situ materials treatment	square metre (m²)
C5.6.15.3	Application of a MPNS gravel surfacing treatment	square metre (m²)

Rates should include the provision of the materials and suitable distribution equipment able to apply the specified MPNS surface treatments to meet the required specifications and at the required rate.

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

Add the following before the 1st paragraph a:

"The requirements for the thickening of slabs at joints, will be specified in the Contract Documentation."

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."

COTO CHAPTER 7: MAINTENANCE AND REPAIR OF CONCRETE LAYERS

SECTION 7.1: REPLACEMENT OF EXISTING JOINT SEALANT

PART D: GUARANTEES AND COMPLIANCE CERTIFICATES

D7.1.4 DESIGN BY CONTRACTOR / PERFORMANCE BASED SYSTEMS

Add the following after the 2nd paragraph:

"The Contractor shall provide three guarantees in the amounts specified in Table D7.1.4-1, prior to the issue of the Taking-over certificate. The guarantees shall be issued by an insurance company duly registered in terms of the Insurance Act (Long Term Insurance Act No 52 of 1998 or Short Term Insurance Act No 53 of 1998) or by a bank duly registered in terms of the Banks Act (No 94 of 1990) and approved by the Employer and having an office or banking facility in the Republic of South Africa. The guarantee shall be subject to approval by the Employer and shall be in the form as specified in Figure D7.1.4-1 or in another form approved by the Employer.

Table D7.1.4-1: Guarantee amounts

Guarantee	***Amount***
1st Guarantee: To be released 2 years after issuing of Taking-Over Certificate	*50% of pay item C7.1.1*
2nd Guarantee: to be released 6 years after issuing of Taking-Over Certificate	*30% of pay item C7.1.1*
3rd Guarantee: To be released 8 years after issuing of Taking-Over Certificate	*20% of pay item C7.1.1*

FIGURE D7.1.4-1: FORM OF PRODUCT PERFORMANCE GUARANTEE

To:The South African National Roads Agency SOC Limited
PO Box 415
Pretoria
0001

CONTRACT SANRAL *Insert contract number*
insert contract description

1. I/We , the undersigned, ... and .....

   in our respective capacities as .....

   and .....

   and as such duly authorised to represent: .....
   (hereinafter referred to as "the Guarantor") *in the case of a company, a resolution to be attached*

   do hereby hold at your disposal the amount of .....

   (R……), for the due fulfilment by .....
   insert the name of Contractor (hereinafter referred to as "the Contractor") of its obligations to The South African National Roads Agency SOC Limited (hereinafter referred to as "SANRAL") in terms of the above stated contract between the Contractor and SANRAL.

2. The Guarantor hereby renounces the benefits of the exceptions non numeratae pecuniae, non-causa debiti, excussionis and divisionis, the meanings and effect whereof the Guarantor declares itself to be fully conversant.

3. The Guarantor undertakes and agrees to pay to SANRAL the said amount of R .....

   .....

   (R……) (excluding VAT), or such portion as may be demanded on receipt of a written demand from SANRAL, which demand may be made by SANRAL if in SANRAL's opinion and at SANRAL's sole discretion, the Joint Sealant / Asphalt / Surface Treatment *Select applicable* constructed under this Contract does not meet the acceptance criteria in terms of Section D7.1 / D9.1 / D10.1 *Select applicable* of Part C3 of the Contract.

4. Subject to the above and without in anyway detracting from your rights to adopt any of the procedures set out in the contract, the said demand can be made by SANRAL at any stage.

5. The said amount of R.....

   R……), or such portion as may be demanded may be retained by SANRAL on condition that after completion of the service, as stipulated in the contract, SANRAL shall account to the Guarantor showing how this amount has been utilised and refund to the Guarantor any balance due.

6. This guarantee is neither negotiable nor transferable and

a) must be surrendered to the Guarantor at the time when SANRAL accounts to the Guarantor in terms of clause 5 above, or
b) shall lapse at the end of the guarantee period in terms of Section D7.1 / Section D9.1 / D10.1 *Select applicable* of Part C3 of the Contract Document upon issue of a report by the Engineer to SANRAL stating that all parameters meet the full Assessment Criteria, or, where the full Assessment Criteria have not been met, that the remedial work has been accepted by the Engineer and SANRAL, and
c) shall not be interpreted as extending the Guarantor's liability to anything more than payment of the amount guaranteed.

7. This guarantee shall be governed by South African Law and subject to the jurisdiction of South African Courts.

THUS DONE AND SIGNED AT .....

ON THIS ..... DAY OF ..... 20 .....

GUARANTOR: .....

ADDRESS:

.....

.....

.....

AS WITNESSES: 1 ..... 2 .....

NAMES (PRINT): 1 ..... 2 .....

".

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*.

*In the paragraph after Table A8.1.5-1, add "*or subbase*" after "*base*".*

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.*"*

SECTION 8.3: TEXTURE TREATMENT

PART A: SPECIFICATION

A8.3.5 MATERIALS

Add the following:

"The method of application, the aggregate grading (slurry type), type of emulsion, and filler type, will be specified in the Contract Documentation."

A8.3.5.2 Aggregate

*In clause a), delete reference to "*A10.15.17*" and replace with "*A10.1.5.17*".*
*In clause b), delete reference to "*A10.15.18*" and replace with "*A10.1.5.18*".*

SECTION 8.6: GEOSYNTHETIC CRACK SEALING

PART C: MEASUREMENT AND PAYMENT

Add the following new pay item:

"Item	**Description**	**Unit**
C8.6.2	**Bituminous binder variation:**	
C8.6.2.1	Bitumen emulsion (*indicate type and binder content*)	litre (ℓ)

The unit of measurement for bituminous binder in respect of an increase or a decrease in the specified rates of application shall be the litre measured in terms of the residual cold bitumen before dilution."

COTO CHAPTER 9: ASPHALT LAYERS

SECTION 9.1: ASPHALT LAYERS

PART A: SPECIFICATION

A9.1.4 DESIGN BY THE CONTRACTOR

A9.1.4.3 Changes to mix components

Add the following:

"If the binder source or crude oil source changes, the following tests and report will be conducted and evaluated in order to determine whether there is a material difference between the original binder and the alternative source binder:

1. Saturates, Aromatics, Resins and Asphaltenes (SARA) fractionation analysis;
2. Fourier Transform Infrared (FTIR) spectroscopy testing;
3. Specialist Evaluation Report on the above binder test results related to chemical, structural and mechanical properties, including blending compatibility and stability characteristics. The report shall include a direct comparison with the original binder.
4. Asphalt mix volumetric and performance testing including Indirect Tensile Strength (ITS), Immersion Index, Air Permeability, Modified Lottman, and Hamburg Wheel Tracking tests.

If the above tests indicate a material difference in binder properties and mix performance, the mix design process will be repeated.

The abovementioned tests will also be conducted on the original proposed binder during the asphalt mix design process for future comparison purposes if the binder source or crude oil source changes.

All costs related to the above processes shall be at the cost of the Contractor and shall be deemed to be included in the relevant tendered rates."

A9.1.5 MATERIALS

A9.1.5.4 Aggregates

a) Aggregate properties

*In the 1st paragraph, delete the 2nd sentence: "*Coarse and fine aggregate shall be clean and free from decomposed materials, vegetable matter or any other deleterious substances, and shall meet the requirements listed in Table A9.1.5-1 below unless otherwise specifically stated in the Contract Documentation*", and replace with the following:*
"Coarse and fine aggregate shall be clean from excess dust and free from decomposed materials, vegetable matter and any other deleterious substances such as clay lumps and organic matter and shall meet the requirements listed in Table A9.1.5-1 below unless otherwise specifically stated in the Contract Documentation.".

A9.1.6 CONSTRUCTION EQUIPMENT

A9.1.6.8 Material transfer vehicle

*In the 1st paragraph, in the 1st sentence, delete: "*Where so specified, and provision thereof is included under Measurement and Payment,*" and replace with: "*If specified in the Contract Documentation,*".*

A9.1.8 WORKMANSHIP

A9.1.8.4 Surface regularity

a) Measured using inertial laser profilometers

*In the 6th paragraph add the following prior to "*The applicable Full Payment Bracket *…":*

"For the Asphalt Base the values in Payment Bracket 6 in Table A9.1.8-3 shall be applied as the payment adjustment factors for the Asphalt Base on the contract or section, and for the Asphalt Surfacing".

In the 6th paragraph add the following after "…assessment of the base as per Clause A5.3.8.5c) of Chapter 5 for granular bases":

", and this clause A9.1.8.4a) for Asphalt bases."

In the 7th paragraph, delete: "under 1".

Add the following after the 8th paragraph:

"Where the asphalt surfacing is placed on a surface, other than a granular or asphalt base, constructed by the Contractor through mill and replace or patching, the surface regularity of the replaced or patched surface shall be measured before the surfacing is placed. Should the IRI values per 100m section so determined be better than the IRI values of the original surfacing for the particular 100m section, the measured values shall be used for the $IRI_{b\ Ave}$ in the above calculation. Should the IRI values per 100m section so determined be worse than the IRI values of the original surfacing for the particular 100m section, the IRI values of the original surfacing shall be used for the $IRI_{b\ Ave}$ in the above calculation."

In the 9th paragraph, delete : "surfacing".

*For Table A9.1.8-3, delete "*surfacings*" in the heading and add the following additional Payment Bracket to Table A9.1.8-3*

"Target $IRI_{100m\ Ave}$ (m/km)	**Payment Bracket 9**
< 0.80	1.050
0.81 to 0.90	1.050
0.91 to 1.00	1.050
1.01 to 1.10	1.050
1.11 to 1.20	1.050
1.21 to 1.30	1.050
1.31 to 1.40	1.050
1.41 to 1.50	1.050
1.51 to 1.60	1.050
1.61 to 1.70	1.025
1.71 to 1.80	1.010
1.81 to 1.90	1.000
1.91 to 2.00	0,990
2.01 to 2.10	0,975
2.11 to 2.20	0,955
2.21 to 2.30	0,930
2.31 to 2.40	0,900
2.41 to 2.50	0.865
>2.51	Reject"

A9.1.8.8 Sampling

a) Coring of completed layers

Add the following after the last paragraph:

*"*At least 25% of the cores drilled on the completed asphalt layers to determine the density, shall be drilled randomly within 250 mm of the joints.*":*

Add the following new sub-clause A9.1.8.9:

A9.1.8.9 Surface Texture

*"*Unless otherwise specified in the Contract Documentation, the final surface texture of any asphalt surface shall not be less than 0,8 mm and shall be demonstrated as being achievable in the trial section, as described in Clause A9.1.3.3. Measurement of texture depth shall be in accordance SANS 3001-BT11, or by means of instrument determined measurements as described and specified in Clause A20.1.5.5 of Chapter 20 "Tests on pavements*":*

PART C: MEASUREMENT AND PAYMENT

(iii) Items that will not be measured separately

Delete activity 6, and replace with the following:

"6. No separate payment will be made for transporting materials from commercial sources irrespective of the haul distance and no separate payment will be made for transporting asphalt from any source, irrespective of the haul distance."

Item	Description	Unit

C9.1.8 Surfacing of bridge decks

*Delete the last paragraph of the item description: "*Rolled in chippings shall be paid for separately under payment item C9.1.10 as applicable*", and replace with the following:*
*"*Rolled in chippings shall be paid for separately under payment item C9.1.9 and C9.1.10 as applicable.*".*

C9.1.9 Application of rolled-in chippings (State nominal size**)**

*Delete the 1st paragraph of the item description: "*The unit of measurement shall be the ton of specified size of rolled-in chippings applied at the approved application rate, measured loose in hauling vehicles. The tendered rate shall include full compensation for the procuring, furnishing, pre-coating, spreading and rolling in of the chippings and for any additional costs resulting from the construction of the asphalt surfacing with rolled-in chippings.*", and replace with the following:*
*"*The unit of measurement shall be the square metre of specified size of rolled-in chippings applied at the approved application rate. The tendered rate shall include full compensation for the procuring, furnishing, pre-coating, spreading and rolling in of the chippings and for any additional costs resulting from the construction of the asphalt surfacing with rolled-in chippings.*".*

C9.1.16 Work undertaken in accordance with a Product Performance Guarantee System

Delete all paragraphs of this item description and replace with the following:

"The tendered lump sum under payment item C9.1.16.1 shall include full compensation for the provision of performance guarantees issued as specified in D9.1.3.1 in respect of the asphalt surfacing and asphalt base of the permanent works, valid for the Performance Warranty period. The combined value of the guarantees shall be 10% of the total value of Section C9.1 [Asphalt Layers]. The value of pay Item C9.1.17 [Surface Regulatory Payment Adjustment] to be excluded from the value of guarantees calculation.

The tenderer shall, with his tender, provide documentation as to confirm that performance guarantees as required shall be provided by an acceptable financial institution should the tender be successful.

The guarantees shall be prepared to the format provided under Figure D9.1.3-1. The Terms and Conditions applicable to the release of the Performance Guarantees shall be as described under Clauses D9.1.3, D9.1.9, D9.1.10, D9.1.11 and D9.1.12.

The tendered lump sum shall not be subject to Contract Price Adjustment and shall become payable once the Contractor has submitted and the Employer has accepted the guarantees.

The rate tendered under payment item C9.1.16.2 shall include all costs associated with constructing the relevant pavement layers, all as specified in the Contract Documentation."

Add the following payment item:

"Item	**Description**	**Unit**
C9.1.17	**Surface regularity payment adjustment**	prime cost (PC) sum

The prime cost sum makes allowance for the payment adjustment where applicable. The adjustment shall be calculated as the cumulative monetary value of each 100 m section of the completed surface layer as measured and paid under item C9.1.5, multiplied by the applicable payment adjustment factor obtained from Table A9.1.8-3.
No mark-up is payable on this item."

PART D: GUARANTEES AND COMPLIANCE CERTIFICATES

D9.1.3 GENERAL

D9.1.3.1 Extended Performance Warranty

Add the following after the 3rd paragraph:

" The guarantees shall be issued by an insurance company duly registered in terms of the Insurance Act (Long Term Insurance Act No 52 of 1998 or Short Term Insurance Act No 53 of 1998) or by a bank duly registered in terms of the Banks Act (No 94 of 1990) and approved by the Employer and having an office or banking facility in the Republic of South Africa. The guarantee shall be subject to approval by the Employer and shall be in the form as specified in figure D9.1.3-1 or in another form approved by the Employer.

FIGURE D9.1.3-1: FORM OF PRODUCT PERFORMANCE GUARANTEE

To:The South African National Roads Agency SOC Limited
PO Box 415
Pretoria
0001

CONTRACT SANRAL R.531-020-2026/1
FOR THE R531 SECTION 2 - EMERGENCY REPAIR OF DAMAGED STEEL RIBBED PIPE CULVERT AT KM 6.9 AND SINKHOLE AT KM 11

1. I/We , the undersigned, ... and .....

   in our respective capacities as .....

   and .....

   and as such duly authorised to represent: .....
   (hereinafter referred to as "the Guarantor") ***in the case of a company, a resolution to be attached***

   do hereby hold at your disposal the amount of .....

   (R……), for the due fulfilment by .....
   insert the name of Contractor (hereinafter referred to as "the Contractor") of its obligations to The South African National Roads Agency SOC Limited (hereinafter referred to as "SANRAL") in terms of the above stated contract between the Contractor and SANRAL.

2. The Guarantor hereby renounces the benefits of the exceptions non numeratae pecuniae, non-causa debiti, excussionis and divisionis, the meanings and effect whereof the Guarantor declares itself to be fully conversant.

3. The Guarantor undertakes and agrees to pay to SANRAL the said amount of R .....

   .....

   (R……) (excluding VAT), or such portion as may be demanded on receipt of a written demand from SANRAL, which demand may be made by SANRAL if in SANRAL's opinion and at SANRAL's sole discretion, the Joint Sealant / Asphalt / Surface Treatment ***Select applicable*** constructed under this Contract does not meet the acceptance criteria in terms of Section D7.1 / D9.1 / D10.1 ***Select applicable*** of Part C3 of the Contract.

4. Subject to the above and without in anyway detracting from your rights to adopt any of the procedures set out in the contract, the said demand can be made by SANRAL at any stage.

5. The said amount of R.....

   R……), or such portion as may be demanded may be retained by SANRAL on condition that after completion of the service, as stipulated in the contract, SANRAL shall account to the Guarantor showing how this amount has been utilised and refund to the Guarantor any balance due.

6. This guarantee is neither negotiable nor transferable and

a) must be surrendered to the Guarantor at the time when SANRAL accounts to the Guarantor in terms of clause 5 above, or

b) shall lapse at the end of the guarantee period in terms of Section D7.1 / Section D9.1 / D10.1 *Select applicable* of Part C3 of the Contract Document upon issue of a report by the Engineer to SANRAL stating that all parameters meet the full Assessment Criteria, or, where the full Assessment Criteria have not been met, that the remedial work has been accepted by the Engineer and SANRAL, and

c) shall not be interpreted as extending the Guarantor's liability to anything more than payment of the amount guaranteed.

7. This guarantee shall be governed by South African Law and subject to the jurisdiction of South African Courts.

THUS DONE AND SIGNED AT .....

ON THIS ..... DAY OF ..... 20 .....

GUARANTOR: .....

ADDRESS:

.....

.....

.....

AS WITNESSES: 1 ..... 2 .....

NAMES (PRINT): 1 ..... 2 .....

".

COTO CHAPTER 10: SURFACE TREATMENTS

SECTION 10.1: GENERAL REQUIREMENTS FOR SURFACE TREATMENTS

PART A: SPECIFICATION

A10.1.3 GENERAL

A10.1.3.2 Weather limitations

In the 1st paragraph, add the following new sub-clause:

- *"*If the permeability of the surface (utilising the Marvil test – SANS 3001-BT12) indicate medium or high permeability (i.e. the water level reached the 50mL mark within 3 minutes), no sealing shall be done for 1000°C.hours after rain."

Delete the 1st sentence of the 2nd paragraph, and replace with the following:
*"*No seal work will be allowed in the Seal Embargo Period defined in the Contract Documentation, unless otherwise specified in the Contract Documentation.".

A10.1.3.14 Nominal rates of application for tender purposes

*In the 1st sentence of the 2nd paragraph, after the wording: "…*used in the various types of seals*", add the following: "*,as specified in the Contract Documentation*".*

b) Multiple stone seals

*In Table A10.1.3-4 for Nominal size of aggregate of 7.1mm, add "*1.1*" as the nominal rate of binder application for penetration coat in l/m² for Hot applied homogeneous modified bitumen at spray temperature.*

*In Table A10.1.3-4 for Nominal size of aggregate of 7.1mm (for 1st layer of split application), add "*n/a*" as the nominal rate of binder application for penetration coat in l/m² for Hot applied homogeneous modified bitumen at spray temperature*.

e) Nominal binder application and aggregate spread rates for Cape seals (Slurry component)

Delete Table A10.1.3-7, and replace with the following:

"Table A10.1.3-7: Nominal spread rate of slurry for Cape seals

Nominal size of aggregate (mm)	First layer of slurry (m² per m³)	Second layer of slurry (m² per m³)
20	190	365
14	200	-
10	335	-"

g) Cover sprays

*Replace the 1st paragraph with the following: "*The nominal application rate of a diluted emulsion cover spray as specified, shall for tender purposes be 0,35 l/m² residual cold bitumen.*"*.

A10.1.5 MATERIALS

A10.1.5.7 Precoating fluid

*Add the following new paragraph: "*The precoating fluid shall be a low viscosity bitumen-based product containing petroleum cutters and a chemical adhesion agent. It shall comply with the specifications as provided in the SABITA Manual 30: Requirements for stone precoating fluids.".

A10.1.6 CONSTRUCTION EQUIPMENT

A10.1.6.1 Binder distributor

*In the last paragraph replace the 1st sentence with the following: "*The transverse distribution of spray flares shall be field verified according to SANS 3001-BT25 and Clause A20.1.5.9 of Chapter 20 and by visual observations to ensure a uniform transverse distribution of binder.".

A10.1.6.2 Chip spreaders

In the last paragraph delete the 2nd bullet and replace with the following:
"- of spreading Grade C aggregate, Graded aggregate and Sand- or Grit seals.".

PART C: MEASUREMENT AND PAYMENT

(i) Preamble

Add the following new paragraph:
"Items C10.1.27 and C10.1.28 are only applicable for bituminous surface treatments constructed in terms of Part D: Guarantees and Compliance Certificates."

Item	Description	Unit
C10.1.2	**Single seals including a cover spray, if specified (indicate grade of aggregate and type of binder) spreading the aggregate by (state: walk behind spreader or by hand):**	

Replace the 1st two item description paragraphs with the following:
*"*The unit of measurement for item C10.1.1 and C10.1.2 shall be square metre of completed and accepted seal in accordance with the approved method statement and additional instructions.

The nominal rates for single seals indicated in A10.1.3.14(a) and for cover sprays indicated in A10.1.3.14(g), shall apply.".

C10.1.3 Multiple stone seals including a cover spray, if specified using:

Replace the 1st sentence of the 2nd paragraph of the item description, with the following:
*"*The nominal rates for multiple stone seals indicated in A10.1.3.14(b) and for cover sprays indicated in A10.1.3.14(g), shall apply.

C10.1.4 Embargo period effects

*In the 1st paragraph of the item description, delete reference to: "*C10.1.6.1*", and replace with: "*C10.1.4.1*".*

*In the 2nd paragraph of the item description, delete reference to: "*C10.1.6.2*", and replace with: "*C10.1.4.2*".*

C10.1.6 Sand or Grit seals using (state: walk behind spreader or by hand):

Replace the 1st two item description paragraphs with the following:
*"*The unit of measurement for item C10.1.5 and C10.1.6 shall be square metre of completed and accepted seal in accordance with the approved method statement and additional instructions.

The nominal rates for sand or Grit seals indicated in A10.1.3.14(c) shall apply.".

C10.1.11 Application of cover spray

*In the 2nd paragraph of the item description, delete reference to: "*A10.1.3.15*", and replace with: "*A10.1.3.14*".*

C10.1.12 Application of cover spray by hand

*In the 2nd paragraph of the item description, delete reference to: "*A10.1.3.15*", and replace with:* "A10.1.3.14*".*

PART D: GUARANTEES AND COMPLIANCE CERTIFICATES

D10.1.3 PERFORMANCE GUARANTEE REQUIREMENTS

Replace the 1st sentence of the 2nd paragraph, with the following:
"Prior to the issuing of the Completion Certificate, the Contractor shall provide a guarantee, valued at 10% of the contract value as provided for under item C10.1.27 for the performance of the surfacing layer.".

Add the following after the 2nd paragraph:

" The guarantees shall be issued by an insurance company duly registered in terms of the Insurance Act (Long Term Insurance Act No 52 of 1998 or Short Term Insurance Act No 53 of 1998) or by a bank duly registered in terms of the Banks Act (No 94 of 1990) and approved by the Employer and having an office or banking facility in the Republic of South Africa. The guarantee shall be subject to approval by the Employer and shall be in the form as specified in figure D10.1.3-1 or in another form approved by the Employer.

FIGURE D10.1.3-1: FORM OF PRODUCT PERFORMANCE GUARANTEE

To:The South African National Roads Agency SOC Limited
PO Box 415
Pretoria
0001

CONTRACT SANRAL R.531-020-2026/1
FOR THE R531 SECTION 2 - EMERGENCY REPAIR OF DAMAGED STEEL RIBBED PIPE

1. I/We , the undersigned, ... and .....

   in our respective capacities as .....

   and .....

   and as such duly authorised to represent: .....
   (hereinafter referred to as "the Guarantor") ***in the case of a company, a resolution to be attached***

   do hereby hold at your disposal the amount of .....

   (R……), for the due fulfilment by .....
   insert the name of Contractor (hereinafter referred to as "the Contractor") of its obligations to The South African National Roads Agency SOC Limited (hereinafter referred to as "SANRAL") in terms of the above stated contract between the Contractor and SANRAL.

2. The Guarantor hereby renounces the benefits of the exceptions non numeratae pecuniae, non-causa debiti, excussionis and divisionis, the meanings and effect whereof the Guarantor declares itself to be fully conversant.

3. The Guarantor undertakes and agrees to pay to SANRAL the said amount of R .....

   .....

   (R……) (excluding VAT), or such portion as may be demanded on receipt of a written demand from SANRAL, which demand may be made by SANRAL if in SANRAL's opinion and at SANRAL's sole discretion, the Joint Sealant / Asphalt / Surface Treatment ***Select applicable*** constructed under this Contract does not meet the acceptance criteria in terms of Section D7.1 / D9.1 / D10.1 ***Select applicable*** of Part C3 of the Contract.

4. Subject to the above and without in anyway detracting from your rights to adopt any of the procedures set out in the contract, the said demand can be made by SANRAL at any stage.

5. The said amount of R.....

   R……), or such portion as may be demanded may be retained by SANRAL on condition that after completion of the service, as stipulated in the contract, SANRAL shall account to the Guarantor showing how this amount has been utilised and refund to the Guarantor any balance due.

6. This guarantee is neither negotiable nor transferable and

a) must be surrendered to the Guarantor at the time when SANRAL accounts to the Guarantor in terms of clause 5 above, or
b) shall lapse at the end of the guarantee period in terms of Section D7.1 / Section D9.1 / D10.1 *Select applicable* of Part C3 of the Contract Document upon issue of a report by the Engineer to SANRAL stating that all parameters meet the full Assessment Criteria, or, where the full Assessment Criteria have not been met, that the remedial work has been accepted by the Engineer and SANRAL, and
c) shall not be interpreted as extending the Guarantor's liability to anything more than payment of the amount guaranteed.

7. This guarantee shall be governed by South African Law and subject to the jurisdiction of South African Courts.

THUS DONE AND SIGNED AT .....

ON THIS ..... DAY OF ..... 20 .....

GUARANTOR: .....

ADDRESS:

.....

.....

.....

AS WITNESSES: 1 ..... 2 .....

NAMES (PRINT): 1 ..... 2 .....

".

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 A: SPECIFICATION

A11.4.1 SCOPE

Delete the last paragraph, and replace with the following:
*"*Moveable vehicle restraint systems required for traffic accommodation during construction and truck mounted attenuators are also specified in Clauses A1.5.6.1, A1.5.6.3 and A1.5.7.11 of Chapter 1.".

SECTION 11.6: ROAD SIGNS

PART A: SPECIFICATION

A11.6.7 EXECUTION OF THE WORKS

A11.6.7.5 Erecting road signs

b) Excavation and backfilling

*In the 1st sentence of the 2nd paragraph, before "*Section A13.4 of Chapter 13*", add the following:*
*"*Section A13.2, Section A13.3 and".

PART C: MEASUREMENT AND PAYMENT

Item **Unit**

C11.6.1 Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:

Add the following new pay item:

C11.6.1.13 Moveable barricade/road sign combination (1,4 mm thick pre-painted galvanised steel, background Class III and symbol retro-reflective Class III) ..... number (No)

The unit of measurement for item C11.6.1.13 shall be the number of moveable barricades, complete with road signs provided.

The tendered rate for item C11.6.1.13 shall include full compensation for providing and erecting each moveable barricade and signs and shall also include full compensation for moving the barricade as and when required."

Add the following payment item:

"Item **Unit**

C11.6.12 Mounted on stands:

C11.6.12.1	Road signs, R- and TR series 1200mm dia Class III- (m^2)	square metre
C11.6.12.2	Road signs, TW-series 1500mm sides Class III (m^2)	square metre
C11.6.12.3	Road signs, TGS- and TG-series 1800 x 2400mm Class III (m^2)	square metre

The unit of measurement for item C11.6.12.1 to C11.6.12.3 shall be the square meter of each sign provided, and, as may be applicable, completely erected.

In addition, the rate shall also include moving the signs as may be necessary to new positions as required in terms of the works."

SECTION 11.7: ROAD MARKINGS AND ROAD STUDS

PART A: SPECIFICATION

A11.7.5 MATERIALS

A11.7.5.2 Materials

a) Marking materials

(iii) Thermoplastic road marking material

*In the 4th paragraph, delete "*mcd/m^2.lux*"and replace with "*mcd/m^2/lux*".*

PART C: MEASUREMENT AND PAYMENT

Item	Unit
C11.7.3 Thermoplastic road marking	

*Amend the retro-reflective luminance unit to be "*mcd/m^2/lux*".*

COTO CHAPTER 12: GEOTECHNICAL APPLICATIONS

SECTION 12.5: SHOTCRETE

PART A: SPECIFICATION

A12.5.7 EXECUTION OF THE WORKS

Preconstruction trial panels

*Add "***A12.5.7.21***" before the heading "***Preconstruction trial panels***".*

PART C: MEASUREMENT AND PAYMENT

Item **Unit**

C12.5.4 Shotcrete (of specified thickness or volume):

Amend the unit for item C12.5.4.4 Dental shotcrete, to "cubic metre (m^3)*".*

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.*

SECTION 12.10: HARD EXCAVATION BY BLASTING

PART A: SPECIFICATION

A12.10.5 MATERIALS

A12.10.5.1 Explosives

b) Controlled bulk blasting

Add the following at the end of the 2nd paragraph:
*"*The use of pumped emulsions for controlled bulk blasting will only be permitted if emulsion ingress into rock fissures is prevented and the emulsion is encapsulated and separated from the blast hole.*".*

PART C: MEASUREMENT AND PAYMENT

Item **Unit**

C12.10.1 Excavation in hard rock using controlled blasting techniques

Add the following at the end of the pay item specification:

*"*Where the excavated material is not to be utilised in earthworks or layerworks, the volume measured for payment shall be the tight volume of excavated material.*".*

Add the following new pay item:

"Item	**Description**	**Unit**
C12.10.8	**Ground vibration, air blast and fly rock monitoring**	**lump sum**

The unit of measurement for the monitoring as required shall be the lump sum.
The tendered rate shall include for the monitoring of all blasts as per the specification and shall include the services of an independent specialist, providing and operating all equipment necessary to successfully monitor all blasting operations and for compilation of all reports."

SECTION 12.11: GEOSYNTHETICS

PART A: SPECIFICATION

A12.11.5 MATERIALS

Add the following sub-clause:

"A12.11.5.4 Grade Classification

The Grade classification for Geosynthetics is specified in the Contract Documentation."

COTO CHAPTER 13: STRUCTURES

SECTION 13.1: FOUNDATIONS

PART B: LABOUR ENHANCEMENT

B13.1.7 EXECUTION OF THE WORKS

B13.1.7.4 Utilisation of excavated material

*Delete reference to: "*100 m*" and replace with "*50 m*".*

SECTION 13.3: STEEL REINFORCEMENT

PART A: SPECIFICATION

A13.3.8 WORKMANSHIP

A13.3.8.4 Tolerances

b) Concrete cover

*Delete reference to "*Clause A13.4.8.1a)(iv)*" and replace with: "*Clause A13.4.8.1a)(v)*".*

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.*"*

SECTION 13.7: JOINTS

PART A: SPECIFICATION

A13.7.4 DESIGN BY CONTRACTOR / PERFORMANCE BASED SYSTEMS

A13.7.7.4 Proprietary expansion joints

c) Installing the expansion joints

Delete the guarantee periods for the deck expansion joints, and replace with the following guarantee periods:
*"*Proprietary joints - 15 years
Asphalt plug type joints - 10 years
Elastomeric glands - 15 years*".*

SECTION 13.8: ANCILLARY STRUCTURAL ELEMENTS

PART A: SPECIFICATION

A13.8.7 EXECUTION OF THE WORKS

A13.8.7.2 Drainage for structures

d) Crushed stone in drainage strips behind walls

*Delete "*19 mm nominal size*" and replace with "*20 mm nominal size*".*

PART C: MEASUREMENT AND PAYMENT

Item **Unit**

C13.8.2 End blocks

Delete the last sentence of the second paragraph.

COTO CHAPTER 14: REPAIR AND REHABILITATION OF STRUCTURES

SECTION 14.2: CORROSION SURVEY METHODS AND TESTING OF NEAR SURFACE CONCRETE PROPERTIES

PART C: MEASUREMENT AND PAYMENT

Item **Unit**

C14.2.1 Delamination Survey

Add the following at the end of the pay item specification:

*"*The tendered rate for delamination survey using extracted core samples, shall also include the establishment of coring equipment, the moving of the coring equipment, the coring of samples and the filling and repairing of the cored holes.*"*

Item **Unit**

C14.2.3 Concrete compressive strength

Add the following at the end of the pay item specification:

*"*The tendered rate for concrete compressive strength testing using extracted core samples, shall also include the establishment of coring equipment, the moving of the coring equipment, the coring of samples and the filling and repairing of the cored holes.*"*

SECTION 14.3: DEMOLITION AND REMOVAL OF STRUCTURAL CONCRETE

PART A: SPECIFICATION

A14.3.7 EXECUTION OF THE WORKS

A14.3.7.3 Demolition of entire structural members

a) Concrete members

Add the following after the 3rd paragraph:
"If the concrete is to be re-used and not removed to a disposal site, the requirements shall be indicated in the Contract Documentation."

COTO CHAPTER 20: QUALITY ASSURANCE

SECTION 20.1: TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP

PART A: SPECIFICATION

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*"*

A20.1.4 PUBLISHED TEST METHODS

A20.1.4.8 Testing of asphalt

Add the following new paragraph:

"Sabita Manual 39: Laboratory Testing Protocols for Binders and Asphalt, shall be implemented together with the asphalt tests listed."

*Delete reference to: "*Sabita Manual 35 for Design and Use of Asphalt in Road Pavements: Determining the Richness Modulus of EME asphalt mixes.*"*
*and replace with "*Sabita Manual 33 for Design Procedure for High Modulus Asphalt (EME): Determining the Richness Modulus of EME asphalt mixes."

A20.1.5 UNPUBLISHED TEST METHODS

A20.1.5.6 Tests on structural elements

c) Tests on piles

Below Table A20.1.5-3 add the following note:

"The units for Oxygen permeability index, Water Sorptivity and Chloride conductivity are as provided in Chapter 13.".

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.*"*

A20.1.7.5 Assessment Methods

b) Judgement plans

Add the following new sub-clause (iii) and renumber the existing sub-clause (iii) to (iv) and (iv) to (v):

"*(iii) Judgement Plan C*

Judgement Plan C is for judging measurements of the levels and thicknesses of pavement layers. In accordance with this plan, the compliance of the individual results only with the specified requirements is determined and the variability of test results is not computed."

Add the following new sub-clause (e):

"(e) Application of Judgement Plan C

Surface levels and layer thicknesses shall be judged in accordance with the following procedure:

(i) Taking the levels

Level measurements shall be taken in a random pattern, before and after a layer has been constructed, and levels shall be taken at exactly the same point before and after construction. Layer thicknesses will then be determinable as the difference between the pre- and post-construction levels, but may be supplemented by determinations made by means of holes made in the layer.

The number of measurements of layer thicknesses shall be at least 30 (thirty), and that of surface levels at least 50 (fifty). Larger sample sizes will give more reliable results.

In the case of asphalt layers, the engineer may require that layer thicknesses be determined only by means of measurements taken on drilled cores, in which case the minimum number of cores shall be 20 (twenty) per lot and not 30 (thirty).

For rehabilitation or repair work the number of measurements shall be as specified in the Contract documentation or as directed by the engineer.

(ii) Calculating the deviations

Compute the difference between the specified level or thickness and the actual level or thickness. Compute the mean thickness of the layer.

(iii) Identifying outliers

Check this work by remeasuring any results which may possibly be defective.

(iv) Assessing the results

The following criteria will apply when results are assessed:

1. Surface levels

The lot will comply with the requirements specified for surface levels if at least 90% of all surface levels are within the H_{90} tolerance specified in each case, before any level corrections are made.

Individual spots, where the surface level deviates by more than the H_{max} tolerance, specified in each case, shall be repaired to bring them to within the H_{90} tolerance.

2. Layer thickness

Individual spots, where the actual thickness is less than the specified thickness minus the D_{max} tolerance specified in each case, shall be locally repaired to bring them within the D_{90} tolerance."

PART C: MEASUREMENT AND PAYMENT

R*eplace item C20.1.2.2 with the following:*

Item		Unit
C20.1.2	**Special tests requested by the Engineer**	
"PC20.1.2.2	(a) Employer's contribution to other special tests: 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(a).

"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."

SECTION B: 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. Where, however, a clause has been amended under Section A2, the clause number is prefixed with a "P" in this Section.**

COTO CHAPTER 1: GENERAL

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
1			**GENERAL**	
	A1.1		**GENERAL PREAMBLE**	
		PA1.1.2	**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 no.* G156/W7/2000/T in Volume 4 – Roadworks Drawings
	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 14. The calculation of payment for approved extensions of time granted for delays caused by rainfall, shall be calculated in accordance with Clause A20.1 in Part C.1.2.2 – Contract Data.
			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: f) Other • The Contractor's works insurance policy schedule shall comply with the requirements of the Employer's *"Checklist for Contractor's Insurance for Works Contracts*" which is provided under Appendix 13.
			A1.2.3.9 Monthly reports	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)

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				Reporting of training, empowerment, capacity building, small contractor development, labour and staff employment and any such aspects shall be extracted from the Employer's Integrated Transportation Information System (ITIS), as required in terms of Conditions of Contract Clause 4.21. The Contractor shall update the ITIS system with the required information and documentation as required by the ITIS system. ITIS currently consist of the following platforms: • ITIS Web – Web enabled portal providing online access to various functions, workflows and reports. • ITIS Desktop – Offline data capture tool enabling the capture of information offline, validation and then synchronisation of data with the ITIS database. • ITIS Mobile – Application (Android 6 or later) that allows the in-field capture of information using a smart phone or tablet (must have camera and GPS), validation and then synchronisation of data with the ITIS database. The Employer has several ITIS modules running on any of the above ITIS platforms which affect the Contractor, who will need to use some of these modules to perform certain procedures and to provide required information. The current module applicable to this contract and its description is as follows: • Project Information Module – uploading of employment and training data; Users are to register as a service provider utilising the following link: https://itis.nra.co.za/Portal/ Manuals for the various functions can be downloaded utilising the following links: Project Information User Manual – https://itis.nra.co.za/Portal/Modules/ProductLicensing/MVC/Manuals/ITIS%20Desktop%20Project%20Information%20Module%20-%20User%20Manual.pdf Desktop Installation Manual – https://itis.nra.co.za/Portal/Modules/ProductLicensing/MVC/Manuals/ITIS%20DeskTop%20-%20Installation%20Manual.pdf Support Manual – https://itis.nra.co.za/Portal/Modules/ProductLicensing/MVC/Manuals/ITIS%20Support%20Service%20Desk%20User%20Manual.pdf
			A1.2.3.10 Notices, signs and advertisements	Details of the contract sign board is provided in Appendix No. 12.

<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>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><td>Asset description</td><td>Estimated quantity</td><td>Disposal requirement</td></tr>
<tr><td>Asphalt</td><td>16m^3</td><td>Contractor to dispose</td></tr>
<tr><td>Gabion stone</td><td>50m^3</td><td>Dispose or reuse</td></tr>
<tr><td>Demolished concrete</td><td>10m^3</td><td>Contractor to dispose</td></tr>
<tr><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td></td><td></td><td></td><td>PA1.2.3.15 Routine maintenance</td><td>The Contractor shall be responsible for:

- All the routine maintenance responsibilities

The Contractor shall take over the specified maintenance responsibility on the date of Access to site.

The backfilling for patching shall be done in accordance with the requirements of Chapter 8.

Any potholes which occur on the road surface (including on roads outside the site of works which are used as detours) shall be temporarily repaired within 24 hours after being recorded.</td></tr>
<tr><td></td><td></td><td></td><td>A1.2.3.18 Stakeholder liaison</td><td>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.</td></tr>
<tr><td></td><td></td><td></td><td>A1.2.3.22 Wayleaves/Agreements and Permits</td><td>The Contractor shall be responsible for applying for the following wayleaves:

No wayleaves/agreements are to be applied for.</td></tr>
<tr><td></td><td></td><td>A1.2.7</td><td>EXECUTION OF THE WORKS</td><td></td></tr>
<tr><td></td><td></td><td></td><td>PA1.2.7.1 Programme of work</td><td></td></tr>
<tr><td></td><td></td><td></td><td>a) General</td><td>A scheme 2 programme shall apply.</td></tr>
<tr><td></td><td></td><td></td><td>b) Scheme 2</td><td>The programme shall be drawn up or be compatible with the latest version of Microsoft Project

Additional schedules, other than required in terms of Conditions of Contract Clause 8.3, to be provided are: (not applicable).</td></tr>
<tr><td></td><td></td><td></td><td>e) Specified programmed activities</td><td>Activities with specific due completion and/or duration is specified as follows:</td></tr>
</table>

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				The Works at the minor culvert at km 11.4 must be completed with all lanes open to traffic no later than four (4) months after the Letter of Access to Site has been issued.
	A1.3		**CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS**	
		A1.3.3	**GENERAL**	
			A1.3.3.1 Construction camps	SANRAL will not make any land available for the use of the contractor. The contractor shall make his own arrangements in respect of his site camp and engineer's offices including security.
	A1.4		**FACILITIES FOR THE ENGINEER**	
		PA1.4.3	**GENERAL**	The engineer will not provide their own buildings. Details of site facilities are not shown on drawings, but a description of facilities is provided in the specifications.
		A1.4.7	**EXECUTION OF THE WORKS**	
			A1.4.7.1 Offices and laboratories	
			a) General	The site laboratory shall be supplied with three-phase electricity.
			b) Offices	The Engineer will require the following offices and conference room at the site camp: • 3 x office of at least 16m2 • 1 x conference room of at least 24m2
			f) Ablution unit	Ablution facilities will be provided for exclusive use by the Engineer's staff. Each facility must include 2 x toilets and hand basin with fittings, furniture and equipment as specified.
			A1.4.7.3 Services	
			b) Water, electricity and gas	A backup power supply in the form of a generator must be provided be provided.
			A1.4.7.5 Office staff	No office staff are required to be provided for the engineer by the contractor..
	A1.5		**ACCOMMODATION OF TRAFFIC**	
		A1.5.3	**GENERAL**	
			A1.5.3.2 General requirements	The Contractor may not commence any part of the Works until adequate provision has been made for the accommodation of vehicular, non-motorised and pedestrian traffic. Traffic shall be accommodated in accordance with the requirements given in the Contract Documentation unless the Contractor has submitted an alternative incorporating an amended method of traffic accommodation and this alternate method has been accepted by the Employer. Traffic accommodation shall be in accordance with the traffic accommodation plan provided in the Roadworks Drawings, Dwg. No.'s

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				G156/W7/2000/T to G156/W7/2003/T and approved by the Engineer The section of Road R531 between the minor culvert at km 11.4 and the major culvert at km 6.94 will be closed to traffic for the duration of the project. Traffic will be accommodated through a 17km long temporary deviation through Acornhoek. Westbound traffic on road R531 will be diverted onto the deviation from both approaches of the minor culvert at km 11.4. The detour route starts at the “unnamed road” to Acornhoek, then goes on to Bridgeway Road and Canhuk Drive and finally onto the road R40, merging back onto the Road R531. In order to maintain access to the detour route, of the minor culvert at km 11.4 will need to be constructed in half-widths. Refer to *Dwg. No.’s G156/W7/2000/T* in Volume 4 – Roadworks Drawings for the Detour Route Locality Plan.
		A1.5.6	**CONSTRUCTION EQUIPMENT**	
			A1.5.6.1 Traffic control facilities	
			a) Barriers	The containment level for the temporary moveable restraining system to be provided shall be: H2, W4 according to EN1317 or MASH equivalent.
			A1.5.6.2 Illuminated traffic signs and safety devices	
			d) Sign mounted flashing lights	The flashing lights are to be operated during the night.
		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 minor culvert at km 11.4 shall be constructed in half widths using a STOP/GO one-way traffic section over the culvert. Maximum length and total number of Half or partial width sections that will be allowed to be in operation at any time shall be: 60m, 1 No. Stop-Go” operations shall not obstruct traffic in one direction for more than 10 minutes and in such instance the Contractor shall be obliged to take whatever means reasonably possible to reduce the traffic queue length, including temporary stoppage of construction activities.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				The work zone and the one-way traffic lane shall be separated from each other by delineators and/or temporary barriers as specified in Volume 2 of the SARTSM and/or in the Contract Documentation and by the Engineer where applicable. The Contractor shall endeavour to ensure that there is no vertical step between two opposing traffic lanes during a shutdown period. The traffic accommodation measures must be maintained by the traffic safety personnel for the full duration of the shutdown period.
			A1.5.7.6 Maintenance of existing roads used as detours	The detour road is to be maintained by the Contractor for the duration of the contract.
	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	There are no known services at the site. Should an unknown service be encountered, the contractor is required to protect/relocate the service as specified in the contract documentation.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
3			**DRAINAGE**	
	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	
			b) Prefabricated concrete kerbing and channelling	*Refer to Drawing no. G156-NC-07-C9521 01.*

<table>
<tr><th>CH</th><th>SEC</th><th>CL</th><th>SUB-CLAUSE</th><th>SPECIFICATION DATA</th></tr>
<tr><td>5</td><td></td><td></td><td>EARTHWORKS AND PAVEMENT LAYERS: CONSTRUCTION</td><td></td></tr>
<tr><td></td><td>A5.3</td><td></td><td>ROAD PAVEMENT LAYERS</td><td></td></tr>
<tr><td></td><td></td><td>A5.3.3</td><td>GENERAL</td><td></td></tr>
<tr><td></td><td></td><td></td><td>A5.3.3.4 Compaction of pavement layer material</td><td><table><tr><th>Layer</th><th>Compaction</th></tr><tr><td>300mm Subbase Layer</td><td>97% of MDD</td></tr><tr><td>150mm Upper Selected Subgrade Layer</td><td>95% of MDD</td></tr><tr><td>150mm Lower Selected Subgrade Layer</td><td>93% of MDD</td></tr></table></td></tr>
<tr><td></td><td></td><td></td><td>A5.3.3.7 Joints between pavement layers</td><td></td></tr>
<tr><td></td><td></td><td></td><td>a) Location of joints</td><td>The final manifestation of a longitudinal joint in the asphalt surfacing shall coincide with a road marking line (lane or shoulder).</td></tr>
<tr><td></td><td></td><td></td><td>c) Transverse Joints</td><td>The transverse joint shall be constructed with the use of saw-cutting equipment.</td></tr>
<tr><td></td><td></td><td>A5.3.5</td><td>MATERIALS</td><td></td></tr>
<tr><td></td><td></td><td></td><td>A5.3.5.1 Material information</td><td>Refer to Part C4.1 and Drawing No. G156-NC-07-C9521 01.</td></tr>
<tr><td></td><td></td><td>A5.3.8</td><td>WORKMANSHIP</td><td></td></tr>
<tr><td></td><td></td><td></td><td>PA5.3.8.5 Surface regularity</td><td>By using a 3,0 m straight-edge.</td></tr>
<tr><td></td><td>A5.4</td><td></td><td>STABILISATION</td><td></td></tr>
<tr><td></td><td></td><td>A5.4.5</td><td>MATERIALS</td><td></td></tr>
<tr><td></td><td></td><td></td><td>A5.4.5.1 General</td><td>Refer to Drawing No. G156-NC-07-C9521 01.</td></tr>
<tr><td></td><td></td><td></td><td>A5.4.5.3 Cementitious stabilising agents</td><td>On this contract CEM II (32.5N) at a nominal proportion of 3% shall be used for cement stabilisation purposes.</td></tr>
<tr><td></td><td></td><td>A5.4.6</td><td>CONSTRUCTION EQUIPMENT</td><td>The method of curing shall be Water curing. Side-spraying tankers travelling off the layer is to be used.</td></tr>
<tr><td></td><td></td><td>A5.4.7</td><td>EXECUTION OF THE WORKS</td><td></td></tr>
<tr><td></td><td></td><td></td><td>A5.4.7.7: Protection and curing of chemically stabilised layers</td><td>The method of curing shall be Water curing.</td></tr>
</table>

COTO CHAPTER 8: PRETREATMENT AND REPAIR OF EXISTING LAYERS

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
8			**PRETREATMENT AND REPAIR OF EXISTING LAYERS**	
	A8.1		**PRIME COAT**	
		A8.1.3	**GENERAL**	
			A8.1.3.1 Weather limitations	The limiting moisture contents for treated layers before priming shall not be greater than 50% of OMC.
		A8.1.5	**MATERIALS**	
			PA8.1.5.1 Bituminous material	The priming material shall be one of the following as specified in Part C: Measurement and Payment: MC-30 Cut-back Bitumen Inverted bitumen emulsion

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
9			**ASPHALT LAYERS**	
	A9.1		**ASPHALT LAYERS**	
		A9.1.2	**DEFINITIONS**	
			Asphalt mix types	**<u>The Asphalt mix types which shall be used on this contract are as follows:</u>** **<u>Surfacing Wearing Course</u>** Sand skeletal (Continuously graded) mix NMPS – 14mm Extreme loading conditions (E) PG58E-22 Design level II **<u>Base Course</u>** Sand skeletal (Continuously graded) mix NMPS – 14mm Extreme loading conditions (E) PG58E-22 Design level II
		A9.1.3	**GENERAL**	
			Table A9.1.3-2: Nominal Mix Proportions of Sand Skeletal Mixes for Tender Purposes Bitumen (type and grade according to Contract Documentation) (%)	Refer to A9.1.2
		A9.1.4	**DESIGN BY THE CONTRACTOR**	
			A9.1.4.1 Mix Designs	The mix types and design levels are indicated under A9.1.2.
			A9.1.4.2 Mix design requirements	**<u>The mix design requirements are stipulated under A9.1.2 and shall be placed at the following thicknesses:</u>** **<u>Surfacing Wearing Course</u>** Sand skeletal (Continuously graded) mix with a compacted layer thickness of 50mm. **<u>Base Course</u>** Sand skeletal (Continuously graded) mix with a compacted layer thickness of 60mm.
		A9.1.5	**MATERIALS**	
			A9.1.5.2 Bituminous binders for asphalt mixes	Refer to A.9.1.2
			A9.1.5.5 Fillers	
			Table A9.1.5-7: Filler requirements	The properties limits and test methods for baghouse fines and limestone dust shall be as stated in the latest version (at time of tender) of Sabita Manual 35.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
		A9.1.8	**WORKMANSHIP**	
			A9.1.8.8 Sampling	
			b) Coring of completed layers	The Contractor shall provide suitable coring machines capable of cutting 100mm cores from the completed asphalt layers.
		A9.1.6	**CONSTRUCTION EQUIPMENT**	
			PA9.1.6.8 Material transfer vehicle	Asphalt shall be transferred from the haul trucks into the paver hopper by means of a materials storage and transfer vehicle.

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**	The replacement of danger plates at culverts is required on this contract.
	A11.7		**ROAD MARKINGS AND ROAD STUDS**	
		A11.7.5	**MATERIALS**	
			PA11.7.5.2 Materials	
			a) Marking materials	
			(ii) Retro-reflective road marking	Water borne paint compliant with SANS 731-2 standards shall be applied for retro-reflective road marking first and second application.
			b) Road studs	The road studs to be used shall be RSA-1 for permanent applications and RSA-T for temporary applications as shown on the drawings and/or specified by the Engineer.
	A11.8		**LANDSCAPING AND PLANTING PLANTS**	
		A11.8.5	**MATERIALS**	
			A11.8.5.2 Materials	
			Nursery grown sods	Buffalo grass sods.

<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>A12.11.3</td><td>GENERAL</td><td>Geosynthetics shall comply with the requirements specified for the grade of material in table A12.11.5-1.</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>The Contractor shall submit to the Engineer for his approval the material data sheets for proprietary geosynthetic products.

The Engineer may order the testing of the proprietary geosynthetic products at an accredited facility when, in the opinion of the Engineer, it is unclear if the proposed geosynthetic product complies with the specification.</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>GRADE</th></tr>
<tr><th>3</th></tr>
<tr><td>Penetration load (CBR) (minimum), N
Test Method: SANS 12236: 2013</td><td>240</td></tr>
<tr><td>Puncture resistance (maximum), mm
Test Method: SANS 13433: 2013</td><td>32</td></tr>
<tr><td>Water percolation (minimum), l/m²/s
Test Method: SANS 11058: 2013</td><td>40</td></tr>
<tr><td>Tensile strength (minimum) kN/m
Test Method: SANS 1525: 2013</td><td>7</td></tr>
</table>
</td></tr>
</table>

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
13			**STRUCTURES**	
	A13.1		**FOUNDATIONS**	
		A13.1.7	**EXECUTION OF THE WORKS**	
			A13.1.7.1 Work access and drainage	
			a)General	The Contractor shall submit a method statement for the Engineer's review at least 1 week prior to the commencement of the work.
			A13.1.7.2 Excavation	
			g) The safety and protection of excavations	The Contractor's competent person shall ensure that the excavated slopes are battered at a safe slope.
	A13.2		**FALSEWORK, FORMWORK AND CONCRETE FINISH**	
		A13.2.3	**GENERAL**	
			A13.2.3.1 Method Statements	Contractor to submit method statements at least 1 week before construction commences for each facet of work. No work may commence prior to the Engineer's approval.
			A13.2.3.2 Hold points and approvals	All formwork should be inspected by the Engineer prior to the casting of the concrete
		A13.2.7	**EXECUTION OF THE WORKS**	
			A13.2.7.2 Formwork	
			b) Formed surfaces: Classes of finish	
			(i) General 3. Class F3 surface finish	Steel forms may be used for the forming of class F3 surface finishes.
			d) Formwork for open joints	Open joints widths do not exceed 150mm.
			A13.2.7.3 Removing the Falsework and Formwork	
			b) Technical criteria for falsework and formwork removal	The Contractor is to refer to Section A13.2.7.3 of COTO for the stripping time of formwork unless otherwise stated on the construction drawings
	D13.2		**FALSEWORK, FORMWORK AND CONCRETE FINISH**	
		D13.2.3	**PERFORMANCE GUARANTEE REQUIREMENTS**	
			D13.2.3.2 Performance specifications	Certification for erection of falsework and formwork by a suitably experienced ECSA

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				Registered Professional Engineer or Technologist is required.
	A13.3		**STEEL REINFORCEMENT**	
		A13.3.3	**GENERAL**	
			A13.3.3.1 Method Statements	Contractor to submit method statements 1 week before construction commences for each facet of work.
			A13.3.3.2 Hold points and approvals	- Inspection of reinforcement by the engineer is required prior to closing of formwork (the reinforcement should be visible and easily inspectable). - Prior to the casting of any concrete.
		A13.3.8	**WORKMANSHIP**	
			PA13.3.8.4 Tolerances	
			c) Spacing between bars	No bars may be spaced closer than the aggregate size plus 5mm.
	A13.4		**CONCRETE**	
		A13.4.3	**GENERAL**	
			A13.4.3.1 Method Statements	Contractor to submit method statements 1 week before construction commences for each facet of work. No work may commence prior to the Engineer's approval.
			A13.4.3.2 Hold points and approvals	- Prior to the casting of any concrete - Prior to the ordering of concrete (for mix design approval)
		A13.4.7	**EXECUTION OF THE WORKS**	
			PA13.4.7.12 Placing and Compaction	
			h) Curing and surface protection	The Contractor should refer to Table 13.4.7-18 for the minimum duration of curing.
	A13.8		**ANCILLARY STRUCTURAL ELEMENTS**	
		A13.8.7	**EXECUTION OF THE WORKS**	
			PA13.8.7.2 Drainage for structures	
			c) Synthetic filter fabric	Filter fabric shall be Grade B synthetic filter fabric.

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	Testing will be undertaken as indicated under A20.1.3.3 a)(i)2 Process control testing is carried out by the Contractor, and acceptance control testing by the Engineer. The cost of process control testing is borne by the Contractor and the cost of acceptance control testing is borne by the Employer. The cost of the contractor's process control testing is deemed to be included in the contractor's tendered rates.

SECTION	CL	SUB-CLAUSE	SPECIFICATION DATA
SECTION C		**ENVIRONMENTAL MANAGEMENT PLAN**	
	C1004	**ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS**	
		(d) The Designated / Dedicated Environmental Officer (DEO)	DEO means: Full-time Dedicated Environmental Officer
	C1012	**PROJECT SPECIFIC CONDITIONS**	Refer to C1012 for project specific specifications. The Employer will consider monitoring and reporting in terms of a sustainability rating tool and the Contractor will be required to engage through its appointed DEO with the ECO to provide all the relevant information.
SECTION D		**STAKEHOLDER AND COMMUNITY LIAISON AND TARGETED LABOUR AND TARGETED ENTERPRISES UTILISATION AND DEVELOPMENT**	
	D1002	**DEFINITIONS AND APPLICABLE LEGISLATION**	
		D1002.01 Definitions	
		(b) Project Impact Area	The Project Impact Area is Bushbuckridge Local Municipality and Maruleng Local Municipality.
		(d) Contract Participation Goal (CPG)	i. Specific Goal for Targeted Enterprises is Minimum of 30% of the Final Contract Value by the end of the contract to Targeted Enterprises. ii. Specific Goal for Targeted Labour is a minimum of 6% of the Final Contract Value by the end of the contract to Targeted Labour The Final Contract Value for purposes of this clause is defined in clause D1003.04
		(g) Corporate Social Investment (CSI)	The definition for CSI Percentage is the portion of the Final Contract Value invested into social, economic, or environmental projects. This monetary commitment shall include the direct costs incurred by the Contractor toward the foregoing and must be substantiated by supporting documentation such as tax invoices.
		(w) Target Area(s)	For Targeted Labour: Bushbuckridge Local Municipality and Maruleng Local Municipality.

		(x) Targeted Enterprise	Target Group for Targeted Enterprise: a. EMEs or QSEs which are at least 51% owned by black people.
		(cc) Targeted Labour	Target Group for Targeted Labour: a. Unemployed black people who: i. are citizens of the Republic of south Africa by birth or descent; or ii. became citizens of the Republic of South Africa by naturalisation before 27 April 1994; or iii. became citizens of the Republic of South Africa by naturalisation on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalisation prior to that date; or b. unemployed women who are South African citizens; or c. unemployed youth (not attending and not required by law to attend an educational institution) as defined in the National Youth Commission Act (Act 19 of 1996); or d. unemployed people with disabilities as defined in the Code of Good Practice on employment of people with disabilities issued under the Employment Equity Act (Act 55 of 1998); or e. unemployed black military veterans who qualify to be called a military veteran in terms of the Military Veterans Act (Act 18 of 2011);
	D1003	**TARGET GROUP PARTICIPATION**	
		D1003.04 Contract Participation Goal (CPG)	
		Specific sub-Goals for minimum contributions by specific Target Groups for Targeted Labour:	
		i) Unemployed black persons who are youth	30% of Targeted Labour value
		ii) Unemployed black persons who are people with disabilities	0.3% of Targeted Labour value
		iii) Unemployed black persons who are women;	30% of targeted labour value
		Specific sub-Goals for minimum contribution by specific Target Groups for Targeted Enterprises:	
		i) Targeted Enterprise with ≥51% ownership by Youth	Minimum of 5% of the Final Contract Value
		ii) Targeted Enterprise with ≥51% ownership by Women	Minimum of 5% 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 2% of the Final Contract Value
		vi) Targeted Enterprise with CIDB 3 or 4 grading	Minimum of 2% of the Final Contract Value
		D1003.05 Contract Participation Performance (CPP)	
		CPP Milestones applicable for Target Enterprise expenditure:	CPP Milestones no. 1, 2, 3 and 6 Shall apply.
	D1008	**WORK SUITABLE FOR EXECUTION BY TARGETED ENTERPRISES**	Refer to D1008 for a project specific list of possible work types suitable for Targeted Enterprises.
	D1010	**TRAINING, COACHING, GUIDANCE, MENTORING AND ASSISTANCE**	
		D1010.02 Developing the TSDP	
		a) Skills Development Requirements	
		i) Contract Skills Development Goals (CSDG)	The CSDG shall not be less than 3% of the Final Contract Value. The Final Contract Value for purposes of this clause is defined in clause D1003.04
SECTION E		**REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS**	
	E1018	**PROJECT SPECIFIC CONSTRUCTION REQUIREMENTS**	Refer to E1018 for project specific specifications.

SECTION C: ENVIRONMENTAL MANAGEMENT PLAN

TABLE OF CONTENTS PAGE

C1001	SCOPE	C3-117
C1002	DEFINITIONS	C3-117
C1003	LEGAL REQUIREMENTS	C3-118
C1004	ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS	C3-120
C1005	TRAINING	C3-121
C1006	ACTIVITIES/ASPECTS CAUSING IMPACTS	C3-122
C1007	ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES	C3-125
C1008	AREAS OF SPECIFIC IMPORTANCE	C3-132
C1009	REHABILITATION	C3-132
C1010	RECORD KEEPING	C3-133
C1011	COMPLIANCE AND PENALTIES	C3-133
C1012	PROJECT SPECIFIC CONDITIONS	C3-ERROR! BOOKMARK NOT DEFINED.

C1001 SCOPE

The South African National Roads Agency SOC Limited (SANRAL) recognises environmental management as a key component of road infrastructure development and as part of its Environmental Sustainability Framework has developed this Environmental Management Plan (EMP) as a tool for continual improvement in environmental performance.

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

The provisions of this EMP are binding on the Contractor during the life of the contract. They are to be read in conjunction with all the documents that comprise the suite of documents for this contract, particularly the conditions of any environmental authorisation and associated site-specific Environmental Management Programme (EMPr). In the event that any conflict occurs between the terms of the EMP and the project specifications or environmental authorisation, the terms herein shall be subordinate.

The EMP is a dynamic document subject to similar influences and changes as are brought by variations to the provisions of the project specification. Any changes to the EMP and/or environmental authorisation cannot occur without being submitted to SANRAL who will manage the process of amending the EMP.

The EMP identifies the following:

- Relevant parties and their responsibilities;
- Construction activities that will impact on the environment;
- Specifications with which the Contractor shall comply in order to protect the environment from the identified impacts; and
- Actions that shall be taken in the event of non-compliance.

C1002 DEFINITIONS

Alien Vegetation: undesirable plant growth which includes but is not limited to all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA), 1983 and the National Environmental Management: Biodiversity Act (Act No. 10 of 2004). Other vegetation deemed to be alien are those plant species that show the potential to occupy in number, any area within the defined construction area and which are declared to be undesirable.

Construction Activity: any action taken by the Contractor, his sub-contractors, suppliers or personnel during the construction process as defined in the contract documents.

Environment: the surroundings within which the contract exists and comprises land, water, atmosphere, micro-organisms, plant and animal life (including humans) in any part or combination thereof as well as any physical, chemical, aesthetic or cultural inter-relationship among and between them.

Environmental Aspect: any component of a contractor's construction activity that is likely to interact with the environment.

Environmental authorisation: a written statement from a Competent Authority, with the general and specific conditions and the EMPr recording its approval of an application for a planned undertaking that triggers listed activities in the Environmental Impact Assessment (EIA) regulations of the National Environmental Management Act (NEMA).

Environmental Impact: any change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.

Environmental Impact Assessment (EIA): a systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes basic assessment and scoping and environmental impact reporting.

Environmental Management Plan: An Environmental Management Plan (EMP) is an environmental management tool used to ensure that adverse impacts of the construction and operation and decommissioning of a project are prevented and/or minimised, and that the positive benefits are enhanced.

Environmental Management Programme (EMPr)*:* A project-specific Environmental Management Plan approved by a competent authority through an environmental impact assessment process.

Road Reserve: a corridor of land, defined by co-ordinates and/or proclamation, within which the road, including access intersections or interchanges, is situated. A road reserve may, or may not, be bounded by a fence.

Site; the site is defined in the FIDIC Conditions of Contract and in the scope of works. It is bound by the limits of construction as shown in the drawings or the title of the project and extends to also include the following:

- Areas outside the construction zones where accommodation of traffic is placed;
- All borrowpits defined in the applications approved by the Department of Mineral Resources (DMR);
- All haul roads constructed by the Contractor for purposes of access;
- Any non-adjacent sites specified in the contract documentation;
- The Contractor's and his subcontractors' camp sites.

For the purposes of this EMP, the site includes areas outside of, but adjacent to, the road reserve that may be affected by construction activities.

Spoil material: is material that is unsuitable for construction of the road pavement and for which no other useful purpose can be found in additional works on the project (e.g. for the provision of protection berms). Such material requires spoiling at convenient areas to be identified by the Engineer and/or Contractor within the Site. Spoil material does not require removal to a designated landfill site unless it contains identifiable hazardous contaminants.

C1003 LEGAL REQUIREMENTS

(a) General

Construction shall be according to the best industry practices, as identified in the project documents. This EMP, which forms an integral part of the contract documents, informs the Contractor as to his duties in the fulfilment of the project objectives, with particular reference to the prevention and mitigation of environmental impacts caused by construction activities associated with the project. The Contractor should note that obligations imposed by the EMP are legally binding in terms of this contract. In the event that any rights and obligations contained in this EMP contradict those specified in the standard or project specifications then the latter shall prevail.

(b) Statutory and other applicable legislation

The Contractor is deemed to have made himself conversant with all legislation pertaining to the environment, including provincial and local government ordinances, which may be applicable to the contract.

Major environmental legislation, as amended from time to time, includes but is not limited to the following:

(i) Conservation of Agricultural Resources Act (Act No. 43 of 1983)

This act provides for control over the utilisation of the natural agricultural resources of South Africa in order to promote the conservation of soil, water sources and vegetation, as well as combating weeds and invader plants.

(ii) The Constitution (Act 6 of 1996)

The Constitution states that everyone has the right to an environment that is not harmful to their health or well-being, and to have the environment protected through reasonable legislative and other measures to prevent pollution and ecological degradation; promote conservation and ensure ecologically sustainable development and use of natural resources.

(iii) Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)

This act makes provision for equitable access to, and sustainable development of, minerals and petroleum resources.

(iv) National Environmental Management Act (NEMA), (Act No. 107 of 1998)

This act supports the Bill of Rights within the Constitution and highlights principles of sustainable development including preservation of ecosystems and biological diversity and avoidance, minimisation and remediation of pollution and environmental degradation. It also sets the stage for the EIA Regulations.

(v) National Environmental Management: Air Quality Act (Act No. 39 of 2004)

This act provides reasonable measures for the prevention of pollution and ecological degradation; and provides for specific air quality measures; for national norms and standards regulating air quality monitoring, management and control by all spheres of government.

(vi) National Environmental Management: Biodiversity Act (Act No. 10 of 2004)

This act makes provisions to accomplish the objectives of the United Nations' Convention on Biological Diversity. SANRAL may be required to apply for permits to conduct certain listed activities which, together with the listed threatened or protected species, may be identified by the Minister.

Section 73 (3) of this act empowers a competent authority to direct a person to take steps to remedy any harm to biodiversity resulting from the actions of that person or as a result of occurrence of listed invasive species occurring on land on which that person is the owner. Thus SANRAL may be directed to remedy harm caused by listed invasive species.

(vii) National Environmental Management: Protected Areas Act (Act No. 57 of 2003)

This act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity, natural landscapes and seascapes.

(viii) National Environmental Management: Waste Act (Act No. 59 of 2008)

This act aims to regulate waste management practices through provision of national norms and standards, specific waste measures, licensing and control of waste activities, remediation of contaminated land as well as providing for compliance and law enforcement.

(ix) National Forests Act (Act No. 84 of 1998)

This act makes provision for promoting the sustainable management and development of forests, and for the protection of certain forests and trees for environmental, economic, educational, recreational, cultural, health and spiritual purposes.

(x) National Heritage Resources Act (Act No. 25 of 1999)

This act provides for an integrated and interactive system for identification, assessment and management of South Africa's heritage resources, and empowers civil society to nurture and conserve their heritage resources.

(xi) National Water Act (Act No. 36 of 1998)

This act makes provision for the protection of surface water and groundwater and their sustainable management for the prevention and remediation of the effects of pollution, as well as for the management of emergency situations.

(xii) The South African National Roads Agency Limited and National Roads Act (Act No. 7 of 1998)

This Act makes provision for a National Roads Agency for the Republic to manage and control the Republic's national roads system and take charge, amongst others, of the development, maintenance and rehabilitation of national roads within the framework of government policy.

C1004 ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS

Copies of this EMP shall be kept at the site office and must be distributed to all senior contract personnel who shall familiarise themselves with its contents.

Implementation of this EMP requires the involvement of several stakeholders, each fulfilling a different but vital role as outlined herein, to ensure sound environmental management during the construction phase of a project.

(a) SANRAL

SANRAL and anyone acting on SANRAL's behalf is accountable for the potential environmental impacts of any activities that are undertaken and is responsible for managing these impacts.

(b) The Engineer

The Engineer has been appointed by, and acts for, SANRAL as its on-site implementing agent and carries the responsibility to ensure that the Contractor undertakes its construction activities in such a way that SANRAL's environmental responsibilities are not compromised.

The Engineer will, within seven days of receiving a contractor's request for approval of a nominated Designated Environmental Officer (DEO), approve, reject or call for more information on the nomination. The Engineer will be responsible for issuing instructions to the DEO where environmental considerations call for action to be taken.

If in the opinion of the Engineer the DEO is not fulfilling his/her duties in terms of this EMP, the Engineer may, after discussion and agreement with SANRAL, exercise his powers under FIDIC general conditions of contract and instruct replacement of the DEO in writing and with stated reasons.

(c) The Contractor

The Contractor is responsible for project delivery in accordance with the prescribed specifications, among which this EMP shall be included.

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

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

(d) The Designated/Dedicated Environmental Officer (DEO)

Once a nominated representative of the Contractor has been approved, he/she shall become the DEO and shall be the responsible person for ensuring that the provisions of this EMP are complied with during the life of the contract. The DEO shall submit regular written reports to the Engineer, but not less frequently than once a month.

The DEO may undertake other construction duties unless Section B: Specification Data, prescribes this position as 'Full-time' or 'dedicated' as opposed to the standard position being 'designated'. However, the DEO's environmental duties shall hold primacy over other contractual duties and the Engineer has the authority to instruct the Contractor to reduce the DEO's other duties or to replace the DEO if, in the Engineer's opinion, he/she is not fulfilling his/her duties in terms of the requirements of this EMP. Such instruction will be in writing clearly setting out the reasons why a replacement is required.

As a minimum the DEO shall have an accredited National Qualifications Framework (NQF) level 6 qualification in environmental or natural sciences or equivalent and a minimum of 2 years' experience in a similar role in construction or other environmental regulatory field.

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

(e) Environmental Control Officer (ECO)

The Environmental Control Officer (ECO) is an independent environmental specialist appointed by SANRAL or the Engineer to objectively and regularly monitor the Contractor's compliance with the conditions of the authorisations issued for the project and the approved EMPr (that is this EMP augmented with specifics of the project). These are external audits and the regularity is determined by the environmental authorisations.

C1005 TRAINING

(a) Qualifications

The (DEO) shall have the minimum qualifications as prescribed above and must be conversant with all legislation pertaining to the environment applicable to the contract. He/she must be appropriately trained in environmental management and possess the skills necessary to impart environmental management skills to all personnel involved in the contract.

The Contractor shall ensure that adequate environmental training takes place. All employees shall have been given an induction presentation on environmental awareness. Where possible, the presentation needs to be conducted in the language of the employees.

(b) Content

Apart from induction environmental training should, as a minimum, include the course content below and no induction or course should be given until the Engineer has been afforded the opportunity to appraise it and provide comment.

(i) The importance of conformance with all environmental policies and the consequences of departure from standard operating procedures;

(ii) Environmental impacts, actual or potential, caused by work activities, prevention measures to avoid them and mitigation measures when they occur;

(iii) Work force roles and responsibilities in achieving conformance with the environmental policy and procedures, including emergency preparedness and response requirements;

(iv) The environmental benefits of improved personnel performance and

(v) Consequences of non- compliance

(c) Induction

In the case of permanent staff the Contractor shall provide evidence that such induction courses have been presented. In the case of new staff (including contract labour) the Contractor shall inform the Engineer when and how he intends concluding his environmental training obligations.

C1006 ACTIVITIES/ASPECTS CAUSING IMPACTS

Typical environmental aspects and impacts associated with road construction are listed in Table 1: Aspects and Impacts Associated with Road Construction. Actual impacts will differ from project to project and, therefore, so may the mitigation measures employed. The most common aspects and impacts are addressed separately, and typical avoidance and/or mitigation measures described. The list and descriptions are not by any means exhaustive, and they shall be used for guideline purposes only.

Table 1: Aspects and Impacts Associated with Road Construction

Aspect	Potential Impact
Waste generation/storage	Water pollution; nuisance; visual impact
Water use and stormwater discharge	Change in flow regime and/or reduction in downstream availability; soil erosion: water pollution
Vehicle use and maintenance	Air pollution; noise
Chemical/fuel storage	Water/air/soil pollution; health impacts; accidents e.g. spills, fire
Site clearing; earthworks; layer-works; seal works	Change in landform; impact on heritage resources; noise; soil erosion; air pollution
River bridges; installing drainage structures	Water pollution; impact on river flows; noise
Land acquisition	Loss of land and/or livelihood; change in land use;
Acquisition of building material from borrow pits	Change in landform and use

(a) General approach

The role of the DEO cannot be underestimated and once approved he/she shall be on the site at all times, and before the Contractor begins each construction activity, he/she shall give to the Engineer a written statement setting out the following:

(i) The type of construction activity about to be started.
(ii) Locality where the activity will take place.
(iii) Identification of the environmental aspects and impacts that might result from the activity.

(iv) The methodology of impact prevention for each activity or aspect.
(v) The methodology of impact containment for each activity or aspect.
(vi) Identification of the emergency/disaster potential for each activity (if any) and the reaction procedures necessary to mitigate impact severity.
(vii) Treatment and continued maintenance of impacted environment.

The Contractor shall programme his work in such a way that each cause and effect of a construction activity is also identified, and the activity planned so as to prevent any impact from happening and shall demonstrate that he is capable of carrying out any repair and reinstatement of the damaged environment. These requirements shall be concurrent with the time constraints to produce method statements for each construction activity in compliance with the provisions of these project specifications.

The Contractor shall provide such information in advance of any or all construction activities provided that new submissions shall be given to the Engineer whenever there is a change or variation to the original.

The Engineer may provide comment on the methodology and procedures proposed by the DEO, but he shall not be responsible for the Contractor's chosen measures of impact mitigation and emergency/disaster management systems. However, the Contractor shall demonstrate at inception and at least once during the contract that the approved measures and procedures function properly.

(b) Spillages

Streams, rivers and dams shall be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous products. In the event of a spillage, the Contractor shall be liable to arrange for professional service providers to clear the affected area.

Responsibility for spill containment and treatment (whether hazardous or not) lies with the Contractor. The individual causing a spill, or who discovers a spill, must report the incident to his/her DEO or to the Engineer. The DEO will assess the situation in consultation with the Engineer and act as required. In all cases, the immediate response shall be to contain the spill. The exact treatment of polluted soil/water shall be determined by the Contractor in consultation with the DEO and the Engineer. Areas cleared of hazardous waste shall be re-vegetated according to the Engineer's instructions.

Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice will be sought for appropriate treatment and remedial procedures to be followed. The requirement for such input shall be agreed with the Engineer. The costs of containment and rehabilitation shall be for the Contractor's account, including the costs of specialist input as well as the sampling and testing of the water quality upstream and downstream of the spill. Water quality sampling and testing, and further treatment shall continue until upstream and downstream results correspond with each other.

(c) Water use and control

The Contractor's use of water shall take into consideration that it is a scarce commodity and shall be optimised. Authorisation shall be obtained from the Department of Water and Sanitation (DWS) before water is drawn from streams or new boreholes developed.

The Contractor shall also ensure that any stream deviations or diversions are undertaken in such a manner that the impact on the environment is minimised. Method statements shall be submitted to the Engineer for comment, detailing how the work will be undertaken, what risks are foreseen and what measures will be employed to minimise such risks. Notwithstanding any comments by the Engineer, no work on stream deviations or diversions shall be undertaken in accordance with GN 509 in GG 40229 of 26 August 2016 - General Authorisation in terms of Section

39 of the National Water Act, 1998 (Act No. 36 Of 1998) for Water Uses as defined in sections 21(c) and (i) .

The quality, quantity and flow direction of any surface water runoff shall be established prior to disturbing any area for construction purposes. Cognisance shall be taken of these aspects and incorporated into the planning of all construction activities. Before a site is developed or expanded, it shall be established how this development or expansion will affect the drainage pattern. Recognised water users/receivers shall not be adversely affected by the expansion or re-development. No water source shall be polluted in any way due to proposed changes.

Streams, rivers, pans, wetlands, dams, and their catchments shall be protected from erosion and flooding by dredging, daylighting, removal of debris and vegetation, etc. These shall also be protected from direct or indirect spillage of pollutants such as refuse, garbage, cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous products.

The Contractor shall submit to the Engineer his proposals for prevention, containment and rehabilitation measures against environmental damage of the identified water and drainage systems that occur on the site. Consideration shall be given to the placement of sedimentation ponds or barriers where the soils are of a dispersive nature or where toxic fluids are used in the construction process. The sedimentation ponds must be large enough to contain runoff so that they function properly under heavy rain conditions up to 1:5 year severity.

The Contractor shall submit to the Engineer the results of the baseline water quality test taken above and below the site of the proposed activity, and thereafter monthly testing results or at the frequency as may be specified by the Water Use Licence/General Authorisation, where applicable. No taking-over can be authorised until the water quality is shown to be at pre-construction levels or better.

(d) Vegetation management

The Contractor shall be responsible for the management of vegetation by protection of indigenous vegetation, especially identified protected species, and the prevention of alien vegetation germinating in areas disturbed by road construction activities within and outside the road reserve. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for or from road construction has been stored temporarily. This responsibility shall continue for the duration of the defects notification period. The project specification may 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 appropriate means and applied at sufficient frequency so as not to cause nuisance to adjacent habitation or affect farming activities or natural vegetation. Vegetation cover should also be kept for as long as possible to reduce the area of exposed surfaces. Dust emissions from batching and screening plants shall be subject to the relevant legislation and shall be the subject of inspection by the relevant authorities.

(f) Noise control

The Contractor shall endeavour to keep noise generating activities to a minimum. Noises that could cause a major disturbance, for instance blasting and crushing activities, should only be carried out during the hours prescribed by the conditions of contract (i.e. normal hours). Should such noise generating activities have to occur at any time outside normal hours the people in the vicinity of the noise-generating activity shall be warned about the noise well in advance and the activities kept to a minimum. Relevant legislation shall also be taken into consideration, and any practical mitigation measures adopted. No noise generating activity outside of normal hours, regardless of its proximity to residences, can take place without

application to the Engineer for approval. The application shall be accompanied by the noise containment measures proposed.

(g) Energy consumption

The Contractor shall take into consideration the impacts of high energy consumption, both from a cost and emissions point of view. Energy use shall be minimised, and where possible, alternative energy sources such as solar utilised.

Furthermore, the Contractor shall measure and keep records of the consumption of carbon units his chosen method of construction produces in the execution of his programme. In conjunction with the Engineer who will provide complete cooperation, a month by month output shall be compiled and efforts made to see how these outputs can be curtailed and reduced.

C1007 ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES

The Contractor shall undertake “good housekeeping” practices during construction as stated in the COTO Standard Specifications for Roads and Bridges and the FIDIC conditions of contract. This will help avoid disputes on responsibility and allow for the smooth running of the contract as a whole. Good housekeeping extends beyond the wise practice of construction methods that leaves production in a safe state from the ravages of weather to include the care for and preservation of the environment within which the site is situated.

The construction activities addressed below shall become part of the Contractor’s obligations regarding his programme of work and incorporated into the required method statements for workmanship and quality control.

a) Site establishment

i) <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 watercourse unless the Contractor has applied to DWS and received authorisation to do so. Regardless of the chosen site, the Contractor’s intended mitigation measures shall be indicated on the plan. The site plan shall have been submitted and approved before establishment commences. Detailed, electronic colour photographs shall be taken of the proposed site before any clearing may commence. These records are to be kept by the ECO and the Engineer for consultation during rehabilitation of the site in order that rehabilitation is, as a minimum, done to a standard similar to pre-construction activities.

ii) Vegetation

The Contractor has a responsibility to inform his staff of the need to be vigilant against any practice that will have a harmful effect on vegetation.

The natural vegetation encountered on the site is to be conserved and left as intact as possible. Vegetation planted at the site shall be indigenous and in accordance with instructions issued by the Engineer. Only trees and shrubs directly affected by the works, and such others as may be indicated by the Engineer in writing, may be felled or cleared. In wooded areas where natural vegetation has been cleared out of necessity, the same species of indigenous trees as were occurring shall be re-established. Protected trees may not be removed without a permit from the Department of Forestry, Fisheries and Environment.

Contravention of a notice of listed protected tree species under the National Forests Act, 1998 is regarded as a first category offence that may result in a fine or imprisonment for a period up to three years, or to both a fine and imprisonment. The DEO must be conversant with the latest gazette of declared protected trees.

Rehabilitation shall be undertaken using only indigenous tree, shrub and grass species. Special attention shall be given to any search and rescue operation identified during the environmental assessment process and any removal to an on-site nursery for continuous nurturing and protection and later replanting.

Any proclaimed weed or alien species that propagates during the contract period shall be cleared by hand before seeding.

Fires shall only be allowed in facilities or equipment specially constructed for this purpose. The need for a firebreak shall be determined in consultation with the Engineer and the relevant authorities, and if required a firebreak shall be cleared and maintained around the perimeter of the camp and office sites.

iii) Water management

Water for human consumption shall be available at the site offices and at other convenient locations on site.

All effluent water from the camp/office sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water sources (streams, rivers, pans, dams etc.). Only domestic type wastewater shall be allowed to enter this system.

iv) Heating and cooking fuel

The Contractor shall provide adequate facilities for his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The Contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

b) Sewage management

Particular reference in the site establishment plan shall be given to the treatment of sewage generated at the site offices, site laboratory and staff accommodation and at all localities on the site where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of the Engineer, the local authorities and legal requirements.

Safe and effective sewage treatment will require one of the following sewage handling methods: septic tanks and soak-aways, dry-composting toilets such as “enviro loos”, or the use of chemical toilets which are supplied and maintained by a specialist service provider. The type of sewage management will depend on the

geology of the area selected, the duration of the contract and proximity (availability) of providers of chemical toilets. Should a soak-away system be used, it shall not be closer than 800 metres from any natural water course or water retention system. The waste material generated from these facilities shall be serviced on a regular basis. The positioning of the chemical toilets shall be done in consultation with the Engineer. Should a soak-away system be used, it shall not be closer than 800 metres from any natural water course or water retention system and shall be approved by the Engineer in consultation with the ECO.

Toilets and latrines shall be easily accessible and shall be positioned within walking distance from wherever employees are employed on the works. Use of the veld for this purpose shall not, under any circumstances, be allowed.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. The toilets shall also be placed outside areas susceptible to flooding. The Contractor shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such latrines in a clean, orderly and sanitary condition to the satisfaction of the Engineer.

c) Waste management

The Contractor's intended methods for waste management shall be outlined and implemented at the outset of the contract and shall be to the satisfaction of the Engineer. A waste inventory shall be drawn up of all waste streams that will possibly be generated by the site/project and an integrated approach shall be taken to its management. Records shall be kept of all waste disposed. Opportunities for avoiding, reducing, reusing and recycling of materials should be identified upfront, as should constraints for their implementation. All personnel shall be instructed to dispose of all waste in the proper manner.

i) Solid waste

Solid waste shall be stored in an appointed area in covered, tip-proof metal drums or similar container for collection and disposal. Disposal of solid waste shall be at a licensed landfill site or at a site approved by the relevant authority in the event that an existing operating landfill site is not within reasonable distance from the project area. No waste shall be burned or buried at or near the project area.

ii) Litter

No littering by construction workers shall be allowed and particular emphasis on litter control measures shall apply at stop/go facilities.

During the construction period, the various contractors' facilities shall be maintained in a neat and tidy condition and the site shall be kept free of litter. At all places of work the Contractor shall provide litter collection facilities for later safe disposal at approved sites.

iii) Hazardous waste

Hazardous waste such as oils shall be disposed of at an approved landfill site and proof of such disposal kept by the Contractor. Special care shall be taken to avoid spillage of bitumen products such as binders or pre-coating fluid to avoid water-soluble phenols from entering the ground or contaminating surface water.

Under no circumstances shall the spoiling of bituminous products on the site, over embankments, in borrow pits or any burying, be allowed. Unused or rejected bituminous products shall be returned to the supplier's production plant. Any spillage of bituminous products shall be attended to immediately and affected areas shall be promptly reinstated to the satisfaction of the Engineer.

iv) Construction and demolition waste

The opportunity for recycling and reuse of construction and demolition waste as fill for road embankments, land reclamation and drainage control must first be explored and take priority before the option of declaring these materials a 'waste'.

The Contractor is encouraged to actively engage with authorities and landowners adjacent to the site and identify where such materials can be usefully deployed to repair existing environmentally damaged areas such as erosion dongas.

d) Control at the workshop

The Contractor's management and maintenance of his plant and machinery will be monitored according to the criteria given below.

i) Hazardous Material Storage

Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. All hazardous materials such as bitumen binders shall be stored in a secured, appointed area that is suitably fenced, bunded and has restricted entry. Storage of bituminous products shall only take place using suitable containers to the approval of the ECO and the Engineer.

The Contractor shall provide proof to the Engineer that relevant authorisation to store such substances has been obtained from the relevant authority. In addition, hazard signs indicating the nature of the stored materials shall be displayed on the storage facility or containment structure. Before containment or storage facilities can be erected, the Contractor shall furnish the Engineer with details of the preventative measures he proposes to install in order to mitigate pollution of the surrounding environment from leaks or spillage. The preferred method shall be a concrete floor that is bunded. Any deviation from the method will require proof from the relevant authority that the alternative method proposed is acceptable to that authority. The proposals shall also indicate the emergency procedures in the event of misuse or spillage that will negatively affect an individual or the environment.

ii) Fuel and gas storage

The Contractor shall take cognisance of the limits set by legislation for the storage of fuels and acquire the necessary authorisation for storage capacity beyond these. An adequate bund wall, 110% of volume, shall be provided for fuel and diesel areas to accommodate any leakage spillage or overflow of these substances. The area inside the bund wall shall be lined with an impervious lining to prevent infiltration of the fuel into the soil. Any leakage, spillage or overflow of fuel shall be attended to without delay.

Gas welding cylinders and LPG cylinders shall be stored chained in a secure, well-ventilated area exterior to any building wall.

iv) Oil and lubricant waste

Used oil, lubricants and cleaning materials from the maintenance of vehicles and machinery shall be collected in a holding tank and sent back to the supplier. Water and oil should be separated in an oil trap. Oils collected in this manner, shall be retained in a safe holding tank and removed from site by a specialist oil recycling company for disposal at approved waste disposal sites for toxic/hazardous materials. Oil collected by a mobile servicing unit shall be stored in the service unit's sludge tank and discharged into the safe holding tank for collection by a specialist oil recycling company.

Drip trays shall be used to collect any lubricants or fuel spilled where any vehicle and machinery are repaired or refuelled. The lubricants and fuel collected shall be handled as specified above.

All used filter materials shall be stored in a secure bin for disposal off site. Any contaminated soil shall be removed and replaced. Soils contaminated by oils and lubricants shall be collected and disposed of at a facility designated by the local authority to accept contaminated materials.

e) Clearing the site

In all areas where the Contractor intends to or is required to clear the natural vegetation and soil, either within the road reserve, or at designated or instructed areas outside the road reserve, a plan of action shall first be submitted to the Engineer for his approval. Working areas shall be clearly defined and demarcated on site to minimise the construction footprint. 'No-go- areas' and other sensitive areas shall also be clearly demarcated on site, and staff must be made aware of them.

The plan of action shall contain a photographic record and chainage/land reference of the areas to be disturbed. This shall be submitted to the Engineer for his records before any disturbance/stockpiling may occur. The record shall be comprehensive and clear, allowing for easy identification during inspections.

f) Soil management

i) Topsoil

Topsoil shall be removed from all areas where physical disturbance of the surface will occur and shall be stored and adequately protected. The contract will provide for the stripping and stockpiling of topsoil from the site for later re-use. Topsoil is the natural soil covering, including all the vegetation and organic matter. Depth may vary at each site. The areas to be cleared of topsoil shall include all storage areas. All topsoil stockpiles and windrows shall be maintained throughout the contract period in a weed-free condition. Weeds appearing on the stockpiled or windrowed topsoil shall be removed by hand. Soils contaminated by hazardous substances shall be disposed of at an approved waste disposal site. The topsoil stockpiles shall be stored, shaped and sited in such a way that they do not interfere with the flow of water to cause damming or erosion, or itself be eroded by the action of water.

The Contractor shall ensure that no topsoil is lost due to erosion – either by wind or water. Areas to be top-soiled and grassed shall be done so systematically to allow for quick cover and reduction in the chance of heavy topsoil losses due to unusual weather patterns. The Contractor's programme shall clearly show the proposed rate of progress of the application of topsoil and grassing. The Contractor shall be held responsible for the replacement, at his own cost, for any unnecessary loss of topsoil due to his failure to work according to the progress plan approved by the Engineer. The Contractor's responsibility shall also extend to the clearing of drainage or water systems within and beyond the boundaries of the road reserve that may have been affected by such negligence.

ii) Subsoil

The subsoil is the layer of soil immediately beneath the topsoil. It shall be removed, to a depth instructed by the Engineer, and if not used for road building it shall be stored and maintained separately from the topsoil so that neither stockpile is contaminated by the other. This soil shall be used for rehabilitation purposes by first spreading it over the excavated slopes without interfering with or contaminating the stockpiled topsoil.
Whilst in stockpile it shall be maintained free from erosion and weed infestation in the same way as for topsoil stockpile maintenance.

g) Earthworks and layerworks

This section includes all construction activities that involve the mining of all materials, and their subsequent placement, stockpile, spoil, treatment or batching, for use in the permanent works, or temporary works in the case of deviations. Before any stripping prior to the commencement of construction, the Contractor shall have complied with the requirements of this EMP. In addition, the Contractor shall take cognisance of the requirements set out below.

i) Quarries and borrow pits

The Contractor's attention is drawn to the requirement of the Department of Mineral Resources, that before entry into any quarry or borrow pit, an Environmental Authorisation for the establishment, operation and closure of a quarry or borrow pit shall have been approved by the Department where applicable. It is the responsibility of the Contractor to ensure that he is in possession of the authorisation prior to entry into the quarry or borrow pit. The conditions imposed by the relevant authorisation are legally binding on the Contractor and may be more extensive and explicit than the requirements of this specification. In the event of any conflict occurring between the requirements of the specific authorisation and this EMP, the former shall apply.

ii) Excavation, hauling and placement

The Contractor shall provide the ECO and the Engineer with detailed plans of his intended construction processes prior to starting any cut or fill or layer. The plans shall detail measures by which the impacts of pollution (noise, dust, litter, fuel, oil and sewage), erosion, vegetation destruction and deformation of landscape will be prevented, contained and rehabilitated. Particular attention shall also be given to the impact that such activities will have on the adjacent built environment. The Contractor shall demonstrate his "good housekeeping", particularly with respect to closure at the end of every day so that the site is left in a safe condition.

iii) Spoil sites

The Contractor shall be responsible for the safe siting, operation, maintenance and closure of any spoil site he uses during the contract period, including the defects notification period. This shall include existing spoil sites that are being re-entered. Before spoil sites may be used proposals for their locality, intended method of operation, maintenance and rehabilitation shall be given to the ECO for his/her comments and to the Engineer for his approval. The location of these spoil sites shall have signed approval from the affected landowner before submission to the ECO and the Engineer. No spoil site shall be located within 50m of any watercourse. A photographic record shall be kept of all spoil sites for monitoring purposes. This includes before the site is used and after re-vegetation.

The use of approved spoil sites for the disposal of any waste shall be prohibited. Spoil sites will be shaped to fit the natural topography. Depending on availability these sites shall receive a minimum of 75mm topsoil and be grassed with the recommended seed mixture. Appropriate grassing measures to minimise soil erosion shall be undertaken by the Contractor. This may include both strip and full sodding. The Contractor may motivate to the Engineer for other acceptable stabilising methods. The Engineer may only approve a completed spoil site at the end of the defects notification period upon receipt from the Contractor of a landowner's clearance notice.

iv) Stockpiles

The Contractor shall plan his activities so that materials excavated from borrow pits and cuttings, in so far as possible, can be transported direct to and placed at the point where it is to be used. However, should temporary

stockpiling become necessary, the areas for the stockpiling of excavated and imported material shall be indicated and demarcated on the site plan submitted in writing to the Engineer for his approval. The Contractor's proposed measures for prevention of environmental damage, containment and subsequent rehabilitation shall also be submitted.

The areas chosen shall have no naturally occurring indigenous trees and shrubs present that may be damaged during operations. Care shall be taken to preserve all vegetation in the immediate area of these temporary stockpiles. During the life of the stockpiles the Contractor shall at all times ensure that they are positioned and sloped to create the least visual impact, constructed and maintained so as to avoid erosion of the material and contamination of surrounding environment and kept free from all alien/undesirable vegetation.

After the stockpiled material has been removed, the site shall be re-instated to its original condition. No foreign material generated/deposited during construction shall remain on site. Areas affected by stockpiling shall be landscaped, top soiled, grassed and maintained at the Contractor's cost until clearance from the Engineer and the landowner is received.

Material milled from the existing road surface that is temporarily stockpiled in areas approved by the Engineer within the road reserve, shall be subject to the same condition as other stockpiled materials. Excess materials from windrows, in situ milling or any leftover material from road construction activities may not be swept off the road and left unless specifically instructed to do so in the contract documentation or under instruction from the Engineer.

The ECO shall comment on and the Engineer shall approve the areas for stockpiling and disposal of construction rubble before any operation commences and shall approve their closure only when they have been satisfactorily rehabilitated.

v) Blasting activities

Wherever blasting activity is required on the site (including quarries and/or borrow pits) the Contractor shall rigorously adhere to the relevant statutes and regulations that control the use of explosives.

h) On site plant

i) Crusher, screening plants and concrete batching plants

Crushing plants and concrete batching plants, whether sited inside or outside of defined quarry or borrow pit areas, shall be subject to the requirements of the applicable industrial legislation that governs gas and dust emissions into the atmosphere. Such sites will be the subject of regular inspections by the relative authorities during the life of the project. In addition, the selection, entry onto, operation, maintenance, closure and rehabilitation of such sites shall be the same as for those under section C1007(g)(i) of this EMP, with the exception that the Contractor shall provide additional measures to prevent, contain and rehabilitate against environmental damage from toxic/hazardous substances. In this regard the Contractor shall provide plans that take into account such additional measures as concrete floors, bunded storage facilities, linings to drainage channels and settlement dams. Ultimate approval of these measures shall be from the relevant authority, as shall approval of closure. The Engineer will assist the Contractor in his applications to the relevant authority.

Screening activities shall be undertaken so that dust and noise is minimised. This can be done by carefully choosing the site for the activity, and by using slightly damp material.

Effluent from concrete batch plants and crusher plants shall be reused where possible or treated in a suitable designated sedimentation dam to the legally

required standards to prevent surface and groundwater pollution. The designs of such a facility should be submitted to the Engineer for approval.

ii) Asphalt Plant

Asphalt plants shall be subject to the applicable legislation that governs establishment and operation of batching plants. The Contractor shall be responsible to obtain the necessary permit from the relevant authority.

Operation of the plant shall conform to the same requirements as for a crushing plant or concrete batching plant under C1007(h)(i) above.

C1008 AREAS OF SPECIFIC IMPORTANCE

Any area, as determined and identified within the project documents as sensitive or of special interest within the site shall be treated according to the express instructions contained in these specifications or the specific environmental authorisation, as well as the approved EMPr. The Contractor may offer alternative solutions to the Engineer in writing should he consider that construction will be affected in any way by the hindrance of the designated sensitive area or feature. However, the overriding principle is that such defined areas requiring protection should not be changed. Every effort to identify such areas within the site will have been made prior to the project going out to tender. The discovery of other sites with archaeological or historical interest that have not been identified shall receive ad hoc treatment.

a) Archaeological sites

If an artefact on site is uncovered, work in the immediate vicinity shall be stopped immediately. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the Engineer of such discovery. The South African Heritage Resource Agency (SAHRA) is to be contacted, and a SAHRA-registered archaeological consultant may undertake the necessary work involved in confirming the find and advising on how it should be preserved or removed. Work may only resume once clearance is given in writing by the archaeologist. (Read with FIDIC condition of contract clause 4.24)

If a grave or midden is uncovered on site then all work in the immediate vicinity of the graves/middens shall be stopped, and the Engineer informed of the discovery. The South African Heritage Resource Agency and the South African Police Services (SAPS) should be contacted and in the case of graves, arrangements made for an undertaker to carry out exhumation and reburial. The undertaker will, together with SAHRA, be responsible for attempts to contact family of the deceased and for the place where the exhumed remains can be re-interred.

C1009 REHABILITATION

The Contractor shall be responsible for the re-establishment of grass within the road reserve boundaries for all areas disturbed during construction. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for, or from, construction has to be stored temporarily, and designated or instructed areas outside the road reserve. It also includes the area where site offices were erected which may require rehabilitation at the end of the contract. All construction material, including concrete slabs and barbecue (braai) areas shall be removed from the site on completion of the contract unless written approval from the relevant landowner demonstrates it is to be left in place.

Responsibility for re-establishment of vegetation shall extend until expiry of the defects notification period. However, SANRAL reserves the right to continue holding retention monies (or not releasing guarantees in lieu of retention) depending upon the state of cover at the end of the defects notification period. Such extension may continue until closure of the relevant quarry or borrow pit has been secured,

Rehabilitation of affected areas should be undertaken as early as possible when the relevant activities are done in order to reduce further environmental damage. All re-vegetation should be undertaken using indigenous vegetation. The standard of rehabilitation should be to the satisfaction of the Engineer and the relevant authorities. The Department of Minerals Resources will only issue closure certificates for borrow pits and quarries when they are satisfied with the rehabilitation undertaken. It should also be noted that in some cases there is a requirement for a final environmental audit covering the extent of the project.

C1010 RECORD KEEPING

The Engineer and the DEO will continuously monitor the Contractor's adherence to the approved impact prevention procedures and the DEO shall submit regular written reports to the ECO and to the Engineer at least once a month. The DEO will report the environmental compliance performance of the project at regular site meeting. The Engineer shall issue to the Contractor a notice of non-compliance whenever transgressions are observed. The DEO shall document the nature and magnitude of the non-compliance in a designated register, the action taken to discontinue the non-compliance, the action taken to mitigate its effects and the results of the actions. The non-compliance shall be documented and reported to the Engineer in the monthly report.

Copies of all authorisations shall be kept on site and made available for inspection by visiting officials from SANRAL, relevant authorities or internal/external auditors.

C1011 COMPLIANCE AND PENALTIES

The Contractor shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the construction site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. This record shall be submitted with the monthly reports and an oral report given at the monthly site meetings.

Any non-compliance/omissions with the procedures in this EMP, environmental authorisations and the approved EMPr constitute a breach of the Conditions of Contract. Regulatory financial penalties imposed on SANRAL shall be passed onto the defaulting parties.

SECTION D: STAKEHOLDER AND COMMUNITY LIAISON, AND TARGETED LABOUR AND TARGETED ENTERPRISES UTILISATION AND DEVELOPMENT

SECTION D: STAKEHOLDER AND COMMUNITY LIAISON, AND TARGETED LABOUR AND TARGETED ENTERPRISES UTILISATION AND DEVELOPMENT

TABLE OF CONTENTS **PAGE**

D1001	**SCOPE**	C3-136
D1002	**DEFINITIONS AND APPLICABLE LEGISLATION**	C3-137
D1003	**TARGET GROUP PARTICIPATION**	C3-143
D1004	**STAKEHOLDER AND COMMUNITY LIAISON AND SOCIAL FACILITATION**	C3-148
D1005	**MOBILISATION PERIOD**	C3-157
D1006	**THE ROLE OF THE ENGINEER**	C3-160
D1007	**TENDER PROCESS FOR TARGETED ENTERPRISES**	C3-161
D1008	**GENERAL RESPONSIBILITIES OF THE CONTRACTOR TOWARDS TARGETED ENTERPRISES**	C3-172
D1009	**WORK SUITABLE FOR EXECUTION BY TARGETED ENTERPRISES**	C3-178
D1010	**TRAINING, COACHING, GUIDANCE, MENTORING AND ASSISTANCE**	C3-178
D1011	**LABOUR ENHANCED CONSTRUCTION**	C3-187
D1012	**COMMUNITY DEVELOPMENT**	C3-187
D1013	**MEASUREMENT AND PAYMENT**	C3-188

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 Principles for Project Liaison, Targeted Enterprise Subcontracting, and Targeted Labour Sourcing in SANRAL Projects (Fourteen Point Plan)

The scope of the work described in this Section D of the Specifications shall be based on the Employer's Principles for Project Liaison, Targeted Enterprise subcontracting and Targeted Labour sourcing in all SANRAL projects, which are stipulated below:

1. *SANRAL will establish a Project Liaison Committee (PLC) for every project to create a platform for project communication with the aim to facilitate the Contractor's sub-contracting with Targeted Enterprises and the employment of Targeted Labour. It may also include the supply of material and goods, procurement of services, and participation with MoU, MoA, and/or PPP partners to facilitate successful works execution.*
2. *Communication shall be co-ordinated through the PLC where the expectations of impacted local businesses, communities, and other stakeholders are managed.*
3. *SANRAL will take the project to the recognised stakeholders of the community before the appointment of the PLC. SANRAL shall Induct the PLC, chair PLC meetings and provide secretarial support through the Consulting Engineer or its Agent. Representation on the PLC will comprise of SANRAL, the Contractor, the Consulting Engineer (SANRAL's Agent), and other relevant entities such as business representatives, traditional authority representatives, provincial, district, and local municipal representatives (not political office bearers), community representatives, and any other critical local Stakeholder that may be deemed necessary by SANRAL. While serving on the PLC, members must declare any conflict of interest and recuse themselves if requested by the PLC Chairperson.*
4. *The social facilitator shall be appointed by the Consulting Engineer during the design stage of the project and the Project Liaison Officer (PLO), shall be appointed by the Consulting Engineer, during the mobilisation period of the project. The recruitment shall be fair and transparent, and the individual appointed must be supported by the PLC.*
5. *The definition of a Target Area (sometimes referred to as a local area or Project Area) may be varied by SANRAL with the input of the PLC prior to the construction tender being let.*
6. *The setup of databases for Targeted Labour in the Target Area will be done with the input of the PLC. The Targeted Labour database will be disseminated to the PLC for comment and input.*
7. *A system of Targeted Labour selection from the database must be established at a PLC meeting. The Targeted Labour database will be used by the Contractor to recruit Targeted Labour.*
8. *The PLC may contribute to identifying areas of the Scope of the Works that are deliverable by Targeted Enterprises, and areas where capabilities are not available locally. All Scope of the Works areas where capabilities are not available locally will be imported from outside of the local area and local service providers will be given an opportunity to learn through one of the structured training options provided in the Contract.*
9. *Capability assessments of Targeted Enterprises will be done with the input of the PLC, prior to the subcontract tender stage commencing, to identify any deficiencies in skills and experience. For Targeted Labour, skills assessments will be done at recruitment stage.*
10. *Targeted Enterprise development support and training must be coordinated and conducted, prior to the sub-contract tender stage commencing, with the input of the PLC*
11. *In accordance with the provisions of the Construction Industry Development Board Act, 2000 (Act No. 38 of 2000), and aligned with the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000), the Contractor shall with the input of the PLC, as part of the setup of the database for Targeted Enterprises conduct a comprehensive market analysis within the defined Community.. The database will be disseminated to the PLC for comment and input. A database will only become final on the date of sub-contract tender closure.*
12. *The Targeted Enterprises on the database must be assisted by the Consulting Engineer and the Contractor to be compliant with the relevant legislation to execute work for a SANRAL project. Targeted Enterprises on the database must be registered on the National Treasury Central Supplier Database (CSD). The databases for Targeted Enterprise sub-contracting will be used by the Contractor for open tender processes. Tender processes for Targeted Enterprise subcontracting must be conducted by the Contractor using government principles (e.g., public opening of received bids, announcement of bidders and*

prices). The successful tenderers will be tabled, by the Contractor, in the PLC meeting for information purposes.

13. *Appeals to the tender process, which cannot be resolved by the PLC, must be escalated to SANRAL's Transformation Unit for review.*
14. *The Consulting Engineer must ensure that formal contracting arrangements between the Contractor and the Targeted Enterprise Subcontractors are in place in all projects.*

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 utilisation and development.

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) Business Coaching

Business Coaching establishes an atmosphere of mutual trust, respect, responsibility and accountability to motivate the emerging business owner and his team. To that end, the business coach must conduct an ethical and competent practice, based on appropriate professional experience and business knowledge.

b) Community

The Community consists of permanently residing persons of South African Citizenship, including households, local businesses, and community-based organisations that are owned or controlled by South African citizens as defined in terms of the South African Citizenship Act (Act 88 of 1995), in the Project Impact Area(s) as defined in the Specification Data, demarcated by the Municipal Demarcation Board. Such members may participate in or benefit from employment opportunities, subcontracting, skills development, community liaison, or other social and economic development obligations imposed..
All persons and entities claiming permanently residing Community status shall at request of the Employer provide proof of South African citizenship and proof of residence or operation within the Project Impact Area to the satisfaction of the Employer's Transformation Unit.

c) Contract Participation

Contract Participation is the process by which the Employer implements Government's objectives by setting Specific Goals to enhance Targeted Labour and Targeted Enterprises' utilisation and development, which the Contractor must achieve as a minimum.

d) Contract Participation Goal (CPG)

The CPG is the monetary value of the participation goals set by the Employer for Targeted Labour and Targeted Enterprises expressed as a percentage of the Final Contract Value (Refer to D1002.01 Definitions j) Final Contract Value. (excluding provision for Contract Price Adjustment (CPA, also referred to as escalation), contingencies for unforeseen additional expenditure, and Value Added Tax (VAT)).).

e) Contract Participation Goal Plan (CPG Plan)

The CPG Plan outlines how the Contractor intends to achieve the various Specific Goals w.r.t the CPG as set in the Specification Data. The CPG Plan includes the detail of the Targeted Enterprise work programme, as well as the contents and value of the work packages. See Appendix 8.1 for the CPG Plan template.

f) Contract Participation Performance (CPP)

The CPP is the measure of the Contractor's progress in achieving the CPG and the formula for calculating its value is described in Section D1003.05.

g) Corporate Social Investment (CSI)

The definition of the CSI Percentage shall be included under the Specification Data. The Contractor shall commit to allocating a minimum amount equivalent to 0.5% of the Final Contract Value towards the approved Corporate Social Investment initiatives in the Project Impact Area, as may be further specified or adjusted by the Employer. The allocation, management, and reporting of CSI expenditure shall be conducted in consultation with the PLC and in accordance with the Employer's Transformation Unit.

h) Contract Skills Development Goals (CSDG)

i) The CSDG shall be expressed as a percentage (%) of the Final Contract Value and shall not be less than the percentage specified for Civil Engineering Works in the Specification Data (D1010). This monetary commitment shall be used to deliver accredited skills development interventions that may be measured in hours of training provided, or head count of individuals benefiting from formal training, apprenticeships, learnerships, internships, or other approved skills development activities, in accordance with the Employer's Community Participation and Skills Development Guidelines..

i) Domestic Subcontractors

A Domestic Subcontractor is one in whose selection and appointment the Employer traditionally plays no part in other than simply giving consent when that is required under the terms of the Contract. The appointment of the subcontractor is treated as something entirely for the benefit of the Contractor and is a purely "domestic matter".

j) Final Contract Value

The Final Contract Value also means the Contract Price as defined in FIDIC, sub-clause 1.1.4.2. To calculate the CPG as per Section D1003.04 Contract Participation Goal (CPG) of the Specifications, the Final Contract Value shall exclude CPA, contingencies, and VAT).

k) 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.

l) 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; but
iii) 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.

m) Market Analysis

Market analysis shall identify the number, type, and capacity of local Targeted Enterprises, assess the availability of relevant skills, trades, equipment, and supply chain readiness within the Community, determine any gaps where capacity building, skills development, or enterprise incubation may be required, and establish baseline data to enable the monitoring and evaluation of local procurement and enterprise development obligations throughout the duration of the Contract.

n) Market Related Rates

This is the price of goods and services based on demand and supply that emerges from open tendering process and is independent of the Contractor rates.

o) Mentoring

Mentoring is a professional relationship in which an experienced businessperson assists another by giving advice and imparting their knowledge in developing special skills and knowledge that will enhance the less experienced businessperson's professional and personal growth. The objective is to equip the emerging business owner and his team to improve their decision-making skills, being focussed and make positive progress quickly.

p) Mobilisation Period

The Mobilisation Period is the period between the Commencement Date and the date of Access to Site), which period (duration) is stated in the Contract Data. Section D1005 of the Specifications describes the purpose and requirements of the Mobilisation Period.

q) Project Area

The Project Area is 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 requisite resources availability, Project Areas other than defined above may be identified where preference would be given to Targeted Enterprises for subcontracting opportunities.

r) Project Liaison Committee (PLC)

The PLC is 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 may not be members of the PLC, and
ii) the Engineer and Contractor become members of the PLC on their appointment and participate in the Committee within the scope of their respective roles and responsibilities.

s) Project Liaison Officer (PLO)

The PLO is 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.

t) Specific Goals

Specific Goals may include contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination based on race, gender and disability.

The Employer's Specific Goals are set in the Specification Data, and unless otherwise permissible by the Preferential Procurement Policy Framework Act (Act 5 of 2000) and its Regulations, Specific Goals may be set by the Employer for the Contractor to subcontract with Targeted Enterprises in terms of their ownership and/or control, and employ Targeted Labour as follows:

i) EMEs and/or QSEs which are at least 51% owned by black people as listed below;
ii) Black people who:
    a. are citizens of the Republic of south Africa by birth or descent; or
    b. became citizens of the Republic of South Africa by naturalisation:
        i. before 27 April 1994; or
        ii. on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalisation prior to that date;
iii) Women who are South African citizens;
iv) Youth as defined in the National Youth Commission Act (Act 19 of 1996);
v) People with disabilities as defined in the Code of Good Practice on employment of people with disabilities issued under the Employment Equity Act (Act 55 of 1998);
vi) Black military veterans who qualify to be called a military veteran in terms of the Military Veterans Act (Act 18 of 2011);
vii) Unemployed persons that are black people as listed in iii) to vi) above; and
viii) Unemployed persons not attending and not required by law to attend an educational institution and not awaiting admission to an educational institution.

u) Stakeholders

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 leadership representation;
iv) Organised forums representing community interest groups;
v) Organised forums representing the youth, women and disabled people;
vi) Other structured community groups such as religion, education, farming, etc.
vii) Organised forums representing the transport sector;
viii) Organised forums representing the business sector;
ix) Organised forums representing road users and road safety interest groups;
x) Organised forums representing environmental interest groups;
xi) Any other relevant stakeholder forum or organisation recognised by the Employer and the local municipality.

v) Subcontractor

An entity appointed by the Contractor to execute a portion of the Scope of the Works as defined in the Conditions of Contract under FIDIC subclause 1.1.2.8. This includes both Domestic Subcontractors and Targeted Enterprises.

w) 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; or
iv) one or more Wards that are predominantly located within the Project Area.

x) Targeted Enterprise

A Targeted Enterprise is an entity to which the Contractor subcontracts a percentage of the contract value as set in the Specification Data acting in the capacity of a Subcontractor or JV partner of a subcontractor; and

i) the Contractor does not have any equity holding in the enterprise, either directly or through a flow through calculation in accordance with the amended Construction Sector Code of Good Practice published in Notice 931 of 2017 in Government Gazette No. 41287 of 2017 in terms of the Broad Based Black Economic Empowerment Act (Act 53 of 2003); and
ii) is registered in terms of the Company's Act (Act No. 71 of 2008) or Close Corporation Act (Act No. 69 of 1984); and
iii) its ownership adheres to the Specific Goals as set in the Specification Data; and
iv) is registered with National Treasury's Central Supplier Database; and
v) is tax compliant prior to award of a subcontract; and
vi) is CIDB registered where applicable; and
vii) is COIDA compliant prior to award of the subcontract where applicable; and
viii) is an entity that has not been employed as a domestic subcontractor on this contract.

A Targeted Enterprise may be a:

a. subcontractor subcontracted to execute a portion of the Scope of the Works;
b. manufacturer that operates or maintains a factory or establishment that produces materials or goods;
c. supplier that owns, operates or maintains a store, warehouse or other establishment in which goods are kept in stock, which was bought in its own name, and regularly sold to other parties in the usual course of its business;
d. service provider who provides professional, technical, or managerial services, including those required for the acquisition of personnel, facilities, equipment, and goods.

Targeted Enterprises are also Subcontractors as defined in the Conditions of Contract under FIDIC subclause 1.1.2.8.

y) Targeted Enterprise Construction Manager (TE Construction Manager)

The full-time dedicated 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.

z) Independent Targeted Enterprise Monitor

The Targeted Enterprise Monitor is an independent service provider, or individual, appointed by the Engineer and reporting to the Employer's Transformation Unit, to audit the Contractor and his TE Construction Manager's activities with respect to their obligations to Targeted Enterprises.

aa) Targeted Enterprise Procurement Coordinator (TE Procurement Coordinator)

The sub-service provider appointed by the Contractor to facilitate the procurement of Targeted Enterprise Subcontractors. The subservice provider shall not be a subsidiary member of the Contractor; no member of his personnel should have a holding equity or any interest in this subservice provider. The TE Procurement Coordinator shall undertake procurement of Targeted Enterprises based on Market Related Rates for each package, which shall be reviewed by the Engineer who shall verify if the rates are market related and approve the provided or balanced rates for each subcontract package.

bb) Target Group

It is a group of entities and/or persons set as the Employer's Specific Goals in the Specification Data for the Contractor to subcontract with Targeted Enterprises and employ Targeted Labour.

cc) Targeted Labour

Persons:

i) who are unemployed; and
ii) who are then employed by the Contractor or a Subcontractor (including Targeted Enterprises) in the performance of this Contract; 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 or Targeted Enterprise's employment policies; and
iv) 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
v) who are stated as being Targeted Labour in the Specification Data.

The personnel employed by the Contractor's suppliers and service providers are not defined as "Targeted Labour" for the purposes of this Contract.

dd) 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.

ee) Training and Skills Development Programme (TSDP)

The TSDP outlines how the Contractor intends to achieve the CSDG targets, by applying the various training methods described in Section D1010 of the Specifications.

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) Constitution of the Republic of South Africa Act, 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 and its latest regulations;
d) The South African National Roads Agency Limited and National Roads Act, Act No. 7 of 1998;
e) Construction Industry Development Board Act, Act No. 38 of 2000;
f) Broad-Based Black Economic Empowerment Act, Act No. 53 of 2003 as amended;
g) Amended Construction Sector Codes , Government Gazette Notice 931 of 2017;
h) The Skills Development Act, Act No. 97 of 1998;
i) The Skills Development Levies Act, Act no. 9 of 1999;
j) The National Small Enterprises Act, Act 102 of 1996 as amended.

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) CIDB Standard for Indirect Targeting for Enterprise Development through Construction works Contracts, 29 January 2013 (Government Gazette No. 36190, 25 February 2013).

ii) CIDB Standard for Developing Skills through Infrastructure Contracts, 08 August 2013 (Government Gazette No. 36760, 23 August 2013), amended by version 2, June 2020 (Government Gazette No. 43495, 03 July 2020).
iii) CIDB Standard for Minimum Requirements for Engaging Contractors and Subcontractors on Construction Works Contracts, 25 October 2015 (Government Gazette No. 42021, 09 November 2015).
iv) CIDB Standard for Contract Participation Goals for Targeted Enterprises and Labour through Construction Works Contracts, 31 October 2017 (Government Gazette No. 41237, 10 November 2017).
v) SANS 10845: 2015, Parts 5, 7 and 8.

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 penalties 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 system for the recruitment of Targeted Labour shall be established at a PLC meeting prior to the commencement of labour recruitment. This system shall be fair and transparent.

Based on the system for recruitment, a Targeted Labour Database shall be compiled by the Contractor, with the assistance of the PLO, and the input of the PLC, for the Target Area(s) as stated in the Specification Data. If necessary, the assistance of the Department of Labour may be called upon to provide a labour database of labourers with the required skills and within the required Target Groups and Target Area(s). Once the Database has been disseminated to 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 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, with the inputs of the PLC, compile a Targeted Enterprise Database which is to be used to assess subcontracting skills availability and assist the Contractor in developing and managing the subcontracting databases described in this part of Section D of the Specifications.

a) Market Analysis and Requisite Resources Availability Audit

The Contractor shall conduct a market analysis and requisite resources availability audit to determine the availability, expertise, abilities, and proficiency of Targeted Enterprises in the Project Area.

To inform the market analysis and requisite resources availability audit, the Contractor may use the National Treasury's Central Supplier Database (CSD) , as well as the CIDB contractor database, and transport database (if applicable).

The market analysis and requisite resources availability audit, and all updates thereof for the duration of the Contract, shall be submitted to the Engineer and the Employer's Project Manager in a format acceptable to the Employer.

Following the market analysis and a requisite resources availability audit, the Contractor shall apply the CPG Target Group criteria in the Specification Data to compile a ***preliminary*** Targeted Enterprise Database (see D1003.03(c) below).

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, 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 requisite resources availability audit, and the information obtained from the call for an expression of interest, additional criteria for the Preliminary Targeted Enterprise Database may be tabled by the PLC to the Contractor for consideration to ensure Target Group participation as intended by the Employer.

d) Targeted Enterprise Database

Once the Preliminary Targeted Enterprise Database has been disseminated to the PLC for information purposes, 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.

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 goals set by the Employer for Targeted Labour and Targeted Enterprises expressed as a percentage of the Final Contract Value. The participation goals comprise of the following:

a) Targeted Labour

In the case of Targeted Labour, the CPG is:

i) the sum of the wages and allowances, for which the Contractor, Subcontractors, and Targeted Enterprises contract to engage Targeted Labour in the performance of the Contract, expressed as a percentage of the Final Contract Value (excluding CPA, contingencies, and VAT) associated with the Specific Goals that are set in the Specification Data; or

ii) the amount equal to the person days worked for which the Contractor, Subcontractors, and Targeted Enterprises contract to engage Targeted Labour expressed as a percentage of the total person days worked associated with the Specific Goals that are set in the Specification Data.

% Targeted Labour ($TL_{Total\%}$) = the sum of the % Targeted Labour employed by the Contractor, Subcontractors and Targeted Enterprises.

b) Targeted Enterprises

In the case of Targeted Enterprises, including manufacturers, suppliers, and service providers, the CPG is:

i) the amount equal to the value of goods, services and works for which the Contractor contracts to engage Targeted Enterprises in the performance of the Contract, expressed as a percentage of the Final Contract Value (excluding CPA, contingencies, and VAT) associated with the Specific Goals that are set in the Specification Data, and calculated as follows:

$$\%\ \text{Targeted Enterprises } (TE_{Total\%}) = TE_{Subcontractor} + TE_{Supplier} + TE_{Manufacturer} + TE_{ServiceProvider.} + TE_{JonitVenture}$$

Where:

$TE_{Subcontractor}$ = 1.0 x % Targeted Enterprise subcontractors (who are not suppliers, manufacturers, service providers or joint ventures), including the Targeted Labour employed by the Targeted Enterprise subcontractors.

$TE_{Supplier}$ = 0.2 x % Targeted Enterprise suppliers who are not manufacturers.

$TE_{Manufacuter}$ = 1.0 x % Targeted Enterprise manufacturers.

$TE_{ServiceProvider}$ = 1.0 x % Targeted Enterprise service providers (excluding cost of goods if service provider is not also the supplier or manufacturer of goods, e.g., a transport service).

$TE_{JointVenture}$ = 1.0 x % Targeted Enterprise joint venture participation parameter.

While the individual participation goals, 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 any CPA, contingencies, and VAT.

The Contractor shall strive to distribute and implement the participation goals and opportunities equally and continuously over the duration of the Contract. Where the Contractor deems such an equal and continuous distribution of the participation goals to be unachievable, he shall provide reasons and motivate it clearly in the preliminary CPG Plan.

Both the Targeted Labour and Targeted Enterprise participation goals may consist of sub-goals which are stipulated in the Specification Data. The Contractor is required to achieve these individual sub-goals. If the Contractor fails to achieve any one of the individual sub-goals and does not substantiate that such failure is due to quantitative underruns, the elimination by the Employer of items contracted to Targeted Enterprises, or any other reason beyond the Contractor's control which may be acceptable to the Employer, penalties shall apply as stated in Section D1003.05 of the Specifications, and as provided for in clause 8.7 of the FIDIC Conditions of Contract.

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 goal set by the Employer for Targeted Enterprises. It is the Contractor's responsibility to assess the work required to meet the goals and, if necessary, to engage additional Targeted Enterprises to execute work on the Contract as well to ensure that the minimum goals 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} (with only 50% of spent on Targeted Enterprise suppliers who are not manufacturers contributing towards the CPG_{Actual}

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.

It is a requirement of this contract that the Contractor shall exceed the minimum specified expenditure on Targeted Enterprises by the time the main contract expenditure reaches the appropriate percentage outlined as per Table D1003.05. The contractor shall achieve the minimum CPP target for Targeted Enterprises per allocated milestone in Table D1003.05.

CPP Milestone Target Calculation:

Y = 80% of (30% of X)

(Y) = Interim CPP Milestone target
(X) = Main Contractor Expenditure (%) Milestone.

**Interim Penalty Applicable for a given milestone = 50% of (Y – Actual interim CPG)

The Milestones to apply is as specified in the Specification Data.

Table D1003.05

CPP Milestone no.	Main Contractor Expenditure (%) Milestone. X	Interim CPP Target, Percentage of the Main Contractors Expenditure (%) Y
1	30	7.0
2	40	10
3	50	12
4	60	14
5	70	17
6	80	20

Failure by the Contractor to achieve the CPP Milestones specified in Table D1003.05 shall incur liability for the penalty stipulated in Clause 8.7(b) of the FIDIC Conditions of Contract, unless the Contractor presents satisfactory evidence demonstrating compelling reasons, as defined in Section D1003.04 of the Specifications, that prevented the achievement of such Milestones.

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.

a) CPP Penalties

Failure to reach either the CPG or any individual Target Group goals 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 goal or sub-goals could not be achieved as stipulated in Section D1003.04 of the Specifications. Penalties for Targeted Labour and for Targeted Enterprises shall be calculated as follows:

Penalty Targeted Labour = $(TL - TG) + Sum\ (TL_n - TG_n) - 1.2 \times L_{dp}$

Where:

$_n$	=	Each lowest order sub-group 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.
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 = $(TE - TGE) + Sum\ (TE_n - TGE_n) - 1.2 \times TE_{mv} - 1.2 \times TE_{dp}$

Where:

$_n$	=	Each lowest order sub-group of Targeted Enterprise stipulated in the Specification Data.
TE	=	Monetary value (excluding VAT) of Targeted Enterprises calculated at the percentage stipulated in the Specification Data applied to the Final Contract Value
TGE	=	Cumulative monetary value (excluding VAT) expended on Targeted Enterprises by the Contractor but with only 20% 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, sub-contracted to the Contract by the Contractor.

TE_{dp} = Cumulative monetary value (excluding VAT) by Targeted Enterprises being majority owned by black Disabled Persons, sub-contracted 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 (0) value.

Interim penalty valuations, based on the accepted CPG Plan, shall 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 be applied for failure to meet the CPP targets for Target Enterprises at each Milestone specified in this clause In addition the Contractor shall by notice be placed on terms to correct as prescribed in sub-clause 15.1 of the FIDIC Conditions of Contract. Failure to correct by completion of the Contract will lead to an Employer's Claim in terms of sub-clause 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 Employer's CPG requirements, and the compulsory utilisation of project specific Targeted Labour and Targeted Enterprise 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.

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, which include the Contractor, 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, providing 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 subcontracting, as well as its associated risks, shall remain the sole responsibility of the Contractor.

The Contractor shall take cognisance of the Employer's PLC and PLO Forms, attached as Appendix 8.2. 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 establishment of the PLC, and/or the Engineer 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.

To ensure that all relevant Stakeholders are represented in the PLC, the Employer did, or will, consult with the Executive Mayor's office, as well as with the LED Department of the Local Municipalities in the Project Area.

Stakeholder representation on the PLC is project and Project Area specific and may, amongst others, include:

i) Relevant Provincial departments.
ii) Relevant District and Local Municipal departments.
iii) Traditional leadership representation.
iv) Organised forums representing community interest groups.
v) Organised forums representing the youth, woman and people with disabilities.
vi) Other structured community groups such as religion, education, farming, etc.
vii) Organised forums representing the business sector.
viii) Organised forums representing the transport sector.
ix) Organised forums representing road users and road safety interest groups.
x) Organised forums representing environmental interest groups.

xi) Any other relevant stakeholder forum or organisation recognised by the Employer and the district and/or local municipality.

Every forum/organisation/constituency shall have one (1) representative on the PLC, which representation shall be confirmed by a duly signed nomination form.

It should be noted that the PLC is not a political platform. While political office bearers may be invited to some PLC meetings, they may not be PLC members and hence, will not have voting rights when attending a PLC meeting.

The Employer's timeous establishment of the PLC and/or the level of functionality of the PLC shall not prevent the Contractor from continuing with his responsibilities during the Mobilisation Period and the subsequent commencement of construction of the Works.

b) Reimbursement of PLC Members

PLC membership is voluntary and PLC members shall not be remunerated for any time spent in PLC meetings or work done outside of PLC meetings, which are associated with representing their constituencies on the PLC.

In establishing a reimbursement amount for PLC members, the factors listed below, are considered for the proposed amount of R1200 per seating per PLC member in a PLC meeting subject to escalation as per CPI (once per year):

i) Transportation costs.
ii) Sustenance (if not provided during meetings).
iii) Type, size, and technical complexity of the project.
iv) Facilitation of performance milestones.

PLC members will be reimbursed monthly, and the reimbursable amount may be revised bi-annually should the actual costs incurred by PLC members change during the project.

The PLC reimbursement amount shall be increased annually, or twelve (12) months after the last bi-annual adjustment, based on the CPI figure contained in Table B2 of Statistical Release P0141 by StatsSA (base date July 2025).

c) Induction of the PLC

The Employer shall conduct an induction meeting with the PLC to acquaint PLC members with the following information:

i) SANRAL's Horizon 2030 Strategy.
ii) SANRAL's Principles for Project Liaison.
iii) The role and responsibilities of PLC members.
iv) SANRAL's Transformation Policy.
v) How the Transformation Policy impacts on SMMEs.
vi) Relevant details of the Contract, e.g.
    a. Start and end dates
    b. Important milestones
    c. CPG goals
    d. Envisaged Targeted Enterprise packages, and
    e. Envisaged work for other SMMEs (non-CPG).

d) Rules of Engagement for the PLC

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.

i) <u>General Matters and Membership</u>

    a. A PLC member may not be a politically elected representative and political party representation will not be allowed in the PLC.

b. Ward Councillors nominated by the Mayor may interact with the PLC through the Mayor's Office and the PLC chairperson (the Employer).
c. If required, and in consultation with the Employer, a Political Steering Committee (PSC) may be established to address political matters.

ii) Term of Office for the PLC

a. The duration of PLC members' participating in the PLC (term of office) shall depend on the duration of the project.
b. If the Employer finds the performance of a PLC member to be below expectation or their conduct to be unacceptable, the affected member will be discharged from their obligations and the constituency whom they represented will be requested to nominate a replacement member.

iii) Targeted Enterprises and Targeted Labour

PLC members shall:

a. ensure that they, or companies in which they hold equity, do not tender for any work or on any subcontract that are issued for this Contract. Should a PLC member, or a company in which he/she holds equity, tender for such work or subcontract, it will be treated as a conflict of interest and-
   i. the person shall cease to be a PLC member for this Contract, and
   ii. the tender proposal submitted will not be evaluated.
b. not have private or business interests in any of the sub-contract tenders tabled to the PLC or considered in this Contract.
c. 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 sub-contract to a tenderer known to the member.
d. during the tender and tender evaluation processes, neither deliberately favoured nor prejudiced a person or tenderer, as intended, or contemplated in treasury Regulation 16, A8.3 (a), (b) & (c).
e. ensure that no conflict of interest arises from members' involvement in the PLC and potential involvement in Targeted Labour recruitment and/or Targeted Enterprises procurement and/or any other manufacturer/supplier/subcontractor/service provider procurement or involvement in the Contract.

iv) Confidentiality

a. PLC members shall accept that all information, documentation, and discussions regarding any matter serving before the PLC are confidential and undertake not to communicate this information outside of the PLC meeting.
b. Decisions of PLC meetings may not be disseminated to any party other than the constituency whom they are representing.
c. Information for public dissemination shall be clearly documented in the minutes of the meeting of the PLC to ensure that sensitive information is disseminated to the correct audience.

v) Removal from Office

a. PLC members who violate the provisions of these Rules of Engagement for PLCs will be removed from their role as a PLC member at the sole discretion of the Employer.
b. The Employer reserves the right to recover any costs from PLC members whose actions can be regarded as detrimental to the Employer or to the execution of the project.
c. The Employer also reserves the right to recommend criminal prosecution if the offence warrants such action.

d. The Employer reserves the right to dissolve the entire PLC should it believes that such an action is in its best interest, or that of the project. The Employer will not be obliged to reconstitute the PLC if such a dissolution occurs.

e) Responsibilities and Duties of the PLC

The PLC shall execute specific duties during the design and construction phases of the project.

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 provide input to the project's design stage matters which are of interest or concern to the parties to the PLC.
b. Peruse the PLC duties outlined in this Section D of the Specifications and agree on the duties of, and procedures to be followed by, the PLC to fulfil its duties.
Note: The principles outlined in this section 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 with the agreed terms of reference for the PLC.
d. Inform the Employer's Project Manager of any training that PLC members require to execute their duties.
e. Provide input to the Engineer in sourcing suitable candidates, based on the Employer's qualifying criteria, for the position of PLO.
f. Observe that the qualifying criteria and procedures applied by the Engineer to select and employ the PLO are executed in a fair and transparent manner and are within the prescripts of the relevant labour legislation and regulations.
g. Provide input to the Engineer in identifying the project's Target and Project Area(s), from which Targeted Labour and Targeted Enterprises could be employed and subcontracted respectively.
h. Provide input to the Engineer in identifying the project's Target Groups for inclusion in the Tender Documents.

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. Provide input to the Contractor in establishing the selection criteria and process to employ Targeted Labour.
c. Provide input to the Contractor in identifying the eligibility, functionality, preference and compliance criteria to select and sub-contract Targeted Enterprises.
d. Provide input to the Databases compiled by the PLO and the Contractor from which Targeted Labour will be selected and employed and Targeted Enterprises will be sub-contracted respectively.
e. Observe that the criteria and methodologies applied by the Contractor to select and employ Targeted Labour and sub-contract Targeted Enterprises are executed in a fair and transparent manner and are within Government legislation and regulations and the Employer's Policies.
f. Observe that the conditions of employment and the conditions of sub-contracting, in the employment of Targeted Labour and sub-contracting of Targeted Enterprises are applied in a fair and transparent manner

and according to the Employer's employment and sub-contracting requirements.

g. Provide input to the Contractor on the training needs, eligibility criteria and selection criteria for the provision of training to Targeted Labour, Targeted Enterprises, Target Groups, project Stakeholders and the affected Communities.
h. Observe that training and skills development programmes, which the Contractor committed to, are implemented and executed as approved and intended.
i. Inform the constituency whom they represent of any project matters which the respective parties to the PLC wishes to communicate with each other.
j. Inform the constituencies 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 Employer's Project Manager, Engineer and Contractor of any road safety concerns within the Project Area(s) and provide input on possible mitigating measures and/or road safety programs that will be most suitable for acceptance by the affected Communities to promote road safety.
l. Assist parties to the PLC to agree on a dispute resolution mechanism to resolve any disputes that may arise between the parties to the PLC.
m. Assist parties to the PLC to liaise with their respective constituencies to resolve any disputes amongst the parties which may occur due to the project.

f) PLC Meetings

i) Frequency
   a. Meetings will be conducted monthly or as required by the parties to the PLC based on the urgency of project matters.

ii) Notice of Meetings
   a. Notice of PLC meetings shall be given at least seven (7) calendar days prior to meeting dates.
   b. Where meetings have been diarised over a period by the PLC, it shall be the duty of each PLC member to ensure his/her attendance on the set dates.
   c. Where a PLC member has been absent from a meeting, he/she bears the onus of acquiring the date and venue of the next meeting.

iii) Venue
   a. The venue for PLC meetings shall be the project site office or any other venue agreed to by the members of the PLC and approved by the Employer' Project Manager.
   b. During the COVID-19 lockdown, or any other lockdown as announced by government, the meetings shall be held on an online platform such as WhatsApp, MS Teams, Zoom or similar.

iv) Agenda
   a. An agenda shall be made available or displayed to PLC members at the commencement of meetings or the minutes of the previous meeting will serve as the agenda of meetings.
   b. The agenda shall not be amended without prior approval from the Employer's Project Manager.

v) Chairperson
   a. PLC meetings shall be chaired by the Employer which will typically be the Employer's Project Manager, or a SANRAL staff member, with decision-making delegation. The Chairperson shall:
      i. chair all meetings of the PLC,
      ii. co-ordinate all the activities of the PLC with the assistance of the PLO,

iii. monitor that PLC members are fulfilling their tasks as assigned by the PLC,
iv. see to the execution of decisions taken by the PLC,
v. ensure, with the assistance of the Engineer, the validity of members' claims for reimbursement,
vi. monitor that all activities of the PLC comply with current laws regulations, and SANRAL policies, and
vii. be a co-signatory to all official documents of the PLC.

vi) Secretariate
a. The Engineer's staff shall provide a secretarial service to take minutes of PLC meetings.
b. Secretarial support other than taking minutes at PLC meetings shall be provided by the PLO.

vii) Quorum
a. The quorum for PLC meetings shall be constituted by 50% plus one (+1) ratio excluding co-opted members.

viii) Apologies and Non-attendance
a. Apologies shall be in writing. In an emergency where a PLC member could not apologise in advance, a written apology must be submitted as soon as possible.
b. Apologies may be sent through any media agreed to by the PLC e.g. through SMS or WhatsApp messaging or a similar application.
c. The constituency, represented by a PLC member who fails to attend three (3) consecutive meetings without an apology, will be informed in writing and requested to nominate a replacement member.

ix) Language
a. PLC meetings will be conducted in English to enable all participants to understand the discussions of the meeting.
b. However, care and consideration must be given to provide non-English speakers an opportunity to participate, and hence, if agreed by all PLC members any of the 11 official languages may be spoken and translated during the meeting. Even if a language other than English is used, the minutes of the meeting will be recorded in English.

x) Other
a. Sustenance shall be provided at PLC meetings as per government policy.

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 Engineer appoints the PLO in accordance with the Employer's criteria for a PLO. The appointment of the PLO must be supported by the PLC.

Although the PLO 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 PLO shall 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 Communities 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 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 sub-contracting opportunities;
d. the project programme as it pertains to the employment of Targeted Labour and sub-contracting 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 they pertain to Targeted Labour employment and training.

(ix) Assist the PLC to establish and agree the criteria to follow when selecting and employing Targeted Labour.

(x) Assist the Engineer, Social Facilitator 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) Monitor that the Contractor compiles the Targeted Labour databases based on the 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) Confirm that each Targeted Labourer enters in an employment contract which adheres to current and relevant Labour legislation.

(xiv) Confirm 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 observe that hearings are fair and conducted in accordance with the current and relevant Labour legislation.

(xvii) Be proactive in identifying project Stakeholder and affected Communities' (including Targeted Labour and/or Targeted Enterprise Sub-contractor), requirements, disputes, unrest, strikes, etc. and bring it to the attention of the PLC.

(xviii) Play a facilitating role to resolve any disputes between the parties to the PLC, which may occur due to the project.

(xix) Other than keeping the records already mentioned in this section, 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,

Stakeholder and affected Communities' matters and any other project matters that impact on the parties to the PLC.

D1004.05 Social Facilitator

It is Important to note and understand that the purpose of Social Facilitation is to create a conducive environment for the positive reception of ideas from stakeholders. The service provider must perform and establish strategic, strong liaison and cooperation between the project team and the stakeholders and communities to enable a conducive environment for the delivery of the project:

Assist the Program Manager/Project Manager in executing the Social Facilitation responsibilities relevant to the project. The Social Facilitator's Report shall inform the development and updating of the CSDG and CPG Plans.

a) General Duties

i) Produce project specific social facilitation plans and update annually
ii) Develop and implement standardised social facilitation reporting templates in accordance with client requirements and applicable statutory frameworks (e.g., the PFMA, BBBEE Act, and CIDB Regulations). Reporting must ensure transparency and accountability in stakeholder engagement, conduct extensive stakeholder mapping/metrics to determine each stakeholder's level of influence.
iii) Induct the PLO and new PLC entrants during the project life cycle.
iv) Work with the PLO to deal with the day-to-day operations of a project.
v) Identify, manage, monitor, and provide regular project risk and status updates.
vi) Continuously Engage with the affected residents and communities, stakeholders, and transparent and timely dissemination and convey important information accurately and appropriately regarding but not limited to the project, the project timeline, and potential disruptions.
vii) Liaise and frequently meet with local authorities (local community leaders, traditional leaders) and relevant government departments, thus ensuring trust and co-operation is maintained.
viii) Must be able to promote and drive community development programs through skills development or training.
ix) Craft and implement interventions, approved stakeholder conflict management plan and mitigation strategies for all identified risks and active issues
x) Attend meetings with Engineer, Site Meetings, PLC meetings, Client meetings, etc. and provide regular status updates.
xi) Hold strategic meetings for issue resolution and/or to provide feedback to Engineer and Employer.
xii) Ensure that proceedings of meetings (whether formal or informal) are formally documented. These meetings may be between the Employer, Engineer, Sub-service Providers, and/or other Stakeholders and maintain a stakeholder engagement register.
xiii) Compile a quarterly lesson learnt document with clear recommendations to be shared with Project Managers, SANRAL Stakeholder Relation and Transformation team.
xiv) Assist in coordinating project-related community events or information sessions, ensuring that logistics and messaging are in line with project goals and stakeholder expectations.

b) PLC establishment

i) Scan the environment and identify critical stakeholder groups as per Part D 1000.
ii) Work with the LED office, facilitating the nomination process of PLC representatives by engaging with critical stakeholders and where more than one stakeholder organisation exists, facilitates the nomination of one or more PLC representatives.
iii) Establish PLC and induct PLC on Part D1000 of the Project contract document
iv) Facilitate resolution of PLC issues to ensure sign off on all matters tabled to the PLC
v) Revise PLC membership as and when representatives' changes occur.

vi) Facilitate feedback and progress update session between PLC and their constituency holders
vii) Facilitate the engagement and apply conflict management methods for the resolution of PLC related issues arising from the communities/stakeholders.

c) Engagement of Targeted Enterprises (TE)

i) Facilitate establishment and maintenance/continuous updating of a TE database within the Package's Project Area.
ii) Facilitate the resolution of issues related to the establishment of database, sourcing, and engagement of TEs arising from the communities/stakeholders
iii) Provide feedback to Engineer and Employer

d) Engagement of Labour (work with the PLO)

i) Facilitate the establishment and maintenance/continuous updating of a Labour database within the Package Target Area.
ii) Facilitate the resolution of issues related to the establishment of the database, sourcing and engagement of labour arising from the communities/stakeholders
iii) Provide feedback to Engineer and Employer.

e) Training and Development

i) Facilitate the sourcing and engagement of labour, TEs for training and development in line with the Client's training contract and the contractor's approved CSDG between communities/stakeholders and the Project
ii) Apply conflict resolution tactics to facilitate the resolution of Training and Development issues between the communities/stakeholders and project.

f) Programme Administration

i) Issue monthly status reports, attend monthly status meetings
ii) Participate in Strategic/ issue resolution meetings with Client's management
iii) Attend Client's Project/Program meetings and participate in inter-agency meetings.
iv) Attend Client -related meetings (e.g., project specific meetings.)
v) Coordinate and project manage all projects related to the appointment (Project Leader)
vi) Develop and maintain a database with all work produced for the Employer. This database of information will be handed over to the Employer on a yearly basis.
vii) Provide translation services between English and other official languages during engagements with communities/stakeholders as and when required.

g) Account Management and Workflow

i) Programme Administration and account management including
ii) Issue monthly invoices and statements
iii) Manage and resolve financial queries with third parties as well as with Client's Consultants' finance department.
iv) Manage third party suppliers such as the social facilitators including preparation of cost estimates, invoices, and statements timeously
v) Venue hire, equipment hire, catering, travel, accommodation
vi) Travel to meetings/ events/workshops and to project sites/communities
vii) Provide necessary marketing and communication requirements of all planned workshops/events.

D1005 MOBILISATION PERIOD

The Mobilisation Period is defined in Section D1002 of the Specifications. This Section describes the requirements of the Mobilisation Period.

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 of the Specifications;
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 Section D1010 of the Specifications,
d) follow the processes prescribed in this Section D of the Specifications to employ the initially required Targeted Labour and enter 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.

Access to site for the Commencement of the Works shall thus only be issued once the following deliverables have been submitted and/or completed by the Contractor:

i) Submission of the CPG Plan, followed by acceptance of the Engineer.
ii) Submission of the Training and Skills Development Programme, followed by acceptance of the Engineer.
iii) Appointment of the initial Targeted Enterprise Subcontractors.

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 goals as stated in the Specification Data The Contractor shall distribute and implement the participation goals 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 goals to be unachievable, he shall provide reasons and motivate it clearly in the CPG Plan.

The CPG Plan shall provide the detail of the Targeted Enterprise work programme, as well as the contents and value of the work packages. See Appendix 8.1 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 w.r.t. the Mobilisation Period have been executed to the satisfaction of, the Engineer after consultation with the Employer's Project Manager and Transformation Unit.

The Employer's Project Manager and the Engineer shall monitor progress and adherence to the CPG Plan in the same manner as they would monitor the Works Programme.

Should the Contractor require an extension of the Mobilisation Period due to a delay not within his control, Contractual Procedure shall be followed, and the Contractor shall submit his Claim for an extension of time through the relevant Contractual Clauses of the Conditions of Contract.

b) Compile a Training and Skills Development Programme

The Contractor shall compile an acceptable Training and Skills Development Programme, which sets out how he intends to achieve the various CSDG goals as per Section D1010 of the Specifications and in line with the CIDB Standard for Developing Skills through Infrastructure Contracts (refer to latest version on www.cidb.org.za).

The Training and Skills Development Programme shall provide the detail of the training methods selected for implementation as described in Section D1010 of the Specifications 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 Programme has been accepted by, and all the duties w.r.t. the Mobilisation Period have been executed to the satisfaction of, the Engineer after consultation with the Employer's Project Manager.

The Employer's Project Manager and the Engineer shall monitor progress and adherence to the Training and Skills Development Programme in the same manner as they would monitor the Works Programme.

c) Subcontracting to Targeted Enterprises

During the Mobilisation Period the Contractor shall execute the following duties w.r.t. subcontracting work to Targeted Enterprises:

i) Liaise with the Employer's Project Manager, the Engineer and the PLC to structure and finalise the work packages to be subcontracted to Targeted Enterprises.
ii) Liaise with the Employer's Project Manager, the Engineer and the PLC to determine the Targeted Enterprise Database criteria for the subcontracting of Targeted Enterprises.
iii) Compile the Targeted Enterprise Database(s) for input 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 with the input of 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 with input of 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.

All training provided by the Contractor shall be aligned with the training requirements as described in Section D1010 of the Specifications.

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 and Targeted Labour in the Project Area. The purpose of the audit was to:

a) obtain an understanding of the Community's skills, both educational and occupational;
b) obtain an understanding of the resources available within the Community, i.e. Targeted Enterprise availability and capabilities and Targeted Labour skills levels;
c) establish the CPG goals for Targeted Enterprises and Targeted Labour for inclusion in 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, structuring, and scheduling the work packages to be subcontracted to Targeted Enterprises.
ii) Approve the scope and extent of the work packages and, in consultation with the Employer, accept the CPG Plan.
iii) Verify that the Targeted Enterprise Database(s) has been updated prior to the letting of every new set of subcontracts.
iv) Approve tender procedures, tender documents, tender submission requirements and adjudication processes for the subcontracting of Targeted Enterprises.
v) 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.
vi) Verify that subcontract agreements and the conditions of subcontracting to Targeted Enterprises are fair and transparent and within the prescripts of the Contract requirements.
vii) 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 subcontract 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.
ii) Approve the proposed Training and Skills Development Programme, in consultation with the Employer.
iii) Monitor that the Training and Skills Development Programme and any Targeted Enterprise support programmes, which the Contractor committed to, are implemented and executed as intended.

D1007 TENDER PROCESS FOR TARGETED ENTERPRISES

While the Contractor may utilise manufacturers, suppliers, service providers, and subcontractors 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 of the Specifications.

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.

The TE Procurement Coordinator shall be well acquainted with, and have experience in:
a) the management of road construction and ancillary works,
b) road construction and ancillary works suitable for SMMEs,
c) National Treasury's Supply Chain Management Legislation and Regulations,
d) the Employer's Supply Chain Management and Procurement Policies,
e) the Employer's Transformation Policy,
f) the Employer's proforma document for Targeted Enterprise Subcontracting,
g) claims, amicable settlement, and dispute resolution facilitation, and
h) Stakeholder and Community relations management.

The TE Procurement Coordinator shall conduct the tender processes and procedures for Targeted Enterprise subcontracting as prescribed in this Section D of the Specifications and shall adhere to Government's Supply Chain Management legislation and regulations and the Employer's policies.

The TE Procurement Coordinator shall provide the PLC with the necessary pre- and post-tender information for them to be able to observe that the criteria and methodologies applied by the Contractor to subcontract Targeted Enterprises are executed in a fair and transparent manner and are within Government's legislation and regulations and the Employer's policies.

D1007.02 Procedures for Targeted Enterprises Subcontracting

The Contractor shall utilise the Employer's proforma tender and contract document for Targeted Enterprise subcontracting. The proforma subcontract document is attached as Appendix 8.3 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 activities, and sub-activities:

Activity 1 Tender Preparation

1.1 Compile preliminary list of subcontracting work packages.
1.2 Conduct a market analysis and resources and skills audit.
1.3 Call for an expression of interest.
1.4 Establish a Targeted Enterprise Helpdesk.
1.5 Compile Preliminary Targeted Enterprise Database.
1.6 Identify Targeted Enterprises, Target Groups and Project Area.
1.7 Finalise the Contract Participation Goal (CPG) Plan.
1.8 Acceptance of the CPG Plan.
1.9 Compile tender documents.

Activity 2 Tender Process

2.1 Advertise the subcontract packages.
2.2 Conduct a tender briefing and tender training session.
2.3 List of minimum tender submission documents.
2.4 Tender closure and opening of tenders.
2.5 Finalise Targeted Enterprise Database.

Activity 3 Tender Evaluation

3.1 Stage 1 – Eligibility
3.2 Stage 2 – Functionality
3.3 Stage 3 – Price and Preference
3.4 Stage 4 – Compliance Check

Activity 4 Appoint Successful Targeted Enterprises

4.1 Submitting a Tender Report.
4.2 Negotiating tender sum and/or rates with Targeted Enterprises.
4.3 Advise on low tender sums submitted by Targeted Enterprises.
4.4 Payment to the Contractor.
4.5 Entering the Subcontract Agreement.

The summarised list of activities above, are further elaborated on in the paragraphs below:

a) Tender Preparation

Although the Contractor is required to implement the Targeted Enterprise work opportunities equally and continuously over the duration of the Contract, most of the Tender Preparation activities must be concluded during the Mobilisation Period.

i) Compile a preliminary list of subcontracting work packages

Based on the Specification Data and the Scope of the Works, the Contractor shall compile a preliminary list of the work packages (scope of work and number of packages) that are anticipated to be subcontracted to Targeted Enterprises.

The Contractor shall refer to the construction activities that have been identified as being suitable for construction by Targeted Enterprises as listed in Section D1009 of the 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 Targeted Enterprise work packages. The Contractor may consult the following databases as a minimum:

a. Construction Industry Development Board (CIDB)'s contractor database (not applicable to manufacturers, suppliers, and non-construction service providers).
b. National Treasury's Central Supplier Database (CSD) .

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 advised 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, functionality, and preference,
b. compliance requirements such as CSD and CIDB registration, tax clearance and COID compliance, and
c. the anticipated scope of the works to be undertaken by Targeted Enterprises.

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, functionality, and preference criteria, as well as of compliance requirements.

The Contractor shall enhance the readiness of Targeted Enterprises to participate in the subcontracting opportunities by establishing a Targeted Enterprise 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 goals listed in the Specification Data and the information obtained from the activities described in the paragraphs above, the Contractor shall compile a Preliminary Targeted Enterprise Database.

When compiling the Preliminary Targeted Enterprise Database, unless otherwise indicated by the market analysis, the Contractor should aim to identify approximately ten (10) enterprises that are likely to meet the functionality threshold prior to advertising the tender(s). The Preliminary Targeted Enterprise Database shall be utilised to establish the functionality criteria thresholds for the tender process.

vi) Identify Targeted Enterprises, Target Groups and Project Area(s)

Based on the CPG goals 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. Target 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) Finalise the Contract Participation Goal (CPG) Plan

The Contractor shall utilise all the information gathered from the activities described in the paragraphs above to finalise the 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 Target 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 sub-contracting (see Appendix 8.3).

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 subcontract work packages, its evaluation and selection criteria, and the Tender Advertisement shall be acknowledged by the PLC and accepted by the Employer, prior to advertising the tender. The draft subcontract tender documents shall be approved by the Engineer and accepted before letting the tender (see Appendix 8.4).

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, on SANRAL's electronic supply development desk portal (*https://sanralesdd.co.za*), and any other place or medium as advised by the PLC such as local community radio stations. The Contractor shall in additional to the above, in email send the tender advertisement(s) to Targeted Enterprises that are registered on this Contract Specific Targeted Enterprise Database. The Contractor shall keep printed proof of all advertisements and the platforms where the subcontract packages were advertised.

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 session 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 shall be provided on award:

Notes of the tender briefing training session shall be distributed to all attendees of the briefing session as an Addendum to the Tender Documents, irrespective if they have attended the training session or not.

A separate Attendance Register shall be completed for the training session for future reference.

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, manufacturing, supply or services):

a. A valid B-BBEE certificate or Sworn Affidavit with 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 (if applicable).
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 the stipulated time and date as advertised in the subcontract Tender Advertisement and Tender Data. Tenders shall be submitted to the Contractor in the format and at the address prescribed by the Contractor in the subcontract Tender Advertisement and Tender Data.

The tender opening shall be conducted by the Contractor who shall publicly announce and record the names of all Tenderers and their tender prices.

v) Finalise Targeted Enterprise Database

The purposes of the preliminary Targeted Enterprise Database are described in 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's Supply Chain Management Department 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 the relevant subcontract tender and shall be made available to the PLC if requested.

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 Section D1002 of the Specifications.

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. A valid B-BBEE certificate or a Sworn Affidavit with the Tenderer's B-BBEE contributor level
e. Proof that the Tenderer is an EME or a QSE.
f. Proof that the Tenderer falls within one or more of the Target 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 (Appendix 8.3) 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. 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.

c. Project Specific Target Groups; e.g. woman, youth, etc.

In addition to the eligibility criteria for preferential procurement functionality points may also be allocated for the following Target 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 Target Groups shall not be more than 15% of the total evaluation points.

One, two or three of the Target Groups listed above may be selected to count towards the score for Target Groups.

If any one of the Target 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 Target 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 %

Preference will be scored as follows:

Table D1007.02(1): Allocation of Preference Score

Specific Goals	Criteria	10 Points		20 Points	
		Points	Max Points	Points	Max Points
TE's B-BBEE Level	1	10	10	20	20
	2	9		18	
	3	6		14	
	4	5		12	
	5	4		8	
	6	3		6	
	7	2		4	
	8	1		2	

	Non-compliant	0		0	

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 unless agreed in consultation with SANRAL Transformation Unit and the PLC.

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 subcontractors).
b. Proof that the Tenderer is tax compliant.
c. Any other form that needs to be completed not including the form of offer and the BOQ.

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) Submitting a Tender Report

a. Tender Report Presentation

The Contractor shall prepare and submit a detailed Tender Report for each subcontract package to the Engineer for review and approval and then acceptance by the Employer's Project Manager. The Contractor shall thereafter table the details of the recommended successful tenderer(s) to the PLC for noting prior to the award of the subcontract.

b. Assessment of unreasonably Low Tender Sums

Where any tender submitted for a subcontract package includes a tender sum or tendered rates that, in the reasonable opinion of the Contractor, the Engineer, and the Employer's Project Manager are unreasonably low or materially below prevailing market rates, the Targeted Enterprise Procurement Coordinator shall issue a written notification to the affected tenderer. Such notification shall set out the identified low rates, the Contractor's assessment of the associated risks, and the potential implications for the successful completion of the subcontract works.

c. Tenderer's Right of Response

Upon receipt of the notification contemplated in **(b) Assessment of unreasonably Low Tender Sums**, the affected tenderer shall be afforded a

period not exceeding three 3 Working Days to respond in writing, either confirming acceptance of the identified risks or rejecting such risks with valid supporting motivation of which further evaluation may be required on this revised submission.

d. Feasibility Review

Prior to disqualifying any tenderer solely based on an unreasonably low tender sum or tendered rates, the Contractor shall conduct a feasibility review of the tendered rates in consultation with the Engineer and the Employer's Project Manager. Where the feasibility review indicates that the:

i. tendered rates can deliver the subcontract works to the required specification and standard; the Contractor may proceed with the appointment of the tenderer.
ii. rates are materially unfeasible and pose a significant risk of non-performance, the Contractor may disqualify the tenderer from further consideration.

e. Documentation and Record Keeping

All records of correspondence with affected tenderers, feasibility assessments, and decisions taken in terms of this clause shall be retained by the Contractor as part of the Tender Report and shall be made available to the Engineer and the Employer's Project Manager immediately upon request.

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

a. Rates

If the Contractor choose to include work for which he has tendered rates in the subcontract package and the tenderer who scored the highest points tendered higher rates than that of the Contractor, the Contractor may negotiate to Market Related Rates as determined by the Engineer as the base and not the Contractor's rates as the base.

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 Market Related Rates (this process must be clearly explained to the PLC prior to negotiation; or
ii. accept the highest points scoring tenderer's higher rates and total sum and remunerate the subcontractor at the subcontractor'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 subcontractors.

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's Project Manager and the Engineer.

i. If the highest points scoring compliant tenderer's rates and tender sum are deemed market related by the Engineer, the Contractor shall obtain the Employer's approval to utilise the Provisional Sum provided for the work items.
ii. If the highest points scoring compliant tenderer's rates and tender sum are deemed not market related and the Employer does not approve the utilisation of the relevant Provisional Sum,

the Contractor may negotiate with the tenderer for market related rates and tender sum.

iii. If the Contractor fails to negotiate market related rates and a tender sum with the tenderer, he may:

(a) approach the next highest point scoring, compliant tenderer for negotiation. This process may be repeated up to the third highest points scoring compliant tenderer, where after the package shall be retendered; or

(b) accept the highest points scoring tenderer's rates and total sum and remunerate the subcontractor 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's Project Manager and the Engineer on the feasibility of tendered rates, sums or Provisional Sums of tenderers who tendered exceptionally low. Exceptionally low rates, sums or Provisional Sums are those that are less than Market Related Rates confirmed by the Engineer prior to the subcontract tender. If the tendered rates, sums, or Provisional Sums of those tenderers who tendered are exceptionally low, 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 mark-ups. 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

a. 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.

b. 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 subcontractors. This Lump Sum is all exhaustive and no amount shall be paid by the Employer if this Lump Sum is depleted. If this Lump Sum is depleted, the Contractor takes overall risk in appointing Targeted Enterprise Subcontractors above his rates.

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.

vi) Targeted Enterprise Works Variance

While it is understood that Targeted Enterprise subcontracts are based on FIDIC Subcontract Conditions of Contract and that all Works is re-measurable, Works undertaken by Targeted Enterprise subcontractors shall be limited to a variance as per the table below. The amount of a subcontract package exceeding the limits set in Table D1007.02(2) shall not count as Targeted Enterprise subcontract spending, unless motivated by the Contractor, approved by the Engineer and supported in writing by the Employer's Transformation Office prior to the Targeted Enterprise exceeding his allocated Works package limits.

Table: D1007.02 (2)

CIDB Grade	Variance Limit Above TE Subcontract award amount
1CE – 2CE	20%
3CE – 4CE	15%
5CE or higher	10%
Other subcontracts not in CIDB	10%

vii) Targeted Enterprises Development Incentive

Targeted Enterprise subcontractors who have demonstrated exceptional performance in their planning and execution of their allocated packages, as part of continuous development and mentorship, can exceed their allocated tender sum up to a limit as indicated in Table D1007.02(3). This variance shall be motivated by the Contractor, approved by the Engineer and supported in writing by the Employer's Transformation Office prior to the Targeted Enterprise exceeding his allocated Works package beyond the limits.

Table: D1007.02 (3)

CIDB Grade	Variance Limit Above TE Subcontractor award amount
1CE – 2CE	100%
3CE – 4CE	75%
5CE or higher	50%
Other subcontractors not in CIDB	15%

D1008 GENERAL RESPONSIBILITIES OF THE CONTRACTOR TOWARDS TARGETED ENTERPRISES

The Contractor shall have the responsibilities described in this Section, D1008 of the Specifications, towards all Targeted Enterprises subcontracted in terms of the CPG as stated in the Specification Data.

a) The Employer's Independent Targeted Enterprise Monitor

The Employer shall, through its Transformation Unit, appoint an independent Targeted Enterprise Monitor, who shall audit the Contractor with respect to his obligations to Targeted Enterprises and who shall report his findings to the Employer's Project Manager, the Engineer, and the Regional Transformation Officer (RTO) monthly.

b) Failure to Comply with Responsibilities Towards Targeted Enterprises

If the Contractor, in the opinion of the Employer's Project Manager or the Engineer, fails to comply with its responsibilities towards Targeted Enterprises, the Engineer shall issue a written warning to the Contractor, stating all the areas of non-compliance. The Contractor's time to correct shall be stated in the letter and shall be in accordance with the relevant specifications for the aspects of non-compliance.

A copy of the letter of warning shall be forwarded to the Employer's Project Manager and the Targeted Enterprise Monitor shall monitor that corrective action is taken by the Contractor.

Failure by the Contractor to comply with a deadline, will be sufficient grounds for the Employer to apply a penalty or institute a claim in accordance with the relevant Conditions of Contract.

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 of the Specifications, with an emphasis on D1008 and D1010.

The TE Construction Manager may be appointed from the Contractor's existing staff or may be employed or sub-contracted for the purpose of this Contract. Irrespective of the contractual relationship between the TE Construction Manager and the Contractor, the TE Construction Manager shall not perform any other duties than that of a dedicated TE Construction Manager on a full-time basis for this Contract.

a) TE Construction Manager's Obligations

Amongst others, the TE Construction Manager shall facilitate the training, mentoring, guidance, coaching, development and support of Targeted Enterprises as per the Contractor's approved Training and Skills Development Programme (see Section D1010 of the Specifications).

The TE Construction Manager shall submit monthly TE Progress Reports in the Employer's reporting format. The report shall be submitted to the Employer's Project Manager and Regional Transformation Officer, the Engineer and the Contractor, at least one week prior to the monthly site progress meeting.

This report shall include, amongst others:

i) Details of TEs trained, e.g., number, hours, value, modules, credits obtained, etc.
ii) Details of TEs sub-contracted, e.g., number, packages, values, etc.
iii) Details of TEs performance on the work packages, and skills gaps to be addressed, etc.
iv) Details of TEs growth and sustainability, e.g., CIDB grading upgrades, business success, etc.
v) Details of disputes and the associated interventions and/or resolutions.

b. 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.

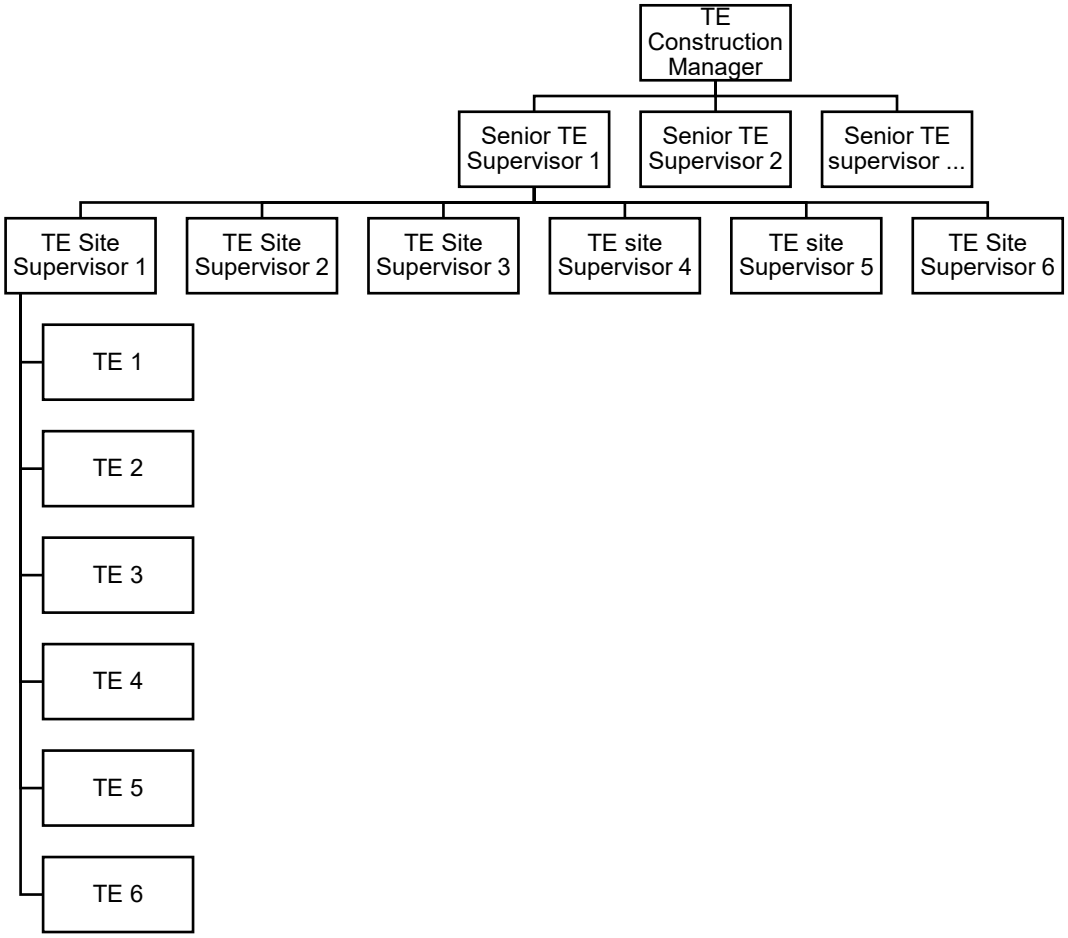
He/She shall have at least 5 years' experience as a Site Agent, managing construction processes in the fields of roads maintenance, new roads construction, roads rehabilitation, roads structures, etc. In addition, he shall have ample knowledge of, and experience in, the requirements of training and mentoring in the road construction environment.

c. 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 and their employees;
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 sub-contracts,
d) Assist Targeted Enterprises to monitor and manage the schedules, costs, and cash flows of their sub-contracts.
e) Endeavour to avoid sub-contract disputes and if disputes do arise, facilitate a process to find an amicable solution.
f) Ensure that the CPG objectives are achieved.

D1008.03 Sub-contract Agreements

The Contractor shall conclude subcontract agreements with each sub-contracted Targeted Enterprise and shall utilise the be the Employer's proforma document for Targeted Enterprise sub-contracting (see Appendix 8.3), which is based on the 2011 FIDIC Conditions of Sub-contract for Construction 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

Amongst others, the sub-contract agreement includes the following Particular Conditions of Contract:

i) The Targeted Enterprise's entitlement to receive the training contemplated in the main Contract (sub-contract Part C1, C1.2.1, Part B, clause 6.8);
ii) The Targeted Enterprise's obligation to participate and co-operate in the training provided for in the main Contract (sub-contract Part C1, C1.2.1, Part B, clause 6.8);
iii) The allowable sources from which Labour may be drawn in terms of the main Contract (sub-contract Part C1, C1.2.1, Part B, clause 6.5);
iv) The terms and conditions relating to the recruitment, employment and remuneration of Labour engaged on the main Contract (sub-contract Part C1, C1.2.1, Part B, clause 6.5);
v) The training to be provided to the Targeted Enterprise's workforce (sub-contract Part C1, C1.2.1, Part B, clause 6.8);
vi) The terms and conditions related to payment of the Targeted Enterprise (sub-contract Part C1, C1.2.1, Part B, clauses 14.6 to 14.8 and 15.3);
vii) Sanctions in the event of failure by the Targeted Enterprise to comply with the terms and conditions of the subcontract agreement (sub-contract Part C1, C1.2.1, Part B, clauses 14.6 and 20.4 to 20.7);
viii) Dispute avoidance and resolution procedures (sub-contract Part C1, C1.2.1, Part B, clauses 20.4 to 20.7).

Further Special Conditions of Contract required by the Contractor shall only be included into the subcontract agreement once approved by the Employer and the Engineer.

b) Monitoring of Sub-contract Agreements

The proforma subcontract agreement for each group of work packages shall be tabled to the Employer's Independent Targeted Enterprise Monitor for his review and confirmation that sub-contract agreements are in terms of the Employer's requirements and policies.

In addition, the PLC may request proof that subcontract agreements were entered into with the subcontracted Targeted Enterprises. The PLC may 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 C1.3.1 of the COTO specification payment items, i.e.:
i) C1.3.1.1 paid in 3 instalments of 50%, 35% and 15%;
ii) C1.3.1.2 paid as a percentage of the total value progressively per certificate;

iii) C1.3.1.3 paid monthly for the subcontractor's contract duration.

b) Monitoring of Payment of Targeted Enterprises

The Employer's independent Targeted Enterprise Monitor shall audit the Contractor's Payment of Targeted Enterprises to ensure timeous and correct payment in terms of the Employer's requirements and Policies and shall report his findings to the Employer's Project Manager on a regular basis.

D1008.05 Quality of Work and Performance of Targeted Enterprises

a) Ensuring Quality of Work and Performance

The purpose of the Employer's CPG is to, amongst others, enhance the utilisation and development of Targeted Enterprises. Thus, while the Contractor remains responsible for the quality of work and performance of Targeted Enterprises, he may not neglect the developmental requirements in the subcontracting of Targeted Enterprises.

It is thus emphasised that the Contractor's TE Construction Manager shall closely monitor and supervise all Targeted Enterprises and shall train, coach, guide, mentor and assist each Targeted Enterprise in all aspects of management, execution and completion of its subcontract. This shall typically include assistance with planning of the Works, sourcing and ordering of materials, labour relations, monthly measurements and invoicing procedures. The extent and level of such training, coaching, guidance, mentoring, and assistance to be provided by the Contractor shall be commensurate with the level of subcontract applicable and shall be directed at enabling the Targeted Enterprise to achieve the successful execution and completion of its subcontract.

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's Project Manager and the Employer's independent Targeted Enterprise Monitor. 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;
v) Accommodation of traffic.

c) Assist the Targeted Enterprise to Make Good

The Contractor shall in terms of the sub-contract agreement (sub-contract Part C3, clause 3.1.12) 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, together with the Targeted Enterprise, identify the causes that led to failure to comply and jointly develop a plan to rectify, which plan shall be submitted to the Employer's Project Manager and the Engineer for information purposes.

Based on the plan to rectify, the Contractor shall 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.

d) Monitoring Execution of the Plan to Make Good

The Employer's independent Targeted Enterprise Monitor shall review plans to rectify and monitor the execution thereof to ensure that Targeted Enterprises are given a fair opportunity to rectify within a developmental environment. He shall report his findings to the Employer's Project Manager monthly.

D1008.06 Dispute Avoidance and Resolution Procedures

When any disputes arise, the Contractor shall within seven (7) calendar days inform the Employer's Project Manager, the Employer's Targeted Enterprise Monitor, and the Engineer, in writing, of the details of the dispute.

a) Facilitate Dispute Avoidance

Prior to taking any action, the Contractor shall commence with a facilitation process by arranging a formal meeting with the Targeted Enterprise with the aim to find an amicable solution to the dispute. The meeting shall be attended by the Employer's Project Manager, the Employer's Targeted Enterprise Monitor, and the Engineer to ensure a fair and transparent process in reaching a settlement.

If the parties are unable to find an amicable solution, the Contractor shall explain fully to the Targeted Enterprise the provisions in the sub-contract agreement to address disputes. If action is necessary, it shall be discussed with the Employer's Project Manager and the Engineer prior to any action being taken.

b) Support to Targeted Enterprise during Dispute Resolution Process

While the Employer's Project Manager and the Engineer will observe the dispute resolution process to ensure fairness and transparency, the Targeted Enterprise may request consultation and assistance from the Targeted Enterprise Monitor. The Targeted Enterprise Monitor will assist the Targeted Enterprise with the interpretation of the Conditions of Sub-contract and will guide the Targeted Enterprise during the dispute resolution process.

c) Issuing a Letter of Warning to Targeted Enterprise

The Contractor shall issue a letter of warning to the Targeted Enterprise, whom 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.

d) Failure by the Targeted Enterprise to Comply

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's Project Manager and the Engineer are satisfied that the Contractor has made every effort to correct the performance of the Targeted Enterprise.

The Targeted Enterprise may dispute any ruling given or deemed to be given by the Contractor or the Engineer, within 21 calendar days after receipt thereof by submitting a written Dispute Notice to the Contractor, in terms of the relevant Conditions of the Sub-contract.

On request by the Targeted Enterprise, the Targeted Enterprise Monitor will assist the Targeted Enterprise with the interpretation of the Conditions of Sub-contract and will guide the Targeted Enterprise during the dispute resolution process.

D1009 WORK SUITABLE FOR EXECUTION BY TARGETED ENTERPRISES

To assist the Contractor in achieving his CPG, the following guideline work items have been identified as being suitable for execution by Targeted Enterprises:

a) Traffic accommodation
b) Detour maintenance work
c) Culvert backfilling
d) Pavement layerworks,
e) Guardrails
f) Road marking
g) Gabion works

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

a. Clearing and grubbing.
b. Grass cutting
c. Demolition works
d. 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 subcontractors is allowed under pay item D10.05.

D1010 TRAINING, COACHING, GUIDANCE, MENTORING AND ASSISTANCE

The Contractor shall with the input and support of the PLC develop a Training and Skills Development Programme (TSDP) which shall be managed by the Contractor's TE Construction Manager.

The CIDB Standard for Developing Skills through Infrastructure Contracts, 08 August 2013 (Government Gazette No. 36760, 23 August 2013), as amended by version 2, June 2020 (Government Gazette No. 43495,03 July 2020) shall apply to projects with a Works Construction Period of 12 months or more, as set out under this Section D1010.

D1010.01 Purpose of the Training and Skills Development Programme (TSDP)

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.

The TSDP shall provide the learning detail for Targeted Labour, Targeted Enterprises and other Learner categories, including course and/or module contents and timeframes. See Appendix 8.5 for the TSDP format.

D1010.02 Developing the TSDP

The Employer shall through its Project Manager be involved in the decision making and quality control pertaining to the development and implementation of the TSDP facilitated through this Contract.

The complete TSDP shall be developed during the Mobilisation Period, accepted by the Engineer after consultation with the Employer's Project Manager, and tabled to the PLC for their information before any training commence.

a) Skills Development Requirements

i) Contract Skills Development Goals (CSDG)

This section establishes a minimum CSDG which is to be achieved in the performance of a Contract in relation to the provision of different types of workplace opportunities linked to work associated with a Contract which culminate in or lead to:

a. a part or full occupational qualification accredited by the Quality Council for Trades and Occupations (QCTO).
b. a part- or full occupational qualification registered on the National Qualification Framework,
c. a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012),
d. a national diploma registered on the National Qualification Framework, and
e. Continuous Professional Development CPD training toward registration in a professional category by one of the professional bodies listed in Table 1 of the Standard.

The Contractor shall achieve or exceed the CSDG in the performance of the Contract. The Contractor may, if need be, devolve their obligations onto Subcontractors.

The CSDG shall not be less than the final contract value multiplied by the percentage (%) for Civil Engineering work (CE) as set in the Specification Data.

To attain the CSDG, it is estimated that the following number of Learners must be trained on the Contract in the stated categories:

TABLE D1010.02: Number of Learners per Category

Learning Category		**Number of Learners**
Method 1	QCTO Accredited Occupational qualification.	10
Method 2	TVET College graduates, or	1
	Apprenticeships.	
Method 3	P1 and P2 learners, or	1
	240 credits qualification.	
Method 4	Candidates, 360 credits qualification.	1
	Candidates, 480 or more credits qualification.	
Generic Skills	Occupational qualification.	10
Community Training	Occupational qualification.	10

ii) Achieving Contract Skills Development Goal (CSDG)

The Contractor shall achieve the CSDG by providing employment opportunities to Trainees requiring structured workplace learning using one or a combination of any of the following methods in relation to work directly related to the Contract:

Method 1: Structured workplace Learning opportunities for Learners (LoL) towards the attainment of a part or a full occupational qualification.

This training method shall apply to Targeted Enterprises and Targeted Labour.

Method 2: Structured workplace Learning opportunities for Apprentices or other artisan Trainees (LoA) towards the attainment of a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012) subject to at least 60% of the artisan Trainees being holders of public FET college qualifications.

This training method shall apply to Targeted Enterprises and Targeted Labour.

Method 3: Work integrated Learning opportunities for University of Technology or Comprehensive University Students (LoUS) completing their national diplomas.

This training method shall apply to P1 and P2 Trainees, or Trainees with a 240 credits qualification. Both the permanently employed and temporary employed Trainees shall be considered under this training method.

Method 4: Structured workplace Learning opportunities for Candidates (LoC) toward registration in a professional category by a statutory council listed in Table 1 of the Standards.

This training method shall apply to Candidates with 480 credits qualification. Both the permanently employed and temporary employed Trainees shall be considered under this training method.

No single method shall contribute more than 50 percent (%) of the CSDG. The Contractor's permanently employed Trainees may not account for more than 25 percent (%) of the CSDG, and not more than one method may be applied to any individual concurrently in the calculation of the CSDG.

iii) CSDG Credits

The CSDG shall be calculated by multiplying the number of people employed by the Contractor and placed for continuous training opportunities in a three-month period by the notional values contained in Table 3 of the Standard, or as revised in a Gazette notice.

iv) Denial of Credits

Credits towards the CSDG shall be denied should the Contractor not fulfil all the requirements listed in clause 3.4 (a) to (f) of the Standards.

v) Compliance with Requirements

The Contractor shall comply with the requirement as set out in clause 4 of the Standards.

vi) Records

The Training Service Provider shall keep comprehensive records of the training provided to each Trainee and shall ensure that Trainees' successful completion of successive Unit Standards is entered onto the national SAQA database. After the successful completion of generic skills courses each Trainee shall be issued with a certificate indicating the course contents as proof of attendance and completion. The Contractor shall keep a register of certificates issued. Whenever required, the Contractor shall provide copies of such records to the Engineer.

The Contractor shall submit all the documentation required in terms of clause 4 of the Standards, in a timely manner and according to a prescribed format where applicable.

The Engineer shall certify the value of the credits counted towards the CSDG, if any, whenever a claim for payment is issued to the Employer and shall notify the Contractor of this amount.

The Contractor shall, upon termination of the opportunities provided to satisfy the CSDG, certify the quantum and nature of the opportunity and submit the certificate, counter-certified by the relevant individual, to the Engineer for record-keeping purposes.

vii) Sanctions (Penalty)

Failure to achieve the CSDG shall render the Contractor liable for a penalty as prescribed in clause 8.7 of the FIDIC Conditions of Contract. Penalties shall be as follows:

a. Penalty = {[LoAs + LoLs + LoUSs + LoCs]}
Where:
LoLs = Monetary Value of the shortfall for structured workplace learning opportunities for Trainees towards the attainment of a part or a full occupational qualification.
LoAs = Monetary Value of the shortfall for structured workplace learning opportunities for apprentices or other artisan Trainees towards the attainment of a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012) subject to at least 60% of the artisan Trainees being holders of public FET college qualifications.
LoUSs = Monetary Value of the shortfall for work integrated learning opportunities for University of Technology or Comprehensive University students completing their national diplomas (LoUS).
LoCs = Monetary Value of the shortfall for structured workplace learning opportunities for candidates towards registration in a professional category by a statutory council listed in Table 1 of the Standards (LoC).

b. Delay the issuing of the Performance Certificate until all the required records described in clause 5 of the Standards are received.

D1010.03 TSDP General Requirements

The Training and Skills Development Programme shall consist of Learnerships that include multiple, but related Unit Standards which are (1) relevant to the Works to be constructed, (2) aimed at achieving the skills development objectives of the Programme, and (3) lead towards a formal qualification in the Construction Industry.

Learnerships shall include both the theoretical and practical components of each Unit Standard and shall be in accordance with the various laws and regulations contained in the South African Qualification Authority (SAQA) statutes.

a) Sourcing of Trainees

The Employer may provide the Contractor with its list of Trainees or source from which Trainees may be selected.

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

If the Employer does not provide the Contractor with a list or source of Trainees, the Contractor may source beneficiaries of the CSDG from the CIDB Skills Development Agency (SDA) or an SDA recognised by the CIDB such as the Construction Education and Training Authority (CETA) or a relevant Sector Education and Training Authority (SETA).

All beneficiaries shall be registered with a Skills Development Agency (SDA) recognised by the CIDB.

b) Skills Audit and Analysis

To develop the Training and Skills Development Programme(s), the Contractor shall conduct a skills audit and analysis of Labour on the Targeted Labour database and the Targeted Labour of sub-contracted Targeted Enterprises to determine their levels of education, existing qualifications, skills sets, Recognised Prior Learning (RPL), and gaps linked to the applicable occupational qualifications. The outcome of the skills audit and analysis shall be used to develop a Training and Skills Development Programme 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 their supervisors sub-contracted 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.

c) Selection of Trainees

To complete a Learnership successfully requires minimum literacy and numeracy competencies as defined by SAQA. The Training Service Provider shall utilise the skills audit and analysis and conduct additional skills analysis to benchmark the literacy and numeracy levels of Targeted Labour and Targeted Enterprises and their employees. 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 skills gap 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 D of the Specifications 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.

d) 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 and/or an accredited Learning Pathway forming part of QCTO Occupational Qualifications, will lead to a full Learnership outcome and hence an accredited formal qualification or a full Occupational 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 or shall be aligned to the QCTO Occupational Curriculum format and shall consist of accredited Knowledge Modules, Practical Skills Modules, and Workplace Experience Modules. Nevertheless, the competencies and credits achieved in the Programme shall contribute to a full Learnership by a later acquisition of the outstanding Unit Standards required for the full Learnership.

The Training and Skills Development Programme shall be structured in a manner to prioritise those Unit Standards and/or shall be aligned to the QCTO Occupational Curriculum format, that will equip Trainees with the minimum skills and competencies required to become economically involved in the execution of the Works as soon as possible.

The Training Service Provider shall apply the SAQA Learnership criteria of which the basic elements are listed below to demonstrate the Employer's requirements for Legacy qualifications:

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.

For QCTO Occupational Qualifications the Training Service Provider Shall be QCTO accredited as a Skills Development Provider (SDP) for the relevant Occupational Certificate and shall demonstrate the Employer's requirements for QCTO qualifications:

i. Facilitate learning in accordance with the SDP's approved QCTO Curriculum Document.
ii. Implement accredited RPL processes where applicable.
iii. Ensure that all trainees meet the Knowledge, Practical Skills, and Workplace Experience requirements prescribed for the qualification.
iv. Facilitate and prepare learners for the External Integrated Summative Assessment (EISA) conducted by the relevant Assessment Quality Partner (AQP) (e.g., CETA). Maintain compliance with all applicable legislation, including the:
    a. Skills Development Act
    b. QCTO Act
    c. SETA Grant Regulations
    d. NSDP 2030
    e. ensure continuous compliance with QCTO updates to the curriculum and qualification requirements. In the event of any conflict, legislated requirements shall prevail.

The above criteria are not exhaustive, and the Training Service Provider shall apply the systems and processes required by the relevant SAQA and other related legislation pertinent to training. The Training Service Provider shall regularly consult the QCTO (www.qcto.org.za) and SAQA websites (www.saqa.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

Or

a. QCTO Occupational Certificate: Road Construction Worker (NQF Level 3)
b. QCTO Occupational Certificate: Roadworks Foreman/Supervisor (NQF Level 4)
c. QCTO Occupational Certificate: Construction Site Manager (NQF Level 5)

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.

e) Learning Material

For the QCTO accredited qualifications training approach, learning material shall be provided for all Knowledge and Practical Skills Modules in accordance with the QCTO Curriculum Document and AQP (Assessment Quality Partner) requirements. Each Trainee shall receive a full set of training material, including workbooks, practical guides, and Workplace Experience logbooks. The learning material must comply with the following QCTO requirements:

1. Purpose and rationale of the module
2. Internal assessment guidelines
3. Practical task specifications
4. Workplace experience activities
5. Knowledge component outcomes
6. Practical skills training outcomes
7. Assessment criteria for formative learning
8. External Integrated Summative Assessment (EISA) requirements
9. Occupational tasks aligned to road construction and/or maintenance
10. Where necessary, subject matter experts shall contribute to the development and contextualisation of the learning material to ensure technical relevance to civil works and SANRAL project environments.

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

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

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

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.

(f) Generic Skills Training

Generic skills training, which is not construction (technical) specific, but which are beneficial to the skills development of Targeted Enterprises and Targeted Labour, shall be taught in learning areas where the need has been identified and approved by the Employer's Project Manager and the Engineer.

The Contractor shall make representation to the Employer's Project Manager 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 examples of generic skills training programmes are:
i) National Certificate: Vocational, levels 1, 2, and 3 in various fields.
ii) National Certificate: Road Safety Development.
iii) National Certificate: Occupational Hygiene and Safety.

Generic skills training shall add towards the Contractor's CSDG credits and shall be structured learning as per the CSDG Method 1 requirements. Training shall be accredited by the relevant Sector Education and Training Authority (SETA) and shall be provided by SETA accredited entities and individuals.

(g) Community Training

Community training shall be taught in learning areas where the need has been identified. Affected Communities may submit their training needs to the PLC for the Contractor's 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, and with the input and support of the PLC. 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.

Typical examples of community training programmes are:
i. General Education and Training Certificate: Hygiene and Cleaning
ii. General Education and Training Certificate: ABET
iii. National Certificate: Vocational, levels 1, 2, and 3 in various fields.
iv. National Certificate: Travel and Community Tourism
v. Further Education and Training Certificate: Community Development
vi. Further Education and Training Certificate: Public Awareness HIV/AIDS

Community skills training shall add towards the Contractor's CSDG credits and shall be structured learning as per the CSDG Method 1 requirements. Training shall be accredited by the relevant Sector Education and Training Authority (SETA) and shall be provided by accredited entities and individuals.

D1010.04 The Training Service Provider

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.

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 sub-contract 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 with the Quality Council of Trade and Occupations (QCTO), and have in its employment Practitioners, Assessors and Moderators who 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 D1010.04: 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 QCTO/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. Trainers responsible for delivering Knowledge and Practical Skills Modules shall hold a qualification at least one NQF level higher than the Occupational Certificate or module being facilitated, or an equivalent recognised qualification. 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.

c) Assessor Requirements for QCTO accredited occupational qualifications:

Assessors shall be constituted and registered with the relevant Assessment Quality Partner (AQP), such as CETA, for the applicable Occupational Qualification, and must be professionally competent in the fields of road construction, road maintenance, road rehabilitation, or structures. They shall have a minimum of five (5) years' industry experience, preferably at the level of Site Agent or Construction Supervisor, with demonstrable experience in managing the execution of civil engineering construction works. In addition, Assessors shall have completed the required QCTO/AQP-accredited Assessor training and must be competent in conducting formative assessments, evaluating Portfolios of Evidence (PoE), and validating workplace experience logs.

d) Moderators Requirements for QCTO accredited occupational qualifications:

Moderators shall be registered with the AQP (CETA) as Constituted Moderators and must hold a qualification at least one NQF level higher than the Occupational Qualification being moderated, unless this requirement is otherwise met through formal RPL. Moderators must have no less than five (5) years' experience in civil engineering construction supervision, site management, or technical quality management. They shall ensure that all internal assessments are conducted in accordance with QCTO requirements and that all trainees are adequately prepared for the External Integrated Summative Assessment (EISA).

e) 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

The Contractor's attention is drawn to the fact that it is an objective of the Contract to maximise the labour content of certain operations or portions thereof. In this regard, where the specified work allows for a choice between mechanical or labour-enhanced means, the former should generally be kept to the practical minimum.

Before commencing with any labour enhanced operations, the Contractor shall discuss his intentions with the Engineer and shall submit to the Engineer monthly, 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 D of the Specifications.

D1012 COMMUNITY DEVELOPMENT

D1012.01 Corporate Social Investment (CSI)

The Contractor shall demonstrate its willingness to actively participate in the social development initiatives for local Communities affected by the Contract. To this end, the Contractor shall provide details of CSI initiatives it will actively pursue under Form D9: Corporate Social Investment.

D1012.02 Community Development Projects

Community Development (CD) Projects are primarily training and skills development programmes to benefit an identified Community and Trainee Targeted Enterprises selected from the Community.

The owners and supervisors of Trainee Targeted Enterprises receive SAQA accredited training towards an accredited NQF qualification which consists of theoretical and practical components.

The theoretical training as well as the practical training (which is the construction of the CD Works), is undertaken by the Trainee Targeted Enterprises under the mentorship and supervision of a Training and Construction Manager.

a) CD Project(s)' Service Provider(s)

CD Projects identified for implementation in association with this Contract will be let for tender by the Employer as **separate Contracts**.

The name(s) and contact details of the Service Provider(s) appointed for the implementation of the CD Project(s) will be provided to the Contractor on award of the Contract or as soon as the Service Provider(s) has/have been appointed.

The Contractor shall collaborate and cooperate with the CD Project(s)' Service Provider(s) and take cognisance of the CD Project(s)' programme in compiling the programme of the Works Contract.

b) CD Project(s) Associated with this Contract

The Employer will identify a CD Project in the Project Area of this Contract and will inform the Contractor of the CD project number and description as soon as it has been registered, together with all other relevant detail.

A Taking-Over Certificate will be issued in terms of Clause 10.1 for the CD Project(s).

D1013 MEASUREMENT AND PAYMENT

Item		Unit
D10.01	**Target Group Participation**	
(a)	N/A	

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 sub-item D10.03(a) shall be the number of individual subcontract agreements concluded with Targeted Enterprise subcontractors and suppliers in accordance with the procurement process described in this Section D of the Specifications.

The tendered monthly rate for sub-item D10.03(b) shall include full compensation for the provision of the relevant personnel on a full-time basis to carry out the requirements in terms of sub-item D10.03(a) and the full contents of this Section D of the Specifications.

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, 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 of the Specifications.

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 sub-item 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 sub-items 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 sub-item D10.04(a) and the full contents of this Section D of the Specifications.

Item		Unit
D10.05	**Construction Works by Targeted Enterprises**	
(a)	Payments associated with the construction works executed by Targeted Enterprise subcontractors of CIDB 1 and 2 contractor grading designation appointed in terms of Section D of the Specifications	Prime Cost (PC) Sum
(b)	Handling costs and profit in respect of payment associated with sub-item D10.05(a)	Percentage (%)
(c)	Fluctuation between the main contractor's rates and that of the Targeted Enterprise subcontractors	Lump Sum (LS)
(d)	Preliminary and General Obligations of Targeted Enterprise subcontractors appointed in terms of Section D of the Specifications	Lump Sum (LS)

Expenditure under sub-items D10.05(a) shall be in accordance with clause 13.5 of the FIDIC Conditions of Contract.

The Prime Cost Sum for sub-item 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 of the Specifications. Expenditure under sub-item D10.05(a) shall be limited to the Prime Cost Sum amount stated in the Pricing Schedule. Construction works by Targeted Enterprise subcontractors of CIDB 1 and 2 contractor grading designation exceeding the Prime Cost Sum amount shall be measured for payment from the applicable work items in the Contractor's pricing schedule. Where portions of an item of work with a tendered rate (and not the whole priced item) are sublet to Targeted Enterprise subcontractors of CIDB 1 and 2 contractor grading designation, payments will be made from the portion of the tendered rate and not be made under sub-item D10.05(a).

The tendered percentage for sub-item D10.05(b) is the percentage of the amount spent under sub-item 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 more than the contractor's tendered rates, for work not paid under items D10.05(a). Payment of the Lump Sum shall be on a pro-rata 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 more than 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 subcontractors (excluding CIDB 1 and 2 contractor grading designation paid from the Prime Cost Sum). Payment of the Lump Sum shall be on a pro-rata basis to provide compensation for the P&Gs of Targeted Enterprise subcontractors until the Lump Sum is depleted. Any costs incurred for the P&Gs of Targeted Enterprise subcontractors more than 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)	Quality Council for Trade and Occupation (QCTO) Accredited qualification training (Short course and learnerships)	
	(i) Stipend/wages for unemployed learners	Prime Cost (PC) Sum
	(ii) Handling costs and profit in respect of payment associated with sub-item D10.06(a)(i).	Percentage (%)
	(iii) Mentorship and other costs	Person Month
(b)	TVET college graduates and apprenticeships	
	(i) Stipend/wages for unemployed learners	Prime Cost (PC) Sum
	(ii) Handling costs and profit in respect of payment associated with sub-item D10.06(b)(i).	Percentage (%)
	(iii) Mentorship and other costs	Person Month
(c)	P1 and P2 learners and learners with a 240 credits qualification	
	(i) Stipend/wages for unemployed learners	Prime Cost (PC) Sum
	(ii) Handling costs and profit in respect of payment associated with sub-item D10.06(c)(i).	Percentage (%)
	(iii) Mentorship and other costs	Person Month
	(iv) Travel and Accommodation	Prime Cost (PC) Sum
	(v) Handling costs and profit in respect of payment associated with sub-item D10.06(c)(iv).	Percentage (%)
(d)	Candidates with 360 credits or more qualification	
	(i) Stipend/wages for unemployed learners	Prime Cost (PC) Sum
	(ii) Handling costs and profit in respect of payment associated with sub-item D10.06(d)(i).	Percentage (%)
	(iii) Mentorship and other costs	Person Month
	(iv) Travel and Accommodation	Prime Cost (PC) Sum
	(v) Handling costs and profit in respect of payment associated with sub-item D10.06(d)(iv).	Percentage (%)
(e)	Generic skills training	
	(i) Stipend/wages for unemployed learners	Prime Cost (PC) Sum
	(ii) Handling costs and profit in respect of payment associated with sub-item D10.06(e)(i).	Percentage (%)
	(iii) Mentorship and other costs	Person Month
(f)	Community training	
	(i) Stipend/wages for unemployed learners	Prime Cost (PC) Sum
	(ii) Handling costs and profit in respect of payment associated with sub-item D10.06(f)(i).	Percentage (%)
	(iii) Mentorship and other costs	Person Month

The Prime Cost Sums under sub-items D10.06(a)(i), (b)(i), (c)(i), (d)(i), (e)(i), and (f)(i) shall be paid in accordance with the provisions of sub-clause 13.5 of the FIDIC Conditions of Contract. The Prime Cost Sums shall cover the monthly stipends and/or wages as prescribed by the Employer to be paid to the relevant categories of unemployed Trainees receiving training and/or workplace training. No provision is made for stipends or wages

of employed Trainees and the Contractor must make provision for loss of production for his own employees which are included in the TSDP.

The Percentage tendered for sub-items D10.06(a)(ii), (b)(ii), (c)(ii), (d)(ii), (e)(ii), and (f)(ii) is the percentage of the stipends and wages paid under sub-item D10.06(a)(i), (b)(i), (c)(i), (d)(i), (e)(i), and (f)(i) and shall include full compensation for the Contractor's handling costs, and any other costs associated with the pay-out of stipends and wages, which are not provided for in other pay-items.

The Person Month under sub-items D10.06(a)(ii), (b)(ii), (c)(ii), (d)(ii), (e)(ii), and (f)(ii) shall be paid in accordance with the provisions of sub-clause 13.5 of the FIDIC Conditions of Contract. The Person Month shall cover the monthly cost to mentor and/or train a Trainee and shall include all charges for the provision and delivery of the service including an accredited Training Service Provider (if required), learning material, stationery, information technology hardware and software, connection or licence costs, Trainee sustenance, fully furnished and equipped training venue(s), travel and accommodation (if/where required) and any other requirement as described in Section D1010 of the Specifications, and shall include the Contractor's loss of production, handling cost, profit, record keeping, reporting to the Employer and any other body or organisation as required in terms of the mentoring or training category, and all other administrative and overhead costs associated with mentoring and training. No mark-up is payable to the Contractor under this item.

No payment, nor pro rata payment, shall be made for trainees that, once selected, do not attend or only partially complete structured training modules. The Contractor's own staff may attend the training modules provided. However, training of the Contractor's staff shall be considered for measurement and payment purposes within the limits set in Section D1010.02 and if they also qualify as Targeted Labour.

The Prime Cost Sums under sub-items D10.06(c)(iv) and (d)(iv) shall be paid in accordance with the provisions of sub-clause 13.5 of the FIDIC Conditions of Contract. The Prime Cost Sums shall cover the travel and accommodation of Trainees in the relevant learning categories and in line with the Employer's Travel, Accommodation and Disbursement Policy. No provision is made for travel and accommodation of Trainees in other learning categories and the Contractor must make provision for travel and accommodation (if required) for these categories in other relevant pay-items.

The Percentage tendered for sub-items D10.06(c)(v) and (d)(v) is the percentage of the travel and accommodation paid under sub-item D10.06(c)(iv) and (d)(iv) and shall include full compensation for the Contractor's handling costs, and any other costs associated with the travel and accommodation, which are not provided for in other pay-items.

Item		**Unit**
D10.07	**Utilisation of updated Section D during contract implementation**	
(a)	Payments associated with the utilisation, as part of contract amendment, of Section D during contract implementation.	Provisional Sum

The Provisional Sum in item D10.07 is to cater for the need, as shall be formally requested by the Employer, to replace the contractual Section D1000 specifications in part or in its entirety with the latest approved version of Section D1000 specifications of the Employer.

The Provisional Sum shall be utilised in part or in full based on proven cost comparison of the contractual version compared to the latest approved version to be implemented. New items with new rates and quantification of Contractor risks inherent with the new version to be implemented shall be assessed and accepted by the Employer prior to payments being made under this pay item.

A latest approved Section D1000 can replace the contractual Section D1000 up to one (1) revision per twelve (12) months period. It is the sole decision of the Employer to request the replacement of the contractual Section D1000 to a later approved version.

No mark-up is payable to the Contractor under this item.

SECTION E: REQUIREMENTS OF HEALTH AND SAFETY ACTS AND REGULATIONS

SECTION E1000: REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS

TABLE OF CONTENTS **PAGE**

E1001	SCOPE	C3-196
E1002	DEFINITIONS AND ABBREVIATIONS	C3-196
E1003	HEALTH AND SAFETY POLICY	C3-199
E1004	ROLES AND RESPONSIBILITIES	C3-199
E1005	HSE TRAINING AND COMPETENCE	C3-199
E1006	APPLICATION FOR CONSTRUCTION WORK PERMIT	C3-200
E1007	DUTIES	C3-200
E1008	MANAGEMENT AND SUPERVISION	C3-201
E1009	RISK MANAGEMENT	C3-201
E1010	LEGAL COMPLIANCE AND DOCUMENT CONTROL	C3-202
E1011	OPERATIONAL INTEGRITY	C3-205
E1012	OCCUPATIONAL HEALTH AND HYGIENE	C3-206
E1013	WASTE MANAGEMENT	C3-207
E1014	HAZARDOUS SUBSTANCE MANAGEMENT	C3-207
E1015	CONTRACTORS	C3-207
E1016	DESIGNING FOR HEALTH, SAFETY AND THE ENVIRONMENT	C3-211
E1017	INCIDENT MANAGEMENT	C3-211
E1018	PROJECT SPECIFIC CONSTRUCTION REQUIREMENTS	C3-212

E1001 SCOPE

Note :
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*.

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 any applicable Regulations under the OHS Act and incorporated Standards.

It is the responsibility of the Principal Contractor and other Contractors to make themselves conversant and comply with the requirements and conditions contained in the various legislation pertaining to their profession and scope of works at all times.

This specification is not exhaustive of all duties imposed by the OHS Act and its Regulations, governing the duties and obligations, of a Designer, Principal Contractor and Contractor performing duties in terms of an agreement with the client (SANRAL). These duties are fully described in the OHS Act and its Regulations and it is the duty of every Designer, Principal Contractor and Contractor to acquaint themselves therewith before commencing work.

This specification is compiled to ensure that the Principal Contractor and any other Contractors working for SANRAL directly or through a Principal Contractor, are aware of the Occupational Health and Safety requirements when working on a SANRAL contract, as well as to make them aware of their legal liabilities and responsibilities as per the Occupational Health & Safety Act, Act 85 of 1993, and its Regulations.

Words used herein in the singular shall be deemed to include the plural and male shall include female and vice versa unless the context otherwise requires.

E1002 DEFINITIONS AND ABBREVIATIONS

Assessment – An opinion or a judgment about someone or something that has been thought about very carefully.
At-risk behavior – Conduct that unnecessarily increases the likelihood of an injury or incident.
Audit – A systematic and documented review of the effectiveness of implementation of processes, programs and procedures, based on general process criteria.
Baseline risk assessment: This is the initial assessment of risk in a workplace. It is a broad assessment and includes all activities taking place on site but does not include risk control measures or safeguards.
Client – Any organization or person for whom construction work is performed. For the purpose of this document, the client is the South African National Roads Agency SOC Limited, also identified in the contract document as the Employer.
Competence – A combination of attributes such as knowledge, training, experience and qualifications to assure successful performance.
Competent Person – Means a person who has in respect of the work or task to be performed the required knowledge, training and experience and, where applicable, qualifications, specific to that work or task: Provided that where appropriate qualifications and training are registered in terms of the

provisions of the National Qualification Framework Act, 2000 (Act No. 67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and is familiar with the Act and with the applicable regulations made under the Act.
Consequence – Outcome or impact of an event.
Continual Improvement – A recurring process of enhancing performance to achieve consistent improvements in overall performance.
Contractor – An employer as defined in section 1 of the OHS Act, who performs construction work and includes Principal Contractors and Sub-Contractors.
Construction Work – any work in connection with:

- The construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or
- The construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling, or any similar civil engineering structure or type of work.

Corrective Action – An action taken to eliminate the cause of a detected non-conformity or other undesirable situation.

Construction Regulations (CR) – Construction Regulations, GNR. 84 of 2014

Critical equipment – A piece of equipment or a structure whose failure to perform to design specification, has the potential to result in a major accident event.

Design – in relation to any structure, includes drawings, calculations, design details and specifications.

Designer –
a) competent person who:
   - Prepares a design;
   - Checks and approves a design;
   - Arranges for a person at work under his or her control to prepare a design, including an employee of that person where he or she is the employer; or
   - Designs temporary work, including its components;
b) an architect or engineer contributing to, or having overall responsibility for a design;
c) a building services engineer designing details for fixed plant;
d) a surveyor specifying articles or drawing up specifications;
e) a contractor carrying out design work as part of a design and building project; or
f) an interior designer, shop fitter or landscape architect.

DMR – Driven Machinery Regulations, GNR. 295 of 26 February 1988

Documents – Structured units of recorded information and its supporting medium (paper or electronic). Most records are documents, but not all documents are records. A document becomes a record when it is part of a business transaction, is kept as evidence of that transaction and is managed within a record-keeping system.

EIR – Electrical Installation Regulations, GNR. 242 of 6 March 2009

Emergency – An abnormal occurrence that pose a threat to the safety or health of employees, customers, or local communities, or which can cause damage to assets or the environment.

Employee – An individual who is employed by or works for an Employer and who receives or is entitled to receive any remuneration or who works under the direction or supervision of an employer or any other person.

Employer – Any person who employs or provides work for any person and remunerates that person or expressly or tacitly undertakes to remunerates him but excludes a labour broker as defined in section 1(1) of the Labour Relations Act, 1956 (Act No. 28 of 1956). The South African National Roads Agency SOC Limited, also identified in the contract document as the Employer.

EMR – Electrical Machinery Regulations, GNR. 250 of 25 March 2011

Environment – The surroundings or conditions in which a person, animal or plant lives or operates, including air, water, land, natural resources and habitats.

Epidemic Disease - An *epidemic* disease is one affecting many persons at the same time and spreading from person to person in a locality where the disease is not permanently prevalent. The World Health Organization (WHO) further specifies *epidemic* as occurring at the level of a region or community.

Excavation work – The making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping

GAR – General Administrative Regulations, GNR. 929 of 25 June 2003

GMR – General Machinery Regulations, GNR. 1521 of 5 August 1988

GSR – General Safety Regulations, GNR. 1031 of 30 May 1986

Harm – A significant and or long-lasting adverse effect on people, the environment or the community.

Hazard – A source, situation or act with a potential for harm in terms of human injury or ill health.

Health and Safety File – Means a file, or other record in permanent form, containing the information in writing as required by the Construction Regulations, GNR. 84 of 7 February 2014, Section 7(1)(b).

Health and Safety Plan – Means a project specific documented plan in accordance with the client's health and safety specifications, as required by the Construction Regulations, GNR. 84 of 7 February 2014, Section 7(1)(a).

Health and Safety Specification – Means a project specific document prepared by the client pertaining to all health and safety requirements related to construction work, as required by the Construction Regulations, GNR. 84 of 7 February 2014, Section 5(1)(b).

HSE – Health, Safety and Environment. Commonly used in the format HSE.

Incident – Work-related events (including accidents which give rise to injury, ill health, fatality or emergencies) that have resulted in, or has the potential to result in adverse consequences to people, the environment, property, reputation or a combination of these.

Likelihood – A description of probability or frequency, in relation to the chance that something will occur.

Lost Time Injury (LTI) – When a person is injured during the execution of his/her duties and as a result of the injury is unable to perform his/her regular duties for one full shift or more on the day following the day on which the injury has incurred, whether a scheduled work day or not(weekend).

Management System – Management processes and documentation that collectively provide a systematic framework for ensuring that tasks are performed safely, correctly, consistently and effectively to achieve a specified outcome and to drive continual improvement in performance.

Mandatory – An agent, contractor or sub-contractor for work, but without derogating from his status in his own right as an employer or a user.

MSDS – Material Safety Data Sheet

Near Hit / Near Miss – Any occurrence or situation which had the potential for adverse consequences to people, the environment, property, reputation or a combination of these.

Non-conformance – Any deviation from work standards, practices, procedures, regulations that could either directly or indirectly lead to injury or illness, property damage, damage to the environment or a combination of these.

OHS Act – Occupational Health & Safety Act, 85 of 1993

Pandemic Disease - a *pandemic* disease is an *epidemic* disease that has spread over a large area, that is, it is prevalent throughout an entire country, continent, or the whole world.

Policy – Statement by an organization of its intentions and principles in relation to its overall performance which provides a framework for action and for the setting of its objectives and targets.

PPE – Personal Protective Equipment

Preventive Action – An action implemented to eliminate the cause of a potential non-conformity or other undesirable potential situation.

Principal Contractor – An employer appointed by the client to perform construction work and who is in overall control and management of a part of or the whole construction site.

Procedure – A specific documented way to carry out an activity or a process.

Records – Recorded information, in any form that is kept as evidence. Records include monitoring results, evidence of training, audits, inspections and calibration reports.

Risk Assessment – A process of evaluating the risk(s) arising from hazards taking into account the adequacy of any existing controls and deciding whether or not the risk(s) is acceptable.

Risk Management – The ongoing treatment of risks through the application of management policies, processes, procedures and risk control measures.

Risk – A combination of the likelihood of an occurrence of a hazardous event or exposure and the severity of injury or ill health that can be caused by the event or exposure.

Root Cause – The cause of the incident that, when rectified, will prevent the recurrence of not just incidents with those exact circumstances, but others with similar causes.

SACPCMP – South African Council for Project and Construction Management Professions

SANRAL - South African National Roads Agency SOC Limited

Supplier – A person or company that supplies material or equipment to a contractor on a construction site but does not physically carry out construction work on the construction site.

The Act – The Occupational Health and Safety Act No. 85 of 1993

The Site – The area where work is carried out for SANRAL as defined on the front page of this document.

WAH – Acronym for Working at Heights.

E1003 HEALTH AND SAFETY POLICY

Contractors are expected to have their own written Health and Safety Policy. The policy should declare their attitude and approach to the health, safety and welfare of their employees and others. The policy should include a description of the company and provision must be made to review the policy annually and the CEO or Managing Director must sign and date the policy to indicate his commitment to ensuring the health and safety of his employees, as per Section 7 of the OHS Act.

E1004 ROLES AND RESPONSIBILITIES

Every Contractor is considered to be an employer in his own right and shall comply with all legal requirements pertaining to an employer, which include the responsibility to provide as far as reasonably practicable a safe and healthy working environment for his employees, as per Section 8 of the OHS Act.

In conjunction with Section 8 of the OHS Act, all employees on the project are responsible for their own health and safety as well as the safety of persons who may be affected by their acts, as per Section 14 of the OHS Act. It is the responsibility of each employee to ensure that he acts in a safe manner before and during work is carried out.

The Principal Contractor shall ensure that where required by the OHS Act and Regulations, competent employees are appointed in writing. These appointments must be project/contract specific and specific to the tasks that will be performed. Every appointment must display the duties of the person appointed and training certificates from a registered training provider must be attached to such appointment (where applicable). A list of possible appointments can be found in clause E1010 below.

E1005 HSE TRAINING AND COMPETENCE

Where appropriate qualifications and training are registered in terms of the provisions of the National Qualifications Framework Act, 2000 (Act No. 67 of 2000), those qualifications and training must be regarded as the required qualifications and training and employees must have attended courses of the aforementioned nature to be considered competent in the task.

All employees that forms part of the construction work must be trained and competent. Employees formally appointed to perform a certain duty must be in possession of a training certificate (where applicable), received from a registered training provider. All employees must as a minimum have received site specific safety induction training and must receive daily safe task instruction training (DSTI) before any work commences and thereafter on a daily basis.

a) Training Needs

There shall be a system in place to determine the training requirements of each individual, based on the tasks that the employee will perform as well as to ensure the health and safety of fellow employees and the public. Special attention should be given to employees who are new hires, new to the task or have combined responsibilities.

b) Basic Safe Work Training (Induction Training)

Every contractor shall ensure that his employees are inducted into his own company Health and Safety System as well as basic safe work training (HSE Induction Training). The Principal Contractor shall ensure that his, all his Contractor's employees and visitors are inducted on the specific site safety procedures.

A Daily Safe Task Instruction (DSTI) must be conducted on site with all employees involved in the project. The DSTI must be carried out each day before work commences and proof thereof must be available on site. Each work crew may conduct their own specific DSTI to discuss the hazards, risks and control measures associated with their task for the day.

Where two or more contractors or work crews work in the same area, they should have a combined DSTI to ensure they know of the additional hazards the other contractor or work crew will introduce to their operations and what precautions to put in place.

The Principal Contractor shall have evidence that employees have been trained on the relevant procedures prior to and during the project duration. The evidence will be in a form of attendance register.

c) Formal Training

All qualifications for which there are SAQA registered training courses, must be regarded as the minimum required qualifications and training. To be deemed "competent" an employee must have received training at a registered training provider, the training course must be registered and if there is an assessment, the employee must have been found competent after the assessment. A person cannot be deemed competent after awareness training only.

The Principal Contractor shall ensure that his employees, as well as the employees of any contractors that may be used, have received appropriate training for the type of work that will be performed, e.g. First Aid, Flag Man, Mobile Plant Operator, Working at Heights, Risk Assessment training etc.

d) Records

Record of all training shall be kept by the employer and shall be readily available. Records shall make provision for refresher training where applicable. Where an employee is legally appointed with certain duties and responsibilities a copy of the training certificate must be attached to the appointment.

E1006 APPLICATION FOR CONSTRUCTION WORK PERMIT

Construction Regulation, 2014 Section 3 requires that the client apply for a construction work permit at least 30 days before construction work is started, if the intended construction work will:

- exceed 365 days AND will involve more than 3 600 person days of construction work; or
- if the tender value limit is a CIDB grade 7, 8 or 9.

If approved, the provincial director will issue a construction work permit in writing to perform construction work within 30 days of receiving the application and assign a site-specific number for the construction site. It is the intention of SANRAL to apply for a construction work permit as soon as The Principal Contractor is appointed and his Health and Safety Plan is received, in order to minimize construction delays.

The site-specific construction work permit number must be displayed at the main entrance to the site and a copy of the construction work permit must be kept in the principal contractor's health and safety file for inspection purposes.

E1007 DUTIES

Various duties are imposed on the client, designer, principal contractor and other contractors by the Construction Regulation, 2014, Sections 5, 6 & 7. SANRAL will comply and carry out the required duties

as contemplated in Section 5 of the Construction Regulations, 2014 and it is expected from the designer and every contractor to make themselves conversant with the requirements and duties imposed on them and to ensure that they comply with the requirements of section 6 & 7 at all times.

E1008 MANAGEMENT AND SUPERVISION

The Principal Contractor shall ensure that the project is managed safely, and legal compliance is ensured at all times.

A full-time competent person must be appointed as a Construction Manager to manage all construction work, including health and safety compliance. The construction manager may not be appointed to manage more than one single construction site. An Alternate Construction Manager must be appointed, to carry out the duties in the absence of the Construction Manager.

The construction manager must appoint construction supervisors responsible for construction activities and ensuring occupation health and safety on the construction site.

The Principal Contractor must appoint a full-time construction health and safety officer, who is registered with the SACPCMP, to assist in the control of health and safety aspects on site.

E1009 RISK MANAGEMENT

The Principal Contractor must follow a formal risk-based approach to ensure hazard control measures are implemented to an acceptable reasonable practical level. The Principal Contractor and his employees shall be responsible to ensure all hazards pertaining to his scope of activity are proactively identified, the risks assessed and appropriately eliminated or minimized and managed on an ongoing basis. Risk assessments shall also identify possible and potential environmental, health and hygiene issues pertaining to each hazard with potential exposures and limits.

a) **Risk Assessment**

i) Hazard Identification and Risk Assessment (Construction Regulation 9)

The Principal Contractor shall, before the commencement of any construction work or work associated with the aforesaid construction work and during such work, conduct a risk assessment by a competent person, appointed in writing and the risk assessment so produced shall form part of the OH&S plan and be implemented and maintained as contemplated in Construction Regulation 9(1). Competence is a factor of training, knowledge, experience and/or appropriate qualifications.

The risk assessment shall include, as far as is reasonably practicable, at least:

- The task or task step
- the identification hazards to which persons may be exposed to during the task or task step;
- The analysis and evaluation of the risks associated to the hazards identified, inclusive of a residual risk rating methodology. The method to be used is not prescribed;
- a documented plan of safe work procedures, to mitigate, reduce or control those residual risks that have been identified as unacceptably high, by means of the rating system;
- a monitoring plan;
- a review plan, inclusive of dates to be adhered to; and
- Ergonomic related risks are to be analysed, evaluated and addressed as part of the process.

Based on the risk assessments, The Principal Contractor shall develop a set of site-specific OH&S rules that shall be applied to regulate the OH&S aspects of the construction. The risk assessments, together with the site-specific OH&S rules shall be submitted to the Employer before construction on site commences. SANRAL has conducted a Baseline Risk Assessment as per clause E1009 (b) below, which must be used by The Principal Contractor to develop task specific risk assessments before work commences. This does not mean that all possible Risk Assessments must be attended to before work commences,

but that all relevant Risk Assessments receive the necessary attention as the contract progresses, and this is the responsibility of The Principal Contractor.

All variations to the scope of work shall similarly be subjected to a risk assessment process.

ii) Risk Assessment Monitoring

The Principal Contractor shall ensure that a monitoring plan for all risk assessments are in place. Risk assessments must be monitored to ensure effectiveness and employee understanding. The monitoring of risk assessments shall be formal, and records thereof shall be available for audit purposes.

iii) Review of Risk Assessment

The Principal Contractor shall review the hazard identification, risk assessments and standard safe working procedures:

- prior to any work activity commencement,
- where changes are affected to the design and construction that result in a change to the risk profile,
- when an incident has occurred, or
- at least quarterly.

The Principal Contractor shall provide the Employer, sub-contractors and all other concerned parties with copies of any changes, alterations or amendments as contemplated above.

Activities carried out without conducting a risk assessment or found to be non-compliant with the risk assessment, will be stopped until such time a risk assessment is compiled, and work is carried out according to the risk assessment.

Risk assessments must be fully communicated to all relevant personnel and must be considered when establishing training, awareness and competency requirements. Records of risk assessment communications must be kept for inspection purposes.

b) **Baseline Risk Assessment**

SANRAL prepared a Baseline Risk Assessment from which the Health and Safety Specifications for this project was prepared. The Baseline Risk Assessment highlights all work for which The Principal Contractor must prepare safe work procedures and or work method statements. It must be noted that the Baseline Risk Assessment is not exhaustive and Principal Contractors are required to identify risks and come up with control measures, this must be identified by Principal Contractor when preparing the Issue Based Risk Assessments.

The Baseline Risk Assessment for this Project can be found in clause E1018.

c) **Continuous Risk Assessment**

The Principal Contractor shall continuously assess the risks of the activities that are carried out. Risk assessments must be in writing, site specific and must be reviewed continuously as per E1009 a(iii) to ensure it is current and it address all the relevant hazards and risks associated with the specific activity at the specific site.

The Risk assessment must be discussed with the whole work crew before the activity starts and the work crew must acknowledge in writing having discussed the risk assessment and that they understand it. This acknowledgement must be on site and must be available to the client for audit purposes.

E1010 LEGAL COMPLIANCE AND DOCUMENT CONTROL

The Principal Contractor is required to implement systems and procedures to ensure legal compliance through:

- Identification of all relevant HSE legislation, standards and codes applicable to its operations.

- Have available copies of all relevant HSE legislation, standards and codes for reference purposes.
- Update systems and procedures with changed/updated legislation, standards and codes.
- Communicate to all employees any changes that may affect their accountabilities and 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)

Appointment	Legal Reference
Alternate Construction Manager	CR 8(1)
Assistant Construction Manager	CR 8(2)
Health and Safety Officer	CR 8(5)
Construction Supervisor	CR 8(7)
Assistant Construction Supervisor	CR 8(8)
Risk Assessor	CR 9(1)
Fall Protection Plan Developer	CR 10(1)(a)
Structure Inspector	CR 11(2)(a)
Temporary Works Designer	CR 12(1)
Temporary Works Supervisor	CR 12(2)
Excavation Supervisor	CR 13(1)(a)
Demolition Supervisor	CR 14(1)
Competent Person in the use of Explosives	CR 14(11)
Scaffold Supervisor	CR 16(1)
Suspended Platform Supervisor	CR 17(1)
Rope Access Supervisor	CR 18(1)(a)
Material Hoist Inspector	CR 19(8)(a)
Bulk Mixing Plant Supervisor	CR 20(1)
Explosive actuated fastening device Inspector	CR 21(2)(b)
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.Cl 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 consists 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 contains at least the following:

- Scope and summary of the project as well as any scope changes.
- Notification of Construction Work to DoL / Copy of Work Permit
- Proof of COID registration (Letter of Good Standing)
- Contractor Health and Safety Policy statement signed by management
- Appointment of Principal Contractor
- Mandatory Agreement – OH&S Act 37.2 (Between Employer and Principal Contractor)
- Client Health and Safety specification
- Latest copy of the OHS Act and Regulations
- Company Organogram depicting Health and Safety Responsibilities, including sub-contractors
- Employee list including copy of IDs and medicals
- Project specific Health and Safety Management Plan agreed with the Employer – See E1015(d) above
- Relevant OH&S Legal appointments which includes duties and responsibilities as well as competencies (training certificate)
- Copies of minutes of meetings – OH&S committee and other relevant OH&S meeting minutes
- Site specific Fall Protection Plan (if applicable)
- Risk Assessments
- Contractor Induction material
- Waste management Plan
- Emergency preparedness (first aid, firefighting, emergency plan, etc.)
- Emergency Contact Telephone numbers
- List of hazardous chemical substances used on site
- Material Safety Data Sheets of hazardous chemicals on site
- List of plant & equipment to be used on site
- Inspection Checklists/Registers of plant & equipment and emergency equipment
- List of Sub-contractors including type of work
- Sub-contractor 37.2 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 renders 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 …, 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; Electrical hand tools; Lifting equipment; Aggrieved members of the public.	Heat exhaustion; Dehydration; Poisoning; Fatality / Serious health effect; Silicosis; Electrical shock; Personal Injuries; Falling objects; Strikes / riots	M
Community and Workforce	Labour and community instability	Work stoppage Civil unrest	H
Security	Aggrieved members of the public; Uncontrolled people Inadequate security arrangements could result in unauthorised access by members of the public that could pose a risk to employees working on this site or could also result in the illegal removal of equipment and/or material from the site or injuries to these members of the public.	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; Aggrieved members of the public.	Heat exhaustion; Poisoning; Fatality / Serious health effect; Silicosis; Electrical shock; Personal Injuries; Falling objects; Strikes / riots	M
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	H

Activity	Associated Hazards	Associated Risks	Risk Rating High Medium Low
		Re-use of containers can have serious health effect on people or fatal.	
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
Pouring of concrete	Contact with skin Collapse of structure	Skin irritation Skin burns' Fatality	H
Steel fixing	Cuts Body injuries Back injuries Falling from heights during steel fixing	Back injuries Disability Fatalities	H
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 with portable electrical equipment – grinders, circular saws, generators	Electricity Electrical tools Portable electrical equipment	Electrical shock Cuts Personal injuries	M
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
Gabion work	Manual handling	Personal injuries	M

Activity	Associated Hazards	Associated Risks	Risk Rating High Medium Low
	Slopes Slippery Rocks	Trips, Slips & Falls	
Work adjacent or near traffic	Public vehicles	Workers not attentive to approaching vehicles. Drivers not slowing down to indicated speed limit. Drivers losing control of their vehicles.	H
Temporary works – Form work & support work	Temporary works	Falls from height; Collapse of temporary work overloading	H
Demolition work	Demolition equipment Flying debris Explosives;	Fatality; Serious Injuries; Damage to equipment; Damage to public assets	H
Work adjacent to public property	Construction plant and equipment; Excavation activities; Demolition activities;	Injury to public persons; Damage to public property and assets;	M
Protection of public H&S	Unprotected temporary works; Stockpiles; Incomplete structures. The disregard of the public's health and safety could result in injuries or even fatalities with associated claims and reputation risks	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
Changes in conditions that affect safe system work	Falling / failing light Darkness / fog Mist Heavy rain Reduced / reduction of sighting Restricted clearance Entering Red Zone working Prohibited areas	Death/serious injury	M
	Hazardous biological agents	Serious health effects; Fatality; Pandemic;	H

Activity	Associated Hazards	Associated Risks	Risk Rating High Medium Low
		Epidemic	

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 operator’s card. The crane operator must be in possession of a valid medical certificate of fitness, issued by an occupational health practitioner.

The wind factor should always be taken into consideration when operating cranes and a wind speed device must be fitted so that it provides the operator with an audible warning when the speed exceeds the safe lifting speed. Upon noticing that the wind speed is equal or more than the specified speed limit, the operator should stop immediately.

m) **Construction Vehicles & Mobile Equipment**

Comply with Construction Regulation, Section 23, National Road Traffic Act, 1996

Construction vehicle operators must have received training to operate the class of construction vehicle or mobile equipment and must be in possession of an operator’s card as proof of competency. Construction vehicle operators must be authorised in writing and have a medical certificate of fitness issued by an occupational health practitioner to operate the construction vehicle and/or mobile equipment.
All construction vehicles operating on a public road, must be roadworthy, licenced and when operated on a public road, comply with the National Road traffic Act.

n) **Electrical Equipment**

Comply with Construction Regulations, Section 24.

The Principal Contractor shall take adequate steps to ascertain the presence of and guard against danger to workers from electrical cables or apparatus which is under, over or on the site.
The exact location of underground electric power cables must be determined before any excavators are used for excavation purposes.
The location of overhead electrical cables must be assessed when working with cranes and lifting equipment. Injury may be possible from touching the electrical cables with the crane boom, or from arching when the crane boom comes too close to the electrical cable.
All temporary electrical installations must be inspected at least once a week by a competent person and the records of the inspections must be recorded in a register which must be kept on site.
Electrical machinery and extension cords must be 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.

SECTION E2000: REQUIREMENTS OF THE MINE HEALTH AND SAFETY ACT AND REGULATIONS

TABLE OF CONTENTS **PAGE**

E2001	**PURPOSE**	**C3-224**
E2002	**SCOPE**	**C3-224**
E2003	**APPLICABLE LEGISLATION**	**C3-224**
E2004	**TERMS AND DEFINITIONS**	**C3-225**
E2005	**COMPLIANCE TO MINE HEALTH AND SAFETY ACT NO 29 OF 1996**	**C3-227**
E2006	**COMPLIANCE TO MINERALS ACT, ACT NO. 992 OF 1970**	**C3-247**
E2007	**HEALTH AND SAFETY PLAN**	**C3-250**
E2008	**NON-CONFORMANCE AND WORK STOPPAGES**	**C3-251**
E2009	**INDEMNITY BY THE PRINCIPAL CONTRACTOR**	**C3-251**

E2001 PURPOSE

Mine health and safety law in South Africa is comprehensive and aimed at protecting workers and the environment from the risks associated with mining activities. Compliance with the Mine Health and Safety Act and its Regulations is mandatory, and therefore Employers are encouraged to implement best practices to ensure the highest level of health and safety standards.

The **South African National Roads Agency SOC Limited (SANRAL)**, has developed this Health and Safety Specifications (H&S Spec) in accordance with the Mine Health and Safety Act No, 29 of 1996 as amended and its Regulations, as a minimum standard, inclusive of any other health and safety requirements that SANRAL deems necessary.

The purpose of this Health and Safety (H&S) specification is to ensure that any Principal Contractor who is appointed by **SANRAL** to conduct any mine related work complies with the Mine Health and Safety Act and Regulations No. 29 of 1996 as amended, and any other health and safety requirements that **SANRAL** may specify. The requirements contained in this document are the **ABSOLUTE MINIMUM** and the responsibility is placed on the Principal Contractor to ensure compliance with the requirements of the Mine Health and Safety Act and all other applicable legislation.

E2002 SCOPE

SANRAL has developed this Health and Safety Specifications in accordance with the Mine Health and Safety Act No 29 of 1996 as amended, as minimum standards 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/ her employees. This Health and Safety Specification reflects minimum legal and SANRAL requirements and should not be construed as all encompassing.

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 legislations pertaining to their profession and scope of works at all times.

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 Health and Safety requirements when working on the SANRAL mining site, as well as to make them aware of their legal liabilities and responsibilities as per the Mine Health and Safety Act, Act 29 of 1996, and applicable Regulations.

E2003 APPLICABLE LEGISLATION

The scope of this specification shall apply to the Principal Contractor contracted to carry out mining activities on behalf of SANRAL**,** where work is carried out on mine premises and the activities are governed by the following legislation but not limited to;

- Mine Health and Safety Act No 29 of 1996 (MHSA) and Regulations (R 93 of 1997) (MHSR)
- Minerals Regulations (R992 0f 1970) (MR)
- Mine Health and Safety Guidelines
- Compensation for Occupational Injuries and Diseases Act No. 130 of 1993) (COID)
- Explosives Act and Regulations No 26 of 1956 (EA)
- Mineral And Petroleum Resources Development Act 28 of 2002 (MPRDA)
- Environmental Regulations for the Workplace (R 2281 of 1987) (ERW)
- Waste Act (WA)
- Ergonomics Regulations (R 1589 0f 2019) (ER)
- Asbestos Abatement Regulations (R 1196 of 2020) (AAR)
- Facilities Regulations (R924 of 2004) (FR)
- Hazardous Chemical Agents Regulations (R280 of 2021) (HCA)
- Other Contractual requirements provided by SANRAL

The Principal Contractor as employers in their own right, are fully responsible and accountable for compliance with all Health and Safety requirements. This Health and Safety Specification forms an

integral part of the Contract, and the Principal Contractor shall make it an integral part of their Contracts with other Sub-Contractors and Suppliers. It will be the duty of the Principal Contractor to enforce the provisions of the Health and Safety Specification amongst all Sub-Contractors and suppliers for the project/ contract.

The Health and Safety Plan forms an integral part of the Contractors Health and Safety Management System, and the Principal Contractor is required to ensure all their Contractors and Suppliers have developed a Health and Safety Plan according to this health and safety specification. A Health and Safety Plan is to be available for each level of Contractor and must be complied with.

The Health and Safety Plan must be read in conjunction with the MHSA, it's Regulations (as amended) and any other standards relating to work being done and ensure compliance thereto. The information relative to the scope of work, the works etc. is detailed in the contract document and is to be taken into account when developing the Project Specific Health and Safety Plan and associated documentation.

E2004 TERMS AND DEFINITIONS

"AIA" means Approved Inspection Authority who is a body that can inspect, test, and certify lifting tackle and machinery.

"BHIRA" means Baseline Hazard Identification and Risk Assessment.

"Client" means 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 (SANRAL), also identified in the contract document as the Employer.

"**COMSOC**" means Chambers of Mining Safety Officers Certificate.

"**COP"** means Code of Practice in terms of section 9 of the MHSA.

"Competence" means 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.

"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.

"CIOM" means Chief Inspector of Mines.

"**CBHIRA**" means Continuous Based Hazard Identification and Risk Assessment.

"**DMRE**" means Department of Mineral Resources and Energy

"Employee" means any person who is employed or working at a mine.

"Employer" means SANRAL (South African National Roads Agency SOC Limited).

"**EA**" means Employers Agent.

"GBVF" means Gender Based Violence and Femicide.

"Hazard" means a source of or exposure to danger.

"Health hazard" means any physical, chemical or biological hazard to health, including anything declared to be a health hazard by the Minister.

"**Health and Safety Plan**" means a project specific documented plan in accordance with the client's health and safety specifications.

"**IBHIRA**" means Issue Based Hazard Identification and Risk Assessment.

"Incident" means 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.

"Induction Training" means instruction provided to a Visitor, Principal Contractor employee or Subcontractor employee prior to the commencement of work or any other activity.

"**Inhalable particulates**" means airborne particulates as collected by a personal gravimetric sampler without particle size selection.

"Lost Time Injury (LTI)" means 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 workday or not (weekend).

"mg/m3" means milligrams per cubic metre.

"Manager" means any competent person appointed in terms of section 3(1)(a).

"Medical surveillance" means a planned programme of periodic examination, which may include clinical examinations, biological monitoring, or medical tests, of employees by an occupational medical practitioner.

"**MHSA**" means Mine Health and Safety Act, No 29 of 1996.

"**MQA**" means Mining Qualifications Authority.

"Near Hit / Near Miss" means any occurrence or situation which had the potential for adverse consequences to people, the environment, property, reputation, or a combination of these.

"Non-Conformance" means deviation from normal processes, regulations, procedures etc. resulting in the potential of, or actual, damage to plant, equipment or the environment, injury or illness to Principal contractors, sub-contractors or their employees or any other person, or loss of quality.

"**Occupational Exposure Limit**" (OEL) means the time weighted average concentration for an 8-hour work day and a 40-hour work week to which nearly all workers may be repeatedly exposed without adverse health effects.

"**Occupational Exposure Limit - Ceiling Limit**" (OEL-C) means an instantaneous value which must never be exceeded during any part of the working exposure.

"**Occupational Exposure Limit - Short Term Exposure Limit**" (OEL–STEL) means a 15-minute TWA exposure which should not be exceeded at any time during a workday even if the 8-hour TWA is within the OEL-TWA. Exposures above the OEL-TWA up to the STEL should not be longer than 15 minutes and should not occur more than four times per day. There should be at least 60 minutes between successive exposures in this range. An averaging period other than 15 minutes may be recommended when this is warranted by observed biological effects.

"Occupational medical practitioner" (OMP) means a medical practitioner who holds a qualification in occupational medicine, or an equivalent qualification, recognized by the Health Professions Council of South Africa.

"Occupational hygiene" means the anticipation, recognition, evaluation, and control of conditions at the mine that may cause illness or adverse health effects to persons.

"Occupational Hygienist" is "a person competent to carry out measurements of the work environment".

"Policy" means a 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" means Personal Protective Equipment.

"PPM" means parts per million.

"Principal Contractor" A company or person contracted to SANRAL to perform mine related tasks or projects and may include Sub-Contractors.

"Risk" means the likelihood that occupational injury or harm to persons will occur.

"Safety" means safety at mines.

"**Respirable Particulates**" means the respirable fraction of airborne particulates.

"Risk Assessment" means 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" means the ongoing treatment of risks through the application of management policies, processes, procedures, and risk control measures.

"SANRAL" - South African National Roads Agency SOC Limited.

"**SAMTRAC**" means Safety Management Training Course.

"SOP" means Safe Operating Procedure.

"Substance" means includes any solid, liquid, vapour, gas, or aerosol, alone or in any combination.

"The Site" means the area where work is carried out for SANRAL as defined in the Tender document.

E2005 COMPLIANCE TO MINE HEALTH AND SAFETY ACT NO 29 OF 1996

a) Policy

i) The Principal Contractor is required to have their own written Health and Safety Policy and to be compiled in consultation with the Health and Safety Committee *{Sec 8(1) and (2)}*. The policy should include the following commitments:
   (1) describes the organisation of work;
   (2) the protection of employees' health and safety at work;
   (3) the protection of persons who are not employees but who may be directly affected by the activities at the mine; and
   (4) outlines the arrangements for carrying out and reviewing policies.

ii) The policy must be signed by the CEO or Managing Director of the Company.

iii) The Principal Contractor must prominently and conspicuously display a copy of the policy for employees to read; and provide each health and safety representative a copy of the document *{Sec 8(3)}*

iv) The Principal Contractor shall ensure that all other applicable policies are available.

b) Roles and Responsibilities (Refer to Appointment Templates)

i) The Employer (SANRAL) shall appoint the CEO of the Contracted company (Principal Contractor) who must take reasonable steps to ensure that the functions of the employer as contemplated in the MHSA, are properly performed *{Sec 2(A)(1)}*.
   (1) The Principal Contractor must appoint a Mine Manager with the qualifications as may be prescribed to be responsible for the day-to-day management and operation of the

mine *{Sec 3(1) (a)}*. The requirement of qualification as per the Employer's standard is as follows:

(2) Minimum of 5 years as Mine Manager.
(3) Holder of a blasting ticket for surface operations.
(4) Familiar with multistage crushing equipment.
(5) Familiar with Trackless Mobile Machinery.
(6) Possess a good understanding of Mine Health and Safety Act, No 29 of 1996.
(7) Possess a qualification/ certificate in Legal Liability.

ii) The Mine Manager must be on site at all times during a shift. Should the Mine Manager not be on the site, another individual must be appointed in writing as Acting Mine Manager for the duration. If the duration of the Acting Appointment is for a period of 5 days or more, a copy of such appointment must be submitted to the Principal Inspector of Mines.

iii) In terms of Chapter 2, Section 7(2) of the MHSA, the CEO must appoint the any other persons with qualifications as may be prescribed to perform any duty as required by the Employer in terms of the MHSA:

(1) Engage either the part-time or full-time services of a person qualified in occupational hygiene techniques to measure levels of exposure to hazards (*Occupational Hygienist*) – *{Mine Health and Safety Act, {Chap 2, (12(1)}.*
(2) Engage the part-time or full-time services of an *occupational medical practitioner* who is registered with the Health Professions Council of South Africa (HPCSA) - *{Mine Health and Safety Act, {Chap 2, (13(3)}.*
(3) Engage the services of a Competent person to be in charge of surveying, mapping and mine plans (*Mine Surveyor*) – *{Mine Health and Safety Regulations (17(2)(a)}.*
(4) Competent person as a Blaster - *{Mine Health and Safety Regulations (4.4 (1) and 4.4 (2)}.*
(5) Magazine Master/Assistant (if applicable) - *{Mine Health and Safety Regulations (4.1(2))}.*
(6) Explosives Manager *{Explosives Act, 1956 Act No 26 Of 1956}*.
(7) Competent Persons to the Blaster *(Blaster Assistants) - {Mine Health and Safety Regulations (4.4 (3)}*.
(8) Competent Person: Examine and Make Safe for Face Stability - *{Mine Health and Safety Regulations (14)}*.
(9) Engage the services of a Competent person for input into mine design, planning and operations (Rock Engineer) who is at least in possession of either the Chamber of Mines Certificate in Rock Mechanics (Metalliferous Mines), or the Chamber of Mines Certificate in Rock Mechanics (Coal Mines), whichever is appropriate for the type of mine concerned - *{Mine Health and Safety Regulations (14.1(8)}*.
(10) Responsible Person for Explosives *{Explosives Act 15/2003 (Chapter 3 (10.5 (a))}*.

iv) In terms of Chapter 2, Section 7(4) of the MHSA, the Mine Manager must appoint any other persons with qualifications as may be prescribed to perform any duty as required by the Mine Manager in terms of the MHSA. **For this Contract, all the below mentioned appointment will be for full-time on Site**:

(1) Subordinate Managers – *{Minerals Regulations (2.6.1)}*
(2) Supervisors – *{Minerals Regulations (2.9.2)}*
(3) Engineer (Plant and Moving Machinery) – *{Minerals Regulations (2.13.1)}*
(4) Competent Person in Charge of Electrical - *{Minerals Regulations (2.13.2)}*
(5) Pressure Vessel Inspector (if applicable) - *{Mine Health and Safety Act, {Chap 2, (7(4) and Minerals Regulations Chapter 23)}*
(6) Electrical Equipment Inspector - *{Mine Health and Safety Regulations (3)}*
(7) Fire and Emergency Coordinator - *{Mine Health and Safety Regulations (5.1(2) & 16.1)}*
(8) Health and Safety Representatives - *{Mine Health and Safety Regulations (6.9)}*
(9) Lifting Equipment Operators - *{Mine Health and Safety Regulations (8.5(5)}*
(10) Persons authorized to start, operate and maintain any machine where such starting, operation or maintenance may pose a significant risk to any person - *{Mine Health and Safety Regulations (8.8(3) and 8.9.1(i))}*
(11) Trackless Mobile Machine Operators - *{Mine Health and Safety Regulations (8.10.23.4)}*
(12) First aiders - *{Mine Health and Safety Act, {Chap 2, (7(4)}*
(13) Incident Investigators - *{Mine Health and Safety Act, {Chap 2, (11(5)}*
(14) Employer Representatives on the Health and Safety Committee - *{Mine Health and*

Safety Act, {Chap 3, (34(6)}

(15) Competent and dedicated Health and Safety Officer with working experience in the Mining Industry.

v) Other Inspections of equipment in terms of *{Mine Health and Safety Act, {Chap 2, (7(4)}*
- Fire equipment.
- Lifting equipment.
- Ladders.

c) <u>Safe Working Environment</u>

i) The Principal Contractor must provide conditions for safe operation and a healthy working environment {*Sec 2 (1)}.*

ii) The Principal Contractor must supply all necessary health and safety equipment and health and safety facilities to each employee; and maintain that equipment and those facilities in a serviceable and hygienic condition {*Sec 6(1)}.*

iii) The Principal Contractor must ensure that sufficient quantities of all necessary personal protective equipment are available {*Sec 6(3)*}. The Principal Contractor shall ensure that the users of the PPE shall be trained in the reason for wearing and the correct use and care thereof. The Principal Contractor must also ensure that the PPE is worn accordingly and that such PPE shall be maintained in a good working condition.

iv) The Principal Contractor may not make any deduction from an employee's wages or permit an employee to make any payment to any person, in respect of anything which the employer is obliged to provide or to do in terms of the MHS Act in the interest of the health and safety of an employee {*Chapter 2, Section 24*}.

d) <u>Risk Management – Chapter 2, Section 11</u>

i) In terms of Section 11 (1) of the Mine Health and Safety Act No. 29 of 1996 (as amended) it is mandatory for the employer to identify hazards, to assess the Health and Safety risk to which workers may be exposed while at work, to record these findings and implement reasonably practicable measures to control the significant recorded risk. Therefore, the Principal Contractor is required to ensure that hazards and risks are identified, and a system is implemented in terms of Section 11 (2) to:
- eliminate any recorded risk;
- control the risk at source;
- minimize the risk; and
- in so far as the risk remains:
  - provide for personal protective equipment; and
  - institute a programme to monitor the risk to which employees may be exposed.

ii) The implementation of the risk management strategies as outlined in 5.4.1 shall consider the **HIERARCHY OF CONTROLS** as well the concept of reasonably practicable when prioritising suitable controls. In terms of the hierarchy of control the following needs to be considered during selection:

(1) <u>Elimination</u>
Elimination of a hazard results in elimination of the associated risk. While elimination is the most desirable it is often the least practical, but it's not impossible.

(2) <u>Substitution</u>
Substituting a more hazardous substance with a lesser one reduces the risk.

(3) <u>Engineering/Isolation</u>
Modifying the engineering of the exposure source or interrupting the path between the employee and the exposure source will mitigate the risk.

(4) <u>Administrative</u>
Administrative controls include reduction of exposure times through shift rotation, training, scheduling work at certain low risk times and other measures.

(5) <u>Personal Protective Equipment (PPE)</u>
It is vitally important to note that PPE is the least desirable option and should only be considered after all the above have been investigated or in conjunction with them. The Principal Contractor shall ensure that their responsible persons and employees

are provided with adequate personal protective equipment (PPE) for the work they may perform in accordance with the HIRA outcomes and in accordance with the requirements of chapter 2 of the Mine Health and Safety Act Section 6.

iii) The following hazard identification and risk assessments shall be undertaken:
(1) **Baseline Hazard Identification and Risk Assessment** (**BHIRA**)– the Baseline HIRA must be undertaken before the project/ contract commences and is an overview of the hazards and risks identified on site. The documented baseline HIRA shall form part of the health and safety plan. The Employer, SANRAL, has conducted a Baseline HIRA which must be utilized by the Principal Contractor to develop task specific risk assessments before work commences. **(Refer to Appendix 9: Baseline HIRA - in Part C4: Project Information).**
(2) **Issue Based Hazard Identification and Risk Assessment (IBHIRA)** – Issue Based HIRA's must be undertaken for the various tasks that shall/ will be undertaken during the project/ contract.
(3) Continuous Based Hazard Identification and Risk Assessment (**CBHIRA**) – Continuous HIRA's are mini risk assessments undertaken prior to commencement of a task (Daily Safe Task Instructions (DSTI's)).

iv) Based on the Risk Assessments, the Principal Contractor must develop site-specific rules, policies, procedures and safe operating procedures (SOP's) that shall be applied to manage the health and safety risks on site.

v) All Employees and subcontracted employees must be trained on the HIRA's and:
(1) Where activities have been conducted without performing a risk assessment, the Employer maintains the right to stop all activities until such a risk assessment has been completed.
(2) The Principal Contractor must cause the relevant risk assessments to be reviewed:
- Where changes are made to the scope,
- When an incident has occurred,
- At intervals not exceeding six months.
- As recommended by the Employer based on random site inspections.
(3) Documented HIRA's must be kept on the site at all times and must be readily available for inspection by the DMRE, SANRAL, or any other inspection body as required.

e) <u>Code of Practice (COP) – Chapter 2, Section 9</u>

i) In terms of the requirement stated in Section 9 of the Mine Health and Safety Act No. 29 of 1996 (as amended), the Principal Contractor shall prepare and implement relevant code of practice's as outlined by the MHSA and must comply to the Guideline as issued by the Chief Inspector of Mines.

ii) The Principal Contractor must deliver a copy of every code of practice prepared to the regional office of the Department of Mineral Resources and Energy. At the time of compilation of these H&S Specifications, the following Guidelines are required by the DMRE. As and when, new guidelines are promulgated by the DMRE, the Principal Contractor must ensure that those Code of Practice' are developed and implemented.
(1) Mandatory Code of Practice to Combat Rock Fall and Slope Instability Related Accidents in Surface Mines. {Reference Number: DME 7/4/118 AB4}.
(2) Mandatory Code of Practice for the Safe Use of Conveyor Belt Installations for the Transportation of Mineral, Material or Personnel. {Reference Number: DMR 16/3/2/2-B1}.
(3) Mandatory Code of Practice for Risk-Based Fatigue Management at Mines {Reference Number. DMR 16/3/2/4-B2}.
(4) Mandatory Code of Practice for Emergency Preparedness and Response {Reference Number: DMR 16/3/2/1–A5}.
(5) Mandatory Code of Practice for the Selection and Provision of Personal Protective Equipment for Women in the South African Mining Industry {Reference Number: DMRE 16/3/2/5-A5} (if applicable).
(6) Mandatory Code of Practice on the Right to Refuse Dangerous Work and Leave Dangerous Working Places {Reference Number: DMR 16/3/2/1-A6}.
(7) Mandatory Code of Practice for an Occupational Health Programme (Occupational Hygiene and Medical Surveillance) for Noise {Reference Number: DMRE 16/3/214-

B7}.

(8) Mandatory Code of Practice for an Occupational Health Programme (Occupational Hygiene and Medical Surveillance) on Personal Exposure to Airborne Pollutants {Reference Number: DMR 16/3/2/4-A1}.
(9) Mandatory Code of Practice for an Occupational Health Programme on Thermal Stress {Reference number: DMRE 16/3/214-B6}.
(10) Mandatory Code of Practice on the Minimum Standards of Fitness to Perform Work on a Mine {Reference Number: DMR 16/3/2/3-A3}.
(11) Mandatory Code of Practice for the Management of Medical Incapacity Due to Ill-Health and Injury {Reference Number: DMRE 16/3/2/4-B8}.
(12) Mandatory Code of Practice for Prevention of Fires at Mines {Reference Number: DMR 16/3/2/4-B3}.
(13) Mandatory Code of Practice for the Management of Working in Confined Spaces at Mines {Reference Number: DMR 16/3/2/4-B4}.
(14) Mandatory Code of Practice for Trackless Mobile Machines {Reference Number: DMR 16/3/2/2-B2}.
(15) Mandatory Code of Practice for Minimum Standards on Ground Vibrations, Noise, Air-Blast and Fly rock Near Surface Structures and Communities to be Protected {Reference Number: DMRE 16/3/2/1-A8}.
(16) Mandatory Code of Practice for a Quality Assurance Programme for a System of Occupational Hygiene and Ventilation Engineering Measurements {Reference Number: DMRE 16/3/2/4-B8}.
(17) Guidance Note for the Management of Gender Based Violence and Femicide (GBVF), Safety and Security Challenges for Women in the South African Mining Industry {Reference Number: DMRE 16/3/2/1-A7}.
(18) Guidance Note for the Management of Latent Tuberculosis Infection in the South African Mining Industry {Reference Number: DMRE 16/3/2/3-B5}.

iii) All Employees must be trained on the COP's relevant to their work area. Proof of such training must be kept on site at all times.

iv) All COP's must be kept on site at all times and must be readily available for inspection by the DMRE, SANRAL, or any other inspection body as required.

v) In addition to the periodic review required by Section 11(4) of the MHSA, the COP should be reviewed and updated, if necessary:
- After a serious incident/ accident to which the COP relates and is applicable to the COP or part thereof.
- Significant changes to systems, procedures, processes, methods, plant, equipment and materials occur.

f) <u>Health and Safety Training – Chapter 2, Section 10</u>

i) In terms of the requirement stated in Section 10 of the Mine Health and Safety Act No. 29 of 1996 (as amended), the Principal Contractor must provide health and safety training to equip employees with any information, instruction, training or supervision that is necessary to enable them to perform their work safely and without risk to health; and to ensure that every employee becomes familiar with work-related hazards and risks and the measures that must be taken to eliminate, control and minimize those hazards and risks.

ii) The Principal Contractor must ensure that there is an established and effective procedure for defining individual employee qualifications for all positions (Training Needs Analysis) and ensuring that appointments are made against these criteria.

iii) The health and safety plan must ensure that minimum training needs are satisfied before commencing on the project.

iv) All employees who will work on the mine must be trained and competent. Employees formally appointed to perform a certain duty must be in possession of a training certificate (where applicable), and obtained from a registered training provider for e.g., MQA.

v) Where semi-skilled employees are employed, adequate supervision must be available to maintain standards of work and to ensure compliance with MHSA and all other applicable standards on the Project/ Contract.

vi) Supervisors shall be required to have attended an MHSA Legal Liability training course and any other requirement the Employer imposes in their Specification.

vii) All employees must as a minimum have received site specific safety induction training before the project/ contract begins, repeated on an annual basis and if an employee has been off the site for 1 month or more.

viii) All employees must receive training on performing continuous hazard identification and risk assessments before any task commences.

ix) The Principal Contractor shall, in particular, ensure that all his users or operators of any materials, machinery or plant equipment are properly trained in the use of such materials, machinery or plant equipment.

x) The Principal Contractor shall ensure that all its employees who are in possession of valid licenses and/or certificates of the correct code where machinery, plant or equipment is utilized, that such proof of these licenses and/or certificates shall be part of the health and safety file. This must be scrutinised on a regular basis to ensure compliance and validity.

xi) The training standards apply to both Principal Contractor employees and sub-contractor employees.

xii) The following training shall also be undertaken:
(1) Induction Training for all persons entering the site, including sub-contractors and visitors.
(2) Daily training in the form of safety/toolbox talks.
(3) All employees must be trained on Chapter 2, Section 20 where it states that an employee may appeal to the Medical Inspector against:
- a decision that the employee is unfit to perform any particular category of work; or
- any finding of an occupational medical practitioner contained in an exit certificate prepared in terms of Chapter 2, Section 17 of the MHSA. An appeal may be lodged with the Medical Inspector within 30 days of the relevant decision or finding.

xiii) The following persons responsible for various tasks/ activities whereby a competency is required must be trained/ qualified and evidence of such training/ qualification must be available on the site:
(1) Safety Representatives (Trained on a MQA Skills programme)
(2) User of Lifting Equipment and Lifting Tackle/ Basic rigging and slinging {MHSR Chapter 8 (8.5(5))}
(3) Fire Fighters
(4) First Aiders (a minimum 10% of the workforce is required) (Trained by an MQA Service Provider for the mining industry)
(5) Incident Investigator {*MHSA 11 (5)}*
(6) TMM Operators *{MHSR Chapter 8 (8.10.23 (6))}*
(7) Blaster {*MHSR Chapter 22 (22.4.1 (1) and MHSR Chapter 4 (4.4.1 and 4.4.2)}*
(8) Blasting Assistant *{MHSR Chapter 22 (22.4.1 (2)} and MHSR Chapter 4 (4.4.3)}*
(9) Competent Person for Examine and Make Safe *{MHSR Chapter 14 (14.1)}*
(10) Mine surveyor *{MHSR Chapter 17 (17.1)}*
(11) Occupational Medical Practitioner *{MHSA Chapter 2, (13.3(a))}*
(12) Occupational Hygienist *{MHSA, Chapter 2, (12(1)}*
(13) Rock Engineer *{MHSR Chapter 14 (14.1(8)}*
(14) Magazine Master *{MHSR Chapter 4 (4.1(2)}*

xiv) Records of attendance shall be part of the health and safety file, as well as a copy of the contents of the said induction and training.

g) <u>Occupational Hygiene Monitoring – Chapter 2, Section 12</u>

i) In terms of Section 12 (1) of the Mine Health and Safety Act No. 29 of 1996 (as amended), the Principal Contractor must engage the part-time or full-time services of a person qualified in occupational hygiene techniques to measure levels of exposure to hazards at the mine.

ii) The Competent person referred to 5.7.1 must be in possession of the following:
(1) Intermediate Certificate in Mine Environmental Control, issued by the Chamber of Mines of South Africa, and be certified as an Occupational Hygienist by the Southern African Institute for Occupational Hygiene; or
(2) Certificate in Mine Environmental Control, issued by the Chamber of Mines of South Africa.

iii) The Principal Contractor must keep a record of all occupational hygiene measurements as outlined in terms of 5.7.1 in a manner that can be linked as far as practicable to each employee's record of medical surveillance.

iv) The Principal Contractor must ensure that the occupational exposure to health hazards of employees is maintained below the limits set out in Schedule 22.9(2)(b) **(Table 1 below)**.

Table 1: Limits of Health Hazards

(i)	**Noise**
	(1) Noise Exposure: 85dBLAeq,8h
	(2) Peak Sound Level: 135 dB(A)
(ii)	**Thermal Stresses**
	(1) Wet Bulb (°C): 32.5
	(2) Dry Bulb (°C): 37
	(3) Mean Radiant Temperature (°C): 37
	(4) Equivalent Chill Temperature (°C): 4

(1) System of Occupational Hygiene Measurements in terms of MHS Regulations – Chapter 9.2
The Principal Contractor must establish and maintain a system of occupational hygiene measurements, as contemplated in section 12, of all working places where the following hazard limits prevail:
- airborne pollutants - particulates ≥ 1/10 of the occupational exposure limit; - gases and vapours ≥ 1/2 of the occupational exposure limit:
- thermal stress - heat >25,0°C wet bulb and/or >32,0°C dry bulb and/or >32,0°C mean radiant temperature; - cold < 10,0°C equivalent chill temperature; and
- noise - ≥82dBL Aeq.8h.

(2) Report to the Principal Contractor in terms of MHS Regulations – Chapter 9.3
The competent person engaged by the Principal Contractor in terms of section 12(1) must, as part of the compliance with section 12(2)(b), report to the Principal Contractor on:
- the occupational hygiene risk assessment, with specific reference to planning, design, implementation and management of occupational hygiene at the mine.
- the occupational hygiene hazards that may cause illness or adverse health effects to persons, assess the results in terms of the implementation of control systems and the management thereof, and recommend remedial actions to the Principal Contractor.

(3) Provision of potable and palatable water in terms of MHS Regulations – Chapter 9.4
The Principal Contractor must ensure that sufficient potable and palatable water, which comply with the requirements set out in Schedule 22.9(2)(c) (**Table 2 below**), is readily available to all employees and clearly identified as drinkable. Where water is unsafe for human consumption, it must be so indicated by means of adequate signage.

Mine Health and Safety Regulations
Table 2: Schedule 22.9(2)(c). Potable Water

- Quality

Potable Water Quality	Physical Requirements	Chemical Requirements	Conductivity Requirements
Allowable Limit	Odour} and} Not to be Taste} Objectionable	pH 5.5 min 9.5 max	
Recommended Limit	Turbidity 1 (NTU) Colour 20mg/l of platinum	pH 6.0 min 9.0 max	70 ms/m
Maximum Allowable Limit	Turbidity 5 (NTU) Colour not specified		
Maximum Limit			300 ms/m

(NTU) = Expressed in Nephelometric turbidity units

- Macro, Micro Determinants and Bacteriological Limits

Determinants	Formula	Maximum Allowable Limit
Macro Determinants		**mg/l**
Total hardness	$CaCO_3$	650
Magnesium	Mg	100
Sodium	Na	400
Chloride	Cl	600
Sulphate	SO_4	600
Nitrate + nitrite	N	10
Fluoride	F	1.5
Zinc	Zn	5.0
Micro Determinants		**micro gram/l**
Arsenic	As	300
Cadmium	Cd	20
Copper	Cu	1000
Cyanide	CN	300
Iron	Fe	1000
Lead	Pb	100
Manganese	Mn	1000
Mercury	Hg	10
Phenolic Compounds	Phenol	10
Selenium	Se	50
Bacteriological Limits		
Total coliform bacteria count		5 per 100 ml
Faecal coliform bacteria count		NIL per 100 ml

Standard plate count		Not specified

- Other Constituents

  The water shall not contain any other constituents in concentrations, which may render it unsuitable for use as drinking water.

(4) Report to Regional Principal Inspector in terms of MHS Regulations – Chapter 9.7
The Principal Contractor must submit to the regional principal inspector of mines, on forms 21.9(2)(a); 21.9(2)(b); 21.9(2)(c) and 21.9(2)(d), 21.9(2)(e) and 21.9(2)(f) prescribed in MHSA Chapter 21, and within 60 days from the end of the relevant reporting period as indicated on each form, reports which contain information on the airborne pollutant, thermal stress and noise aspects of the system of occupational hygiene measurements, established and maintained in terms of Regulation 9.2(2).

(5) Respiratory Protective Equipment in terms of MHS Regulations – Chapter 9.8
The Principal Contractor must ensure that all respiratory protective equipment used at a mine, comply with the South African bureau of Standards Code of Practice, Homologation of Respiratory equipment SABS 0338.

(6) Illumination of Working Places in terms of MHS Regulations – Chapter 9.9
The Principal Contractor must ensure that the illumination at all working places is sufficient to enable employees, who have conformed with the requirements of the vision tests conducted in terms of the Guideline for the Minimum Standards of Fitness to Perform work at a Mine, to perform their work safely.

h) Occupational Medical Surveillance – Chapter 2, Section 13

i) The Principal Contractor must establish and maintain a system of medical surveillance of employees exposed to health hazards. *{MHSA Chapter 2, (13.1)}*

ii) The Principal Contractor who establishes or maintains a system of medical surveillance must:
- engage the part-time or full-time services of:
  - an occupational medical practitioner; and
- keep a record of medical surveillance for each employee exposed to a health hazard. *{MHSA Chapter 2, (13.3)}*

iii) The Occupational Medical Practitioner (OMP) outlined in 5.8.2 must be:
- A person registered with the Health Professions Council in any of the following three categories:
  - as an ear, nose and throat specialist;
  - in speech therapy and audiology; or
  - as an occupational medical practitioner; or
- A person qualified in audiometric techniques from an institution registered with the relevant Education and Training Quality Assurer (ETQA) registered in terms of the South African Qualifications Authority Act (Act No. 58 of 1995.
- A person registered as an audiologist with the Health Professions Council.

iv) The Principal Contractor must ensure that the appointment of the OMP must be submitted in writing to the Principal Inspector of Mines, within seven days of the appointment of the occupational medical practitioner. *{MHSA Chapter 2, (13.4A)}*

v) The system of medical surveillance must:
- be appropriate, considering the health hazards to which the employees are or may be exposed.
- be designed so that it provides information that the Principal Contractor can use in determining measures to:
  - eliminate, control and minimize the health risk and hazards to which employees are or may be exposed; or
  - prevent, detect and treat occupational diseases; and
- consist of an initial medical examination and other medical examinations at appropriate intervals. *{MHSA Chapter 2, (13.2 (a, b and c))}*

vi) The system of medical surveillance for Noise must consist of a baseline audiogram, periodic audiograms and an exit audiogram. *{MHSA Chapter 11, (11.4)}*

vii) The system of medical surveillance for Crystalline Silica Dust must consist of an initial examination, periodic examinations and an exit examination and it must consist of the completion of an appropriate respiratory questionnaire, a cardio-respiratory examination, including:
- a full-size chest x-ray; and
- a lung function test. *{MHSA Chapter 11, (11.7)}*

viii) The Principal Contractor must retain the records of the hygiene measurements, medical fitness and all service records until the mine closes; and when the mine closes, to deliver those records to the Employer, SANRAL. SANRAL shall thereafter submit those reports to the Medical Inspector. *{MHSA Chapter 2, (13.8 (a and b))}*

ix) The Principal Contractor must keep a service record of employees at the mine who perform work in respect of which medical surveillance is conducted. When an employee ceases to be employed at the mine, a copy of the DMR 276 Record of Hazardous Work Form must be attached to a copy of the Exit Medical Certificate and submitted to the Medical Inspector. *{MHSA Chapter 11, (11.3) and (11.9)}*

x) On closure of the site, the Principal Contractor must submit a copy of all medical records for each employee, for the period worked on the site to the Employer, SANRAL. The Employer, SANRAL, must keep such records for 40 years.

xi) The OMP must compile an Annual Report covering employees at that mine, giving an analysis of the employees' health based on the employees' records of medical surveillance, without disclosing the names of the employees. *{MHSA Chapter 11, (11.2)}*

xii) The Principal Contractor must submit the Annual Medical reports to the Medical Inspector by no later than the last day of February, each year, using DMR 165 Forms. *{MHSA Chapter 11, (11.2)}*

xiii) Should an employee's employment at the mine be terminated for any reason, the Principal Contractor must arrange an exit medical examination of the employee, and must be held before, or within 30 days after, termination of employment. A copy of the exit medical examination must be provided to the employee. {*MHSA Chapter 11, (11.3)}*

xiv) If any employee is declared unfit to perform work as a result of an occupational disease, the Principal Contractor must conduct an investigation in terms of Chapter 2, Section 11(5) within 30 days from the date of diagnosis. *{MHSA Chapter 2, (13.6)}*

xv) The Principal Contractor must report any Occupational Disease to the Principal Inspector of Mines within 30 days from the date of diagnosis, using the DMR 231 Health Incident Report Form. *{MHSA Chapter 11, (11.8)}*

xvi) In terms of Chapter 2, Section 18 of the MHSA, the Principal Contractor must pay the costs of all clinical examinations and medical tests performed in terms of this Act.

i) <u>Health and Safety Representatives and Committees – Chapter 3, Section 25</u>

i) If the Principal Contractor employs 20 or more employees (including sub-contractors who are permanently on the site), then a health and safety representative for each shift at each designated working place must be nominated, elected and appointed.

ii) To qualify to serve as a health and safety representative, an employee must:
- be employed in a full-time capacity in the designated working place; and
- be acquainted with conditions and activities at the designated working place. {*MHSA Chapter 3, Section 28.1 (a and b)}*

iii) The employees in a designated working place may elect from among themselves health and safety representatives.

iv) The Principal Contractor shall ensure that the elected safety representatives are provided with Training for Occupational Health and Safety Representative. This training is based on the Skill Programme Occupational Health and Safety Representative (MQA/SP/0120/10).

v) The Manager must within 7 days of election, appoint in writing every employee elected as a health and safety representative. {*MHSR, Chapter 6 (6.9(a)}*

vi) The Principal Contractor must provide every health and safety representative with suitable means of identification as a health and safety representative and prominently and conspicuously display the photograph and name of the health and safety representative at an appropriate place at the mine. {*MHSR, Chapter 6 (6.9 (b and c)}*

vii) Health and Safety Representatives shall automatically be considered as H&S Committee Members.

viii) The H&S Committee must meet together at least once a month to discuss H&S issues and corrective measures to be implemented.

j) <u>Electrical – MHS Regulations Chapter 3</u>

i) The Principal Contractor must ensure that the design of all electrical apparatus and electrical reticulation systems is approved by a competent person, that all electrical apparatus is under the control of a competent person (appointment as Electrical Inspector); and all electrical apparatus are installed, repaired and maintained by a competent person.

ii) The Principal Contractor must ensure that no person suffers any electrical shock, arc flash or electrocution and that when work is to be performed on electrical equipment/ installations, a lockout procedure must be followed.

k) <u>Explosives – MHS Regulations Chapter 4 (also refer to Explosives Act 15/2003)</u>

i) All blasting and security of explosives must comply with Chapter 4 of the MHS Regulations, Explosives Act and Regulations No. 26 of 1956 and the Explosives Act No. 15 of 2003.

ii) If the Principal Contractor requires explosives to be stored on the site for blasting purposes, then reasonably practicable measures must be taken to prevent persons not authorised by the Principal Contractor from gaining access or removing explosives from the site. {*MHSR Chapter 4 (4.1.1 (a, b and c)}*

iii) The Principal Contractor must ensure explosives are stored in an Explosives Magazine which is securely locked and must only be accessed by a Responsible Person {*MHSR Chapter 4 (4.1.2 (a, b and c)*} so as to facilitate the safe and secure receipt, storage and issuing of explosives.

iv) The Principal Contractor must ensure that a written procedure is prepared and implemented, to prevent persons from being exposed to the significant risks associated with the receipt, storage, issuing and transportation, inadvertent initiation and the deterioration of explosives that is stored in the Explosives Magazine. This procedure must include Storage, Issuing, Transportation, Destruction of Explosives, Sleep over of Blasts and Secondary Blasting. {*MHSR Chapter 4 (4.2) and Chapter 4.16 (5, 6 and 7)}*

v) Blasting must only be undertaken by a Competent Person as a Blaster who is a holder of the Blasting Certificate or a Rockbreaker Certificate *{MHSR Chapter 22 (22.4.1 (1)}* and who has been appointed in writing by the CEO/ Managing Director of the Company. *{MHSR Chapter 4 (4.4.1 and 4.4.2)}*

vi) The Principal Contractor must also appoint other Competent Persons as Blasting Assistants to assist the Blaster with blast preparation *{MHSR Chapter 4 (4.4.3)*}. The Blasting Assistant must also undergo training, be assessed and found competent against a skills programme issued by the Mining Qualifications Authority. *{MHSR Chapter 22 (22.4.1 (2)} {(Skills Programme registered with the MQA (SP-CLA-G017)}*

vii) The Principal Contractor must ensure that a strict procedure is developed for warning, evacuating and compensating people who have any chance of being in the 500- metre fly

rock danger zone during blasting operations as per the *EMP and MHSR Chapter 4 (4.16 (2*).

viii) The Principal Contractor shall take reasonable measures to ensure that when blasting takes place, air and ground vibrations, shock waves and fly material are limited to such an extent and at such a distance from any building, public thoroughfare, railway, power line or any place where persons congregate to ensure that there is no significant risk to the health or safety of persons. *{MHSR, Chapter 4 (4.7)}*

ix) Should it be identified that blasting will take place within a horizontal distance of 500 meters of any public building, public thoroughfare, railway line, power line, any place where people congregate or any other structure, which it may be necessary to protect in order to prevent any significant risk, the following measures must be taken by the Principal Contractor *{MHSR Chapter 4 (4.16(2))}:*

- a risk assessment has identified a lesser safe distance and any restrictions and conditions to be complied with;
- a written application is submitted to the Principal Inspector of Mines accompanied by the following documents for approval:
  - a sketch plan indicating the distance from the blasting area to the affected structures;
  - the risk assessment;
  - a proof of consultation with the owners of the affected structures; and
  - restrictions and conditions.
- a written approval has been granted by the Principal Inspector of Mines; and
- any restrictions and conditions determined by the Principal Inspector of Mines are complied with.

x) Blasting shall be conducted during daylight hours on regular Business Days only and shall not be conducted on weekends or public holidays as per the EMP.

xi) The Principal Contractor shall ensure that all blasting activities are recorded and records to be kept on the site.

l) <u>Machinery and Equipment – MHS Regulations Chapter 8</u>

i) The Principal Contractor must ensure that only persons authorised in writing by the CEO/ Managing Director to do so, operate lifting equipment and lifting tackle. *{MHSR Chapter 8 (8.5(5)}*

ii) The Principal Contractor must ensure that the installation, use, maintenance, inspection, testing and keeping of records of lifting equipment and lifting tackle are done in accordance with a written operating procedure prepared and implemented for that purpose. *{MHSR Chapter 8 (8.5(2)}*

iii) All lifting equipment and lifting tackle are inspected on a 3 monthly basis by an AIA and load tests are undertaken on annual basis. Records of such inspections must be kept at the site for inspections and verification.

iv) The Principal Contractor must ensure only persons authorized in writing by the Manager to start, operate and maintain any machine where such starting, operation or maintenance may pose a significant risk to any person (Refer to Appointment Templates).

v) The Principal Contractor must ensure that machinery is only operated if all installed safety devices are operational and functional. {*MHSR, Chapter 8 (8.8.3 (d))}*

vi) The Principal Contractor must ensure that persons in close proximity to moving parts of machinery do not wear or are not permitted to wear clothing or anything else that can be caught in such moving parts. {*MHSR, Chapter 8 (8.8.3 (e))}*

vii) The Principal Contractor must ensure that pre-start warning devices, such as audible warning devices, the delay time must be determined by risk assessment with a minimum of a ten second time delay, are fitted to such machinery and used to warn persons that such machinery is about to be set in motion. {*MHSR, Chapter 8 (8.8.3 (f))}*

viii) The Principal Contractor must prepare and implement a written lockout procedure that covers all sources of mechanical, electrical, hydraulic, chemical or other source of energy, to ensure that such source of energy is effectively locked out and de-energised before any person works on such machinery. {*MHSR, Chapter 8 (8.8.3 (g)) and MHSR, Chapter 8 (8.10.16)}*

ix) The Principal Contractor must take measures to prevent any person from coming into contact with any moving part of machinery or any equipment attached thereto by implementing physical barrier or guards. {*MHSR, Chapter 8 (8.8.4)}*

x) The Principal Contractor shall ensure that all services, maintenance and repairs to diesel-powered equipment are performed by a competent person. (Refer to Appointment Templates) {*MHSR, Chapter 8 (8.8.5 (b))}*

xi) The Principal Contractor shall ensure that all areas where diesel fuel is stored and where fuelling is carried out are clearly marked and that measures are in place to prevent spillage, contamination and fire. {*MHSR, Chapter 8 (8.8.5 (c))}*

xii) The Principal Contractor must ensure that the designated sections of a conveyor belt installation are to be guarded, the power supply and all sources of stored energy of a stationary conveyor belt installation are isolated, made safe and locked out during either repairs, maintenance or cleaning of spillage in the designated sections. {*MHSR, Chapter 8 (8.9.1 (a and b))}*

xiii) The Principal Contractor must ensure that the functionality of safety devices relating to the conveyor belt installation are tested once a week not exceeding ten days. {*MHSR, Chapter 8 (8.9.8 (a))}*

xiv) The Principal Contractor must ensure that persons are prevented from being injured as a result of collisions between diesel powered trackless mobile machines. *{MHSR, Chapter 8 (8.10.2)}*

A risk assessment must be undertaken on the hazards and risks of operating machinery in the vicinity of pedestrians and measures must be implemented to reduce any significant risk identified. A Traffic Management Plan (TMP) must be developed and implemented to separate pedestrians from moving machinery.

xv) The Principal Contractor must ensure that persons are prevented from being injured as a result of brake failure. All trackless mobile machines must be operated with adequate and effective braking systems, all braking systems are adequately and routinely tested for intended functionality, and all braking systems are regularly maintained. Static brake tests must be undertaken on a daily basis at the start of the shift, without a load and again with a load. Thes details of the date and time of the brake test must be recorded on the daily pre-start checklist for that specific machine. Dynamic tests of braking systems must be undertaken on a six-monthly basis, and results of such tests must be recorded. Pre-start checklists and Dynamic test results must be kept on the site for inspections and verification. {*MHSR, Chapter 8 (8.10.7*)}

xvi) Where remote controlled trackless mobile machines are used on the site, the Principal Contractor must ensure that all wireless remote-control device comply with the relevant requirements of SANS 61000-4-2. {*MHSR, Chapter 8 (8.10.19)}*

xvii) The Principal Contractor must ensure that the design, construction and maintenance of roadways are appropriate for the type and category of trackless mobile machines used on the site and that it also complies with the EMP for the site. {*MHSR, Chapter 8 (8.10.22)}*

xviii) The Principal Contractor must ensure that any persons who shall operate Trackless Mobile Machinery is physically fit to operate such machinery, undergoes a training program for operation of the specific machine, assessed for competency by a Competent Person, and obtains a licence to operate the machine. {*MHSR, Chapter 8 (8.10.23 (1, 2, 3 and 7))}*

xix) The Principal Contractor must ensure that only operators, who are assessed to be competent are authorised in writing by the responsible Engineer to operate the specific

machinery that he/ she has been trained and found competent for. (Refer to Appointment Templates) {*MHSR, Chapter 8 (8.10.23 (4))}*

xx) The Principal Contractor must ensure that if an operator has not operated a trackless mobile machine for a period of two years, such operator must be re-assessed to be competent by a competent person prior to being issued with a new license. {*MHSR, Chapter 8 (8.10.23 (6))}*

xxi) It is mandatory that the Operator of the TMM have their originally issued license on their person whilst operating any trackless mobile machine. {*MHSR, Chapter 8 (8.10.27*)}

xxii) The Principal Contractor must ensure that the operator of the TMM physically inspects and ensures that the brakes, lights and any other defined safety features and devices are functioning as intended prior to using the TMM. {*MHSR, Chapter 8 (8.10.24 (1*))}

xxiii) The Operator must complete a pre-use checklist at the beginning of the shift. For each component, feature or functionality, the check list must clearly indicate the pre-established criteria under which the trackless mobile machines may or may not be put into motion. *{MHSR, Chapter 8 (8.10.23 (2))}*

m) <u>Protection of the Surface and Workings – MHS Regulations Chapter 14</u>

i) The Principal Contractor shall not permit any person, other than those persons examining and making safe, to enter the quarry pit, access ways, travelling ways or places where persons need to travel or work at the mine until such areas are declared safe by a competent person for examine and make safe. *{MHSR Chapter 14 (14.1 (1))} (Refer to Appointment Templates)*

ii) The Examine and Make Safe Inspection must be undertaken on a daily basis prior to work being performed. {*MHSR Chapter 14 (14.1 (2))}*

iii) The Records of such inspections must be kept on the site for at least three months for inspections and verification. {*MHSR Chapter 14 (14.1 (3))}*

iv) The Principal Contractor must ensure that the input of a competent person (Rock Engineer) is properly and timeously considered and integrated into mine design, planning and operations. {*MHSR Chapter 14 (14.1 (8))}* (Refer to Appointment Templates)

v) The Principal Contractor must obtain the service of a qualified Rock Engineer who must visit the site and undertake an inspection of the workings of the quarry pit on a quarterly basis and provide a report of his findings to the Principal Contractor.

n) <u>Emergency Preparedness and Response – MHS Regulations Chapter 16</u>

i) The Principal Contractor must ensure that in conjunction with the Code of Practice for Emergency Preparedness and Response, emergency procedures must be prepared and implemented.

ii) Based on a risk assessment, an emergency evacuation plan must be developed and implemented to assist in the event of emergencies. The Emergency Evacuation Plan must also indicate the location of first aid boxes, firefighting equipment and spill kit.

iii) A list of Key Personnel to be contacted during an emergency must be developed. This list must include as a minimum the names and contact details of the:

- Mine manager
- First Aiders
- Fire Fighters
- Emergency Coordinator
- Security
- Ambulance
- Hospital
- Police
- Fire Department

- Spill Clean Up Department.

iv) This plan and list must be displayed in conspicuous places around the site.

v) The Principal Contractor must ensure that an emergency siren is available and that the emergency assembly point is clearly signposted as the “Emergency Assembly Point”.

vi) Emergency evacuation mock drills must be undertaken at a minimum of a six-monthly basis to assess the effectiveness of the emergency procedures and plans. The plan must be updated should new hazards or risks be identified, or should it be observed that the plan is no longer effective. Records of drills must be part of the health and safety plan.

vii) All employees, inclusive of permanently employed sub-contracted employees must be trained on these procedures and plans.

viii) Emergency Procedures and Plans must be included in Induction Training.

ix) Where visitors are present on site, they must be informed of the emergency protocol that shall be followed in the event of an emergency. Visitors who will not be working on site, must be accompanied by an employee of the Principal Contractor.

x) The Principal Contractor shall provide first aid box/es and appoint, in writing, First Aider(s) for the project/ contract in line with the results of the Contractor’s risk assessment for emergencies. The appointed First Aider(s) are to be provided with accredited first aid training (minimum of Level 1) before working on site. Valid certificates are to be part of the health and safety file.

xi) The Principal Contractor must ensure that a First Aider is always available on the site, for every shift.

xii) The Principal Contractor must ensure that at least 1 first aider per 10 employees is selected, trained and appointed in writing (refer to appointment templates).

xiii) First Aid box/es must be adequately stocked at all times, accessible and be controlled by a qualified First Aider.

xiv) The Principal Contractor shall have a stretcher on site to be used in case of a serious incident.

xv) The Principal Contractor must ensure that the First Aider checks:
- Perishables are checked and replaced when expired.
- Stock per content list and in line with the type of emergencies identified in the risk assessment.
- Signage to be in place.
- To be numbered and sealed with name of first aider on or above the First aid box.
- Dressing logbook to be available in the first aid box.
- First Aid Contents Register to be checked by a First Aider.

xvi) The Principal Contractor must ensure that all appropriate measures are taken to avoid the risk of fire. A Fire Risk Assessment must be undertaken to identify all fire risks and measures are to be implemented to eliminate the risk, and where it cannot be eliminated, control measures must be implemented.

xvii) The Principal Contractor must ensure that:
- Sufficient and suitable storage is provided for flammable liquids, solids and gases;
- Smoking is prohibited and notices in this regard are prominently displayed in all places containing readily combustible or flammable materials;
- Only suitably protected electrical installations and equipment, including portable lights, are used;
- There are no flames or similar means of ignition;
- Oily rags, waste and other substances liable to ignite are without delay removed to a safe place; and combustible materials do not accumulate on the site;

- Welding, flame cutting and other hot work are done only after appropriate precautions have been taken to reduce the risk of fire;
- Suitable and sufficient fire-extinguishing equipment is placed at strategic locations based on a fire hazard risk assessment, and that such equipment is maintained in a good working order;
- The fire equipment is inspected by a competent person (*refer to appointment templates*), who has been appointed in writing for that purpose, in the manner indicated by the manufacturer thereof;
- A sufficient number of workers are trained in the basic use of fire- extinguishing equipment (*refer to appointment templates*);
- Visual symbolic signs are provided to clearly indicate the location of the fire extinguishers and escape routes in the case of a fire; and
- The means of escape is kept clear at all times.

xviii) The Principal Contractor must ensure that a Fire Fighter is always available on the site, for every shift.

xix) The Principal Contractor shall ensure that any emergencies that occur on the site are logged on the Incident/ Accident Register. This register must be part of the health and safety file and provided to the Employer, Inspectorate or any Auditor for inspection if requested.

o) <u>Surveying, Mapping and Mine Plans – MHS Regulations Chapter 17</u>

i) The Principal Contractor must appoint a competent person to be in charge of surveying, mapping and mine plans at the mine. *{MHSR Chapter 17 (17.2) (a))} (Refer to Appointment Templates)*

ii) The Principal Contractor must submit a copy of the appointment to the Regional Office of the DMRE for attention of the Principal Inspector of Mines within 7 days of the appointment being made. {*MHSR Chapter 17 (17.2) (b))}*

iii) Should the Competent Person for Mine Surveying be appointed at another mine, the Principal Contractor shall apply for written permission from the Chief Inspector of Mines for Permission for the Competent Person for Mine Surveying to be in Charge of more than two or more mines. {*MHSR Chapter 17 (17.2) (d))}*

iv) The Principal Contractor must ensure that the Competent Person for Mine Surveying is at all times aware of:
- workings which are being advanced;
- surface structures or objects which may be affected by mining;
- workings which are being finalized, in order to allow the final surveying thereof;
- any place on surface where there is, or is likely to be, a dangerous accumulation of fluid material. *{MHSR Chapter 17 (17.5 (a, b, c and d))}*

v) The Competent Person for Mine Surveying must in writing notify the Principal Contractor, which notification must be dated, of any workings being advanced to come within:
- a horizontal distance of 100 (one hundred) metres from reserve land, buildings, roads, railways, dams, waste dumps or any other structure whatsoever including structures beyond the mining boundaries, or from any surface, which it may be necessary to protect in order to prevent any significant risk.

vi) 50 (fifty) metres from any excavation, workings, restricted area or any other place where there is, or is likely to be a dangerous accumulation of fluid material, noxious or flammable gas. Such notification must include a sketch plan giving the distance to such place from the nearest survey station. *{MHSR Chapter 17 (17.6 (a and b))}*

vii) Should the Principal Contractor at any time become aware of an issue as stated in (o)(vi) above, no mining operations are to be carried out, unless a lesser distance has been determined safe by risk assessment and all restrictions and conditions determined in terms of the risk assessment are complied with. *{MHSR Chapter 17 (17.7 (a, b, c and d))}*

viii) The Principal Contractor must then provide the Chief Inspector of Mines with the distance and accompanying restrictions and conditions for comment. *{MHSR Chapter 17 (17.9 (a))}*

ix) The Principal Contractor must ensure that no mining takes place beyond nine metres of the boundary line. {*MHSR Chapter 17 (17.11 (b))}*

x) The Principal Contractor must ensure that the mine plans are at all times correct to within 12 (twelve) months, except for the plans showing the workings which must at all times be correct to within 3 (three) months. {*MHSR Chapter 17 (17.14 (h))}*

xi) The Principal Contractor must ensure that the Competent Person for Mine Surveying constructs accurate plans, which are readily available to the Principal Contractor. Such plans must cover all restricted areas and the areas where the surface infrastructure and workings occur. {*MHSR Chapter 17 (17.15 (a))}*

xii) The Principal Contractor must provide the Principal Inspector of Mines annually with updated copies of the plans. In the case of computer aided draughting (CAD), legible plans in book form (approximately A3 size) or a copy of the index key plan, indicating additionally the outlines of the workings as well as the surface infrastructure, and a copy of the back-up must be provided. {*MHSR Chapter 17 (17.26)}*

xiii) The Principal Contractor must ensure that, before the mine is closed, that the plans and departmental copies thereof are brought up to date by the Competent Person for Mine Surveying and that the Director: Mine Surveying is notified to inspect such plans and the copies thereof for approval. {*MHSR Chapter 17 (17.29 (a))}*

xiv) The Principal Contractor must also ensure that on closure, where the surface has been disturbed by mining, a rehabilitation plan is drawn, to a legible scale, showing the final surface contours and established water courses and that the Director: Mine Surveying is notified to inspect such plan for approval. {*MHSR Chapter 17 (17.29 (b))}*

xv) The Principal Contractor must ensure, where rehabilitation is completed after cessation of mining, that the surface and rehabilitation plans are updated upon such completion. *{MHSR Chapter 17 (17.31)}*

p) <u>Accident and Incident Management and Reporting – MHS Regulations Chapter 23</u>

i) <u>The Employer SANRAL, requires that the Principal Contractor works towards Zero Harm and Zero Fatalities. The Principal Contractor should have a clear objective and target to obtain zero injuries and fatalities for the duration of the project/contract and such an objective must be communicated to all employees.</u>

ii) The Principal Contractor shall promote Health and Safety, by means of internal training, incident reporting, including near misses, environmental incidents and non-conformances.

iii) The Principal Contractor shall ensure that a suitable Incident/ Accident Procedure is prepared and implemented which may include methods for reporting and investigating accidents, incidents and near misses and the relevant forms that may be utilised for such investigations. This Procedure must contain the names of all emergency contact persons and contact numbers and the process to be followed in the event of various emergency scenarios.

iv) The Principal Contractor shall ensure that each accident / incident will be investigated by a Competent Investigation Team, root causes are to be determined, and the corrective/preventative measures shall be determined by the Root Causes identified. Corrective/ preventative actions shall be formulated and submitted with the monthly register to the Employer, SANRAL.

v) The Principal Contractor shall ensure that the recommended corrective and preventative actions are implemented and embedded in their risk control framework.

vi) The Principal Contractor must discuss the incident with all employees to prevent a recurrence of the incident or to prevent the near miss from becoming an incident in future.

vii) The Principal Contractor shall develop an Incident/ Accident Register and keep it up to date at all times. The register must be submitted to the Employer, SANRAL, on a monthly basis to inform the employer of incidents that have taken place on the site. This register must be part of the health and safety file and be made available to the Inspectorate or any Auditor for inspection if requested.

viii) The Employer, SANRAL, reserves the right to conduct investigations into any incidents that they deem fit, and the Principal Contractor is required to provide full co-operation in this regard.

ix) The Employer, SANRAL, may request the Principal Contractor to provide additional risk control measures, as they deem it necessary.

x) The Principal Contractor shall be responsible to inform the relevant authorities (i.e. Department of Mineral Resources and Energy, Department of Water and Sanitation, Department of Environmental Affairs etc) of any serious or reportable incidents/ accidents as per chapter 23 of the Mine Health and Safety Act which may occur in terms of the applicable legislation or other applicable legislation.

xi) Where an incident/ accident is reportable to a Regulatory Authority, the Principal Contractor must firstly notify the Employer, SANRAL, of the nature of the incident/ accident and provide a copy of the Investigation Report.

xii) The Principal Contractor must ensure that the Incident/ accident is reported to the relevant authority and that all correspondence is in writing and a copy of such must be part of the health and safety file. *{MHSR Chapter 23}*

xiii) The Principal Contractor must take note of the following incidents/accidents that is to be reported to the Principal Inspector of Mines: *{MHSR Chapter 23 (23.1) (a, b, c, d and e)}*
(1) the death of any employee;
(2) an injury, to any employee, likely to be fatal;
(3) unconsciousness, incapacitation from heatstroke or heat exhaustion, oxygen deficiency, the inhalation of fumes or poisonous gas, or electric shock or electric burn accidents of or by any employee and which is not reportable in terms of paragraph (4).
(4) an injury which either incapacitates the injured employee from performing that employee's normal or a similar occupation for a period totalling 14 days or more, or which causes the injured employee to suffer the loss of a joint, or a part of a joint, or sustain a permanent disability,
(5) an injury, other than injuries referred to in paragraph (4), which incapacitates the injured employee from performing that employee's normal or a similar occupation on the next calendar day.

xiv) The Principal Contractor must ensure that an accident referred to as per below are reported to the Principal Inspector of Mines using the correct forms as outlined below:
(1) Accidents as per paragraph (1), (2) or (3) outlined in (p)(xiii) must be reported immediately by the quickest means available and must be confirmed without delay on Forms SAMRASS 1 and 2 prescribed in Chapter 21 of the MHS Regulations. *{MHSR Chapter 23 (23.2) (1)}*
(2) Accidents as per paragraph (4) outlined in (p)(xiii), must, after the accident becomes reportable, be reported within three days on Forms SAMRASS 1 and 2. *{MHSR Chapter 23 (23.2) (2)}*
(3) The SAMRASS 9 Form on a monthly basis for all persons not having returned to work at the time of submitting SAMRASS 2 on a monthly basis must be submitted. *{MHSR Chapter 23 (23.2) (3)}*
(4) Accidents as per paragraph (5) outlined in (p)(xiii), must be reported without delay on a monthly basis, on Form SAMRASS 4 *{MHSR Chapter 23 (23.2) (4)}*
(5) Where the death of an employee, referred to in paragraph (5) outlined in (p)(xiii) is related to a rockburst or fall of ground, the duly completed Form SAMRASS 3, for such rockburst or fall of ground must be forwarded by the Principal Contractor to the Principal Inspector of Mines within 14 days of such death. *{MHSR Chapter 23 (23.3) (1)}*
(6) When an injury results in the death of the injured employee after the report in terms of paragraph (2), (3), (4) or (5) outlined in (p)(xiii) has been given or when a slight

injury, which was not reportable, results in the death of the injured employee, or when general sepsis or tetanus develops as a result of an injury, the Principal Contractor must immediately report it to the Principal Inspector of Mines and without delay submit amended Form SAMRASS 1. *{MHSR Chapter 23 (23.3) (2)}*

(7) Where the injury of a person referred to (p)(xiii) or a dangerous occurrence referred to in regulation 23.4 (o) of the MHS Regulations, is related to the use of explosives, in addition to Form SAMRASS 1, the duly completed Form SAMRASS 5, must be forwarded by the Principal Contractor to the Principal Inspector of Mines within 14 days of such occurrence. *{MHSR Chapter 23 (23.3) (3)}*

(8) Where the injury of a person referred to in (7) above or a dangerous occurrence referred to in regulation 23.4 (f) of the MHS Regulations is related to fires, in addition to Form SAMRASS 1, the duly completed Form SAMRASS 6, must be forwarded by the Principal Contractor to the Principal Inspector of Mines within 14 days of such occurrence. *{MHSR Chapter 23 (23.3) (4)}*

(9) Where the injury of a person referred to in (p)(xiii) is related to heat stroke or heat exhaustion, in addition to Form SAMRASS 1, the duly completed Form SAMRASS 8, must be forwarded by the Principal Contractor to the Principal Inspector of Mines within 14 days of such occurrence. *{MHSR Chapter 23 (23.3) (6)}*

xv) The Principal Contractor must take note of the following Dangerous Occurrences in terms of MHS Regulation Chapter 23.4 are considered as reportable to the Principal Inspector of Mines:

- (A) Rockbursts And Falls of Ground
- (F) Fires And Explosion
- (L) Self Propelled Mobile Machinery
- (M) Boilers And Pressure Vessels
- (O) Explosives

xvi) The Principal Contractor must ensure that a dangerous occurrence referred to in (p)(xiii) must be reported immediately by the quickest means available and must be confirmed without delay on Form SAMRASS 1. *{MHSR Chapter 23 (23.5)}*

xvii) All incidents that result in any form of disabling injury or fatality are to be reported to the Employer, SANRAL, by means of telephone immediately and a written report must follow.

xviii) All incidents must be discussed in the Health and Safety Committee Meetings and recorded on the Minutes of the Meeting. Minutes of the meetings shall be part of the health and safety file, and must be made available for inspection and verification, when required.

q) <u>Waste Management</u>

i) The Principal Contractor shall comply with all applicable and relevant National Environmental Management Waste Act No 59/2008 and the amendment, as well as municipal bylaws that are applicable to waste management.

ii) The Principal Contractor shall remove all waste generated at the site as soon as possible after generation to ensure good housekeeping at all times.

iii) The Principal Contractor shall have a waste management plan/ procedure which must be implemented on the 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.

iv) Waste manifests must be kept on the health and safety file filing system.

r) Compliance Monitoring

i) The Employer will conduct monthly health and safety and document verification audits in compliance with the applicable legislation in order to ensure that the Principal Contractor has implemented and is maintaining the agreed and approved health and safety plan.

ii) The Principal Contractor will be provided with a copy of the Health and Safety audit report within seven days after the audit. Audit results must be acted upon, and non-conformances must be closed out as soon as possible, but before the next audit takes place.

iii) The Employer or his representative may stop the Principal Contractor from executing an activity which poses a threat to the health and safety of persons which is not in accordance with the employer's health and safety specification and the Principal contractor's health and safety plan for the site.

iv) The Employer reserves the right to conduct other ad hoc audits and inspections as deemed necessary. This will include site safety walks, verification of documentation and plant/ equipment inspections.

v) The Employer, or his representative may act or require further outcomes if non-compliances are noted or unsafe acts are noted on site.

vi) The Principal Contractor must ensure that all their Subcontractors are compliant, and that the necessary legal documentation for contractors is available on site. The Principal Contractor will be held responsible for the sub contactors under their care. 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 subcontractor, but at least once every month.

vii) The Principal Contractor shall furthermore ensure that each subcontractor`s health & safety plan is being implemented and maintained.

viii) The Principal Contractor must ensure that H&S representatives conduct monthly inspections of their areas of responsibility and report thereon to their foreman or supervisor, as well as the H&S Committee.

ix) All plant, equipment and machinery shall be inspected before use and as per the frequencies indicated by the applicable legislation. All inspections must be recorded on a register and where deviations are recorded, corrective actions must be noted and followed through on.

x) The Principal Contractor must conduct his own regular internal audits to verify compliance with his own H&S plan, as well as with this specification. Internal audits must include site conditions as well as ensuring that the health and safety plan is appropriate, and compliant to this specification.

xi) Reports of all internal and external audit and inspection reports must be provided to the Employer.

xii) The Health and Safety Officer for the Principal Contractor shall undertake monthly inspections, and a report must be submitted to the Employer

xiii) All Legislative inspections undertaken must also be communicated to the Employer within 24 hours of receiving such a report (Department of Mineral Resources and Energy, Department of Employment and Labour etc)

xiv) Corrective actions of all deviations must be recorded and made available to the Employer. The outcome of the abovementioned inspections and audits shall be in writing, reviewed at H&S committee meetings, endorsed by the chairman of the meeting and placed on the health and safety plan filing system.

s) Legal and other applicable Legislation and Standards

i) The Principal Contractor and all its appointed sub-contractor(s) shall be registered with an appropriate Compensation Commissioner in terms of the Occupational Injuries and Diseases Act 130 of 1993 and have a valid Letter of Good Standing from the Commissioner. The Principal Contractor is responsible for ensuring the Letter of Good Standing is valid for the entire duration of the project/contract. A copy of the letter of Good Standing must be part of the health and safety file and displayed on a notice board in the workplace.

ii) Signage shall be placed around the mining property informing persons that it is a mining area and therefore no unauthorized access is permitted. H&S Signage is required on the site. Signage shall be posted up at the appropriate fixed or temporary working areas, and other potential risk areas. These signs shall be in accordance with the requirements of the General Safety Regulations or SANS requirements as amended. Signage is to be noted on the site drawings indicating where fixed signage is required.

iii) Signage is to include (but not be limited to) the following:
- 'no unauthorised entry';
- 'report to site office';
- 'site office';
- 'beware of overhead work';
- 'hard hat area' or other PPE requirements noted;
- First aid box positions (including vehicles), and
- Fire extinguishers
- No smoking
- Traffic management signs (one way, two way)
- Speed limit signs
- Seatbelt sign
- No talking on cell phone while driving

iv) Signs shall be posted permanently or temporarily at areas of work onsite indicating that a mining site is being entered and that persons should take note of safety requirements.

v) The Principal Contractor shall ensure that the access gate is controlled and that no unauthorized access is permitted. The Mine Manager or his duly appointed representatives on site must be informed of all persons entering the site. No unauthorized persons shall be allowed to loiter the site.

vi) Where there is water bodies present on site, 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. Signage indicating no swimming and fishing including a life buoy must be placed close to the water body. The risk assessment must make provision for the rescuing of persons in danger of drowning and for preventing employees from falling into the water.

E2006 COMPLIANCE TO MINERALS ACT, ACT NO. 992 OF 1970

a) The Principal Contractor must ensure that no person in a state of intoxication or in any other condition which may render or be likely to render him incapable of taking care of himself or of persons under his charge, shall be allowed to enter the mine or be in the proximity of any working place or near any machinery on the surface of a mine. {*Minerals Act, Chapter 4 (4.7.1)}*

b) The Principal Contractor must ensure that a copy of the MHSA and its Regulations are posted up for employees' information. *{Minerals Act, Chapter 3 (3.2)}*

c) The Principal Contractor must develop and implement a Substance Abuse Policy indicating zero tolerance, which must be communicated to all employees. This policy should form part of the induction material for employees as well as visitors. Alcohol Testing may be conducted according to the Substance abuse Policy of the Principal contractor. 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 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. *{Minerals Act, Chapter 4 (4.7.1)}*

d) The Principal Contractor shall not permit any intoxicating liquor to be taken by any person into the workings of the mine or to any place of work on the surface of a mine unless with the special permission of the manager, and no employee shall have intoxicating liquor in his possession while at work or at any place of work. {*Minerals Act, Chapter 4 (4.7.2)}*

e) The Principal Contractor may not permit any person to perform, or cause or permit any other person to perform, any work in connection with the operation of a mine, on a Sunday, Christmas Day, Day of the Covenant or Good Friday, or cause any other person to perform, unless the work is the policing of the mine. *{Mines and Works Act, Chapter 9.1 (e)}*

f) The Principal Contractor may apply to the Chief Inspector of Mines to grant special permission for carrying on temporarily any necessary work, at a mine on the days mentioned in 6.5. (Sunday Labour Permission) *{*Mines and Works Act, Chapter 9.2} A copy of the Sunday Labour Permission must be displayed on the notice boards. *{Minerals Act, Chapter 3 (3.3)}*

g) The Principal Contractor must maintain a system of daily record of attendance of all employees. *{Minerals Act, Chapter 4 (4.5)}*

h) The Principal Contractor shall ensure that adequate and suitable ablution facilities are provided for all employees. 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. No person shall pollute the workings with faeces or urine, nor wantonly misuse or foul any latrine. *{Minerals Act, Chapter 4 (4.11)}*

i) The manager shall at all times keep a record, in a form acceptable to the Principal Inspector of Mines, showing in respect of each employee *{Minerals Act, Chapter 4 (4.16.1)}:*
- Name and residential address;
- occupation;
- total number of ordinary hours and overtime worked each day and each month;
- the normal rate of remuneration and the actual remuneration paid from time to time and the date of every such payment; and
- such other particulars as may be prescribed by the Principal Inspector of Mines.

j) The manager shall retain any record made in terms of this regulation for a period of one year subsequent to the date of the record. *{Minerals Act, Chapter 4 (4.16.2)}*

k) When the equivalent noise exposure, as defined in the South African Bureau of Standards Code of Practice for the Measurement and Assessment of Occupational Noise for Hearing Conservation Purposes, SABS 083 as amended, in any place at or in any mine or works where persons may travel or work, exceeds 85 dB(A), the Manager shall take the necessary steps to reduce the noise to below this level. *{Minerals Act, Chapter 4 (4.17.1)}*

l) Any personal protective equipment that may be necessary in terms of a hearing conservation programme, shall be supplied free of charge by the Principal Contractor. *{Minerals Act, Chapter 4 (4.17.3)}*

m) The Principal Contractor must ensure that no person shall work or be present at or near or cause or permit any other person to work or be present at or near any place where there may be danger of falling mineral or material unless he or such other person wears a hard hat in good condition and of a type approved by the Chief Inspector (GME approved hard hats) *{Minerals Act, Chapter 5 (5.8.3)}*

n) The Principal Contractor must ensure that where there is water containing poisonous or injurious matter in suspension or solution, this must be effectually fenced off to prevent inadvertent access to it and notice boards shall be put up in suitable places to warn persons from making use of such water. *{Minerals Act, Chapter 5 (5.9.1)}*

o) The Principal Contractor must ensure that no dumping or impounding of rubble, litter, garbage, rubbish or discards of any description, whether solid or liquid, shall take place elsewhere than at

the site or sites demarcated for the purpose by the Mine Manager. Every such site shall be limited to a minimum and every dump shall be so controlled to ensure that the environment is, as far as practicable, not polluted. *{Minerals Act, Chapter 5 (5.13.1)}*

p) The Principal Contractor must ensure that in every case where vegetation, including trees, shrubs or grasses, are disturbed in making access roads, clearing sites for stockpiles and erecting plant or other installations, such vegetation shall be re-established. *{Minerals Act, Chapter 5 (5.13.2)}*

q) The Principal Contractor must ensure that in opencast workings, no person shall enter or remain at or near, or cause or permit any other person to enter or remain at or near, any vertical or steeply inclined face or sidewall which exceeds a vertical height of three meters unless he or such person wears a hard hat in good condition and of a type approved by the Chief Inspector. (GME approved hardhats) *{Minerals Act, Chapter 7 (7.7.2)}*

r) The Principal Contractor must ensure that no employee, unless his duty absolutely necessitates it shall trespass within the safety guards or fences erected. In case he notices anything, which might be dangerous to life or limb, or to the working of machinery, he shall as soon as possible inform the person in charge thereof. *{Minerals Act, Chapter 20 (20.2)}*

s) The Principal Contractor must ensure all exposed machinery which, when in motion, may be dangerous to any person shall be securely fenced off. Efficient guards must be provided to such parts, or any machinery as may be a source of danger to any person. {Minerals Act, Chapter 20 (20.5)}

t) The Principal Contractor must ensure that where pressure vessels are used on the mine, that the pressure vessel *{Minerals Act, Chapter 23 (23.1)}*

i) shall be constructed in accordance with a code of practise approved by the Chief Inspector, or where no approved code exists for any particular vessel, its construction shall be approved by the Chief Inspector.

ii) shall be manufactured under the supervision of an inspecting authority approved by the Chief Inspector.

iii) shall be kept clean and free from –

- *carbonized oil or other inflammable material which may ignite under working conditions, or*
- *material which may cause corrosion, or*
- *material which is liable to chemical reaction which may cause an uncontrolled rise in pressure; and*

iv) And shall be maintained in a safe working condition at all times.

u) The manager of the mine shall have in his possession a certificate, or a copy thereof, issued by the inspecting authority referred to in regulation 23.1.2 in which the code to which the vessel was manufactured is certified. *{Minerals Act, Chapter 23 (23.2)}*

v) The manager shall keep a record for each vessel on which shall be entered the dates on which such vessel was cleaned, examined, repaired and tested. This record shall be signed by the person in charge of such cleaning, examination, repair and test. *{Minerals Act, Chapter 23 (23.4)}*

w) Every pressure vessel in which the product of the designed working gauge pressure in kilopascals and the capacity in cubic meters exceeds 30, shall be: *{Minerals Act, Chapter 23 (23.12.3)}*

i) inspected and tested before being commissioned after installation for the first time or any subsequent time, after having been out of commission for more than 2 years or after major repairs,

ii) inspected at regular intervals of not more than one year, and

iii) tested at regular intervals of not more than 2 years.

x) The Principal Contractor must ensure that first aid equipment is in accordance with the following requirements and shall be provided, maintained and be readily available for use: *{Minerals Act, Chapter 24 (24.1)}*

i) Where the number of persons, at any one time is 300 or less, there shall be kept in a readily accessible, clean and dry place a suitable stretcher, provided with 2 blankets, and a substantially constructed first aid box containing tourniquets, splints, bandages, individually wrapped sterile dressings and antiseptic solution.

y) The Principal Contractor must ensure that one or more notices on which are legibly printed in English and Zulu are simple directions setting forth the approved procedures for the immediate treatment of cases of gassing, heat stroke, heat exhaustion, drowning and electric shock shall be posted up in a conspicuous place in every change house and in every first aid room. *{Minerals Act, Chapter 24 (24.6)}*

E2007 HEALTH AND SAFETY PLAN

a) The Principal Contractor shall develop, implement and administer a Health and Safety Plan. The plan shall be in writing and shall be negotiated between The Principal Contractor and SANRAL or the designated H&S Agent. The plan must be approved by SANRAL or the designated H&S Agent prior to the commencement of work on site. A proper filing system consisting of the requirements set forth in this H&S Specification and other legal requirements shall be developed and maintained.

b) The Health and Safety management system 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 but not limited to:
   i) Legal Permits/ Licences/ Registrations
   ii) Proof of COID registration (Letter of Good Standing)
   iii) Contractor Health and Safety Policy statement signed by management
   iv) Appointment of Principal Contractor by the Employer
   v) Mandatory Agreement – (Between Employer and Principal Contractor
   vi) Client Health and Safety specification
   vii) Latest copy of the MHS Act and Regulations
   viii) Company Organogram depicting Health and Safety Responsibilities, including sub-contractors
   ix) Employee list including copy of IDs and medicals
   x) Project specific Health and Safety Management Plan agreed with the Employer
   xi) Relevant Legal appointments which include duties and responsibilities as well as competencies (training certificate)
   xii) Copies of minutes of meetings – H&S committee and other relevant H&S meeting minutes
   xiii) Risk Assessments
   xiv) Induction material
   xv) Waste management Plan
   xvi) Emergency preparedness (first aid, firefighting, emergency plan, etc.)
   xvii) Emergency Contact Telephone numbers
   xviii) List of hazardous chemical substances used on site
   xix) Material Safety Data Sheets of hazardous chemicals on site
   xx) List of plant and equipment to be used on site
   xxi) Inspection Checklists/Registers of plant and equipment and emergency equipment
   xxii) List of Sub-contractors including type of work
   xxiii) Sub-contractor files with legal documents
   xxiv) Policies, Procedures and Safe Operating Procedures
   xxv) Incident and Non-Conformity Management Systems
   xxvi) Communication Records of all internal training
   xxvii) Code of practice's
   xxviii) Occupational Hygiene Monitoring Records
   xxix) Inspection and audit reports (internal and external)

c) The plan shall demonstrate management's commitment to ensure employee health and safety as their primary objective during the contract.

d) The H&S plan shall be site and project specific and must address all aspects of the project H&S specification.

e) The H&S plan shall be closed at the completion of the project and submitted to the Employer for review and approval.

f) It is a requirement of the Contract that an approved closed-out electronic copy of the H&S filing system is required for the issuing of the Certificate of Completion.

E2008 NON-CONFORMANCE AND WORK STOPPAGES

a) Should the Principal Contractor fail or refuse to take the necessary steps to ensure the safety of employees, sub-contractors, visitors and the general public in accordance with these specifications or as required by legal requirements or ordered by the Engineer or the Client's H&S Agent, shall be sufficient cause for the Engineer to issue a work stoppage.

b) The following constitute examples of the types of non-conformances:

Table 3: Risk Categories and Non-Conformances

High Risk Priority: A non-conformance and / work stoppage of entire site/ or activity stoppage	Medium Risk Priority: A non-conformance	Low Risk Priority: A non-conformance
✓ Contractors working without Health and Safety Plan approval	✓ Toilets not supplied or regularly serviced	✓ Non-use of PPE supplied
✓ Workers transported in contravention of the H&S plan or legal requirements	✓ Lack of drinking water	✓ Non completion of registers for plant and equipment on site
✓ Invalid Letter of Good Standing	✓ Subcontractor(s) and/or targeted subcontractor(s) not audited	✓ Lack of H&S signage at work areas
✓ Legal non-conformances identified during the previous audit and not addressed within the agreed time frame	✓ Working without training or the appropriate H&S procedures	✓ Tools and equipment identified in poor condition during inspections
✓ Non-compliance with H&S Specifications	✓ No monthly H&S report at site meeting to report on	✓ Poor housekeeping
✓ Any breach of legal requirements	✓ Noncompliance to Procedures and Policies	
✓ Plant/ equipment or machinery found to be in an unsafe condition and in use.	✓ No traffic management/ noncompliance to traffic management	
✓ No certificates of fitness for employees as required		
✓ Accidents/ incidents that are reportable to the DMRE however not reported		

c) Should, at any time, the works, or part of the works, be stopped due to unsafe acts or non-compliance with the H&S Plan and other legal requirements; neither the Principal Contractor nor any other Subcontractor shall have a claim for extension of time or any other compensation.

E2009 INDEMNITY BY THE PRINCIPAL CONTRACTOR

a) The Principal Contractor shall indemnify the Employer against and all forms of 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."

b) The Principal Contractor shall establish, maintain and ensure that all his contractors establish and maintain H&S standards and systems as necessary and to comply with the Legal requirements as well as these H&S specifications.

c) 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.

PART C4: PROJECT INFORMATION

PART C4: PROJECT INFORMATION

TABLE OF CONTENTS **PAGE**

C4.1 DESCRIPTION OF THE WORKS C3-255
C4.2 DRAWINGS ..... C3-**ERROR! BOOKMARK NOT DEFINED.**
C4.3 CAMP ESTABLISHMENT, POWER SUPPLY AND OTHER SERVICES ... C3-**ERROR! BOOKMARK NOT DEFINED.**
C4.4 CONSTRUCTION IN CONFINED AREAS . C3-**ERROR! BOOKMARK NOT DEFINED.**
C4.5 MANAGEMENT OF THE ENVIRONMENT C3-**ERROR! BOOKMARK NOT DEFINED.**
C4.6 TRAFFIC ..... C3-**ERROR! BOOKMARK NOT DEFINED.**
C4.7 SMALL CONTRACTOR DEVELOPMENT, TRAINING AND COMMUNITY LIAISON ..... C3-**ERROR! BOOKMARK NOT DEFINED.**
C4.8 CLIMATE ..... C3-**ERROR! BOOKMARK NOT DEFINED.**
C4.9 REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS 2014 ..... C3-**ERROR! BOOKMARK NOT DEFINED.**
C4.10 SAFETY PROCEDURES ..... C3-**ERROR! BOOKMARK NOT DEFINED.**
C4.11 OTHER INFORMATION ..... C3-**ERROR! BOOKMARK NOT DEFINED.**
C4.12 AGREEMENT TO OCCUPY SANRAL'S PROPERTY . C3-**ERROR! BOOKMARK NOT DEFINED.**
C4.13 APPENDICES C3-259
APPENDIX 1 LOCALITY PLAN C3-260
APPENDIX 2 WEATHER DATA C3-261
APPENDIX 3 TRAFFIC DATA C3-262
APPENDIX 4 PAVEMENT DATA C3-263
APPENDIX 5 AGREEMENT TO OCCUPY SANRAL'S PROPERTY C3-264
APPENDIX 5.1 PLAN OF THE PROPERTY C3-269
APPENDIX 5.2 PRE-OCCUPATION INSPECTION FORM C3-270
APPENDIX 5.3 PRE-TERMINATION INSPECTION C3-273
APPENDIX 6 DISPUTE ADJUDICATION AGREEMENT C3-274
APPENDIX 7 IMPORTED CONTENT DECLARATION C3-289
APPENDIX 8.1 CONTRACT PARTICIPATION GOAL (CPG) PLAN FORMAT C3-308
APPENDIX 8.2 SANRAL PROJECT LIAISON COMMITTEE AND PROJECT LIAISON OFFICER FORMS C3-315
APPENDIX 8.3 PROFORMA SUB-CONTRACT DOCUMENT FOR TARGETED ENTERPRISES C3-336
APPENDIX 8.4 ACCEPTANCE TO ADVERTISE SUBCONTRACT TENDER C3-337
APPENDIX 8.5 TRAINING AND SKILLS DEVELOPMENT PROGRAMME C3-345
APPENDIX 9 BASELINE HAZARD IDENTIFICATION AND RISK ASSESSMENT (HIRA) (AS PER SECTION E2000) C3-346
APPENDIX 10 ILLUSTRATIVE PROGRAMME C3-347
APPENDIX 11 AS-BUILT DRAWINGS C3-348

Information Only
All data and descriptions contained in this section of the contract documents are given for information purposes only and cannot be interpreted as prescriptive or as an instruction despite the fact that the text may give the opposite perspective. If any conflict arises between the content of this section and other sections of the contract documents, the latter take precedence.

C4.1 DESCRIPTION OF THE WORKS

The project involves the replacement of two drainage structures along the Limpopo/Mpumalanga border along Regional Route R531/2 at approximate chainages km 6.90 (major steel pipe culvert) and km 11.40 (minor portal culvert with sinkhole). A locality plan has been included in Appendix 1.

C4.1.1 *ROADWORKS*

The Armco pipe is located at km 6.90 on the R531 Section 2 along the Limpopo/Mpumalanga border, between Acornhoek and Welverdiend. The Armco pipe requires removal/demolition and is to be replaced with a 2 cell, 3.6m x 3.6m cast in situ concrete box culvert.

The co-ordinates for major culvert C9521 at km 6.90 are as follows:
Latitude: 24° 34' 0.02" S, Longitude: 31° 6' 2.63" E

The minor portal culvert with sinkhole is located at km 11.40 on the R531 Section 2 along the Limpopo/Mpumalanga border, between Acornhoek and Welverdiend. The minor culvert requires removal/demolition and is to be replaced with a 1 cell, 2.2m x 0.8m cast insitu concrete box culvert.

The co-ordinates for minor culvert with sinkhole at km 11.4 are as follows:
Latitude: 24° 33' 45.25" S, Longitude: 31° 8' 42.84" E

The road is a single carriageway, 2-lane, asphalt surfaced road that runs over the Armco pipe and minor portal culvert.

There were no services identified at the site, however, should any services be encountered or identified during the works, this should be brought to the attention of the Engineer and protected for the duration of the contract

Traffic accommodation measures will be required for the full duration of the contract as no traffic will be permitted on the road over the culvert. Traffic will be diverted onto a detour road for the duration of the project.

A portion of the detour road will require reconstruction due to the deterioration of the pavement. The extent of the works is illustrated in the figure below;

C4.1.2 *PAVEMENT DESIGN FOR ALL PARTS OF THE VARIOUS ROADS*

Existing Pavement Structure:
As-built data is not available for the existing pavement.

The scope of works for the reconstruction of pavement layers for the Armco section, Culvert section and identified Detour Road section includes:

(a) Removal of the existing pavement layers.
(b) Removal of the existing fill material.
(c) Construction of the culvert (only applicable to Armco and Culvert section)
(d) Construction of backfill material up to bottom of Lower Selected Subgrade Layer.(only applicable to Armco and Culvert section).
(e) Construction of Lower Selected Subgrade Layer (150mm G7).
(f) Construction of Upper Selected Subgrade Layer (150mm G6)
(g) Construction of Lower Subbase Layer (150mm C4)
(h) Construction of Upper Subbase Layer (150mm C4)
(i) Paving of an Asphalt Base (60mm, Sand Skeletal (Continuously graded) Mix).
(j) Paving of an Asphalt Surfacing (50mm, Sand Skeletal (Continuously graded) Mix).

Layer No.	Description	Material Type
1	50mm Surfacing Layer	Sand skeletal (Continuously graded) mix, Level II, 14mm NMPS, PG58E-22
2	60mm Base Layer	Sand skeletal (Continuously graded) mix, Level II, 14mm NMPS, PG58E-22
3	150mm Upper Subbase Layer	C4 (G5A)
4	150mm Lower Subbase Layer	C4 (G5A)
5	150mm Upper Selected Subgrade Layer	G6
6	150mm Lower Selected Subgrade Layer	G7

C4.1.3 *STRUCTURAL WORKS*

(a) *Culverts*

Major culvert C9521 at km 6.90:
The structural works include the demolition and removal of the existing Armco pipe culvert and the construction of a new 44m long, 2 cell, 3.6m x 3.6m concrete box culvert at a 1.5 degree skew.

Minor culvert at km 11.40:
The structural works include the demolition and removal of the existing concrete portal culvert and the construction of a new 14.7m long, 1 cell, 2.2m x 0.8m concrete box culvert at a 0 degree skew.

C4.2 DRAWINGS

The drawings that form part of the tender document are issued for tender purposes only.

The contractor will be supplied with one set of paper prints plus a CD containing all the construction documentation.

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

The levels given on bridge drawings are subject to confirmation on site, and the contractor shall submit all levels to the engineer for confirmation before he commences any structural construction work. It is the contractor's responsibility to check all clearances given on the drawings and to inform the engineer of any discrepancies.

C4.3 CAMP ESTABLISHMENT, POWER SUPPLY AND OTHER SERVICES

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

C4.4 CONSTRUCTION IN CONFINED AREAS

It will be necessary for the contractor to work within confined areas. In certain places the width of the fill material and pavement layers may decrease to zero and the working space may be confined. The method of construction in these confined areas largely depends on the contractor's constructional plant.

Regardless, measurement and payment will be in accordance with the specified cross-sections and dimensions only, irrespective of the method used for achieving these cross-sections and dimensions. It is deemed that the rates tendered in the Pricing Schedule include full compensation for all special equipment and construction methods and for all difficulties encountered when working in confined areas and narrow widths, and at or around obstructions. No extra payment will be made nor will any claim for additional payment be considered in such cases. (Refer to standard specification sub-clause C1.1.3.2(b)).

C4.5 MANAGEMENT OF THE ENVIRONMENT

The contractor will be responsible for construction according to an environmental management plan in terms of Section C1000 Scope of Works.

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 Section C of the Scope of Works. Where the contractor fails to adhere to these requirements the specifications in Section C of the Scope of Works provide the methodology and cost liability of remedy.

C4.6 TRAFFIC

The average daily traffic (ADT) is 502 ADT East and 505 ADT (West).

The average daily truck traffic (ADTT) is 32 ADTT East and 32 ADDT West.

C4.7 SMALL CONTRACTOR DEVELOPMENT, TRAINING AND COMMUNITY LIAISON

The South African National Roads Agency SOC Limited is committed to the implementation of Government's policies and in turn expects the same from its contractors. Accordingly, it is a requirement of this project that tenderers are familiar with the specifications that relate to the transformation of the construction industry through the following:

(i) adherence to the policies of the Reconstruction and Development Programme and other similar Government initiatives,
(ii) employment and/or creation of Targeted Enterprises,
(iii) arrangement of generic skills, engineering skills and entrepreneurial skills training programmes for which provision has been made in the Pricing Schedule,
(iv) construction using labour maximisation principles and,
(v) active participation with community-based structures.

Tenderers should note that liaison with Community Stakeholders via active participation with the Project Liaison Committee, as well as employment of people from within the community, are essential parts of the project. A provisional sum to cover costs incurred by

members of the community in the liaison process has also been included in the Pricing Schedule.

Section D of the Scope of Works covers the contractor's requirements in detail, as well as defining the targets that comprise the Contract Participation Goal (CPG).

C4.8 CLIMATE

The project is located in the lowveld, an area with moderate to warm with summer rainfall.

The average annual rainfall: +-500mm.

Average minimum temperature: 15.9 deg celsius

Average maximum temperature: 29.8 deg celcius

Number of days per year with 10mm or more rain: 14

C4.9 REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS 2014

Refer to Section E of the Scope of Works for general requirements in terms of the OH&S requirements.

C4.10 SAFETY PROCEDURES

The contractor will be responsible for all safety and security required to ensure the protection of all employees, plant, equipment and inspectors within the confines of the site as set out in C4.1.1.

C4.11 OTHER INFORMATION

The Contractor will be required to dispose of the following redundant roadside furniture:

- Demolished concrete and reinforcement
- Removed Armco metal pipe
- Demolished asphalt

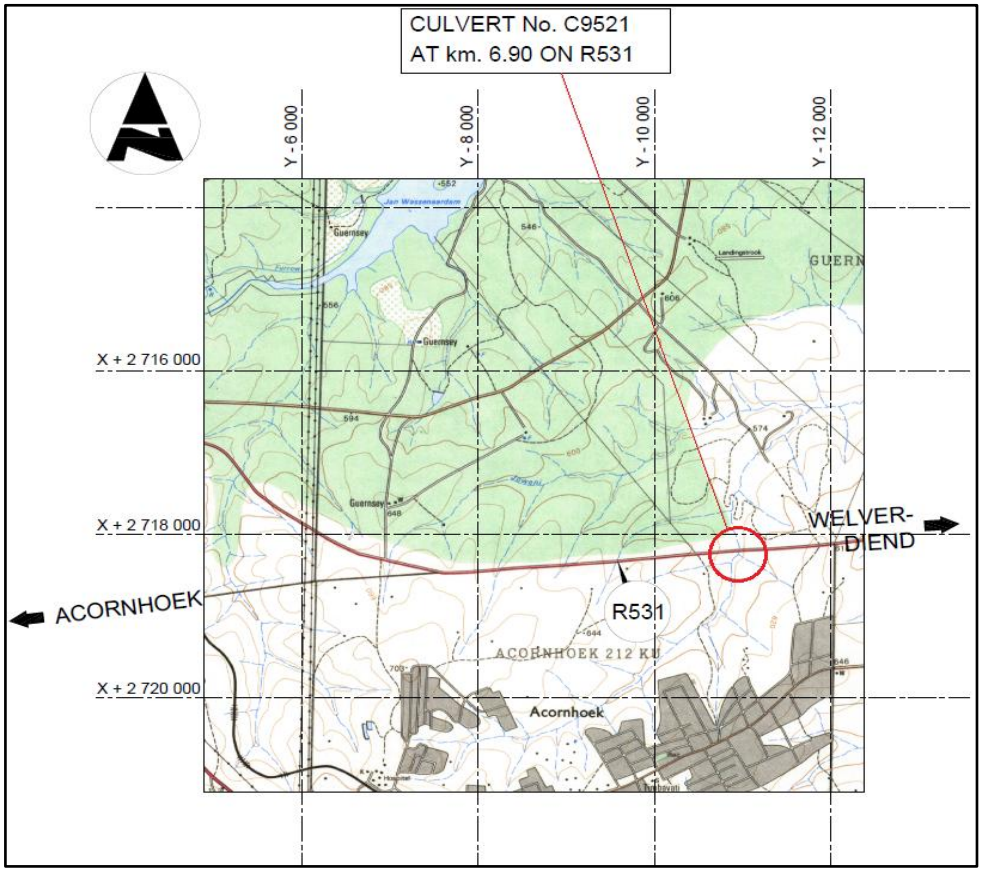
C4.12 AGREEMENT TO OCCUPY SANRAL'S PROPERTY

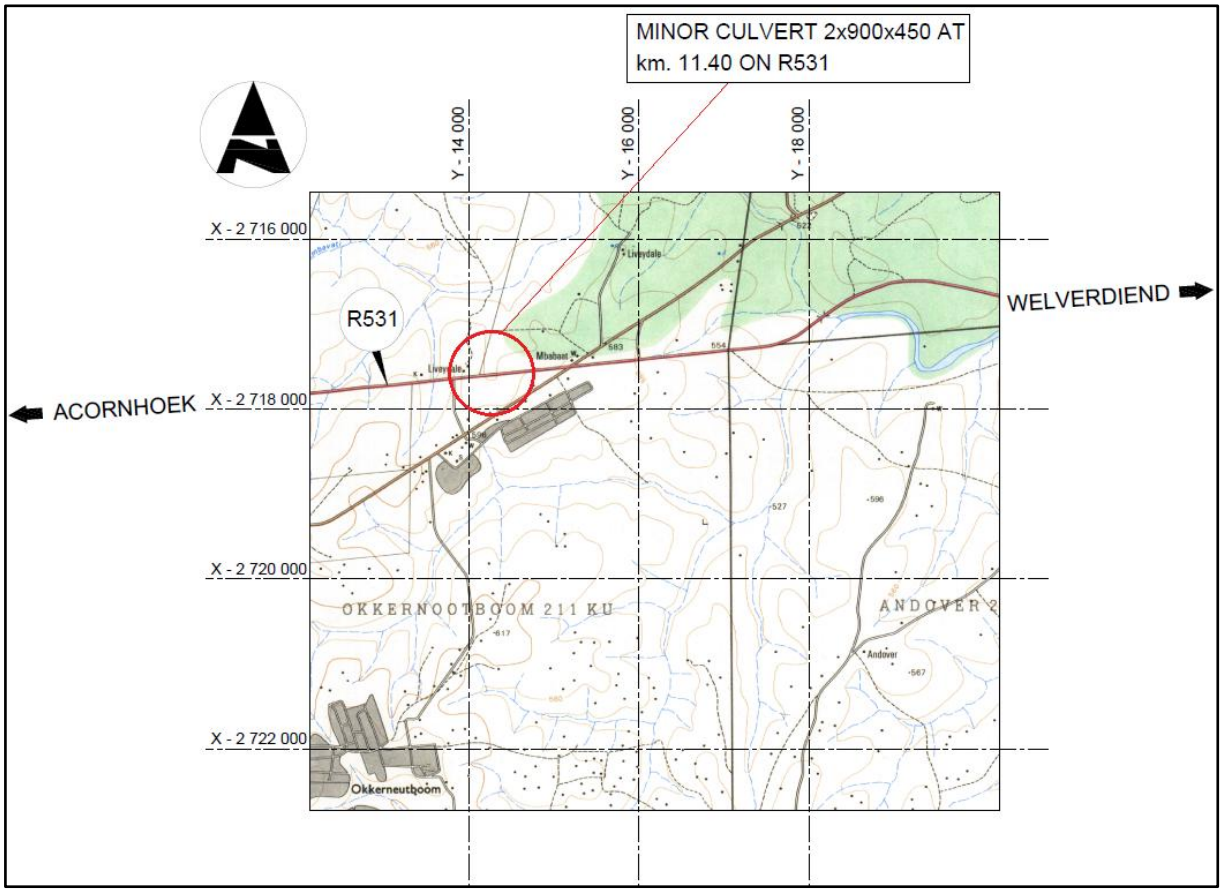
In the event that SANRAL-owned land will be made available for the use of the contractor for his construction camps, offices, stores, workshops and/or testing facilities, the use of such land will not be treated as a lease but will form part of the contract. In this regard the contractor shall complete the prescribed agreement and comply with all the conditions thereof as if it is part of the contract. The Employer's appointed service provider who administers and manages SANRAL owned land, will facilitate the process and the contractor shall liaise and co-operate with the service provider in this regard. The availability of land is indicated below.

C4.13 APPENDICES

Appendix 1:	Locality Plan
Appendix 2:	Weather Data
Appendix 3:	Traffic Data
Appendix 4:	Pavement Data
Appendix 5:	Agreement to Occupy SANRAL’s Property
Appendix 6:	Dispute Adjudication Agreement
Appendix 7:	Imported content
Appendix 8.1:	Contract Participation Goal (CPG) Plan format
Appendix 8.2:	Project Liaison Committee and Project Liaison Officer Forms
Appendix 8.3:	Proforma Sub-contract document for Targeted Enterprises
Appendix 8.4:	Acceptance to Advertise Sub-contract Tenders
Appendix 8.5:	Training and Skills Development Programme (TSDP)
Appendix 9:	Baseline HIRA (as per Section E2000)
Appendix 10:	Illustrative Programme
Appendix 11:	As-built drawings
Appendix 12:	Details of Contract Signboard
Appendix 13:	Checklist for Contractor's Insurance for Works Contracts

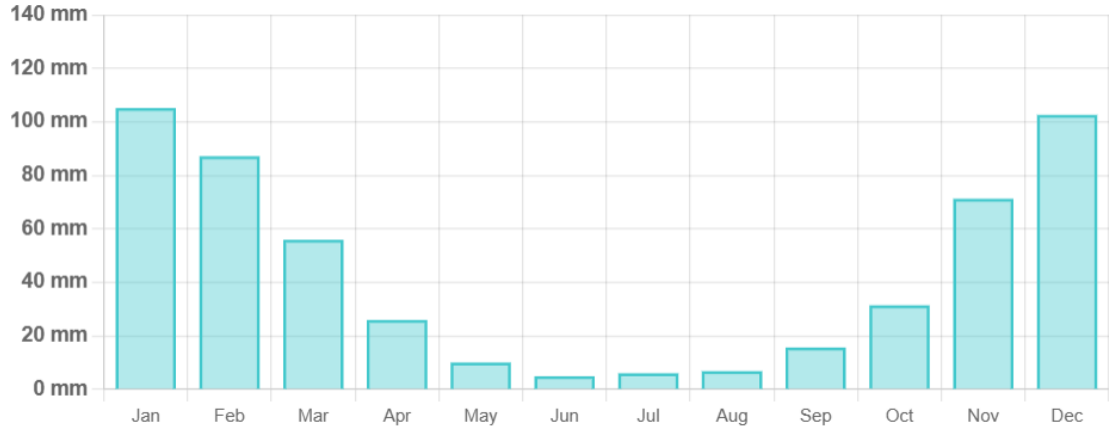
APPENDIX 1 LOCALITY PLAN





APPENDIX 2 WEATHER DATA

The mean monthly precipitation over the year, including rain, hail and snow



APPENDIX 3 TRAFFIC DATA

Authority	Province	Description	Station	Year	ADT (East)	ADTT (East)	ADT (West)	ADTT (West)
SANRAL	Limpopo	Orpen Gate	19181	2019	502	32	505	32

APPENDIX 4 PAVEMENT DATA

NO PAVEMENT AS-BUILT INFORMATION AVAILABLE

APPENDIX 5 AGREEMENT TO OCCUPY SANRAL'S PROPERTY

1. **Definitions**

For the purpose of this clause, the following words, phrases and expressions shall have the respective meanings assigned to each of them as set out hereunder:

1.1 "Commencement Date" shall mean ***.

1.2 "Designated Person" shall mean an employee, director, agent, independent contractor and/or representative of SANRAL, as the case may be;

1.3 "the Property" shall mean the property delineated on the plan annexed hereto marked "Appendix A";

1.4 "Termination Date" shall mean ***.

2. **Option to occupy the Property**

2.1 SANRAL hereby grants the Contractor an option to occupy the Property for the purpose of:

2.1.1 ***;

2.1.2 ***.

2.2 The Contractor may exercise the option referred to above by notifying SANRAL, within 30 (thirty) days of the Tender Award that it intends to use the Property, failing which this option will lapse and be of no further force or effect.

3. **Use of the Property**

3.1 In the event that the Contractor exercises the option to occupy the Property, it may do so with effect from the Commencement Date,

3.2 The Property may not be used for any purpose other than that prescribed above without the prior written approval of SANRAL.

3.3 If SANRAL is unable to give the Contractor occupation of the Property on the Commencement Date for any reason whatsoever, whether or not occasioned by the negligence of SANRAL and/or the Designated Person, the Contractor shall have no claim of whatsoever nature against SANRAL or the Designated Person.

3.4 SANRAL does not warrant that the Property is or will be suitable for any of the purposes for which the Contractor requires the Property.

3.5 SANRAL does not warrant that the Contractor will be granted or provided with any licences, consents, authorities, services or permits in respect of the Property for the proposed use thereof by the Contractor.

3.6 The Contractor shall comply with all laws, by-laws and regulations (including but not limited to the requirements of the Occupational Health and Safety Act 85 of 1993) relating to the Property and shall not contravene or permit contravention of any of the conditions of title under which the Property is held by SANRAL or any of the provisions of the town planning scheme applicable to the Property, nor do or cause or permit to be done in or about the Property anything which may be or cause a nuisance or disturbance to occupiers of neighbouring properties.

3.7 The Contractor's right to occupy the Property shall terminate on completion of Contract No. ***.

4. **Electricity, water and other services**

4.1 The Contractor may not install or arrange for any services such as water and electricity to be installed on the Property without the prior written consent of SANRAL.

4.2 In the event that SANRAL grants the consent referred to above, the Contractor shall be liable for the payment of all amounts due for the consumption of such services on the Property.

4.3 The Contractor hereby indemnifies and holds SANRAL harmless against any claim for payment for the consumption of services on the Property or any claim of whatsoever nature arising therefrom.

5. **Exclusion of claims**

5.1 The Contractor shall have no remedy against SANRAL and/or the Designated Person:

5.1.1 by reason of the Property or any part thereof or any improvement thereto being in a defective condition or in a state of disrepair;

5.1.2 in respect of any damage caused to furniture, equipment or any assets of any nature whatsoever kept on the Property by the Contractor, its employees, invitees, agents, directors or representatives;

5.1.3 in respect of any claim of whatsoever nature for loss or damages allegedly suffered by the Contractor, its servants, invitees, agents, directors, clients or representatives arising from loss of life and/or injury to persons on the Property.

5.2 The Contractor hereby indemnifies and holds harmless SANRAL and/or the Designated Person against any claim arising from the Contractor's occupation of the Property.

6. **Sub-letting**

The Contractor shall not be entitled, except with the prior written consent of SANRAL:

6.1 to cede all or any of the rights of occupation of the Property; or

6.2 to sublet or give up possession of the Property, in whole or part, to any third party.

7. **SANRAL's Right of Entry**

SANRAL and/or the Designated Person shall be entitled to enter the Property at all reasonable times for the purpose of inspecting it in order to determine that the Contractor is complying with the rights and obligations granted to it with respect to the Property.

8. **Obligation to maintain the Property**

8.1 Prior to the Contractor taking occupation of the Property, SANRAL and the Contractor shall jointly inspect the Property.

8.2 During such inspection, the Contractor shall record the condition of the Property and any improvements thereto on the Inspection Form attached hereto marked "Appendix B". In the event that the Contractor does not arrange for the completion of such form, the Contractor shall be deemed to have accepted the Property as being without defect and in good order and repair.

8.3 At all times during the Contractor's occupation of the Property, the Contractor shall care for and maintain the Property in good order and repair, including any improvements thereto.

8.4 On the Termination Date or the date of termination of the Contractor's occupation of the Property, as the case may be, the Contractor shall return the Property and any improvements thereto in good order, condition and repair, fair wear and tear excepted, provided that SANRAL shall not be obliged to compensate the Contractor for any expenditure incurred by the Contractor in complying with the Contractor's obligations of maintenance, repair and replacement provided for herein.

8.5 Prior to the date of termination of occupation of the Property by the Contractor, SANRAL and the Contractor shall arrange a joint inspection of the Property and improvements thereto. Such inspection is to take place within a period of 3 (three) days prior to the date of termination with a view to ascertain if there was any damage caused to the Property or improvements thereto before the Contractor vacates the Property. SANRAL and the Contractor shall record the result of their inspection on the Inspection Form annexed hereto marked "Appendix C".

8.6 SANRAL and the Contractor shall make reference to the initial Inspection Form attached hereto marked Appendix "B" when undertaking the inspection prior to termination of the Contractor's occupation and shall record any damages or lost items which shall be repaired or replaced by the Contractor before the Contractor vacates the Property.

8.7 Should the Contractor fail to repair such damages to the Property or improvements thereto or fail to replace any missing articles, SANRAL may attend thereto and recover the cost thereof from the Contractor.

8.8 Should the Contractor fail to respond to SANRAL's request for an inspection, SANRAL shall, on termination of the Contractor's occupation of the Property, inspect the Property within 7 (seven) days from such termination in order to assess any damages or loss which occurred during the Contractor's occupancy, and may recover such loss or damages from the Contractor.

9. The Contractor's Employees

9.1 The Contractor shall not allow any of its employees and/or their relatives to live on the Property.

9.2 The Contractor shall be held liable for all persons entering onto the Property and such persons shall be considered to be under the control of the Contractor.

9.3 On the termination of the Contractor's occupation of the Property, the Contractor shall ensure that the Property is returned to SANRAL vacant and free of any unlawful or lawful occupiers.

9.4 In the event that any person remains in occupation of the Property on termination of the Contractor's occupation of the Property, and SANRAL is obliged to obtain a Court Order to enable it to evict such person, the Contractor shall be liable for all and any costs in this respect, including but not limited to legal costs and costs for relocating such person.

10. Remedies for Breach and Cancellation

Should the Contractor:

10.1 fail to comply with any of the terms and conditions relating to its occupation of the Property, as provided for herein; or

10.2 abandon the Property,

then, after having received written notification to remedy such breach within 7 (seven) days and having failed to do so, SANRAL shall have the right, but not be obliged to either:

- immediately terminate the Contractor's right to occupy the Property further notice; and/or
- take possession of the Property and claim damages arising from such breaches.

11. **Early Termination of the Right to Occupy**

11.1 Notwithstanding the rights granted to the Contractor in terms hereof, the Contractor acknowledges that SANRAL may terminate such rights prematurely in the event that SANRAL requires the Property for anything related to the construction, maintenance or operation of a national road.

11.2 Should SANRAL be required to terminate the Contractor's right of use of the Property, SANRAL shall be required to give no more than 3 (three) months' written notice to the Contractor of the required premature termination, and the Contractor shall:

11.2.1 vacate the Property on the premature termination date required by SANRAL;
11.2.2 have no remedy against SANRAL as a result of such premature termination or its relocation arising from such premature termination.

12. **Alterations and Improvements**

12.1 The Contractor shall not make any alterations or improvements to the Property without SANRAL'S prior written consent.

12.2 In the event that SANRAL grants approval for alternations or improvements, this shall not preclude the Contractor from having to obtain any consent or approval that may be necessary from any applicable authority.

12.3 SANRAL shall not be liable for compensating the Contractor for the value of any improvements or alterations to the Property.

13. **Development of the Property and/or Underground Services**

13.1 SANRAL shall be entitled at any and at all times during the currency of the Contractor's occupation of the Property to affect such alterations, improvements and/or additions to the Property as SANRAL may deem necessary.

13.2 The Contractor shall have no claim against SANRAL for compensation, damages or otherwise, by reason of any interference with its occupation of the Property occasioned by any such alterations, improvements and/or additions, or arising from any failure or interruption in the supply of water and/or electricity and/or other services to the Property.

13.3 Where relevant, the Contractor shall bear the onus of investigating, at its expense, the existence or otherwise of any live or defunct underground services on or adjacent to the Property by making appropriate enquiries from the local municipality or any other competent authority.

13.4 Save in circumstances where SANRAL has in writing agreed to assume specific obligations to deal with underground services, whether live or abandoned, existing on the Property, the Contractor agrees that it shall have no claim whatsoever against SANRAL for the removal and/or modification of any underground services or abandoned services that may exist on the Property, nor for any direct or consequential losses which may be suffered by the Contractor arising out of any removal and/or modification or failure to remove and/or modify any of the said underground services or abandoned services.

13.5 SANRAL shall have the right to lay and use or continue using underground services of any nature on or under the Property and may grant such right to any third party without being liable for any loss or damage suffered by the Contractor as a result thereof. The Contractor shall not in any way, directly or indirectly, interfere or obstruct the laying or using of such underground services. SANRAL and/or any third party shall at all reasonable times have free access of the Property for the purpose of construction, maintenance, repairs, replacement or removal of such services.

14. **General**

14.1 No amendment or consensual cancellation of any of the above terms and conditions shall be binding unless recorded in a written document signed by SANRAL and the Contractor.

14.2 No extension of time, waiver, indulgence or relaxation or suspension of any of the provisions or terms applicable to the Contractor's occupation of the Property shall be binding unless recorded in a written document signed by the parties. Any such extension, waiver or relaxation or suspension which is so given or made shall be strictly construed as relating strictly to the matter in respect whereof it was made or given.

APPENDIX 5.1 PLAN OF THE PROPERTY

Exterior of the Property:

EXTERIOR	Good	Fair	Poor	None Present
ROOF				
WALLS / FENCE				
GATE				
GUTTERS				
PAVING				
GARDEN (outside taps)				
Carport				
GARAGE				

List other exterior improvements or defects not indicated above:

_____

_____

_____

_____

_____

Improvements on the Property:

EXTERIOR	Good	Fair	Poor	None Present
GUTTERS				
PAVING				
OUTSIDE TAPS				
Carport				
GARAGE				
ROOMS OR OFFICES				
PARTITIONING				
FLOOR COVERING				
WALL COVERING				
CEILING				
KITCHEN				
BATHROOM & TOILET				
SECURITY GATE				
BURGLAR PROOFING				
INTERIOR DOORS				
EXTERIOR DOORS				
LOCKS				
LIGHT FITTINGS				

Details of any other improvements:

_____

_____

_____

_____

_____

Occupancy Status:

☐ Verified – No occupants found on the Property.

☐ Illegal occupants: *Full details of location and names (add page with details)*

SIGNED AT: ..... ON THIS ..... DAY OF ..... 20 .....

.....	.....
SIGNATURE	SIGNATURE
.....	.....
FULL NAME OF SANRAL'S REPRESENTATIVE	FULL NAME OF CONTRACTOR'S REPRESENTATIVE

APPENDIX 5.3 PRE-TERMINATION INSPECTION

a. Verify if the status or condition of any of the items as listed during the Pre-occupation inspection have changed. If so, furnish full detail, costs to repair damages and/or replace lost keys, etc.

b. Results:

☐ Property inspected – No damages found

OR

☐ Damages found – The following must be repaired or replaced:

ITEM TO BE REPAIRED / REPLACED	REPAIR?	REPLACE?	COST

☐ Property inspected: Property vacant

OR

☐ Property inspected: Property not vacant:

Number of persons remaining on Property: .....

SIGNED AT: ..... ON THIS ..... DAY OF ..... 20 .....

....
SIGNATURE SIGNATURE

....
FULL NAME OF SANRAL'S REPRESENTATIVE FULL NAME OF CONTRACTOR'S REPRESENTATIVE

Notes to compiler:

1. ***This document (EDMS #2749551) to be completed utilising track changes to clearly indicate all of the compiler's changes in the draft document (i.e. highlighted for inclusions and crossed out for deletions).***
2. ***The document is not to be altered except where explicitly allowed for. Any other requested/proposed/required changes must be clarified with the Employer.***
3. ***The completed track changed document to be submitted to the Employer for review and finalisation for signing by the parties.***

DISPUTE ADJUDICATION AGREEMENT

between

THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED
(Reg No. 1998/009584/06)

("**Employer**")

and

_____

(Reg No. _____)

("**Contractor**")

and

_____

("**Member**")

1. DEFINITIONS AND INTERPRETATIONS

1.1 In this Dispute Adjudication Agreement, unless the context otherwise indicates :

1.1.1 "**Contract**" means Contract SANRAL … *(insert contract number)* for the *(insert contract description)* entered into between the Employer and the Contractor.

1.1.2 "**Contractor**" means … *(insert contractor's details)* appointed by the Employer under the Contract.

1.1.3 "**DAB**" means the *Note to compiler: Delete which is not applicable* three person/one person Dispute Adjudication Board as contemplated in clause 20 of the Conditions of Contract for Construction for Building and Engineering Works designed by the Employer, published by the Fédération Internationale des Ingénieurs-Conseils (hereinafter referred to as "GCC"), in accordance with the terms and conditions as set out in this Dispute Adjudication Agreement.

1.1.4 "**Dispute Adjudication Agreement**" means the tripartite agreement between the Employer, Contractor and Member.

1.1.5 "**Effective Date**" means the date that this Dispute Adjudication Agreement shall take effect, and unless otherwise stated, it shall be the latest date when the Employer, the Contractor, Member and each of the Other Members have respectively signed a Dispute Adjudication Agreement.

1.1.6 "**Employer**" means the South African National Roads Agency SOC Limited, Registration No. 1998/009584/06

1.1.7 "**Engineer**" means … *(insert engineer's details)*.

1.1.8 "**Member**" means Mr _____, *Note to compiler: Insert the following: For the chairperson of a 3 person DAB:* who will act as chairperson of the DAB and who is one of the three persons who are jointly called the DAB. *For other members of a 3 person DAB:* who is one of the three persons who are jointly called the DAB. *For a 1 person DAB:* who will act as chairperson of the DAB and who is called the DAB.

1.1.9 "**Other Members**" means the persons other than the Member, forming part of the DAB, if/where applicable

1.1.10 "**Parties**" means the Employer, Contractor and Member

1.2 In the Dispute Adjudication Agreement, words and expressions which are not otherwise defined shall have the meanings assigned to them in the Contract

2. GENERAL PROVISIONS

2.1 Following the Effective Date, the Employer and the Contractor shall each give notice to the Member accordingly. If the Member does not receive either notice within six months after entering into the Dispute Adjudication Agreement, it shall be void and ineffective.

2.2 This employment of the Member is a personal appointment. At any time, the Member may give not less than 70 days' notice of resignation to the Employer and to the Contractor, and the Dispute Adjudication Agreement shall terminate upon the expiry of this period.

2.3 No assignment or subcontracting of the Dispute Adjudication Agreement is permitted without the prior written agreement of all the Parties to it and of the Other Members.

2.4 The Dispute Adjudication Agreement shall be governed by the law of the Republic of South Africa.

2.5 All disputes will be heard in *(insert location)*_____, Republic of South Africa, unless otherwise agreed by the Parties.

3. WARRANTIES

3.1 The Member warrants and agrees that he/she is and shall be impartial and independent of the Employer, the Contractor and the Engineer. The Member shall promptly disclose, to each of them and to the Other Members, any fact or circumstance which might appear inconsistent with his/her warranty and agreement of impartiality and independence.

3.2 When appointing the Member, the Employer and the Contractor relies upon the Members' representations that he/she is:
- a) experienced in the work which the Contractor is to carry out under the Contract,
- b) experienced in the interpretation of contract documentation, and
- c) fluent in the language for communications defined in the Contract.

4. APPOINTMENT

4.1 The Employer and the Contractor hereby jointly appoint the Member as a Member of a three-person DAB on the terms and conditions as set out in the Dispute Adjudication Agreement, which appointment the Member by his/her signature hereto accepts;

4.2 The conditions of the Dispute Adjudication Agreement comprise the following:
- a) The Dispute Adjudication Agreement together with any addenda or schedules hereto; including the procedural rules;
- b) The GCC, as amended by any particular conditions, to the extent that it is applicable to the DAB and the Member.

5. GENERAL OBLIGATIONS OF THE MEMBER

Note to compiler: Delete this clause for members other than the Chairperson's agreement

5.1 The Member shall act as chairperson of the DAB and shall; ensure smooth administration; keep all records; ensure compliance to procedural rules; ensure the ethics of the DAB remain unchallenged; coordinate between the Parties and the DAB; chair meetings and site visits; ensure procedural correctness of all recommendations and decisions of the DAB.

5.2 The Member shall have no interest financial or otherwise in the Employer, the Contractor or the Engineer, nor any financial interest in the Contract except for payment under the Dispute Adjudication Agreement.

5.3 The Member shall not previously have been employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except in such circumstances as were disclosed in writing to the Employer and the Contractor before they signed the Dispute Adjudication Agreement.

5.4 The Member shall have disclosed in writing to the Employer, the Contractor and the Other Members, before entering into the Dispute Adjudication Agreement and to his/her best knowledge and re-collection, any professional or personal relationships with any director, officer or employee of the Employer, the Contractor or the Engineer, and any previous involvement in the overall project of which the Contract forms part.

5.5 The Member shall not, for the duration of the Dispute Adjudication Agreement, be employed as a consultant or otherwise by the Employer, the Contractor, any member/partner of the Contractor or the Engineer, except as may be agreed in writing by the Employer, the Contractor and the Other Members. Notwithstanding this restriction, the Member shall not be restricted to be employed as a consultant or otherwise by the Employer, the Contractor or the Engineer on another contract or matter, but shall disclose to the Employer, the Contractor, and the Other Members, before he/she consult, advises or accepts any instructions from either the Employer, the Contractor, any member/partner of the Contractor, or the Engineer and confirming that such advice, consultation or other instruction taken from such person shall not affect the Member's ability to be unbiased in relation to his/her duties under the Dispute Adjudication Agreement.

5.6 The Member shall comply with the annexed procedural rules and Sub-Clause 20.4 of the conditions of Contract.

5.7 The Member shall not give advice to the Employer, the Contractor, the Employer's personnel or the Contractor's personnel concerning the conduct of the Contract, other than in accordance with the annexed procedural rules.

5.8 The Member shall not while a Member enter into discussions or make any agreement with the Employer, the Contractor or the Engineer regarding employment by any of them, whether as a consultant or otherwise, after ceasing to act under this Dispute Adjudication Agreement.

5.9 The Member shall ensure his/her availability for all site visits and hearings as are necessary.

5.10 The Member shall become conversant with the Contract and with the progress of the Works (and of any parts of the project of which the Contract forms part) by studying all documents received which shall be maintained in a current working file.

5.11 The Member shall treat the details of the Contract and all the DAB's activities and hearings as private and confidential and not publish or disclose them without the prior written consent of the Employer, the Contractor and the Other Members.

5.12 The Member shall be available to give advice and opinions, on any matter relevant to the Contract when requested by both the Employer and the Contractor, subject to the agreement of the Other Members.

6. GENERAL OBLIGATIONS OF THE EMPLOYER AND THE CONTRACTOR

6.1 The Employer, the Contractor, the Employer's personnel and the Contractor's personnel shall not request advice from or consultation with the Member regarding the Contract, otherwise than in the normal course of the DAB's activities under the Contract and the Dispute Adjudication Agreement, and except to the extent that prior agreement is given by the Employer, the Contractor and the Other Members. The Employer and the Contractor shall be responsible for compliance with this provision, by the Employer's personnel and the Contractor's personnel respectively.

6.2 The Employer and the Contractor undertake to each other and to the Member that the Member shall not, except as otherwise agreed in writing by the Employer, the Contractor, the Member and the Other Members:

a) be appointed as an arbitrator in any arbitration under the Contract;
b) be called as a witness to give evidence concerning any dispute before arbitrator(s) appointed for any arbitration under the Contract;
c) be called as a witness or act on behalf of the Employer or Contractor, concerning any dispute that became the subject of litigation under the Contract; or
d) be liable for any claims for anything done or omitted in the discharge or purported discharge of the Members functions unless the act or omission is shown to have been in bad faith.

6.3 The Employer and the Contractor hereby jointly and severally indemnify and hold the Member harmless against and from claims from which he/she is relieved from liability under the preceding paragraph.

7. PAYMENT

Note to compiler: Complete the values below utilising the accepted DAB quotation. Where an item is not applicable delete the clause or enter N/A in the amount value.

7.1 The Member shall be paid a retainer fee of R… (excluding VAT) per calendar month, which shall be considered as payment in full for:

i) being available on 28 days' notice for all site visits and hearings;
ii) becoming and remaining conversant with all project developments and maintaining relevant files;
iii) all office and overhead expenses including secretarial services, photocopying and office supplies incurred in connection with his/her duties; and
iv) all services performed hereunder except those referred to in sub-paragraphs 7.4, 7.5, 7.6 and 7.7 of this Clause.

7.2 The retainer fee shall be paid with effect from the last day of the calendar month in which the Dispute Adjudication Agreement becomes effective; until the last day of the calendar month in which the Taking-Over Certificate is issued for the whole of the Works.

7.3 With effect from the first day of the calendar month following the month in which the Taking-Over Certificate is issued for the whole of the Works, the retainer fee shall be reduced by 50%. This reduced fee shall be paid until the first day of the calendar month in which the Member resigns or the Dispute Adjudication Agreement is otherwise terminated.

7.4 The Member shall be paid a site visit daily fee of R… (excluding VAT), (reduced to an hourly fee of one eighth the daily fee, for part of a day), which shall be considered as payment in full for:

i) each day or part of a day up to a maximum of one day's travel time in each direction for the journey between the Member's home and the site or another location of a meeting with the Other Members, as agreed by the Parties.

ii) each working day or part of a day on site visits.

7.5 The Member shall be paid a dispute analysis daily fee of R… (excluding VAT), (reduced to an hourly fee of one eighth the daily fee, for part of a day), which shall be considered as payment in full for:

i) each day or part of a day spent on dispute analysis, hearings or preparing decisions; and

ii) each day or part of a day spent reading submissions in preparation for a hearing.

7.6 The Member shall be paid a pupillage daily fee of R… (excluding VAT), (reduced to an hourly fee of one eighth the daily fee, for part of a day), which shall be considered as payment in full for:

i) each day or part of a day spent on preparation for pupillage.

ii) each day or part of a day spent on offering practical experience and mentoring to assigned pupil.

7.7 The Member shall be paid all reasonable expenses incurred in connection with the Member's duties, including the cost of the following:

i) Travel expenses :–
- Own car - motor vehicle travel expenses will be recovered at the relevant South African Automobile Association rates,
- Car hire – group B or similar,
- Flights – economy class.

ii) Accommodation – any type of accommodation up to R1,300.00 per day all inclusive,

iii) Subsistence costs.

7.8 The Member shall be paid all Value Added Taxes as per the law.

7.9 The retainer fee and daily fees shall remain fixed for the 1st 24 calendar months and shall thereafter be adjusted by the twelve-month year on year CPI index (as published in the monthly bulletin P0141 of Statistics South Africa under table B) at each anniversary of the Effective Date. The base month shall be the 12th month following the Effective Date.

7.10 The Member shall be paid in South African Rands.

7.11 The member shall submit invoices for payment of the monthly retainer and may include an estimate of the next month's airfares which will be incurred (and which will be reconciled and adjusted in the subsequent invoice). Invoices for other expenses and for daily fees shall be submitted following the conclusion of a site visit or hearing. All invoices shall be accompanied by a DAB fee claim containing records of previous fee claims and a breakdown of activities performed during the relevant period and shall be addressed to the Contractor.

7.12 Notwithstanding the fact that the appointment is of the Member in his/her personal capacity the Member may invoice and receive payment to a legal entity of which he/she is a member, shareholder or partner.

7.13 The Contractor shall pay the Member's invoices in full within 30 calendar days after receiving each valid invoice, half of which shall be recovered by the Contractor from the Employer.

7.14 If the Member does not receive payment of the amount due within 70 days after submitting a valid invoice, the Member may (i) suspend his/her services (without notice) until the payment is received and/or (ii) resign his/her appointment by giving notice under Clause 8.

8. TERMINATION

8.1 At any time: (i) the Employer and the Contractor may jointly terminate the Dispute Adjudication Agreement by giving 42 days' notice to the Member; or (ii) the Member may resign as provided for under Clause 2.

8.2 If the member fails to comply with the Dispute Adjudication Agreement, the Employer and the Contractor may, without prejudice to their other rights, terminate it by notice to the Member. The notice shall take effect when received by the Member.

8.3 If the Employer or the Contractor fails to comply with the Dispute Adjudication Agreement, the Member may, without prejudice to his/her other rights, terminate it by notice to the Employer and the Contractor. The notice shall take effect when received by them both.

8.4 Any such notice, resignation and termination shall be final and binding on the Employer, the Contractor and the Member. However, a notice by the Employer or the Contractor, but not by both, shall be of no effect.

9. DEFAULT OF THE MEMBER

9.1 If the Member fails to comply with any obligation under Clause 5, he/she shall not be entitled to any fees or expenses hereunder and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses received by the Member and the Other Members, for proceedings or decisions (if any) of the DAB which are rendered void or ineffective.

10. DISPUTES

10.1 Any dispute or claim arising out of or in connection with the Dispute Adjudication Agreement, or the breach, termination or invalidity thereof, shall be finally settled by arbitration under the Rules of Arbitration of the Association of Arbitrators of Southern Africa by one Arbitrator appointed by agreement of the Member, the Employer and the Contractor or, failing such agreement, by the Chairman for the time being of the Association of Arbitrators.

11. DOMICILIA AND NOTICES

11.1 The Parties choose as their *domicilia citandi et executandi* for all purposes under the Dispute Adjudication Agreement, whether in respect of notices or other documents or communications of whatsoever nature (including the exercise of any option), the following addresses:

11.1.1 Employer (*domicilia citandi et executandi)*:

Address: South African National Roads Agency SOC Limited
48 Tambotie Avenue, Val de Grace, Pretoria, 0184
Reference: … CEO

Employer (*General Communication*)

Address: South African National Roads Agency SOC Limited
… Region, …, …, …
Fax Number: …
Tel. Number: …
Reference: … Regional Manager, … Region

11.1.2 Contractor:

Address: …
…
Fax Number: …

Tel. Number: …
Reference: …, Contract Director

11.1.3 Member:

Address: …
…
Fax Number: …
Tel. Number: …
Reference: …,

11.2 Any notice or communication required or permitted to be given in terms of the Dispute Adjudication Agreement shall be valid and effective only if in writing, but it shall be competent to give notice by telefax or registered mail.

11.3 Any Party may by notice to the other Party change the physical address chosen as its *domicilium citandi et executandi* vis-à-vis that Party to another physical address in the Republic of South Africa or its telefax number, provided that the change shall become effective vis-à-vis that addressee on the 7th business day from the deemed receipt of the notice by the addressee.

11.4 Notwithstanding anything to the contrary herein contained a written notice or communication actually received by a Party shall be an adequate written notice or communication to it notwithstanding that it was not sent to or delivered at its chosen *domicilium citandi et executandi*.

12. SIGNATORIES

12.1 Signed for and on behalf of the Employer by:

....
Name Signature of duly authorised representative

.....
Date

In the presence of Witness:

....
Name Signature

.....
Date

12.2 Signed for and on behalf of the Contractor by:

....
Name Signature of duly authorised representative

.....
Date

In the presence of Witness:

....
Name Signature

.....
Date

12.3 Signed by the Member:

....
Name Signature

.....
Date

In the presence of Witness:

....
Name Signature

.....
Date

PROCEDURAL RULES

1. Unless otherwise agreed by the Employer and the Contractor, the DAB shall visit the site at intervals of not more than 140 days, including times of critical construction events, at the request of either the Employer or the Contractor. Unless otherwise agreed by the Employer, the Contractor and the DAB, the period between consecutive visits shall not be less than 70 days, except as required to convene a hearing as described below.

2. The timing of and agenda for each site visit shall be as agreed jointly by the DAB, the Employer and the Contractor, or in the absence of agreement, shall be decided by the DAB. The purpose of site visits is to enable the DAB to become and remain acquainted with the progress of the Works and of any actual or potential problems or claims.

3. Site visits shall be attended by the Employer, the Contractor and the Engineer and shall be co-ordinated by the Employer in co-operation with the Contractor. The Employer shall ensure the provision of appropriate conference facilities and secretarial and copying services. At the conclusion of each site visit and before leaving the site, the DAB shall prepare a report on its activities during the visit and shall send copies to the Employer and the Contractor.

4. The Employer and the Contractor shall furnish to each member of the DAB one copy of all documents which the DAB may request, including Contract documents, progress reports, variation instructions, certificates and other documents pertinent to the performance of the Contract. All communications between the DAB and the Employer or the Contractor shall be copied to the other Party.

5. If any dispute is referred to the DAB in accordance with Sub-clause 20.4 of the GCC, the DAB shall proceed in accordance with Sub-clause 20.4 and these Rules. Subject to the time allowed to give notice of a decision and other relevant factors, the DAB shall:
   a) act fairly and impartially as between the Employer and the Contractor, giving each of them a reasonable opportunity of putting his case and responding to the other's case, and
   b) adopt procedures suitable to the dispute, avoiding unnecessary delay or expense.

6. The DAB may conduct a hearing on the dispute, in which event it will decide on the date and place for the hearing and may request that written documentation and arguments from the Employer and the Contractor be presented to it prior to or at the hearing.

7. Except as otherwise agreed in writing by the Employer and the Contractor, the DAB shall have power to adopt an inquisitorial procedure, to refuse admission to hearings or audience at hearings to any persons other than representatives of the Employer, the Contractor and the Engineer, and to proceed in the absence of any party whom the DAB is satisfied received notice of the hearing; but shall have discretion to decide whether and to what extent this power may be exercised.

8. The Employer and the Contractor empower the DAB, among other things, to:
   a) establish the procedure to be applied in deciding a dispute,
   b) decide upon the DABs' own jurisdiction, and as to the scope of any dispute referred to it,
   c) conduct any hearing as it thinks fit, not being bound by any rules or procedures other than those contained in the Contract and these Rules,
   d) take the initiative in ascertaining the facts and matters required for a decision,
   e) make use of its own specialist knowledge, if any,
   f) decide upon the payment of financing charges in accordance with the Contract,
   g) decide upon any provisional relief such as interim or conservatory measures, and
   h) open up, review and revise any certificate, decision, determination, instruction, opinion or valuation of the Engineer, relevant to the dispute.

9. The DAB shall not express any opinions during any hearing concerning the merits of any arguments advanced by the Parties, unless requested by both the Employer and Contractor. Prior to giving notice to its decision:
   a) it shall convene in private after a hearing, in order to have discussions and prepare its decision;
   b) it shall endeavour to reach a unanimous decision: if this proves impossible the applicable decision shall be made by a majority of the Members' who may require the minority Member to prepare a written report for submission to the Employer and the Contractor; and
   c) if a Member fails to attend a meeting or hearing, or to fulfil any required function, the other two Members may nevertheless proceed to make a decision, unless:
      i) either the Employer or the Contractor does not agree that they do so, or
      ii) the absent Member is the chairman and he/she instructs the other Members not to make a decision.

   Thereafter, the DAB shall make and give notice to its decision in accordance with Sub-clause 20.4 or as otherwise agreed by the Employer and the Contractor in writing.

ANNEXURE 2

COMPULSORY DECLARATION (INCORPORATING SBD4)

The following particulars must be furnished. In the case of a joint venture, separate declarations in respect of each partner must be completed and submitted.

Section 1: **Enterprise details**

Name of enterprise	
Contact person	
E-mail	
Telephone	
Cell	
Fax	
Physical address	
Postal address	

Section 2: **Particulars of companies and close corporations**

Company / Close Corporation registration number	

Section 3: **SARS information**

Tax reference number	
VAT registration number	(state Not Registered if not registered for VAT)

Section 4: **CIDB registration number**

CIDB Registration number	

Section 5: **Particulars of principals**

Principal: means a natural person who is a partner in a partnership, a sole proprietor, a director of a company established in terms of the Companies Act of 2008 (Act No. 71 of 2008) or a member of a close corporation registered in terms of the Close Corporations Act, 1984, (Act No. 69 of 1984)

Full name of principal	Identity number	Personal tax reference number

Attach separate page if necessary.

Section 6: **Record in the service of the state**:

Indicate by marking the relevant boxes with a cross, if any principal is currently or has been within the last 12 months in the service of any of the following:

- a member of any municipal council
- a member of any provincial legislature
- a member of the National Assembly or the National Council of Province
- a member of the board of directors of any municipal entity
- an official of any municipality or municipal entity
- an employee of any department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999)
- a member of an accounting authority of any national or provincial public entity
- an employee of Parliament or a provincial legislature

If any of the above boxes are marked, disclose the following:

Name of principal	Name of institution, public office, board or organ of state and position held	Status of service (tick appropriate column)	
		Current	Within last 12 months

Insert separate page if necessary.

Section 7: **Record of family member in the service of the state**:

Family member: a person's spouse, whether in a marriage or in a customary union according to indigenous law, domestic partner in a civil union, or child, parent, brother, sister, whether such relationship results from birth, marriage or adoption

Indicate by marking the relevant boxes with a cross, if any family member of a principal as defined in section 5 is currently or has within the last 12 months been in the service of any of the following:

- a member of any municipal council
- a member of any provincial legislature
- a member of the National Assembly or the National Council of Province
- a member of the board of directors of any municipal entity
- an official of any municipality or municipal entity
- an employee of any department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act 1 of 1999)
- a member of an accounting authority of any national or provincial public entity
- an employee of Parliament or a provincial legislature

If any of the above boxes are marked, disclose the following:

Name of family member	Name of institution, public office, board or organ of state and position held	Status of service (tick appropriate column)	
		Current	Within last 12 months

Insert separate page if necessary

Section 8: **Record of termination of previous contracts with an organ of state**

Was any contract between the tendering entity, including any of its joint venture partners, terminated during the past five years for reasons other than the employer no longer requiring such works or the employer failing to make payment in terms of the contract?

☐ Yes ☐ No (tick appropriate box)

If yes, provide particulars:

Insert separate page if necessary

Section 9: **Declaration**

The undersigned, who warrants that he/she is duly authorised to do so on behalf of the tendering entity, confirms that the contents of this Declaration are within my personal knowledge, save where stated otherwise in an attachment hereto, and to the best of my belief is both true and correct, and that:

i) neither the name of the tendering entity, nor any of its principals, appears on:
   a) the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004 (Act No. 12 of 2004); or
   b) National Treasury's Database of Restricted suppliers (www.treasury.gov.za);

ii) the tendering entity or any of its principals has not been convicted of fraud or corruption by a court of law (including a court outside of the Republic of South Africa) within the last five years;

iii) any principal who is presently employed by the state has the necessary permission to undertake remunerative work outside such employment (attach permission to this declaration);

iv) the tendering entity is not associated, linked or involved with any other tendering entities submitting tender offers;

v) the tendering entity has not engaged in any prohibited restrictive horizontal practices, including consultation, communication, agreement, or arrangement with any competing or potential tendering entity regarding prices, geographical areas in which goods and services will be rendered, approaches to determining prices or pricing parameters, intentions to submit a tender or not, the content of the submission (specification, timing, conditions of contract, etc.) or intention to not win a tender;

vi) the tendering entity has no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest;

vii) neither the tenderer nor any of its principals owes municipal rates and taxes or municipal service charges to any municipality or a municipal entity, and are not in arrears for more than three months;

viii) SARS may, on an on-going basis during the term of the contract, disclose the tenderer's tax compliance status to the Employer and, when called upon to do so, obtain the written consent of any subcontractors who are subcontracted to execute a portion of the contract that is entered into in excess of the threshold prescribed by National Treasury, for SARS to do likewise.

I, the undersigned .....
certify that the information furnished in this form above is correct. I accept that the Employer may cancel this agreement should this declaration prove to be false.

....
Signature (duly authorised) Date

....
PositionName of Enterprise

NOTE 1: Section 30(1) of the Public Service Act, 1994, prohibits an employee (person who is employed in posts on the establishment of departments) from performing or engaging remunerative work outside his or her employment in the relevant department, except with the written permission of the executive authority of the department. When in operation, Section 8(2) of the Public Administration Management Act, 2014, will prohibit an employee of the public administration (i.e. municipalities and all national departments, national government components listed in Part A of Schedule 3 to the Public Service Act, provincial departments including the office of the premier listed in Schedule 1 of the Public Service Act and provincial departments listed in schedule 2 of the Public Service Act, and provincial government components listed in Part B of schedule 3 of the Public Service Act) or persons contracted to executive authorities in accordance with the provisions of section 12A of the Public Service Act of 1994 or persons performing similar functions in municipalities, from conducting business with the State or to be a director of a public or private company conducting business with the State. The offence for doing so is a fine or imprisonment for a period not exceeding five years, or both. It is also a serious misconduct which may result in the termination of employment by the employer.
NOTE 2: Regulation 44 of Supply Chain Management regulations issued in terms of the Municipal Finance Management Act of 2003 requires that municipalities and municipal entities should not award a contract to a person who is in the service of the State, a director, manager or principal shareholder in the service of the State or who has been in the service of the State in the previous twelve months.
NOTE 3: Regulation 45 of Supply Chain Management regulations requires a municipality or municipal entity to disclose in the notes to the annual statements particulars of any award made to a close family member in the service of the State.
NOTE 4: Corrupt activities which give rise to an offence in terms of the Prevention and Combating of Corrupt Activities Act of 2004, include improperly influencing in any way the procurement of any contract, the fixing of the price, consideration or other moneys stipulated or otherwise provided for in any contract, and the manipulating by any means of the award of a tender.
NOTE 5: Section 4 of the Competition Act of 1998 prohibits restrictive horizontal practice, including agreements between parties in a horizontal relationship, which have the effect of substantially preventing or lessening competition, directly or indirectly fixing prices or dividing markets or constituting collusive tendering. Section 5 also prohibits restrictive vertical practices. Any restrictive practices that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties.

ANNEXURE 3

TAX COMPLIANCE PERMISSION DECLARATION

I, ... (name)
the undersigned in my capacity as ..... (position)
on behalf of .....
..... (name of company)
herewith grant consent that SARS may disclose to the South African National Roads Agency SOC Limited (SANRAL) our tax compliance status on an ongoing basis for the contract term.

For this purpose, our unique security personal identification number (PIN) is .....,
our tax reference number is ……..….. and our tax clearance certificate number is .....

SIGNATURE: .....

DATE: .....

APPENDIX 7 IMPORTED CONTENT DECLARATION

Note to compiler: Include the Excel files of Annex C, D and E in Tender CD

ANNEX D: IMPORTED CONTENT DECLARATION – SUPPORTING SCHEDULE TO ANNEX C

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

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

This total must correspond with Annex C - C 21

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

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

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

Signature of tenderer from Annexure B:
(SATS 1286.2011) _____

(D53) Total of imported content & foreign currency payments - *(D32), (D45) & (D52)* above **R 0**

This total must correspond with Annex C - C 23

Date: _____

ANNEX E: IMPORTED CONTENT DECLARATION - SUPPORTING SCHEDULE TO ANNEX C

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

Local Products (Goods, Services and Works)	**Description of items purchased**	**Local suppliers**	**Value**
	(E6)	*(E7)*	*(E8)*

		***(E9)* Total local products (Goods, Services and Works)**	R 0
(E10)	**Manpower costs**	(Tenderer's manpower cost)	R 0
(E11)	**Factory overheads**	(Rental, depreciation & amortisation, utility costs, consumables etc.)	R 0
(E12)	**Administration overheads and mark-up**	(Marketing, insurance, financing, interest etc.)	R 0
		***(E13)* Total local content**	R 0

This total must correspond with Annex C - C24

Signature of tenderer from Annexure B:
(SATS 1286.2011) _____

Date: _____

Process when requesting exemption letters

For exemption requests on designated products and the minimum threshold for local content cannot be met for various reasons, bidders must apply for exemption per tender. After checking with the industry, **the dti** will decide whether to grant an exemption or not.

In the official request (signed letter), the following information should be included:

- Procuring entity/government department/state owned company.
- Tender/bid number.
- Closing date.
- Item(s) for which the exemption is being requested for.
- Description of the goods, services or works for which the requested exemption item will be used for and the local content that can be met.
- Reason(s) for the request.
- Supporting letters from local manufacturers and suppliers.

NB - Exemption letters are tender specific and applications are not transferrable.

The turnaround time in response to emption letters for all designated products is five working days with the exception of rail and boats/vessels which is seven working days.

Request for exemption letters are to be directed to:
Dr Tebogo Makube
Chief Director: Industrial Procurement
Tel: 012 394 3927
E-mail: tmakube@thedti.gov.za.

The turnaround time in response to textile, clothing, leather and footwear exemption letters request is two working days and requests are to be directed to:

Patricia Khumalo
Tel: 012 394 1390
E-mail: khumaloP@thedti.gov.za.

the dti
Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA

Private Bag X84, PRETORIA, 0001, **the dti** Campus, 77 Meintjies Street, Sunnyside, 0002, Tel: (012) 394 0000
the dti Customer Contact Centre local: 0861 843 384 International: +27 12 394 9500, www.thedti.gov.za

Guidance Document for the Calculation of Local Content

1. DEFINITIONS

Unless explicitly provided in this guideline, the definitions given in SATS 1286:2011 apply.

2. GENERAL

2.1. Introduction

This guideline provides tenderers with a detailed description of how to calculate local content of products (goods, services and works) by components/material/services and enables them to keep an updated record for verification requirements as per the SATS 1286:2011 Annexure A and B.

The guideline consists of two parts, namely:

- a written guideline; and
- three declarations that must be completed:
  - Declaration C: "Local Content Declaration – Summary Schedule" (see Annexure C);
  - Declaration D: "Imported Content Declaration – Supporting Schedule to Annex C" (see Annexure D); and
  - Declaration E: "Local Content Declaration – Supporting Schedule to Annex C" (see Annexure E).

The guidelines and declarations should be used by tenderers when preparing a tender. A tenderer must complete Declarations D and E, and consolidate the information on Declaration C.

Annexure C must be submitted with the tender by the closing date and time as determined by the Tender Authority. The Tender Authority reserves the right to request that Declarations D and E also be submitted.

If the tender is successful, the tenderer must continuously update Declarations C, D and E with actual values for the duration of the contract.

NOTE:

Annexure A is a note to the purchaser in SATS 1286:2011; and
Annexure B is the Local Content Declaration IN SATS 1286:2011.

2.2. What is local content?

According to SATS 1286:2011, the local content of a product is the tender price less the value of imported content, expressed as a percentage. It is, therefore, necessary to first compute the imported value of a product to determine the local content of a product.

2.3. Categories: Imported and Local Content

The tenderer must differentiate between imported content and local content.

Imported content of a product by components/material/services is separated into two categories, namely:

- products imported directly by the tenderer; and
- products imported by a third party and supplied to the tenderer.

2.3.1. Imported Content

Identify the imported content, if any, by value for products by component/material/services. In the case of components/materials/services sourced from a South African manufacturer, agent, supplier or subcontractor (i.e. third party), obtain that information and Declaration D from the third party.

Calculate the imported content of components/materials/services to be used in the manufacture of the total quantity of the products for which the tender is to be submitted.

As stated in clause 3.2.4 of SATS 1286:2011: “If information on the origin of components, parts or materials is not available, it will be deemed to be imported content.”

2.3.1.1. Imported directly by the tenderer:

When the tenderer import products directly, the onus is on the tenderer to provide evidence of any components/materials/services that were procured from a non-domestic source. The evidence should be verifiable and pertain to the tender as a whole. Typical evidence will include commercial invoices, bills of entry, etc.

When the tenderer procures imported services such as project management, design, testing, marketing, etc and makes royalty and lease payments, such payments relating to the tender must be included when calculating imported content.

2.3.1.2. Imported by a third party and supplied to the tenderer:

When the tenderer supplies components/material/services that are imported by any third party (for example, a domestic manufacturer, agent, supplier or subcontractor in the supply chain), the onus is on the tenderer to obtain verifiable evidence from the third party.

The tenderer must obtain Declaration D from all third parties for the related tender. The third party must be requested by the tenderer to continuously update Declaration D. Typical evidence of imported content will include commercial invoices, bills of entry etc.

When a third party procures imported services such as project management, design, testing, marketing etc. and makes royalty and lease payments, such payments relating to the tender must be included when calculating imported content.

2.3.1.3. Exempt Imported Content:

Exemptions, if any, are granted by the Department of Trade and Industry (**the dti**). Evidence of the exemptions must be provided and included in Annexure D.

2.3.2. Local Content

Identify and calculate the local content, by value for products by components/materials/services to be used in the manufacture of the total quantity of the products.

3. ANNEXURE C

3.1. Guidelines for completing Annexure C: Local Content Declaration – Summary Schedule

Note: The paragraph numbers correspond to the numbers in Annexure C.

C1. Tender Number

Supply the tender number that is specified on the specific tender documentation.

C2. Tender description

Supply the tender description that is specified on the specific tender documentation.

C3. Designated products

Supply the details of the products that are designated in terms of this tender (i.e. buses).

C4. Tender Authority

Supply the name of the tender authority.

C5. Tendering Entity name

Provide the tendering entity name (for example, Unibody Bus Builders (Pty) Ltd).

C6. Tender Exchange Rate

Provide the exchange rate used for this tender, as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

C7. Specified local content %

Provide the specified minimum local content requirement for the tender (i.e. 80%), as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MDB) 6.2.

C8. Tender item number

Provide the tender item number(s) of the products that have a local content requirement as per the tender specification.

C9. List of items

Provide a list of the item(s) corresponding with the tender item number. This may be a short description or a brand name.

Calculation of local content

C10. Tender price

Provide the unit tender price of each item excluding VAT.

C11. Exempted imported content

Provide the ZAR value of the exempted imported content for each item, if applicable. These value(s) must correspond with the value(s) of column D16 on Annexure D.

C12. Tender value net of exempted imported content

Provide the net tender value of the item, if applicable, by deducting the exempted imported content (C11) from the tender price (C10).

C13. Imported value

Provide the ZAR value of the items' imported content.

C14. Local value

Provide the local value of the item by deducting the Imported value (C13) from the net tender value (C12).

C15. Local content percentage (per item)

Provide the local content percentage of the item(s) by dividing the local value (C14) by the net tender value (C12) as per the local content formula in SATS 1286.

Tender Summary

C16. Tender quantity

Provide the tender quantity for each item number as per the tender specification.

C17. Total tender value

Provide the total tender value by multiplying the tender quantity (C16) by the tender price (C10).

C18. Total exempted imported content

Provide the total exempted imported content by multiplying the tender quantity (C16) by the exempted imported content (C11). These values must correspond with the values of column D18 on Annexure D.

C19. Total imported content

Provide the total imported content of each item by multiplying the tender quantity (C16) by the imported value (C13).

C20. Total tender value

Total tender value is the sum of the values in column C17.

C21. Total exempted imported content

Total exempted imported content is the sum of the values in column C18. This value must correspond with the value of D19 on Annexure D.

C22. Total tender value net of exempted imported content

The total tender value net of exempt imported content is the total tender value (C20) less the total exempted imported content (C21).

C23. Total imported content

Total imported content is the sum of the values in column C19. This value must correspond with the value of D53 on Annexure D.

C24. Total local content

Total local content is the total tender value net of exempted imported content (C22) less the total imported content (C23). This value must correspond with the value of E13 on Annexure E.

C25. Average local content percentage of tender

The average local content percentage of tender is calculated by dividing total local content (C24) by the total tender value net of exempted imported content (C22).

4. ANNEXURE D

4.1. Guidelines for completing Annexure D: "Imported Content Declaration – Supporting Schedule to Annexure C"

Note: The paragraph numbers correspond to the numbers in Annexure D.

D1. Tender number

Supply the tender number that is specified on the specific tender documentation.

D2. Tender description

Supply the tender description that is specified on the specific tender documentation.

D3. Designated products

Supply the details of the products that are designated in terms of this tender (i.e. buses).

D4. Tender authority

Supply the name of the tender authority.

D5. Tendering entity name

Provide the tendering entity name (i.e. Unibody Bus Builders (Pty) Ltd).

D6. Tender exchange rate

Provide the exchange rate used for this tender, as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

Table A. Exempted Imported Content

D7. Tender item number

Provide the tender item number(s) of the product(s) that have imported content.

D8. Description of imported content

Provide a list of the exempted imported product(s), if any, as specified in the tender.

D9. Local supplier

Provide the name of the local supplier(s) supplying the imported product(s).

D10. Overseas supplier

Provide the name(s) of the overseas supplier(s) supplying the exempted imported product(s).

D11. Imported value as per commercial invoice

Provide the foreign currency value of the exempted imported product(s) disclosed in the commercial invoice accepted by the South African Revenue Service (SARS).

D12. Tender exchange rate

Provide the exchange rate used for this tender as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

D13. Local value of imports

Convert the value of the exempted imported content as per commercial invoice (D11) into the ZAR value by using the tender exchange rate (D12) disclosed in the tender documentation.

D14. Freight costs to port of entry

Provide the freight costs to the South African Port of the exempted imported item.

D15. All locally incurred landing costs and duties

Provide all landing costs including customs and excise duty for the exempted imported product(s) as stipulated in the SATS 1286:2011.

D16. Total landed costs excl VAT

Provide the total landed costs (excluding VAT) for each item imported by adding the corresponding item values in columns D13, D14 and D15. These values must be transferred to column C11 on Annexure C.

D17. Tender quantity

Provide the tender quantity of the exempted imported products as per the tender specification.

D18. Exempted imported value

Provide the imported value for each of the exempted imported product(s) by multiplying the total landed cost (excl. VAT) (D16) by the

tender quantity (D17). The values in column D18 must correspond with the values of column C18 of Annexure C.

D19. Total exempted imported value

The total exempted imported value is the sum of the values in column D18. This total must correspond with the value of C21 on Annexure C.

Table B. Imported Directly By Tenderer

D20. Tender item numbers

Provide the tender item number(s) of the product(s) that have imported content.

D21. Description of imported content:

Provide a list of the product(s) imported directly by tender as specified in the tender documentation.

D22. Unit of measure

Provide the unit of measure for the product(s) imported directly by the tenderer.

D23. Overseas supplier

Provide the name(s) of the overseas supplier(s) supplying the imported product(s).

D24. Imported value as per commercial Invoice

Provide the foreign currency value of the product(s) imported directly by tenderer disclosed in the commercial invoice accepted by the South African Revenue Service (SARS).

D25. Tender rate of exchange

Provide the exchange rate used for this tender as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

D26. Local value of imports

Convert the value of the product(s) imported directly by the tenderer as per commercial invoice (D24) into the ZAR value by using the tender exchange rate (D25) disclosed in the tender documentation.

D27. Freight costs to port of entry

Provide the freight costs to the South African Port of the product(s) imported directly by the tenderer.

D28. All locally incurred landing costs and duties

Provide all landing costs including customs and excise duty for the product(s) imported directly by the tenderer as stipulated in the SATS 1286:2011.

D29. Total landed costs excl VAT

Provide the total landed costs (excluding VAT) for each item imported directly by the tenderer by adding the corresponding item values in columns D26, D27 and D28.

D30. Tender quantity

Provide the tender quantity of the product(s) imported directly by the tenderer as per the tender specification.

D31. Total imported value

Provide the total imported value for each of the product(s) imported directly by the tenderer by multiplying the total landed cost (excl. VAT) (D29) by the tender quantity (D30).

D32. Total imported value by tenderer

The total value of imports by the tenderer is the sum of the values in column D31.

Table C. Imported by Third Party and Supplied to the Tenderer

D33. Description of imported content

Provide a list of the product(s) imported by the third party and supplied to the tenderer as specified in the tender documentation.

D34. Unit of measure

Provide the unit of measure for the product(s) imported by the third party and supplied to tenderer as disclosed in the commercial invoice.

D35. Local supplier

Provide the name of the local supplier(s) supplying the imported product(s).

D36. Overseas supplier

Provide the name(s) of the overseas supplier(s) supplying the imported products.

D37. Imported value as per commercial invoice

Provide the foreign currency value of the product(s) imported by the third party and supplied to the tenderer disclosed in the commercial invoice accepted by SARS.

D38. Tender rate of exchange

Provide the exchange rate used for this tender as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

D39. Local value of imports

Convert the value of the product(s) imported by the third party as per commercial invoice (D37) into the ZAR value by using the tender exchange rate (D38) disclosed in the tender documentation.

D40. Freight costs to port of entry

Provide the freight costs to the South African Port of the product(s) imported by third party and supplied to the tenderer.

D41. All locally incurred landing costs and duties

Provide all landing costs including customs and excise duty for the product(s) imported by third party and supplied to the tenderer as stipulated in the SATS 1286:2011.

D42. Total landed costs excluding VAT

Provide the total landed costs (excluding VAT) for each product imported by third party and supplied to the tenderer by adding the corresponding item values in columns D39, D40 and D41.

D43. Quantity imported

Provide the quantity of each product(s) imported by third party and supplied to the tenderer for the tender.

D44. Total imported value

Provide the total imported value of the product(s) imported by third party and supplied to the tenderer by multiplying the total landed cost (D42) by the quantity imported (D43).

D45. Total imported value by third party

The total imported value from the third party is the sum of the values in column D44.

Table D. Other Foreign Currency Payments

D46. Type of payment

Provide the type of foreign currency payment. (i.e. royalty payment for use of patent, annual licence fee, etc).

D47. Local supplier making the payment

Provide the name of the local supplier making the payment.

D48. Overseas beneficiary

Provide the name of the overseas beneficiary.

D49. Foreign currency value paid

Provide the value of the listed payment(s) in their foreign currency.

D50. Tender rate of exchange

Provide the exchange rate used for this tender as per the Standard Bidding Document (SBD) and Municipal Bidding Document (MBD) 6.2.

D51. Local value of payments

Provide the local value of each payment by multiplying the foreign currency value paid (D49) by the tender rate of exchange (D50).

D52. Total of foreign currency payments declared by tenderer and/or third party

The total of foreign currency payments declared by tenderer and/or a third party is the sum of the values in column D51.

D53. Total of imported content and foreign currency payment

The total imported content and foreign currency payment is the sum of the values in column D32, D45 and D52. This value must correspond with the value of C23 on Annexure C.

5. ANNEXURE E

5.1. Guidelines to completing Annexure E: "Local Content Declaration- Supporting Schedule to Annexure C"

The paragraph numbers correspond to the numbers in Annexure E

E1. Tender number

Supply the tender number that is specified on the specific tender documentation.

E2. Tender description

Supply the tender description that is specified on the specific tender documentation.

E3. Designated products

Supply the details of the products that are designated in terms of this tender (for example, buses/canned vegetables).

E4. Tender authority

Supply the name of the tender authority.

E5. Tendering entity name

Provide the tendering entity name (for example, Unibody Bus Builders (Pty) Ltd) Ltd).

Local Goods, Services and Works

E6. Description of items purchased

Provide a description of the items purchased locally in the space provided.

E7. Local supplier

Provide the name of the local supplier that corresponds to the item listed in column E6.

E8. Value

Provide the total value of the item purchased in column E6.

E9. Total local products (Goods, Services and Works)

Total local products (goods, services and works) is the sum of the values in E8.

E10. Manpower costs:

Provide the total of all the labour costs accruing only to the tenderer (i.e. not the suppliers to tenderer).

E11. Factory overheads:

Provide the total of all the factory overheads including rental, depreciation and amortisation for local and imported capital goods, utility costs and consumables. (Consumables are goods used by individuals and businesses that must be replaced regularly because they wear out or are used up. Consumables can also be defined as the components of an end product that are used up or permanently altered in the process of manufacturing, such as basic chemicals.)

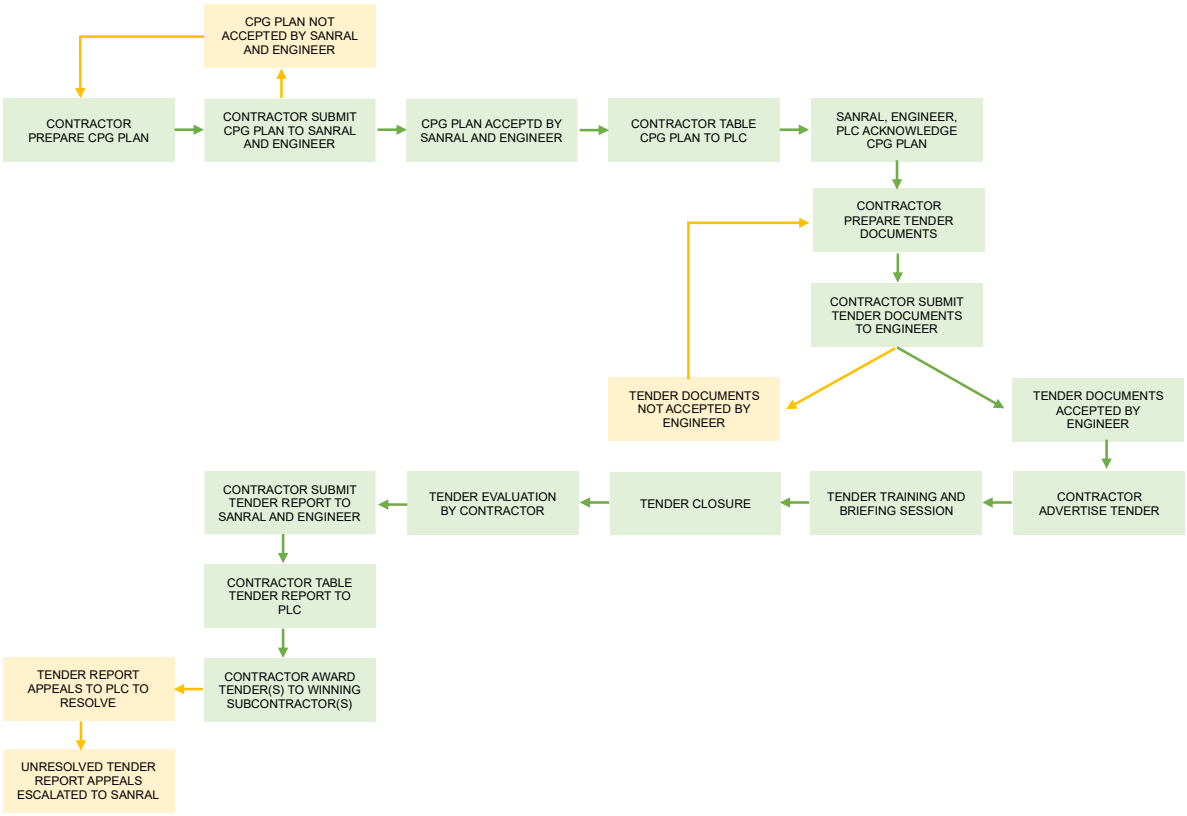
E12. Administration overheads and mark-up:

Provide the total of all the administration overheads, including marketing, insurance, financing, interest and mark-up costs.

E13. Total local content:

The total local content is the sum of the values of E9, E10, E11 and E12. This total must correspond with C24 of Annexure C.

APPENDIX 8.1 CONTRACT PARTICIPATION GOAL (CPG) PLAN FORMAT



Contractor Logo and details

Contract Participation Goal Plan

SANRAL Contract Number: XXXX

Contract Name: XXXX

(SANRAL Logo)

Author:
Date:
Version

1. INTRODUCTION

Xxx (insert details)
Xxx
Xxx

2. OBJECTIVE

Xxx (insert details)
Xxx
Xxx

3. TARGETED ENTERPRISES

3.1 List of Work Packages for Targeted Enterprises

3.2 List of Work Packages for Main Contractor

Table 1: CPG Expenditure Breakdown

Project Number				
Project Name				
Target Groups	**Final Contract Value**		**R**	
	Min (TE) CPG Target		**%**	
	Min (TE) CPG Target Amount		**R**	
Description of CPG Category	**CPG Target as per Contract**		**CPP Planned Achievement**	
	Min. Target % as per Contract	**Target Amount**	**Min. Allocated % as per Market Analyses**	**Expected Amount**
Targeted Labour (TL)	**Min. xx% of Final Contract Value**	**R**	**%**	**R**
Youth				
Women				
Disabled				
Other				
Targeted Enterprises (TEs)	**Min. xx% of Final Contract Value**	**R**	**%**	**R**
Youth				
Women				
Military Veterans				
Disabled				
CIDB 1 and 2				
CIDB 3 and 4				
Other				

3.3 Breakdown of Work Packages

The table below describes the work package breakdown with reference to Target Groups and Functionality:

Table 1: Breakdown of Work Packages

Project Number	SANRAL R.531-020-2026/1															
Project Name	THE R531 SECTION 2 - EMERGENCY REPAIR OF DAMAGED STEEL RIBBED PIPE CULVERT AT KM 6.9 AND SINKHOLE AT KM 11															
Contract Price																
CPG Target %																
CPG Target Value																
No.	**Type of Work Package**	**EME or QSE**	**TE Amount**	**% of CPG Value**	**Proposed CIDB Grading**	**Tender Value Limit**	**Proposed No. of Work Packages**	**Proposed TE Target Group Amount**					**CIDB Expenditure**			
								Black Youth	**Black Woman**	**Black Military Veterans**	**Black Disabled**	**Other**	**Black 1 & 2 CE**	**Black 3 & 4 CE**	**Comment**	
TE Subcontractors																
1																
2																
3																
TE Suppliers and Service Providers																
4																
5																
6																
TE Subcontractor Sub-total																
TE Supplier/Service Provider Sub-total																
Provisional Total																
Provisional %																
Target Amount																
Target %																

3.4 Schedule of works and CPG Expenditure Plan

1.4.1 Schedule of work (Insert Programme)

1.4.2 CPG Expenditure Plan

Table 3: Example: CPG Expenditure Plan

Planned CPG Expenditure					
Final Contract Value	R 100 000 000				
CPG (TE) Value	R 30 000 000				
Timeline	**2021/2022**	**2021/2022**	**2021/2022**	**2021/2022**	**Total**
Project Expenditure	R 20 000 000	R 30 000 000	R 30 000 000	R 20 000 000	R 100 000 000
Work Packages (CPG %) Expenditure	R 6 000 000	R 9 000 000	R 9 000 000	R 6 000 000	R 30 000 000
Cumulative % Spend	20%	50%	80%	100%	
Cumulative Amount Spend	R 6 000 000	R 6 000 000	R 6 000 000	R 6 000 000	R 6 000 000
Package 1	R 2 000 000				
Package 2	R 2 000 000				
Package 3	R 2 000 000				
Total	**R 6 000 000**	R	R	R	R

1.5 Targeted Enterprises Procurement Program

Table 4: Example: Targeted Enterprise Procurement Program

Item	**Activity Name**	**Duration (Days)**	**Start**	**Finish**

1.6 Procedures for Targeted Enterprises Subcontracting (*As Per Section D1000 of the Specifications*)

1.6.1 Tender Preparation

1.6.1.1 Compilation of TE Work Packages

1.6.1.2 Establishment of a Help Desk

1.6.1.3 Market Analysis and Resources and Skills Audit

1.6.1.4 Compilation of Tender Documents

1.6.2 Tender Process

1.6.2.1 Advertising of Works Packages

1.6.2.2 Tender Briefing Sessions

1.6.2.3 Minimum Tender Submission Documents

1.6.2.4 Tender Closure and Opening of Tenders

1.6.3 Tender Evaluation

1.6.3.1 Eligibility

1.6.3.2 Functionality

1.6.3.3 Price and Preference

1.6.3.4 Compliance Check

1.6.4 Appointment of Successful Targeted Enterprise

1.6.4.1 Price and Rates Discussion

1.6.4.2 Sub-contract Agreement

2. TARGETED LABOUR

4.1 Appointment of Targeted Labour

5. TRAINING DEVELOPMENT AND IMPLEMENTATION PLAN

5.1 General Overview

5.2 Purpose of the Training Interventions

5.3 Proposed Training for Targeted Enterprises and Targeted Labour

The table below depicts the proposed training for the Targeted Enterprises.

Table 5: Proposed Targeted Enterprise Training

Training Summary							
No.	**Course Content**	**Facilitator or Mentor**	**No. of Participants**	**Duration of the Course**	**Training Type**	**Start Date**	**Comments**
1							
2							
3							
4							
5							
Etc.							

The table below depicts the proposed training for the Targeted Labour.

Table 6: Proposed Targeted Labour Training

Training Summary							
No.	**Course Content**	**Facilitator or Mentor**	**No. of Participants**	**Duration of the Course**	**Training Type**	**Start Date**	**Comments**
1							
2							
3							
4							
5							

Etc.							

5.4 Training Methodology

5.5 Selection of Participants

5.6 Targeted Participants

5.7 Training Materials

5.8 Training Times

5.9 Training Implementation Plan

5.10 Supporting Documents

APPENDIX 8.2 SANRAL PROJECT LIAISON COMMITTEE AND PROJECT LIAISON OFFICER FORMS

FORM A1: PROJECT LIAISON COMMITTEE – MEMBER NOMINATION FORM

Notes to Nominators and Nominees:

a) General Principles of Membership:
   i) Membership is open to any person residing within the boundaries of the Project Area and that are duly nominated by their constituency.
   ii) Persons nominated as co-opted members do not necessarily have to reside within the boundaries of the Project Area (see explanation in c) below).
   iii) The nomination process will be conducted in consultation with the Local Municipalities within the Project Area.

b) Nominations for Membership
   i) Nominators will submit this prescribed nomination form and include the following information:
      a. Name of the nominee,
      b. Name of the proposer and five (5) seconders,
      c. Residential address of the nominee,
      d. Constituency whom the nominee will represent, and
      e. Acceptance of nomination by the nominee.

c) Co-opted Members
   i) Co-opted members are members that the PLC chooses to add in addition to PLC members selected through the representative nomination process.
   ii) Co-opted members may include a PLC member from the RRM PLC within the Project Area, and specialists such as environmental specialists, etc.
   iii) Councillors will also form part of the co-opted members and will not have voting rights.
   iv) Co-opted members will have limited participation rights in PLC meetings, will not have voting rights and will not receive any reimbursement for participating in the PLC meeting.

d) Remuneration of Government Officials:
   i) Government officials shall not receive any reimbursement for participating in the PLC meetings.

e) Duration of Membership
   i) The duration of a nominee's membership of the PLC will depend on the duration of the project or the duration of the PLC, whichever occurs first.
   ii) A nominee's membership will end with immediate effect in terms of the Rules of Engagement for PLC members.

1. Details of individual or organisation making the nomination:

I, ……, representing ……

hereby nominate ……

to be a member of the PLC for Project

……

Signature …… Date ……..

2. Details of the seconders (individuals supporting the nomination):

	Name	Surname	Organisation	Signature
1				
2				
3				
4				
5				

3. Details of the individual accepting the nomination (nominee):

Name and Surname	
Organisation	
Residential Address	
Ward Number	
Municipality	

I, ……, I.D. number ……

hereby accept the nomination to be a member of the PLC for Project …….

……

I further accept to be bound by the rules, responsibilities and duties prescribed for the Project Liaison Committee Members and the Project Liaison Officers and will always act in good faith.

Signature …….. Date ……..

Witnesses:

Name and Surname …….. Signature ……..

Name and Surname …….. Signature ……..

FORM A2: PROJECT LIAISON COMMITTEE – RULES, RESPONSIBILITIES AND DUTIES (Derived from D1004.03)

The PLC is the official communication channel through which SANRAL, the 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 Form describes the general processes pertaining to the PLC, as well as its role and responsibilities.

1. Establishment of the PLC

The PLC will be established prior to commencement of the Contract or as soon as possible by SANRAL. The PLC consists of SANRAL, the Engineer, Contractor and representatives of project Stakeholders and affected Communities. To ensure that all relevant Stakeholders are represented in the PLC, SANRAL did, or will, consult with the Executive Mayor's office, as well as with the LED Department of the Local Municipalities in the Project Area

Stakeholder representation on the PLC is project and project Area specific and may, amongst others, include:

a) Relevant provincial departments.
b) Relevant District and Local Municipal departments.
c) Traditional leadership representation.
d) Organised forums representing community interest groups.
e) Organised forums representing the youth, woman, and people with disabilities.
f) other structured community groups such as religion, education, farming, etc.
g) Organised forums representing the business sector.
h) Organised forums representing the transport sector.
i) Organised forums representing road users and road safety interest groups.
j) Organised forums representing environmental interest groups.
k) Any other relevant stakeholder forum or organisation recognised by the Employer and the District and/or Local Municipality.

Every forum/organisation/constituency may have one (1) representative on the PLC, which representation will be confirmed by a duly signed nomination form.

It should be noted that the PLC is not a political platform. While political office bearers may be invited to some PLC meetings, they may not be PLC members and hence, will not have voting rights when attending a PLC meeting.

2. Reimbursement of PLC Members

PLC membership is voluntary and PLC members will not be remunerated for any time spent in PLC meetings or work done outside of PLC meetings, which are associated with representing their constituencies on the PLC.

In establishing a reimbursement amount for PLC members, the factors listed below, are considered for the proposed amount of R1200 per seating per PLC member in a PLC meeting:

i) Transportation costs.
ii) Sustenance (if not provided during meetings).
iii) Type, size, and technical complexity of the project.
iv) Facilitation of performance milestones.

PLC members will be reimbursed monthly, and the reimbursable amount may be revised bi-annually should the actual costs incurred by PLC members change during the project.

The PLC reimbursement amount will be increased annually, or twelve (12) months after the last bi-annual adjustment, based on the CPI figure contained in Table B2 of Statistical Release P0141 by StatsSA (base date July 2025).

3. Induction of the PLC

SANRAL will conduct an induction meeting with the PLC to acquaint PLC members with the following information:

a) SANRAL's Horizon 2030 Strategy.
b) SANRAL's Principles for Project Liaison.
c) The role and responsibilities of PLC members.
d) SANRAL's Transformation Policy.
e) How the Transformation Policy impacts on SMMEs.
f) Relevant details of the Contract, e.g.
    i) Start and end dates
    ii) Important milestones
    iii) CPG targets
    iv) Envisaged Targeted Enterprise packages
    v) Envisaged work for other SMMEs (non-CPG).

4. Rules of Engagement for the PLC

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.

a) General Matters and Membership

    i) A PLC member may not be a politically elected representative, and political party representation will not be allowed in the PLC.
    ii) Ward Councillors nominated by the Mayor may interact with the PLC through the Mayor's Office and the PLC Chairperson (the Employer).
    iii) If required, and in consultation with SANRAL, a Political Steering Committee (PSC) may be established to address political matters.

b) Term of Office for the PLC

    i) The duration of PLC members' participating in the PLC (term of office) shall depend on the duration of the project.
    ii) If SANRAL finds the performance of a PLC member to be below expectation or their conduct to be unacceptable, the affected member will be discharged from their obligations and the constituency whom they represented will be requested to nominate a replacement member.

c) Targeted Enterprises and Targeted Labour

    PLC members shall:

    i) ensure that they, or companies in which they hold equity, do not tender for any work or on any subcontract that are issued for this Contract. Should a PLC member, or a company in which he/she holds equity, tender for such work or subcontract, it will be treated as a conflict of interest and the person shall cease to be a PLC member for this Contract, and the tender proposal submitted will not be evaluated.
    ii) not have private or business interests in any of the sub-contract tenders tabled to the PLC or considered in this Contract.
    iii) shall recuse themselves from discussions that deal with a sub-contract 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 sub-contract to a tenderer known to the member.
    iv) during the tender and tender evaluation processes, neither deliberately favoured nor prejudiced a person or tenderer, as intended, or contemplated in treasury Regulation 16, A8.3 (a), (b) & (c).
    v) ensure that no conflict of interest arises from members' involvement in the PLC and potential involvement in targeted labour recruitment and/or targeted enterprises procurement and/or any other manufacturer/supplier/Subcontractor/service provider procurement or involvement in the contract.

d) Confidentiality

i) PLC members shall accept that all information, documentation, and discussions regarding any matter serving before the PLC are confidential and undertake not to communicate this information outside of the PLC meeting.
ii) Decisions of PLC meetings may not be disseminated to any party other than the constituency whom they are representing.
iii) Information for public dissemination shall be clearly documented in the minutes of the meeting of the PLC to ensure that sensitive information is disseminated to the correct audience.

e) Removal from Office

i) PLC members who violate the provisions of these Rules of Engagement for PLCs will be removed from their role as a PLC member at the sole discretion of SANRAL.
ii) SANRAL reserves the right to recover any costs from PLC members whose actions can be regarded as detrimental to SANRAL or to the execution of the project.
iii) SANRAL also reserves the right to recommend criminal prosecution if the offence warrants such action.
iv) SANRAL reserves the right to dissolve the entire PLC should it believes that such an action is in its best interest, or that of the project. SANRAL will not be obliged to reconstitute the PLC if such a dissolution occurs.

5. Responsibilities and Duties of the PLC

The PLC will execute specific duties during the design and construction phases of the project.

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 will execute the following duties:

a) Project Design Stage

i) Meet as often as required to provide input to the project's design stage matters which are of interest or concern to the parties to the PLC.
ii) Peruse the Project Liaison Committee rules, responsibilities and duties outlined in this Form and agree on the rules, responsibilities, and duties of, and procedures to be followed by, the PLC to fulfil its duties.

Note: The principles outlined in this Form shall not be amended, but duties and procedures may be altered to be project specific and to improve the functionality of the PLC.

iii) Act in accordance with the agreed terms of reference for the PLC.
iv) Inform the Employer's Project Manager of any training that PLC members require to execute their duties.
v) Provide input to the Engineer in sourcing suitable candidates, based on SANRAL's qualifying criteria, for the position of PLO.
vi) Observe 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.
vii) Provide input to the Engineer in identifying the project's Target and Project Area(s) from which Targeted Labour and Targeted Enterprises could be employed and sub-contracted, respectively.
viii) Provide input to the Engineer in identifying the project's Target Groups for inclusion in the Tender Documents.

b) Project Construction Stage

i) Meet formally prior to SANRAL'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.
ii) Provide input to the Contractor in establishing the selection criteria and process to employ Targeted Labour

iii) Provide input to the Contractor in identifying the eligibility, functionality, preference, and compliance criteria to select and sub-contract Targeted Enterprises.
iv) Provide input to the Databases compiled by the PLO and the Contractor from which Targeted Labour will be selected and employed and Targeted Enterprises will be sub-contracted, respectively.
v) Observe that the criteria and methodologies applied by the Contractor to select and employ Targeted Labour and sub-contract Targeted Enterprises are executed in a fair and transparent manner and are within Government legislation and regulations and SANRAL's Policies.
vi) Observe 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 SANRAL's employment and subcontracting requirements.
vii) Provide input to the Contractor on the training needs, eligibility criteria and selection criteria for the provision of training to Targeted Labour, Targeted Enterprises, Target Groups, project Stakeholders and the affected Communities.
viii) Observe that training and skills development programmes, which the Contractor committed to, are implemented, and executed as approved and intended.
ix) Inform the constituency whom they represent of any project matters which the respective parties to the PLC wishes to communicate with each other.
x) Inform the constituencies whom they represent of any project matters that are impacting or may impact, either positively or negatively, on the respective parties to the PLC.
xi) Inform the SANRAL, the Engineer and Contractor of any road safety concerns within the Project Area(s) and provide input on possible mitigating measures and/or road safety programs that will be most suitable for acceptance by the affected Communities to promote road safety.
xii) Agree on a dispute resolution mechanism to resolve any disputes that may arise between the parties to the PLC.
xiii) Assist parties to the PLC to liaise with their respective constituencies to resolve any disputes amongst the parties which may occur due to the project.

6. PLC Meetings

a) Frequency
   i) Meetings will be conducted monthly or as required by the parties to the PLC based on the urgency of project matters.

b) Notice of meetings
   i) The notice of the PLC meeting shall be given at least seven (7) calendar days prior to the meeting date.
   ii) Where meetings have been diarised over a period by the PLC, it shall be the duty of each PLC member to ensure his/her attendance on the set dates.
   iii) Where a PLC member has been absent from a meeting, he/she bears the onus of acquiring the date and venue of the next meeting.

c) Venue
   i) The venue for PLC meetings shall be the project site office or any other venue agreed to by the members of the PLC and approved by SANRAL.
   ii) During the Covid 19 lockdown, or any other lockdown as announced by government, the meetings shall be held on an online platform such as WhatsApp, Teams, Zoom or similar.

d) Agenda
   i) An agenda shall be made available or displayed to PLC members at the commencement of such meetings or the minutes of the previous meeting will serve as the agenda of such meetings.
   ii) The agenda shall not be amended without prior approval from SANRAL.

e) Chairperson
   i) PLC meetings shall be chaired by SANRAL which will typically be the SANRAL's Project Manager, or a SANRAL staff member with decision--making delegation.
   ii) The Chairperson shall:
      a. chair all meetings of the PLC,

b. co-ordinate all the activities of the PLC with the assistance of the PLO,
c. monitor that PLC members are fulfilling their tasks as assigned by the PLC,
d. see to the execution of decisions taken by the PLC,
e. ensure, with the assistance of the Engineer, the validity of members' claims for reimbursement,
f. monitor that all activities of the PLC comply with current laws, regulations, and SANRAL policies, and
g. be a co-signatory to all official documents of the PLC.

f) Secretariate
i) The Engineer's staff shall provide a secretarial service to take minutes of PLC meetings.
ii) Secretarial support other than taking minutes at PLC meetings shall be provided by the PLO.

g) Quorum
i) The quorum for PLC meetings shall be constituted by 50%+1 ratio excluding co-opted members.

h) Apologies and Non-attendance
i) Apologies shall be in writing. In an emergency where a PLC member could not apologise in advance, a written apology must be submitted as soon as possible.
ii) Apologies may be sent through any media agreed to by the PLC for example through SMS or WhatsApp messaging or similar application.
iii) The constituency, represented by a PLC member who fails to attend three (3) consecutive meetings without an apology, will be informed in writing and requested to nominate a replacement member.

i) Language
i) PLC meetings will be conducted in English to enable all participants to understand the discussions of the meeting.
ii) However, care and consideration must be given to provide non-English speakers an opportunity to participate and hence, if agreed by all PLC members, any of the 11 official languages may be spoken and translated during the meeting. Even if a language other than English is used, the minutes of the meeting will be recorded in English.

j) Other
i) Sustenance shall be provided at PLC meetings as per government policy.

7. Amendments or Additions

The rules, responsibilities, and duties for PLC members in this Form are adopted and will be in force with effect from this ……. day of ……... 20……

	Name and Surname	Signature	Date
Accepted for SANRAL			
Accepted for Engineer			
Accepted for Contractor			
Accepted for PLC			
Accepted by PLC			

FORM A3: CHECKLIST – PROJECT LIAISON COMMITTEE – MEMBER APPOINTMENT

Notes:
a) The checklist consists of several sections. Only print the relevant sections.
b) Indicate what has been completed and sign off at the end.
c) While other individuals can assist in this process, the Project Manager (PM) remains accountable for all deliverables.
d) All forms/records to be kept by the PM and availed to line management upon request.

Form No.	Item	Explanatory Note for Compliance Check		Responsibility	Complete (Yes/No or N/A)
A3.1	**PLC Member Appointment:**				
1	**Nomination forms completed.**	a)	Form must indicate the nominee and the individual or organisation making the nomination.	Stakeholder Coordinator (SC) /Contracts Engineer (CE)	
		b)	Forms circulated with the assistance of Municipality's LED office.	SC/CE	
		c)	All completed forms collected from the Municipality's LED office.	SC/CE	
2	**Members selected.**	a)	Confirm the membership of the PLC.	SC/SF	
		b)	Where there are multiple entries, the team can select the member with the highest number of nominations.	SC/SF	
		c)	Where there is an equal number of nominations, the team will request the nominating organisation to confirm the member who should join the PLC.	SC/SF	
		d)	The last alternative is to allow for a snap election in a community meeting.	SC/SF	
		e)	Communicate the PLC membership to the affected stakeholders.	SC/SF	
3	**Formal appointment to PLC signed.**	a)	Ensure that the PLC membership is confirmed in line with Form A3.2	SC/Project Manager (PM)	
		b)	All members must be provided with a copy of the PLC Duties and Responsibilities (extract from	SC/SF/PM	

Form No.	Item	Explanatory Note for Compliance Check		Responsibility	Complete (Yes/No or N/A)
			D1004.03). The signed duties and responsibilities must be scanned and shared with all members. The PM retains a copy for future reference.		
		c)	Document must be signed again when the membership changes. The PM must add the version of the document to ensure that the various versions can be tracked.	SF/PM	
Stakeholder Coordinator:					
Name		**Sign**		**Date**	
Project Manager:					
Name		**Sign**		**Date**	

FORM A3.2: PROJECT LIAISON COMMITTEE – MEMBER LIST

No.	Sector/Entity/Forum	Name and Surname	Signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

FORM A4: CHECKLIST – PROJECT LIAISON OFFICER – APPOINTMENT

Notes:
a) The checklist consists of several sections. Only print relevant sections.
b) Indicate what has been completed and sign off at the end.
c) While other individuals can assist in this process, the Project Manager (PM) remains accountable for all deliverables.
d) All forms/records to be kept by the PM and availed to line management upon request.

Form No.	Item	Explanatory Note for Compliance Check		Responsibility	Complete (Yes/No or N/A)
A4	**PLO Appointment:**				
1	**Post advertised in local media.**	a)	Job profile prepared.	CE/PMT	
		b)	Post advertised in the media.	CE/PMT	
		c)	Copy of advert kept on file.	CE/PMT	
2	**Shortlisting completed.**	a)	All CVs received collated.	CE/PMT	
		b)	Shortlisting done by the PMT.	CE/PMT	
		c)	PLC provided with the final shortlist.	CE/PMT	
3	**Interviews held.**	a)	Candidates invited.	CE/PMT	
		b)	Interview grid prepared.	CE/PMT	
		c)	The PLC can nominate a member to sit on the interview panel as an observer to ensure transparency in the process.	CE/PMT	
		d)	Formal interviews carried out.	CE/PMT	
		e)	Interview scores collated.	CE/PMT	
4	**Formal appointment of PLO.**	a)	PLO appointment letter issued.	CE	
		b)	PLO employment contract signed.	CE	
		c)	PLO performance agreement signed.	CE	
Stakeholder Coordinator:					
Name		**Sign**		**Date**	
Project Manager:					

Form No.	Item	Explanatory Note for Compliance Check		Responsibility		Complete (Yes/No or N/A)
Name		Sign		Date		

FORM A5: CHECKLIST – PROJECT LIAISON COMMITTEE – MEETINGS

Notes:
a) The checklist consists of several sections. Only print relevant sections.
b) Indicate what has been completed and sign off at the end.
c) While other individuals can assist in this process, the Project Manager (PM) remains accountable for all deliverables.
d) All forms/records to be kept by the PM and availed to line management upon request.

Form No.	Item	Explanatory Note for Compliance Check		Responsibility	Complete (Yes/No or N/A)
A5	**PLC Meeting Checklist:**				
1	**Attendance register completed.**	a)	All members of the PLC to sign the attendance register in ink.	PLO/PM	
		b)	Where meetings are on an online platform such as MS Teams, the attendance list must be downloaded from that platform.	PLO/PM	
2	**Quorum met.**	a)	The quorum for PLC meetings shall be constituted by 50% + 1 ratio excluding co-opted members.	PLO/PM	
3	**Agenda approved.**	a)		PM	
4	**Previous minutes approved.**	a)	Minutes must be prepared, signed off and dated by the Chairperson at the following meeting.	PLO/PM	
5	**Minutes and resolutions captured.**	a)		RE/PLO	
6	**Declaration of interest completed.**	a)	All members of the PLC to sign the DoL in ink.	PLO/PM	
Stakeholder Coordinator:					
Name		**Sign**		**Date**	
Project Manager:					
Name		**Sign**		**Date**	

FORM A6: PROJECT LIAISON COMMITTEE – DECLARATION OF INTEREST

Notes:
a) This declaration of interest shall be signed by all attendees at every PLC meeting.

THE SOUTH AFRICAN NATIONAL ROADS ANGECY LTD

PROJECT LIAISON COMMITTEE - DECLARATION OF INTEREST

We, as members of the PLC and persons present in the meeting, hereby solemnly swear and declare that we have no private or business interest or stake in any of the Work Packages or Tender Reports tabled here today or to be discussed in this project.

If one of us is of the opinion/view that some people may, rightly or wrongly construe as improper/irregular, his/her participation/involvement in deliberations that may lead to the award of a tender to a tenderer known to him/her, that person shall then recuse himself/herself from the proceedings/discussions that deal with that Work Package or Tender Report. Additionally, such a member shall recuse himself/herself from the operations of this PLC going forward and shall cease to be a PLC member for this project.

We certify that we, during the process neither deliberately favoured nor prejudiced and person or tenderer, as intended or contemplated in treasury Regulation 16, A8.3 (a), (b) & (c).

We further accept that all information, documentation, and decisions regarding any matter serving before the Committee are confidential. We, therefore, undertake not to communicate decisions/discussions of the meeting to external or internal parties unless so directed and approved by the Project Manager.

Members	**Signature**	**Date**

FORM B: CHECKLIST – TARGETED ENTERPRISE TENDERING PROCESS

Form No.	Item	Explanatory Note for Compliance Check		Responsibility	Complete (Yes/No or N/A)	Source Document
B1	**Target Area:**					
1	**Target Area Defined by PLC.**	a)	Target Area for Targeted Labour and Project Area for Targeted Enterprises identified and disseminated to the PLC.	PLO/PM		
		b)	Target Groups identified and disseminated to the PLC.	PLO/PM		
2	**Database of Contractors and Suppliers.**	a)	Database criteria setup and disseminated to the PLC.	PLO/PM		
		b)	Signed off database criteria handed over to PLC.	PLO/PM		
B2	**Tender Phase:**					
1	**Tender Advert.**	a)	Copy of advert on file.	Contractor		
		b)	Proof of publication in selected local publications.	Contractor		
		c)	Proof of publication on SANRAL website.	Contractor		
2	**Tender Document.**	a)	Copy of specification available on file, copy of the Tender CD, or printed.	Contractor		
3	**Clarification Meeting Attendance register.**	a)	Attendance register signed by all attendees of the clarification meeting	Contractor		

Form No.	Item	Explanatory Note for Compliance Check		Responsibility	Complete (Yes/No or N/A)	Source Document
4	**Clarification Meeting Minutes.**	a)	Minutes must be prepared, signed off and dated by the Chairperson within 14 days of the date of the meeting	Contractor		
5	**Clarification Meeting Presentation.**	a)	Copy of the presentation on file.	Contractor		
6	**Addenda**	a)	All addenda issued must be recorded on the file.	Contractor		
		b)	Proof (e-mail) of those persons that the addenda was sent to (if applicable).	Contractor		
7	**Register of tenders issued (if applicable).**	a)	Record the names of persons / companies that collected tender documents (website/by hand).	Contractor		
B3	**Tender Opening:**					
1	**Register of Tenders Received.**	a)	Record the names of persons / companies that submitted tender offers.	Contractor		
2	**Tender Opening, Declaration of Interest.**	a)	Declaration by SANRAL officials at the opening.	Contractor		
3	**Tender Opening, Attendance Register.**	a)	Record the names of persons present at the opening of tenders.	Contractor		
4	**Register for late tenders received.**	a)	Record names and time of late tenders received.	Contractor		
5	**Tender Opening, Opening Data.**	a)	Register of the opening of the Technical Offer on the Tender Data sheet.	Contractor		
B4	**Tender Evaluation:**					

Form No.	Item	Explanatory Note for Compliance Check		Responsibility	Complete (Yes/No or N/A)	Source Document
1	**Extension of validity period.**	a)	Confirmation of issue of letters of extension of validity period.	Contractor		
		b)	Confirmation of response on extension of validity period by the bidders.	Contractor		
2	**Declaration of Interest.**	a)	All members of the Bid Evaluation Committee to sign the DoI in ink.	Contractor		
3	**Attendance Register.**	a)	All members of the BEC to sign the attendance register in ink.	Contractor		
4	**Minutes**	a)	Minutes must be prepared, signed off and dated by the Chairperson within 14 days of the date of the meeting.	Contractor		
5	**Signed evaluation report.**	a)	Report signed by the Chairperson of the BEC detailing deliberations and discussions of the BEC meeting.	Contractor		
6	**PPPFA Scoring sheet**	a)	Scoring sheet detailing the scores of all tenders evaluated as per the PPPFA.	Contractor		
7	**CSD Compliance Report.**	a)	Printout of the CSD Report for compliance verification for the successful tenderer.	Contractor		
8	**CIDB grade confirmation (if applicable).**	a)	Verification of active status.	Contractor		
		b)	JV calculator for Joint Ventures.	Contractor		
9	**B-BBEE Certificate.**	a)	B-BBEE Certificate of winning tenderer on file for verification of preference points.	Contractor		
10	**SANRAL List of Restricted Bidders.**	a)	Verification that the winning tenderer is not restricted from doing business with SANRAL.	Contractor		

Form No.	Item	Explanatory Note for Compliance Check		Responsibility	Complete (Yes/No or N/A)	Source Document
11	**Clarification correspondence after tender closing (individual tenderers or all).**	a)	All correspondence relating to RFT correction of arithmetic errors/balancing of rates etc.	Contractor		
12	**Report for the award of the contract.**	a)	Report detailing information from tender phase to evaluation phase, and a recommendation with motivation for the approval of the winning tenderer.	Contractor		
13	**Review Report.**	a)	Receive high level reports and ensure transparency in the appointment of Targeted Enterprises. The reports must exclude sensitive evaluation information.	PLC /PLO/PM	Report not to be supplied to PLC*.	
B5	**Award of Contract:**					
1	**BAC Declaration of Interest.**	a)	All members of the BAC to sign the DoI in ink.	Project Bid Adjudication Committee Secretariat (PBAC)		
2	**BAC Attendance Register.**	a)	All members of the BAC to sign the attendance register in ink.	PBAC Secretariat		
3	**BAC Minutes.**	a)	Minutes must be prepared, signed off and dated by the Chairperson within 14 days of the date of the meeting.	PBAC Secretariat		

FORM C: CHECKLIST – TARGETED ENTERPRISE CONTRACT ADMINISTRATION

Form No.	Item	Explanatory Note for Compliance Check		Responsibility	Complete (Yes/No or N/A)	Source Document
C	**Contract Administration Phase**					
1	**Letter of award / Letter of Acceptance.**	a)	Copy of letter issued to the successful bidder.	Contractor		
2	**Letters to unsuccessful bidder(s).**	a)	Standard letter informing unsuccessful bidders of the tender outcome with proof of emails.	Contractor		
3	**Publication of award, within 7 working days from date of award.**	a)	Proof of publication on SANRAL website.	Contractor / PLO / Project Manager		
4	**Contract document.**	a)	Original signed contract on file.	End-User / Contractor		
5	**Closure of contract.**	a)	Copy of close-out report (SIPDM).	End-User / Contractor		
6	**Performance report (for Engineering contracts).**	a)	Copy of contractor performance report.	End-User / Contractor		
Project Manager:						
Name		**Sign**		**Date**		

APPENDIX 8.3 PROFORMA SUB-CONTRACT DOCUMENT FOR TARGETED ENTERPRISES

Note to compiler: Include latest version of the Subcontract document (available in EDMS Folder 19335272), else indicate that it will be supplied to the successful tenderer

Notes to Compiler:

1. *Delete all notes to Compiler (highlighted in yellow) before submitting for acceptance.*
2. *Every package to be tendered must appear in the table(s); Insert more tables if necessary.*
3. *Refer to the functionality points **guidelines** below and table to the PLC before submitting for acceptance by the PLC and the Employer.*
4. *Tables A and B are **guidelines**, and the Contractor must consult the Contract document or the relevant proforma subcontract agreements where applicable.*

Table A – Example of Maximum Points per Functionality Criteria

CIDB Grade (if applicable) and Package Value	Points Allocation			Total Points
	Locality	CIDB Grading (or other relevant sector criteria)	Target Groups	
1 - R 500 000	60	30	10	100
2 - R 1 000 000	60	30	10	100
3 - R 3 000 000	60	35	5	100
4 - R 6 000 000	60	35	5	100
5 - R 10 000 000	60	35	5	100
6 - R 20 000 000	60	30	10	100

Table B – Example of Allocation of Points for Functionality Criteria

	CIDB Package Category	1CE	2CE	3CE	4CE	5CE	6CE
	Typical Package Value	Up to R 1 mill		R 1 - 6 mill		R 6 - 20 mill	
Locality	Tenderer is based in the Local Municipality(ies).	60	60	60	60	60	60
	Tenderer is based outside the Local Municipality(ies), but in the District Municipality(ies).	45	45	40	40	40	40
	Tenderer is based outside the District Municipality(ies), but in the Province.	0	0	35	35	35	35
	Tender is based outside the Province, but in the RSA.	0	0	0	0	30	30
-							
CIDB Grading (or other relevant sector criteria)	Tenderer is registered as a CIDB 1	30	30	0	0	0	0
	Tenderer is registered as a CIDB 2	30	30	30	0	0	0
	Tenderer is registered as a CIDB 3	0	0	35	30	0	0
	Tenderer is registered as a CIDB 4	0	0	30	35	30	0
	Tenderer is registered as a CIDB 5	0	0	0	30	35	30
	Tenderer is registered as a CIDB 6	0	0	0	0	30	35
	Tenderer is registered as a CIDB 7 - 9	0	0	0	0	0	30
-							
Target Groups	Tenderer is 51%+ owned by black youth.	5	5	5	5	5	5
	Tenderer is 51%+ owned by black women.	5	5	5	5	5	5
	Tenderer is 51%+ owned by black people with disabilities.	5	5	5	5	5	5
	Tenderer is 51%+ owned by black military veterans.	5	5	5	5	5	5
	Maximum Total Points	**100**	**100**	**100**	**100**	**100**	**100**

Table 1: CPG Plan Tracker *(Example)*

Contract Value*	*e.g.* R 100 000 000						
Contract Data**	**Employer's Min CPG (%)****	**Packages Previously Let (No.)**	**Packages in this Form (No.)**	**Packages still to be Let (No.)**	**Total Packages to be Let (No.)**	**Contractor's Tendered CPG (%)**	**CPG Tendered Value (R)**
TEs	*e.g.* 30%	0	4	16	20	30%	R 30 000 000
TE Sub-Goals							
CIDB 1	9%	0	1	8	9	4,5%	R 4 500 000
CIDB 2		0	2	3	5	4,5%	R 4 500 000
CIDB 3	9%	0	0	1	1	3,0%	R 3 000 000
CIDB 4		0	0	1	1	6,0%	R 6 000 000
CIDB 5	N/A	0	0	1	1	10,0%	R 10 000 000
CIDB 6		0	0	0	0	0%	R 0
Other Sectors***	N/A	0	1	2	3	2,0%	R 2 000 000

* From Letter of Award

** From Contractor's Contract Document.

*** Manufacturers, Suppliers, Service Providers.

Table 2: Subcontract Packages for Targeted Enterprises

Package Number	**1** ***(Example)***	**2** ***(Example)***	**3** ***(Example)***
Package Description	General Maintenance	Repair Potholes	Install Culverts
Package Estimated Value	R 500 000	R 1 000 000	R 1 000 000
Target Group(s)			
a) Locality	Sundays River LM	Sundays River LM	Sundays River LM
b) CIDB Grade	1CE	2CE	2CE
Functionality Criteria			
a) Locality	60	60	60
b) CIDB Grade	30	30	30
c) Target Groups	20	20	20
d) Total	100	100	100
e) Threshold	75	75	75

Table 3: Sub-contract Packages for Targeted Enterprises

Package Number	**4** ***(Example)***	**5**	**6**
Package Description	Site Security		
Package Estimated Value	R 500 000		
Target Group(s)			
a) Locality	Sundays River LM		
b) CIDB Grade	N/A		
Functionality Criteria			
a) Locality	60		
b) PSIRA Registration *(E.g., security sector requirement.)*	30		
c) Target Groups	20		
d) Total	100		
e) Threshold	75		

The sub-contract packages in Tables 1 to x *(insert no. of tables)* for Targeted Enterprises and the accompanying Tender Notice have been perused and are supported.

RECOMMENDED:

NAME	DESIGNATION	SIGNATURE	DATE
	Contractor		
	Engineer		
	SANRAL Project Manager		
	PLC Representative *(other than above members)*		

ACCEPTED:

NAME[1]	DESIGNATION[1]	SIGNATURE	DATE
	SANRAL Planning Manager		
	SANRAL Construction Manager		
	SANRAL CD Representative		
	SANRAL Transformation Officer		

[1]Minimum 3 signatures required.

Insert Main Contractor's Company Logo

SUB-CONTRACT NRA X.xxx-xxx-xxxx/x – XX *(Insert sub-contract project number.)*

SUB-CONTRACTS FOR THE XXX OF NATIONAL ROUTE Xxx SECTION xxx (KM xxx) TO SECTION xxx (KM xxx) BETWEEN XXX AND XXX *(Insert project description.)*

TENDER NOTICE

CLOSING DATE: XXXX, XX XXXX 20XX AT XX:00 *(Insert day, date and time.)*

Xxx *(insert Main Contractor company name)* invites experienced EME and QSE **sub-contractors** to a tender briefing session for Contract **X.xxx-xxx-xxx/x - XX** *(insert sub-contract project number)* for the **XXX OF NATIONAL ROUTE Xxx SECTION xx (KM xx) TO SECTION xx (KM xx) BETWEEN XXX AND XXX** *(insert project description)* on behalf of the South African National Roads Agency SOC Limited (SANRAL). This project is in the province of the Eastern Cape and in the district municipalities of Xxx and Xxx *(insert district municipality(ies))*.

Preferences are offered to prospective tenderers from the targeted area, namely the Xxx and Xxx Local Municipalities *(insert local municipality(ies))*, as well as the CIDB grades and classes indicated for each sub-contract package. This tender will be evaluated in terms of functionality as a criterion and the price and preference points system. Tenderers who satisfy the following criteria are eligible to submit tenders:

a) At least 51% Black owned
b) Exempted Micro Enterprise (EME) or Qualifying Small Enterprise (QSE).
c) Registered on the National Treasury Central Supplier Database (CSD).
d) Registered as "active" with the Construction Industry Development Board (CIDB) in the relevant contractor grade and class designation.

An award will only be made to preferred Tenderers that are:

e) Compliant with the Compensation for Occupational Injuries and Diseases Act (COID); and
f) Tax Compliant.

Sub-contractors are required for the following subcontracts: *(List sub-contract packages, e.g.:)*

1. **Package 1**
   1 x General Maintenance Package (CIDB 4CE PE)

2. **Packages 2 and 3**
   2 x General Maintenance Packages (CIDB 2CE PE)

Note to Tenderers:

a) Xxx *(insert Main Contractor company name)* will reserve the right to negotiate feasible rates with the preferred tenderers if necessary.
b) Tenderers may submit tenders for all sub-contracts in this Tender Notice, but only 1 (one) subcontract will be let per preferred Tenderer at any one time for this project.

A compulsory information briefing meeting and a training session will take place at **Xxx** *(insert name of venue and physical address)* on **xxx** *(insert day)*, **xxx** *(insert date)* **at xxx** *(insert time)* where prospective Tenderers shall meet the Contractor.

Tender documents will be made available at the information briefing in the form of a CD. The CD will contain an electronic copy of the tender document, in PDF format. Only the documents within the folder

named “Returnable Document” must be printed, bound and completed with all the relevant supporting documents attached.

Tenderers must be represented at the information briefing meeting by a representative who must be the Tenderer himself or an authorised person in the direct employment of the Tenderer.

Late arrivals to the compulsory information briefing meeting will not be allowed access and therefore will not be allowed to submit a tender. Such tenders received, shall be deemed non-responsive.

The tender and supporting documents shall be sealed in an envelope and clearly marked:

“Sub-Contract NRA X.xxx-xxx-xxxx/x – XX *(insert sub-contract project number)* for … ” (relevant sub-contract name, e.g. xxx *(insert example name)* and shall be **delivered by hand** to Xxx *(insert name of venue and physical address)* between the hours 09:00 to 16:00.

Note: Telephonic, telegraphic, telex, facsimile, e-mailed or electronic applications will not be accepted.

The Tender Documentation for all packages in this Tender Notice shall reach the stipulated address no later than xxh00 *(insert time)* **on Xxx** *(insert day)*, **xxx** *(insert date)*.

Queries relating to issues arising from this document may be addressed to:

Contact:Xxx *(Insert Main Contractor’s contact person(s).)*
Company Name: Xxx *(Insert Main Contractor’s company name.)*
Tel No:xxx xxx xxx *(Insert contact person’s tel./cell phone number.)*
e-mail:xxx@xxx *(Insert contact person’s e-mail address.)*

APPENDIX 8.5 TRAINING AND SKILLS DEVELOPMENT PROGRAMME

Note to compiler: Insert form of tenderer's commitment in Book 1 here.

APPENDIX 9 BASELINE HAZARD IDENTIFICATION AND RISK ASSESSMENT (HIRA) (AS PER SECTION E2000)

Note to compiler: Include a Baseline Hazard Identification and Risk Assessment for Mine Health & Safety (An example is available on EDMS #30406132 obtainable from the SANRAL Project Engineer)

APPENDIX 10 ILLUSTRATIVE PROGRAMME

Note to compiler: Include an illustrative programme

APPENDIX 11 AS-BUILT DRAWINGS

Note to compiler: Include reference to as-built drawings where applicable

PART C5: ANNEXURES

Note to compiler: Part C5 is only to be utilised after tender closure to include minutes of clarification meeting, correspondence with successful tenderer during the tender evaluation stage as well as Addenda issued

ANNEXURES

TABLE OF CONTENTS **PAGE**

ANNEXURE A: **C3-351**
ANNEXURE B: **C3-352**

ANNEXURE A:

ANNEXURE B: