

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 N.011-090-2016/1

**THE IMPROVEMENT OF NATIONAL ROUTE N11
SECTION 9 BETWEEN HENDRINA POWER
STATION (KM 18.5) AND N4 INTERCHANGE (KM
41.97)**

PROJECT DOCUMENT

DATE: JANUARY 2024

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 N.011-090-2016/1

FOR

THE IMPROVEMENT OF NATIONAL ROUTE N11 SECTION 9 BETWEEN HENDRINA POWER STATION (KM 18.5) AND N4 INTERCHANGE (KM 41.97)

PROJECT DOCUMENT

DATE: JANUARY 2024
TENDER DOCUMENT
VOLUME 3
BOOK 3 OF 3
PRICING DATA, SCOPE OF WORKS, PROJECT INFORMATION, ANNEXURES

THIS DOCUMENT COMPILED UNDER THE DIRECTION OF THE REGIONAL
MANAGER
THE SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

The Regional Manager (Northern Region)
The South African National Roads Agency SOC Ltd
38 Ida Street,
Menlopark,
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.
- Volume 7: Environmental Management Plan report.

Notes to tenderer:

1. **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), is obtainable from CESA, P. O. Box 68482, Bryanston, 2021. Tel: (011) 463 2022 Fax: (011) 463 7383, e-mail: general@cesa.co.za.**
2. **Volume 2: The COTO Standard Specifications for Road and Bridge Works for South African Road Authorities (Draft Standard October 2020 edition) is obtainable from SANRAL and can be downloaded free of charge from the SANRAL's website www.nra.co.za.**
3. **Volume 3 is issued at tender stage in electronic format downloaded from the SANRAL's website link**

The link contains the following files:

- **The full Project Document in .pdf format (excluding the standard conditions of tender)**
- **The returnable forms in word format**
- **The pricing data in Excel format**

The Standard Conditions of Tender may be downloaded from the CIDB website as indicated in Book 1.

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

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

4. **SUBMISSION OF TENDER – Of the contract documents, only the following elements of Volume 3 needs to be submitted:**

VOLUME 3 – ELECTRONIC SUBMISSION

The following information has to be submitted electronically on flash drive

- a) **The 1st file in pdf format which contains;**
 - **Scanned copy of Form of Offer (pdf) and printed hardcopy of Form of Offer**
 - **Scanned copies of all returnable schedules and attachments (pdf)**
 - **Scanned copy and printed Summary of Pricing Schedule.**
- b) **The 2nd file in Excel format which contains:**
 - **Completed pricing schedule**

For alternative offers the tenderer shall submit the following additional documentation, printed and bound hard copy and electronically in a separate flash drive marked

- a) **Alternative (followed by the Tenderer name)" in a sealed envelope in the following order:**
 - **Form of Offer (signed and scanned as .pdf and state "Alternative Form of Offer" and printed hardcopy of Form of Offer)**
 - **All returnable schedules and attachments and certificates applicable to the alternative offer (signed and scanned as .pdf).**
- b) **Alternative Pricing Schedule (printed Summary of Pricing Schedule and copy in Excel)**

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

5. For alternative offers the tenderer shall submit the following additional documentation, in printed and bound hard copy and electronically in a separate flash drive marked "Alternative (followed by the Tenderer name)" in a sealed envelope in the following order:
- Form of Offer (signed and scanned as .pdf and hard copy and state "Alternative Form of Offer");
 - All returnable schedules and attachments and certificates applicable to the alternative offer (signed and scanned as .pdf and hard copy);
 - Alternative Pricing Schedule (scanned copy in .pdf and copy in Excel and hard copy);
 - Other relevant information.

TABLE OF CONTENTS		PAGE
PART C2:	PRICING DATA.....	C2-1
PART C3:	SCOPE OF WORKS	C3-1
PART C4:	PROJECT INFORMATION	C4-1

PART C2: PRICING DATA

PART C2: PRICING DATA

TABLE OF CONTENTS		PAGE
C2.1	PRICING INSTRUCTIONS.....	C2-3
C2.2	PRICING SCHEDULE (INCORPORATING SBD3).....	C2-5

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 used in the Pricing Schedule are as follows:

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

C2.1.3 For the 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)

C1.2		GENERAL REQUIREMENTS AND PROVISIONS					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
C1.2.1		Environmental management:					
	C1.2.1.1	Monitoring of compliance with and reporting on the EMP		month	30		
C1.2.2		Programming and reporting:					
	C1.2.2.3	Submission of a Scheme 2 Initial Programme		L Sum	1		
	C1.2.2.4	Submission of a Scheme 2 Full Programme		L Sum	1		
	C1.2.2.5	Reviewing and updating a Scheme 2 programme every month		month	30		
	C1.2.2.6	Preparation and submission of all information and reports specified in the Contract Documentation		month	30		
C1.2.3		Routine road maintenance of existing public roads within the site of the works or other public roads outside the site of the works which are used as detours:					
	C1.2.3.3	Cleaning out culverts		m³	10		
	C1.2.3.4	Collection of rubbish / litter		km	70		
	C1.2.3.5	Base patching using crushed stone material stabilised with bitumen emulsion and cement - BSM1 using 3.0% SS60 anionic bitumen emulsion and 1.5% CEM II B-L 32,5N cement compacted to 100% of maximum dry density.		m³	230		
	C1.2.3.7	Base and/or surface patching using hot plant mixed asphalt (Sand skeletal mix, continuously graded, level II mix design, 10mm NMPS, PG58H-22, EPM binder)		t	420		
	C1.2.3.8	Replacement of damaged guardrails including posts		m	40		
	C1.2.3.9	Grading of temporary gravel deviations and existing roads used as detours		km	2		
	C1.2.3.10	Watering of temporary gravel deviations and existing roads used as detours		kℓ	1 600		
	C1.2.3.11	Other road maintenance work ordered by the Engineer		Prov Sum	1	250 000	R 250 000.00
	C1.2.3.12	Handling cost, profit and all other charges in respect of item C1.2.3.11		%	250 000		
	C1.2.3.13	Liaison with the routine road maintenance contractor		month	30		
C1.2.4		Stakeholder liaison		month	30		
C1.2.5		Safety :					
	C1.2.5.1	Health and safety plan		L Sum	1		
	C1.2.5.2	Implementation of health and safety plan		month	30		
P C1.2.7		Road safety audits:					
	C1.2.7.1	Stage 4 work zone traffic management audit		Prov Sum	1	400 000	R 400 000.00
	C1.2.7.2	Handling cost, profit and all other charges in respect of item C1.2.6.1		%	400 000		
	C1.2.7.3	Stage 5 pre-opening stage traffic safety audit		Prov Sum	1	200 000	R 200 000.00
	C1.2.7.4	Handling cost, profit and all other charges in respect of item C1.2.6.3		%	200 000		
P C1.2.8		Dayworks:					
	C1.2.8.1	Personnel					
	(a)	Unskilled labourer		h	60		
	(b)	Semi-skilled labourer		h	20		
	(c)	Skilled labourer		h	20		
	(e)	Foreman		h	20		
		TOTAL CARRIED FORWARD					

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
			(f)	Skilled artisan	h	20		
			(g)	Qualified surveyor with all survey equipment and assistants	h	20		
		C1.2.8.2		Construction equipment				
			(a)	Motor grader - CAT 140G (H) or similar (minimum output 138 kW)	h	16		
			(b)	Vibratory roller - Self propelled (minimum weight 12000kg)	h	16		
			(c)	Pneumatic roller - Self propelled (minimum weight 27000kg)	h	16		
			(d)	Front end loader - CAT 924 or similar (minimum output 83 kW)	h	16		
			(e)	Tractor loader backhoe - TLB (minimum output 55 kW)	h	16		
			(f)	Excavator - 30 Ton	h	16		
			(g)	Compressor - cont. rating minimum 5,5 Cu m/min	h	16		
			(h)	Dozer - CAT D7 or similar	h	16		
			(i)	Milling machine - minimum width 1,0m	h	16		
			(j)	Water cart - minimum 12 000 litre	h	16		
		C1.2.8.3		Vehicles				
			(a)	Light delivery vehicle	km	500		
			(b)	Flatbed truck	km	250		
			(c)	Dump truck - 10m³	km	500		
			(d)	Transporter - low bed (capacity 25 ton)	km	250		
		C1.2.8.4		Materials				
			(a)	Procurement of materials	Prov Sum	1	10 000	R 10 000.00
			(b)	Contractor's handling costs, profit and all other charges in respect of item C1.2.8.4(a)	%	10 000		
	C1.2.9			Disposal of non-useable assets:				
		C1.2.9.1		Disposal of non-useable assets identified in the Contract Documentation at time of tender				
			(a)	Reclaimed asphalt	m³	8 850		
			(b)	Guardrails not suitable for re-use	m	190		
			(c)	Roadsigns not suitable for re-use	m²	170		
			(d)	Damaged paving blocks not suitable for re-use	m³	6		
		C1.2.9.2		Disposal of non-useable assets not identified at time of tender	Prov Sum	1	50 000	R 50 000.00
		C1.2.9.3		Handling cost, profit and all other charges in respect of item C1.2.9.2	%	50 000		
P	C1.2.10			Dispute adjudication board (dab)				
		C1.12.10.1		Employer's contribution to DAB (50%)	PC Sum	1	1 500 000	R 1 500 000.00
TOTAL CARRIED FORWARD TO SUMMARY								

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

C1.3				CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS				
ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
P	C1.3.1			The contractor's general obligations:				
P		C1.3.1.1		Fixed obligations	L Sum	1		
		C1.3.1.2		Value-related obligations	L Sum	1		
		C1.3.1.3		Time-related obligations				
			(a)	Mobilisation period	month	3		
			(b)	Execution of the works	month	30		
P		C1.3.1.4		Suspension cost				
			(a)	De-establishment	No.	1		
			(b)	Re-establishment	No.	1		
			(c)	Suspension period	month	3		
			(d)	Engineers cost	PC Sum	1	3 000 000.00	R 3 000 000.00
	C1.3.2			Contract sign boards	m²	20		

C1.4			FACILITIES FOR THE ENGINEER				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C1.4.1			Site accommodation:				
P	C1.4.1.1		Conference room (Type A as per detail drawings)	No.	1		
P	C1.4.1.2		Office Unit Type A (as per detail drawings)	No.	5		
P	C1.4.1.3		Office Unit Type B (as per detail drawings)	No.	4		
P	C1.4.1.4		Laboratory with open and roofed concrete work areas and Store Room (as per detail drawings)	No.	1		
P	C1.4.1.5		Car ports (as per detail drawings)	No.	10		
P	C1.4.1.6		Ablution unit (equipped as specified) (as per detail drawings)	No.	2		
P	C1.4.1.7		Change room with a shower (as per detail drawings)	No.	4		
P	C1.4.1.8		Kitchen unit: Type A (as per detail drawings)	No.	1		
P	C1.4.1.9		Kitchen unit: Type B (as per detail drawings)	No.	2		
P	C1.4.1.10		Type A prefabricated house (equipped as specified) (as per detail drawings)	No.	20		
P	C1.4.1.11		Rented housing paid for by the Contractor	Prov Sum	1	3 600 000	R 3 600 000.00
P	C1.4.1.12		Contractor's handling costs, profit and all other charges in respect of item C1.4.1.11	%	3 600 000		
C1.4.3			Items measured by number:				
	C1.4.3.29		A3 / A4 colour printer, copier, scanner	No.	1		
	C1.4.3.31		Rain gauge	No.	4		
	C1.4.3.33		Digital thermometer	No.	2		
	C1.4.3.35		3,0m aluminium straight edge complete with two measuring wedges	No.	1		
	C1.4.3.36		Measuring wheel	No.	1		
	C1.4.3.37		First aid kit	No.	3		
	C1.4.3.38		Standpipe complete with 30m of 19mm dia. heavy duty hose pipe	No.	4		
C1.4.4			Prime cost items:				
	C1.4.4.1		Cell phones costs, including pro-rata rentals, for calls made in connection with contract administration	PC Sum	1	220 000	R 220 000.00
	C1.4.4.2		Handling costs and profit in respect of item C1.4.4.1	%	220 000		
	C1.4.4.5		The provision of internet connectivity and WiFi data for Engineer's site staff	PC Sum	1	100 000	R 100 000.00
	C1.4.4.6		Handling costs and profit in respect of item C1.4.4.5	%	100 000		
	C1.4.4.7		The provision of paper and ink for a combination colour printer/copier/scanner	PC Sum	1	90 000	R 90 000.00
	C1.4.4.8		Handling costs and profit in respect of item C1.4.4.7	%	90 000		
	C1.4.4.9		The provision of a complete 220/250 volt single phase electrical power installation, including all poles, insulators, wiring, switchboards, mains connections, meters etc.	PC Sum	1	100 000	R 100 000.00
	C1.4.4.10		Handling costs and profit in respect of item C1.4.4.9	%	100 000		
	C1.4.4.11		The provision of a complete 440/231 volt three phase electrical power installation, including all poles, insulators, wiring, switchboards, mains connections, meters etc.	PC Sum	1	200 000	R 200 000.00
	C1.4.4.12		Handling costs and profit in respect of item C1.4.4.11	%	200 000		
	C1.4.4.13		Provision of a 440/231 volt three phase electricity generator if electricity from a power supply authority is not available on site	PC Sum	1	300 000	R 300 000.00
	C1.4.4.14		Handling costs and profit in respect of item C1.4.4.13	%	300 000		
			TOTAL CARRIED FORWARD				

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
			AMOUNT BROUGHT FORWARD				
		C1.4.4.15	The provision of all gas installations required at the site offices, laboratories and at the Engineer's staff accommodation (if required), including gas storage cylinders, tubing, regulators, gas burners and shut-off cocks	PC Sum	1	20 000	R 20 000.00
		C1.4.4.16	Handling costs and profit in respect of item C1.4.4.15	%	20 000		
	C1.4.5		Services at site offices, laboratories and site accommodation:				
		C1.4.5.1	Fixed costs	L Sum	1		
		C1.4.5.2	Running costs	month	30		
	C1.4.6		Office staff:				
		C1.4.6.1	Secretary / receptionist	month	30		
		C1.4.6.2	Technical assistant (Survey Assistant)	month	60		
	C1.4.7		Site inspection transport:				
		C1.4.7.1	Provision of a medium size bus, mini-bus for site inspection purposes (able to transport at least 22 passenger)	per day	36		
		C1.4.7.2	Travel on site	km	2 520		
	C1.4.8		Site security measures for the engineer's facilities:				
		C1.4.8.1	Supply and installation of all required security measures at the Engineer's site offices and laboratories	L Sum	1		
		C1.4.8.2	Provision of security guards / watchmen and an armed response service at the Engineer's site offices and laboratories	month	30		
		C1.4.8.3	Supply and installation of all required security measures at the Engineer's site accommodation	L Sum	1		
		C1.4.8.4	Provision of security guards / watchmen and an armed response service at the Engineer's site accommodation	month	30		
		C1.4.8.5	Supply and installation of an alarm system at the Engineer's rented accommodation (8 houses)	L Sum	1		
		C1.4.8.6	Provision of an armed response service at the Engineer's rented accommodation (8 Houses)	month	30		
TOTAL CARRIED FORWARD TO SUMMARY							

C1.5		ACCOMMODATION OF TRAFFIC					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
P	C1.5.2		Accommodation of vehicular traffic	month	30		
	C1.5.3		Liaison with traffic authorities	month	30		
	C1.5.4		Construction of temporary deviations:				
P			Note1: Initial widenings constructed for traffic accommodation purposes will form part of the permanent works. Earthworks, pavement layers and overlays for the initial widenings have been measured under the relevant sections under a separate heading "INITIAL WIDENINGS". Note2: Only temporary ramps to tie newly completed road sections (at higher level) to existing road levels (at lower level) between accommodation of traffic sections measured here. Note3: Temporary road markings for accommodation of traffic purposes also to be measured under this section				
	C4.1.5		Excavating of materials in the borrow pits and quarries, material obtained from:				
	C4.1.5.5		Hard excavation (by blasting)	m³	2912		
	C4.1.7		Producing the material by:				
	C4.1.7.3		Multiple-stage crushing including screening				
		(a)	G5A crushed rock/boulder material	m³	2912		
	C4.1.12		Stockpiling the material:				
	C4.1.12.1		Material from a producing plant				
		(b)	G5A crushed rock/boulder material	m³	2912		
	C12.10.1		Excavation in hard rock using controlled blasting techniques	m³	2912		
	C1.7.2		Hauling:				
	C1.7.2.1		Hauling material for use in the Works and off-loading it on the site of the Works:				
		(a)	Soil, gravel, crushed stone and pavement layer material	m³ -km	45 136		
	C5.3.2		Construction of pavement layers:				
	C5.3.2.1		Construction of layers using conventional construction methods:				
		(ee)	G5A crushed rock/boulder subbase layer (unstabilised or chemically stabilised) (150mm thick) compacted to 97% of MDD	m³	2912		
	C1.7.1		Loading:				
	C1.7.1.1		Loading from stockpile using machines and some hand labour where necessary	m³	2 912		
	C5.4.2		Chemical stabilisation:				
	C5.4.2.1		Chemical stabilisation (150mm thick) of subbase layer	m³	2912		
	C5.4.5		Cementitious stabilisation agents for pavement layers:				
	C5.4.5.2		Addition of cementitious stabilisation agents (CEM II B-L 32.5N) for pavement layers and spreading the agent using bags and labour enhancement methods.				
		(a)	Cement (for pavement layer)	t	230		
	C8.1.1		Prime coat:				
	C8.1.1.2		MC -30 cut-back bitumen	ℓ	5 824		
	C9.1.3		Application of bond coat:				
	C9.1.3.1		Stable-grade 30% net bitumen emulsion as specified. Applied with a calibrated distributor	ℓ	4004		
	C9.1.5		Asphalt surfacing:				
	C9.1.5.2		Rehabilitation				
		(a)	Sand skeletal mix – continuously graded as defined (35mm thick, PG58H-22, EPM binder, level II mix design)	t	676		
			TOTAL CARRIED FORWARD				

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
			AMOUNT BROUGHT FORWARD					
			C11.7.2 Retro-reflective road marking:					
		C11.7.2.1	White lines broken or unbroken					
		(a)	Water based paint, 100mm wide	km	48			
		C11.7.2.2	Yellow lines broken or unbroken					
		(a)	Water based paint, 100mm wide	km	72			
		C11.7.2.4	White lettering and symbols (water based paint)	m²	220			
		C11.7.2.5	Yellow lettering and symbols (water based paint)	m²	50			
		C11.7.2.7	Transverse lines, painted island and arrestor bed markings (any colour) (water based paint)	m²	120			
			C11.7.5 Variations in rate of application:					
		C11.7.5.4	Retro-reflective beads	kg	10			
			C11.7.7 Road studs:					
		C11.7.7.3	Temporary road studs compliant to SANS 1442 or 1463 (RSA-T classification, Red/Red)	No.	2000			
			C11.7.8 Setting out and premarking the lines (excluding traffic island markings, lettering and symbols)	km	120			
			C11.7.10 Removal of existing, temporary or final road markings by:					
		C11.7.10.1	Sandblasting	m²	1440			
		C11.7.10.2	Water-jetting	m²	180			
		C11.7.10.3	Overpainting as temporary measure	m²	180			
			C11.7.11 Removal of existing road studs	No.	1000			
			C1.5.5 Maintenance of temporary deviations:					
		C1.2.3.3	Cleaning out culverts	m³	40			
		C1.2.3.5	Base patching using crushed stone material stabilised with bitumen emulsion and cement - BSM1 using 3.0% SS60 anionic bitumen emulsion and 1.5% CEM II B-L 32,5N cement compacted to 100% of maximum dry density.	m³	400			
		C1.2.3.6	Base and/or surface patching using cold premixed asphalt	kg	419 400			
		C1.2.3.7	Base and/or surface patching using hot plant mixed asphalt (sand skeleton, continuously graded, PG58V-22, EPM binder, level II mix design)	t	1 800			
		C1.2.3.8	Replacement of damaged guardrails including posts	m	80			
		C1.2.3.11	Other road maintenance work ordered by the Engineer	Prov Sum	1	150 000	R	150 000.00
		C1.2.3.12	Handling cost, profit and all other charges in respect of item C1.2.3.11	%	150 000			
P		C1.5.6	Removal of temporary deviations:	km	0.5			
			Note1: Only the removal of temporary ramps constructed to tie newly completed road sections (at higher level) to existing road levels (at lower level) between accommodation of traffic sections measured here.					
P		C1.5.7	Temporary traffic control facilities:					
		C1.5.7.1	Delineators including mounting bases and ballast:					
		(a)	Single sided, reversible left or right (200mm x 800mm)	No.	950			
		(b)	Double sided, reversible left or right (200mm x 800mm)	No.	200			
		C1.5.7.2	Traffic cones, minimum height 750mm	No.	40			
		C1.5.7.3	Flagmen	man-shift	22 680			
		C1.5.7.4	Traffic controllers	man-shift	4 860			
			TOTAL CARRIED FORWARD					

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
P		AMOUNT BROUGHT FORWARD					
		C1.5.7.5	Provision of illuminated traffic signs:				
		(a)	Sign mounted flashing amber lights (2 lights with the specified power supply) mounted on a backing board which is:				
		(ii)	1200mm wide x 200mm high	No.	12		
		(b)	Flashing LED illuminated arrow board	No.	2		
		(e)	Mobile variable message sign	No.	2		
		C1.5.7.6	Maintenance of illuminated traffic signs:				
		(a)	Sign mounted flashing amber lights (a pair of two lights mounted on a	month	336		
		(b)	Flashing LED illuminated arrow board	month	60		
		(e)	Mobile variable message sign	month	60		
P		C1.5.7.7	Traffic calming devices:				
		(a)	25mm high x 100mm wide asphalt rumble strips	m	3 400		
		C1.5.7.8	Traffic control stations	month	40		
		C1.5.7.9	Cleaning of traffic control facilities	month	40		
		C1.5.7.10	Movable barriers				
		(a)	Supply to site, initial placement and removal from site of barriers:				
		(i)	Rented Barriers	m	1 900		
		(ii)	Barriers obtained from Employers Depot:				
		(1)	Concrete NJ Type, 3m long units, located on site at km 22.2	m	3 375		
		(2)	Concrete NJ Type, 3m long units, located at the Pullenshope intersection (±km 18.0)	m	360		
P		(3)	Concrete NJ Type, 3m long units, located at National Road N2 Section 34 @ km 95.99 (Ermelo)	m	1 900		
		(b)	Dismantling and re-erecting barriers during the works	m	16 500		
		(c)	Renting of barriers	m.month	22 800		
		(d)	Supply to site, initial placement and removal from site of terminal section for temporary barriers	No	12		
		(e)	Dismantling and re-erecting of terminal section for temporary barriers during the works	No	22		
		(f)	Renting of terminal sections	No.month	220		
		(g)	Supply to site barrier connectors "fish plates" and bolts for barriers obtained from Employers Depot	No	1 900		
		(h)	Supply to site retroreflective plates for barriers for barriers obtained from Employers Depot	No	950		
		(i)	Movable barriers (Plastic NJ barriers)	m	250		
		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:				
P		C11.6.1.3	Prepainted galvanized steel plate:				
			Note1: Rectangular road signs, TGS, TW series (excluding TW-series delineators and barricades) and temporary information signs				
		(b)	Area exceeding 0,5 m2 but not 2,0 m2 (background retro-reflective class III and symbol retro-reflective class III)	m²	100		
		(c)	Area exceeding 2,0 m2 but not 10 m2 (background retro-reflective class III and symbol retro-reflective class III)	m²	80		
			TOTAL CARRIED FORWARD				

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
P				AMOUNT BROUGHT FORWARD					
		C11.6.1.8		Regulatory signs, temporary					
			(b)	900mm diameter (prepainted galvanized steel plate, yellow background and all red, retro-reflective class I and black symbols and border in matt)	No.	40			
			(c)	1200mm diameter (prepainted galvanized steel plate, yellow background and all red, retro-reflective class I and black symbols and border in matt)	No.	90			
		C11.6.1.10		Warning signs, temporary					
			(c)	1200mm size (prepainted galvanized steel plate, yellow background and all red, retro-reflective class I and black symbols and border in matt)	No.	10			
			(d)	1500mm size (prepainted galvanized steel plate, yellow background and all red, retro-reflective class I and black symbols and border in matt)	No.	20			
		C11.6.1.12		Supplementary plates to temporary regulatory or warning signs (prepainted galvanized steel plate, yellow background and all red, retro-reflective class I and black symbols and border in matt)	m²	50			
		C11.6.1.13		Moveable barricade/road sign combination (Chevron and ROAD CLOSED types, steel plate with retro-reflective Class III background and symbols)	No	20			
				Extra over on item c11.6.1 for using:					
		C11.6.2.1		Background of retro-reflective material:					
			(a)	Class I	m²	142			
			(b)	Class III	m²	180			
		C11.6.2.2		Lettering, symbols, numbers, arrows, emblems and borders of retro-reflective material:					
			(a)	Class III	m²	180			
		C1.5.8		Traffic safety officer	man-	30			
		C1.5.9		Traffic safety vehicle	month	30			
		C1.5.11		Provision of safety equipment for visitors:					
		C1.5.11.1		Provision of reflective safety vests for visitors	No.	5			
		C1.5.11.2		Provision of hard hats for visitors	No.	5			
		C1.5.12		Additional traffic accommodation facilities ordered by the engineer:					
		C1.5.12.1		Provision of additional traffic accommodation facilities	Prov Sum	1	200 000	R	200 000.00
		C1.5.12.2		Handling cost, profit and all other charges in respect of item C1.5.12.1	%	200 000			
TOTAL CARRIED FORWARD TO SUMMARY									

C1.6			CLEARING AND GRUBBING				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
----- PERMANENT WORKS -----							
	C1.6.1		Clearing:				
		C1.6.1.1	Clearing with machines and some hand labour where necessary	ha	19		
	C1.6.2		Grubbing:				
		C1.6.2.1	Grubbing with machines and some hand labour where necessary	ha	15		
	C1.6.3		Removal and grubbing of large trees and tree stumps:				
		C1.6.3.1	Girth equal to or exceeding 1,0m up to and including 2,0m	No.	5		
		C1.6.3.2	Girth exceeding 2,0m up to and including 3,0m	No.	2		
		C1.6.3.4	Removal of trees in forests and plantations	ha	2		
	C1.6.9		Conservation of topsoil:				
		C1.6.9.1	Stockpiling topsoil	m³	9 410		
		C1.6.9.2	Windrowing topsoil	m³	9 410		
P	C1.6	C1.7.2	Hauling:				
P		C1.7.2.2	Hauling material to spoil or stockpile and off-loading it at a designated spoil or stockpile area:				
		(a)	Cleared and grubbed material (organic matter and all other unsuitable or waste material)	m³ -km	129 870		
----- INITIAL WIDENINGS (TRAFFIC ACCOMMODATION) -----							
	C1.6.1		Clearing:				
		C1.6.1.1	Clearing with machines and some hand labour where necessary	ha	16.8		
	C1.6.2		Grubbing:				
		C1.6.2.1	Grubbing with machines and some hand labour where necessary	ha	16.8		
	C1.6.3		Removal and grubbing of large trees and tree stumps:				
		C1.6.3.1	Girth equal to or exceeding 1,0m up to and including 2,0m	No.	5		
		C1.6.3.2	Girth exceeding 2,0m up to and including 3,0m	No.	2		
	C1.6.9		Conservation of topsoil:				
		C1.6.9.1	Stockpiling topsoil	m³	11 230		
		C1.6.9.2	Windrowing topsoil	m³	11 230		
P	C1.6	C1.7.2	Hauling:				
P		C1.7.2.2	Hauling material to spoil or stockpile and off-loading it at a designated spoil or stockpile area:				
		(a)	Cleared and grubbed material (organic matter and all other unsuitable or waste material)	m³ -km	154 990		
TOTAL CARRIED FORWARD TO SUMMARY							

C2.1		GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
C2.1.1		Location, identification, protection and relocation of existing services					
	C2.1.1.1	Contractor's obligations		L Sum	1		
	C2.1.1.2	Permanent services relocation or protection work by others		PC Sum	1	5 300 000.00	R 5 300 000.00
	C2.1.1.3	Handling costs and profit in respect of item C2.1.1.2 above		%	5 300 000		
	C2.1.1.4	Permanent services relocation or protection work by the Contractor		Prov Sum	1	345 000.00	R 345 000.00
C2.1.2		Existing services location, detection and verification					
	C2.1.2.1	Using specialist detection services (ground penetrating radar, radio detection etc.)		PC Sum	1	100 000.00	R 100 000.00
	C2.1.2.2	Handling costs and profit in respect of item C2.1.2.1 above		%	20 000		
	C2.1.2.3	Survey to verify existing service positions		PC Sum	1	70 000.00	R 70 000.00
	C2.1.2.4	Handling costs and profit in respect of item C2.1.2.3 above		%	50 000		
	C2.1.2.5	Using hand excavation to locate, expose and verify services		m³	120		
C2.1.3		Obtaining construction or work permits		L Sum	1		
C2.1.4		Provision of guarantees or deposits for services					
	C2.1.4.1	Providing guarantees and deposits		PC Sum	1	40 000.00	R 40 000.00
	C2.1.4.2	Handling costs and profit in respect of item C2.1.4.1 above		%	50 000		
C2.1.5		Provision of record drawings and applicable data		L Sum	1		
C2.1.7		Extra over items C2.1.6, C2.1.8, C2.1.9 and C2.1.16 for excavating in:					
	C2.1.7.1	Hard material irrespective of depth		m³	200		
	C2.1.7.2	Stabilised material irrespective of depth		m³	10		
C2.1.8		Excavations outside the normal trench profile		m³	15		
C2.1.9		Trench excavation using labour enhanced construction methods:					
	C2.1.9.1	Trenches up to 1,0m wide (in soft material)					
	(a)	Up to 1,0m deep		m³	8820		
	(b)	Over 1,0m and up to 1,5m deep		m³	890		
C2.1.11		Backfilling of trenches:					
	C2.1.11.1	Backfill compacted to 93% (100% for sand) of MDD (areas subject to traffic loads) using material:					
	(a)	From the excavated trench material		m³	780		
	(b)	From other excavations on Site		m³	20		
	C2.1.11.2	Backfill compacted to 90% (100% for sand) of MDD or complying with the DCP requirements of Clause A2.1.8.2c) (areas not subject to traffic loads) using material:					
	(a)	From the excavated trench material		m³	8010		
	(b)	From other excavations on Site		m³	180		
C2.1.13		Extra over item C2.1.11 for backfilling with soil cement or stabilised material:					
	C2.1.13.1	Backfilling trenches using soil cement using G6 material		m³	60		
	C2.1.13.4	Cement (CEM II B-L 32,5N)		kg	6750		
		Removal and disposal of spoil material from trench excavations:					
	C2.1.17.2	To spoil sites or dumping areas provided by the Contractor		m³	210		
		TOTAL CARRIED FORWARD					

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
	C2.1.27			Demolition of existing manholes, access chambers and other service structures consisting of:				
		C2.1.27.2		Reinforced concrete (including old pipeline support plinths)	m³	350		
		C2.1.27.3		Masonry	m³	15		
TOTAL CARRIED FORWARD TO SUMMARY								

C2.2		DRY SERVICES					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
C2.2.3		Lay and prove ducts provided by others:					
	C2.2.3.1	(a)	Telecom (110mm diameter (OD))	m	13 555		
C2.2.4		Bedding for ducts compacted to 90 % of MDD (100 % for sand) using material:					
	C2.2.4.1		Selected from the excavated trench material	m³	710		
	C2.2.4.2		Selected from other excavations on site	m³	180		
C2.2.6		Duct accessories (markers, marking, draw wires and end caps etc.):					
	C2.2.6.1		Duct markers (Post)	No.	20		
	C2.2.6.3		Draw wires (3.0mm galvanised steel wire)	m	13 555		
C2.2.7		Handholes, manholes and access chambers for ducts :					
	C2.2.7.2		Manholes (Masonry 110mm wall thickness, 1.1m x 1.1m external dimensions, with 150mm thick C24/30-20 concrete floor slab, with Welded steel mesh fabric (Ref. 395), and Class U2 Surface finish)				
		(a)	1m to 1.5m	No.	20		
C2.2.9		Install duct handhole, manhole and access chamber covers and frames provided by others:					
	C2.2.9.1		As supplied by Telecom service provider	No.	20		
TOTAL CARRIED FORWARD TO SUMMARY							

C3.1			DRAINS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C3.1.1			EXCAVATION FOR OPEN DRAINS:				
	C3.1.1.1	(a)	Excavating all material situated within the following depth ranges below the surface level using conventional methods:				
			0m to 1,5m	m³	980		
	C3.1.1.2		Extra over sub-item C3.1.1.1 for excavation in hard and boulder material, irrespective of depth	m³	80		
C3.1.4			EXCAVATION AND DISPOSAL OF MATERIAL FOR SUBSOIL DRAINAGE SYSTEMS:				
	C3.1.4.1	(a)	Excavating in all material situated within the following depth ranges below the surface:				
			0m to 1,5m	m³	1670		
	C3.1.4.4		Extra over sub-item C3.1.4.1 for excavation in hard and boulder material, irrespective of depth	m³	840		
C3.1.5			IMPERMEABLE BACKFILLING TO SUBSOIL DRAINAGE SYSTEMS:				
	C3.1.5.1		Un-stabilised natural gravel obtained from approved sources on the site	m³	470		
	C3.1.5.3		Extra over items C3.1.5.1 and C3.1.5.2 for stabilisation with 4,0% cement (CEM II B-L 32,5N)	m³	100		
C3.1.6			CONSTRUCTION OF BANKS AND DYKES:				
	C3.1.6.1		Banks and dykes using conventional methods				
		(i)	At Cuttings	m³	1140		
		(ii)	Along the road reserve in mining areas, aesthetic banks	m³	16000		
C3.1.7			NATURAL PERMEABLE MATERIAL IN SUBSOIL DRAINAGE SYSTEMS (APPROVED CRUSHED STONE):				
	C3.1.7.1		Crushed stone obtained from approved sources on the site (Coarse grade - 20.0mm)	m³	500		
C3.1.8			NATURAL PERMEABLE MATERIAL IN SUBSOIL DRAINAGE SYSTEMS (APPROVED NATURAL SAND):				
	C3.1.8.1		Natural sand obtained from approved sources (Medium grade > 2.00mm, commercial source)	m³	810		
C3.1.9			PIPES IN SUBSOIL DRAINAGE SYSTEMS:				
	C3.1.9.1		U-PVC pipes and fittings, normal duty, complete with couplings				
		(a)	150mm Slotted	m	1820		
		(b)	150mm unslotted	m	140		
C3.1.11			Geotextile (Grade 2)	m²	3880		
C3.1.13			CONCRETE OUTLET STRUCTURES, MANHOLE BOXES, JUNCTION BOXES AND CLEANING EYES FOR SUBSOIL DRAINAGE SYSTEMS:				
	C3.1.13.1		Subsoil drain outlet (Type A as per drawing KBK/3100/15/015)	No.	7		
	C3.1.13.4		Cleaning eyes (As per drawing KBK/3100/15/016)	No.	20		
C3.1.14			CAPS FOR SUBSOIL DRAIN PIPES:				
	C3.1.14.1		Concrete caps	No.	5		
C3.1.16			LOADING AND HAULING OF MATERIAL IN EXCESS OF 1,0 KM	m³ - km	44560		
C3.1.18			BACKFILLING OF DRAINS WITH SELECTED MATERIAL COMPACTED TO 93% OF MDD PRIOR TO CONSTRUCTION OF CONCRETE LINING AND/OR STONE PITCHED LINING	m³	720.00		
C3.1.22			TEST FLUSHING OF SUBSOIL DRAIN PIPE SYSTEMS	No.	7		
C3.1.23			SUBSOIL DRAIN OUTLET MARKER (Type A as per drawing KBK/3100/15/015)	No.	7		
TOTAL CARRIED FORWARD TO SUMMARY							

C3.2			CULVERTS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
----- PERMANENT WORKS -----							
C3.2.1			Excavation for culvert structures:				
	C3.2.1.1		Excavating in all material situated within the following depth ranges below the surface level:				
		(a)	0m to 1,5m	m³	6750		
		(b)	Exceeding 1,5m and up to 3,0m	m³	3510		
	C3.2.1.4		Extra over sub-item C3.2.1.1 for excavation in hard or boulder material, irrespective of depth	m³	2060		
C3.2.2			Backfilling				
	C3.2.2.1		Using the excavated material compacted to 95% of MDD	m³	4330		
	C3.2.2.3		Extra over sub-items C3.2.2.1 and C3.2.2.2 for soil cement backfilling				
		(a)	With wet mixture of 5% cement	m³	1410		
C3.2.3			Concrete pipe culverts:				
	C3.2.3.2		On Class B bedding				
		(c)	900mm dia. Class 100D	m	793		
		(d)	1200mm dia. Class 100D	m	31		
C3.2.4			Metal and U-PVC culverts:				
	C3.2.4.1		400mm dia, normal duty, unplasticized HDPE pipe	m	134		
C3.2.5			Rectangular culverts with prefabricated elements:				
	C3.2.5.1		Prefabricated portal culverts; wall and roof combination				
		(a)	600mm x 600mm Portal 200S	m	176		
		(b)	900mm x 450mm Portal 175S	m	40		
		(c)	900mm x 600mm Portal 175S	m	212		
		(d)	1200mm x 600mm Class 150S	m	244		
		(e)	1200mm x 900mm Class 150S	m	34		
		(f)	1200mm x 1200mm Class 150S	m	67		
		(g)	1500mm x 1200mm Class 100S	m	243		
		(h)	1500mm x 1500mm Class 100S	m	27		
C3.2.6			Extra over items C3.2.3, C3.2.4 and C3.2.5 for constructing inclined culverts	m	134		
C3.2.7			Cast in situ concrete and formwork:				
	C3.2.7.1		In Class A bedding, screeds, concrete backfill and the encasing for pipes, including formwork (Class C12/15-20 concrete)	m³	170		
	C3.2.7.2		In complete in situ floor slabs for rectangular culverts, manholes and catchpits including formwork, joints and Class U2 surface finish (Class C24/30-20 concrete) (installed at a standard depth of 1,0m)	m³	250		
	C3.2.7.5		In inlet and outlet structures including kerbs, chutes and downpipes, skewed ends, catchpits, manholes, thrust and anchor blocks, excluding formwork but including Class U2 surfacing finish (Class C24/30-20 concrete)	m³	280		
	C3.2.7.6		Formwork of concrete under items C3.2.7.3 to 5 above				
		(a)	Vertical formwork for F1 surface finish	m²	620		
		(b)	Vertical formwork for F2 surface finish	m²	530		
			TOTAL CARRIED FORWARD				

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
	C3.2.10			Reinforcement:				
		C3.2.10.1		Mild steel bars	t	1		
		C3.2.10.2		High-tensile steel bars	t	22		
		C3.2.10.3		Welded steel fabric	kg	13000		
P	C3.2.12			Demolition of concrete members or elements:				
P		C3.2.12.1		Full member or element				
		(c)		Breaking and removing existing downchute inlet structures	No.	8		
		(d)		Breaking and removing existing downchute outlet structures	No.	8		
	C3.2.13			Removing and re-laying existing culverts:				
		C3.2.13.1		Removing and stacking existing culverts for re-use				
		(a)		300mm diameter pipe	m	56		
		(b)		600mm diameter pipe	m	563		
		(c)		750mm diameter pipe	m	141		
		(d)		900mm diameter pipe	m	187		
		(e)		600mm x 600mm Portal	m	18		
	C3.2.20			Anchor for pipes (1850mm x 2.5kg/m steel Y-sections)	No.	37		
	C3.2.22			Cutting of concrete pipes:				
		(a)		900mm diameter pipe	No.	15		
		(b)		1200mm diameter pipe	No.	1		
	C3.2.24			Compaction of bedding for inlets, outlets, manholes and catchpits:				
		C3.2.24.1		Preparation and compaction of in situ bedding material to 90% of MDD (150mm depth)	m³	130		
	C1.7.1			LOADING:				
		C1.7.1.2		Loading from heaps or windrows using machines and/some hand labour where necessary	m³	5 870		
P	C1.7.2			HAULING:				
P		C1.7.2.2		Hauling material to spoil or stockpile and off-loading it at a designated spoil or stockpile area:				
		(b)		Soil and gravel material	m³ -km	19 070		
		(c)		Boulders, hard material and concrete	m³ -km	10 260		
----- TEMPORARY WORK (HAUL ROADS) -----								
	C3.2.1			Excavation for culvert structures:				
		C3.2.1.1		Excavating in all material situated within the following depth ranges below the surface level:				
		(a)		0m to 1,5m	m³	655		
		(b)		Exceeding 1,5m and up to 3,0m	m³	66		
	C3.2.2			Backfilling				
		C3.2.2.1		Using the excavated material compacted to 95% of MDD	m³	323		
	C3.2.3			Concrete pipe culverts:				
		C3.2.3.2		On Class B bedding				
		(a)		600mm dia. Class 100D	m	45		
		(b)		750mm dia. Class 100D	m	16		
		(c)		900mm dia. Class 100D	m	23		
				TOTAL CARRIED FORWARD				

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
	C3.2.13			Removing and re-laying existing culverts:				
		C3.2.13.1		Removing and stacking existing culverts for re-use				
			(a)	600mm diameter pipe	m	150		
			(b)	750mm diameter pipe	m	55		
			(c)	900mm diameter pipe	m	76		
		C3.2.13.3		Re-laying existing culverts from stacking (On Class B bedding)				
			(a)	600mm diameter pipe	m	105		
			(b)	750mm diameter pipe	m	38		
			(c)	900mm diameter pipe	m	53		
	C1.7.1			LOADING:				
		C1.7.1.2		Loading from heaps or windrows using machines and/some hand labour where necessary	m³	398		
P	C1.7.2			HAULING:				
P		C1.7.2.2		Hauling material to spoil or stockpile and off-loading it at a designated spoil or stockpile area:				
			(b)	Soil and gravel material	m³ -km	1 988		
TOTAL CARRIED FORWARD TO SUMMARY								

C3.3		CONCRETE KERBING AND CHANNELING, ASPHALT BERMS, CHUTES, DOWNPIPES, AS WELL AS CONCRETE, STONE PITCHED AND GABION LININGS FOR OPEN DRAINS					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
C3.3.1		Concrete kerbing:					
	C3.3.1.1		Prefabricated kerbing				
		(a)	Precast barrier kerb, Figure 8, as shown on drawing no. KBK/3100/08/019	m	1440		
C3.3.2		Concrete kerbing-channeling combination:					
	C3.3.2.1		Prefabricated kerbing-channeling				
		(b)	Precast barrier kerb, Figure 3 (Type K2), as shown on drawing no. KBK/3100/15/001	m	1000		
		(c)	Precast barrier kerb, Figure 7, as shown on drawing no. KBK/3100/15/001	m	50		
	C3.3.2.2		Cast in situ kerbing-channeling				
		(a)	Cast insitu Type C mountable kerb-and-channel, as shown on	m	810		
		(b)	Cast insitu concrete backing between Figure 8 back to back kerbs, 0.175mm wide by 0.150mm high	m	1440		
C3.3.3		Extra over items C3.3.1 and C3.3.2 for concrete kerbing or concrete kerbing and channeling on curves:					
	C3.3.3.1		On curves of radii more than or equal to 5,0m but less than 20m				
		(a)	Cast insitu Type C mountable kerb-and-channel, as shown on drawing no. KBK/3100/15/004	m	810		
P C3.3.8		Linings for open drains:					
	C3.3.8.1		Cast in situ concrete lining (Concrete Class 24/30-20)				
		(a)	0.8m wide type A concrete drain as shown on (Drawing KBK/3100/15/001)	m³	33		
		(b)	2.5m wide type F concrete drain as shown on (Drawing KBK/3100/15/001)	m³	501		
	C3.3.8.2		Class U2 surface finish to cast in situ concrete (Type A and Type F)	m²	4750		
C3.3.9		Formwork to cast in situ concrete lining for open drains (Class F2 surface finish):					
	C3.3.9.2		To sides with formwork on both internal and external faces (each face measured)	m²	490		
	C3.3.9.3		To ends of slabs	m²	310		
C3.3.10		Sealed joints in concrete and stone pitched linings of open drains (expansion joints as shown on drawing KBK/3100/15/001)		m	491		
C3.3.12		Reinforcement:					
	C3.3.12.3		Welded steel fabric (Reff. No. 311)	kg	17400		
C3.3.13		Polymer film sheeting for concrete-lined open drains:					
		(a)	0.8m wide type A concrete drain, 0.15mm thick	m²	200		
		(b)	2.5m wide type F concrete drain, 0.15mm thick	m²	4550		
C3.3.14		Cutting bituminous surfacing and pavement layers for concrete kerbing, channeling or concrete-lined drains		m	2060		
C3.3.16		Demolition and removal of existing kerbs and/or channel:					
		(a)	Plain concrete (including existing side drains, and kerb/channel combinations)	m³	340		
		(b)	Breaking and removing existing concrete drain outlet structures	m³	253		
P C3.3.17		Inlet, outlet, transition and similar structures (typical designs)					
		(a)	Inlet structures for downchutes at high fills complete as shown on drawing KBK/3100/15/005				
		(i)	Type A inlet structure (Type A Concrete Drains)	No	2		
		TOTAL CARRIED FORWARD					

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
			(ii)	Type B inlet structure (Figure 3 kerb-and-channels)	No	17		
			(b)	Outlet structures for down-chutes at high fills complete as shown on drawing no. KBK/3100/15/005.	No	17		
			(c)	Outlet structures for concrete lined drains and kerb and channel combination complete as shown on drawings KBK/3100/15/002 to 004				
			(i)	Figure 3 Kerb-and-channel combination	No	3		
			(ii)	Type C Kerb-and-channel combination	No	2		
			(iii)	Type A side drain	No	2		
			(iv)	Type F side drain	No	6		
			(d)	In-situ, Class C24/30-20 concrete side drain catchpit on culverts less than 915mm wide complete with grid, frame and benching, as shown on drawings KBK/3100/15/006 and 007 for the following depth range:				
			(i)	1.5m to 2.0m	No	1		
C3.3	3.1.18			Backfilling of drains with selected material compacted to 93% of MDD prior to construction of concrete lining and/or stone pitched lining	m³	720.00		
C1.7.1				LOADING:				
		C1.7.1.2		Loading from heaps or windrows using machines and/some hand labour where necessary	m³	600		
P C1.7.2				HAULING:				
P		C1.7.2.2		Hauling material to spoil or stockpile and off-loading it at a designated spoil or stockpile area:				
			(b)	Soil and gravel material	m³ -km	4 800		
TOTAL CARRIED FORWARD TO SUMMARY								

C4.1			BORROW MATERIALS						
ITEM			DESCRIPTION		UNIT	QTY	RATE	AMOUNT	
				----- PERMANENT WORKS -----					
	C4.1.1			Compiling and implementing M&U plans:					
		C4.1.1.1		For borrow pits					
			(a)	Borrowpit 1		No.	1		
			(b)	Borrowpit 6		No.	1		
		C4.1.1.2		For quarries					
			(a)	Vaalbank Quarry		No.	1		
	C4.1.3			Construction and maintenance of temporary haul and access roads:					
		C4.1.3.1		Temporary unsealed roads		km	8.7		
		C4.1.3.2		Cost to repair existing public roads or streets		Prov Sum	1	250 000	R 250 000.00
		C4.1.3.3		Handling cost and profit in respect of item C4.1.3.2		%	250 000		
	C4.1.4			Removing of the overburden:					
		C4.1.4.1		In borrow pits		m³	9 610		
		C4.1.4.2		In quarries:					
			(a)	Soft material		m³	18 900		
			(b)	Hard material (by blasting)		m³	44 100		
	C4.1.5			Excavating of materials in the borrow pits and quarries, material obtained from:					
		C4.1.5.1		Soft excavation		m³	21330		
		C4.1.5.1		Boulder excavation class A		m³	510		
		C4.1.5.1		Hard excavation (other than by blasting)		m³	2540		
		C4.1.5.5		Hard excavation (by blasting)		m³	419930		
	C4.1.6			Providing crushing, screening and related plants:					
		C4.1.6.1		Single-stage crushing plant		No.	1		
		C4.1.6.3		Multiple-stage crushing and screening plant		No.	1		
	C4.1.7			Producing the material by:					
		C4.1.7.1		Single-stage crushing					
			(a)	Pioneer		m³	31540		
		C4.1.7.3		Multiple-stage crushing including screening					
			(a)	G1 crushed stone base layer material		m³	65420		
			(b)	G5A crushed rock/boulder material		m³	283600		
			(c)	G6 crushed rock/boulder material (-63mm)		m³	39370		
	C4.1.8			Moving and re-erecting the crushing, screening and related plants on the site					
		C4.1.8.1		Single-stage crushing plant		No.	1		
		C4.1.8.3		Multiple-stage crushing and screening plant		No.	1		
	C4.1.10			Compacting the floor of the stockpile sites:		m³	7880		
	C4.1.11			Constructing a platform for the stockpile site :		m³	1580		
P	C4.1.12			Stockpiling the material:					
		C4.1.12.1		Material from a producing plant					
			(a)	Pioneer crushed rock/boulder material		m³	31540		
			(b)	G1 crushed rock/boulder material		m³	65420		
				TOTAL CARRIED FORWARD					

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
			(c)	G5A crushed rock/boulder material	m³	283600		
			(d)	G6 crushed rock/boulder material (-63mm)	m³	39370		
C4.1.14				Removing the fill platform and temporary banks at the stockpile sites upon completion:				
		C4.1.14.1		Fill platform	m³	1580		
		C4.1.14.2		Temporary banks	m³	200		
C4.1.15				Shaping and finishing the borrow pit and quarry areas, and the stockpile sites:				
		C4.1.15.1		Shaping and finishing the borrow pit and quarry areas, and the stockpile sites:				
			(a)	Borrow pits				
			(i)	BP 1	ha	1.9		
			(ii)	BP 6	ha	2.5		
			(b)	Quarry	ha	4.2		
			(c)	Stockpile sites	ha	2.5		
C4.1.16				Personnel:				
		C4.1.16.1		Materials manager	month	24		
		C4.1.16.3		Stockpile controller	month	18		
C4.1.17				Weighbridge facility:				
		C4.1.17.1		Providing, erecting and removal of a weighbridge facility	L Sum	1		
		C4.1.17.2		Operating the weighbridge	month	24		
C4.1	C12.10.1			EXCAVATION IN HARD ROCK USING CONTROLLED BLASTING TECHNIQUES	m³	464 030		
TOTAL CARRIED FORWARD TO SUMMARY								

C4.2			CUT MATERIALS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
----- PERMANENT WORKS -----							
C4.2.1			Compiling and implementing M&U plans for the cuttings:				
	C4.2.1.1		Cuttings exceeding 5 000 m³ up to 10 000 m³	No.	1		
C4.2.4			Excavating of materials in box cuts, material obtained from:				
	C4.2.4.1		Soft excavation	m³	58 260		
	C4.2.4.4		Hard excavation (other than by blasting)	m³	6 860		
	C4.2.4.5		Hard excavation (by blasting)	m³	3 430		
C4.2.6			Widening of existing cuttings:				
	C4.2.6.1		Soft excavation	m³	1 620		
	C4.2.6.2		Boulder excavation class A	m³	240		
	C4.2.6.5		Hard excavation (by blasting)	m³	2 780		
C4.2.7			Removal of unsuitable stable cut material to spoil:				
	C4.2.7.1		In layer thicknesses of 200mm and less	m³	6 380		
	C4.2.7.2		In layer thicknesses exceeding 200mm	m³	6 380		
C4.2.8			Excavate material to spoil in sites designated by the Employer, material obtained from:				
	C4.2.8.1		Soft excavation, overburden and unsuitable material	m³	26 610		
C4.2.9			Excavate material to spoil in sites designated by the Contractor, material obtained from:				
	C4.2.9.1		Soft excavation, overburden and unsuitable material	m³	26 610		
	C4.2.9.2		Boulder excavation class A	m³	1 270		
	C4.2.9.4		Hard excavation (other than by blasting)	m³	6 340		
	C4.2.9.5		Hard excavation (by blasting)	m³	2 540		
C4.2.10			Backfilling of the unavoidable overbreak in hard and boulder excavation:				
	C4.2.10.1		Compliant gravel material	m³	50		
	C4.2.10.3		Soil cement (wet mix with 5% cement)	m³	50		
C4.2.11			Breaking down oversize material	m³	520		
C4.2.12			Finishing the side slopes:				
	C4.2.12.1		Cuttings:				
		(a)	In soft material	m²	61 970		
		(b)	In boulder material class A and B	m²	11 270		
		(c)	In hard material	m²	11 270		
		(d)	In soft material using labour enhanced methods of construction	m²	28 170		
P	C1.7.2		Hauling:				
P	C1.7.2.2		Hauling material to spoil or stockpile and off-loading it at a designated spoil or stockpile area:				
		(b)	Soil and gravel material	m³ -km	196 850		
P	C4.1.12		Stockpiling the material:				
	C4.1.12.2		Material directly from the excavation				
		(i)	Material obtained from cut for fill and lower selected (G7)	m³	15 610		
		(ii)	Material obtained from cut for upper selected (G6)	m³	20 990		
C4.2	12.10.1		Excavation in hard rock using controlled blasting techniques	m³	8 750		
			TOTAL CARRIED FORWARD				

C4.3		EXISTING ROAD MATERIALS					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
C4.3.5		Providing the milling machine on the site:					
	C4.3.5.2	Large milling machine with a cutting width exceeding 1,2m		No.	8		
C4.3.6		Milling and removal of existing asphalt layers with an average milling depth (Contractor takes ownership):					
	C4.3.6.1	Not exceeding 50mm					
		(a)	Milling of Initial widening asphalt (Traffic Accommodation)	m³	3 680		
		(b)	Milling of existing road asphalt	m³	5 170		
TOTAL CARRIED FORWARD TO SUMMARY							

C5.1			ROADBED				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
----- PERMANENT WORKS -----							
C5.1.1			Roadbed construction and compaction:				
	C5.1.1.2		Compaction of in-situ material to 93% of MDD	m³	33 860		
C5.1.5			In-situ treatment of roadbed in hard material:				
	C5.1.5.1		In-situ treatment by ripping	m³	17 060		
	C5.1.5.2		In-situ treatment by drilling and blasting	m³	4 270		
C5.1.6			Roller-pass compaction:				
	C5.1.6.2		Pad foot vibratory rollers	m²	36 840		
	C5.1.6.3		Smooth drum vibratory rollers	m²	36 840		
	C5.1.6.6		Pneumatic rollers	m²	18 420		
C5.1.11			Construction of roadbed comprising a pioneer layer	m³	15 350		
C5.1.11	12.6.17		Geotextile (Grade 1)	m²	26 420		
C5.1.12			Excavation for benches:				
	C5.1.12.1		Excavation for benches				
		(a)	Side-cut to fill in soft material	m³	320		
		(b)	Side-cut to spoil in soft material	m³	80		
P C5.1.13			Construction of a levelling layer:				
	C5.1.13.1		Over roadbed treatment in hard material compacted to 93% MDD	m³	5 020		
	C5.1.13.2		Over a constructed pioneer layer compacted to 93% MDD	m³	6 130		
C5.1	1.7.1		Loading:				
	C1.7.1.1		Loading from stockpile using machines and some hand labour where necessary	m³	15 350		
C5.1	1.7.2		Hauling:				
	C1.7.2.1		Hauling material for use in the Works and off-loading it on the site of the Works:				
		(a)	Soil, gravel, crushed stone and pavement layer material	m³ -km	55 750		
		(b)	Boulders and hard material	m³ -km	299 330		
P	C1.7.2.2		Hauling material to spoil or stockpile and off-loading it at a designated spoil or stockpile area:				
		(b)	Soil and gravel material	m³ -km	400		
C5.1	12.10.1		Excavation in hard rock using controlled blasting techniques	m³	4 270		
----- INITIAL WIDENINGS (TRAFFIC ACCOMMODATION) -----							
C5.1.1			Roadbed construction and compaction:				
	C5.1.1.2		Compaction of in-situ material to 93% of MDD	m³	13 110		
C5.1.5			In-situ treatment of roadbed in hard material:				
	C5.1.5.1		In-situ treatment by ripping	m³	6 610		
	C5.1.5.2		In-situ treatment by drilling and blasting	m³	1 660		
C5.1.6			Roller-pass compaction:				
	C5.1.6.2		Pad foot vibratory rollers	m²	38 850		
	C5.1.6.3		Smooth drum vibratory rollers	m²	38 850		
	C5.1.6.6		Pneumatic rollers	m²	19 430		
C5.1.11			Construction of roadbed comprising a pioneer layer	m³	16 190		
TOTAL CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
P	C5.1	C5.1.12.1		AMOUNT BROUGHT FORWARD				
				Excavation for benches				
			(a)	Side-cut to fill in soft material	m³	160		
			(b)	Side-cut to spoil in soft material	m³	40		
		C5.1.13		Construction of a levelling layer:				
		C5.1.13.1		Over roadbed treatment in hard material compacted to 93 % MDD	m³	1 950		
		C5.1.13.2		Over a constructed pioneer layer compacted to 93 % MDD	m³	6 390		
		1.7.1		Loading:				
		C1.7.1.1		Loading from stockpile using machines and some hand labour where necessary	m³	16 190		
		1.7.2		Hauling:				
		C1.7.2.1		Hauling material for use in the Works and off-loading it on the site of the Works:				
			(a)	Soil, gravel, crushed stone and pavement layer material	m³ -km	41 700		
			(b)	Boulders and hard material	m³ -km	315 710		
		C1.7.2.2		Hauling material to spoil or stockpile and off-loading it at a designated spoil or stockpile area:				
			(b)	Soil and gravel material	m³ -km	200		
	C5.1	12.10.1		Excavation in hard rock using controlled blasting techniques	m³	1 660		
TOTAL CARRIED FORWARD TO SUMMARY								

C5.2			FILL				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
----- PERMANENT WORKS -----							
C5.2.1			Compiling and implementing M&U plans:				
	C5.2.1.2		For fills 1,0 km in length when less than 10 000 m³ (km 18.515 to km 41.900)	No.	1		
C5.2.2			Fill construction				
	C5.2.2.1		Normal fill material in compacted layer thicknesses of 200mm and less:				
		(b)	Compacted to 93% of MDD	m³	8 570		
	C5.2.2.2		Coarse fill material in compacted layer thicknesses exceeding 200 mm but less than 500mm:				
		(b)	Compacted to 93% of MDD	m³	2 160		
	C5.2.2.4		Rock fill material all as per Clause A5.2.7.6	m³	720		
C5.2.7			Construction of a trial section:				
	C5.2.7.1		Normal fill	m³	200		
	C5.2.7.3		Rock fill	m³	200		
	C5.2.7.4		Coarse fill	m³	200		
C5.2.8			Breaking down oversize fill material on the road:				
	C5.2.8.1		By normal grid rolling as per clause A5.3.7.3(b) (i) to (vii)	m² -pass	6 480		
	C5.2.8.3		By pad foot vibratory roller	m² -pass	12 960		
	C5.2.8.4		By vibratory roller	m² -pass	12 960		
C5.2.9			Removal of oversize material	m³	410		
C5.2.11			Finishing-off fill slopes, medians and interchange areas:				
	C5.2.11.1		Fill slopes	m²	81 640		
P C5.2	1.7.2		Hauling				
	C1.7.2.1		Hauling material for use in the Works and off-loading it on the site of the Works:				
		(a)	Soil, gravel, crushed stone and pavement layer material	m³ -km	53 150		
		(b)	Boulders and hard material	m³ -km	4 600		
P	C1.7.2.2		Hauling material to spoil or stockpile and off-loading it at a designated spoil or stockpile area:				
		(c)	Boulders, hard material and concrete	m³ -km	2 050		
----- INITIAL WIDENINGS (TRAFFIC ACCOMMODATION) -----							
C5.2.1			Compiling and implementing M&U plans:				
	C5.2.1.2		For fills 1,0 km in length when less than 10 000 m³ (km 18.515 to km 41.900)	No.	1		
C5.2.2			Fill construction:				
	C5.2.2.1		Normal fill material in compacted layer thicknesses of 200mm and less:				
		(b)	Compacted to 93% of MDD	m³	6 670		
	C5.2.2.2		Coarse fill material in compacted layer thicknesses exceeding 200 mm but less than 500mm:				
		(b)	Compacted to 93% of MDD	m³	1 790		
	C5.2.2.4		Rock fill material all as per Clause A5.2.7.6	m³	600		
C5.2.3			Side-cut to fill compacted to 93% of MDD in compacted layer thicknesses of 200mm and less	m³	2 010		
TOTAL CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
	C5.2.8			Breaking down oversize fill material on the road				
		C5.2.8.1		By normal grid rolling as per clause A5.3.7.3(b) (i) to (vii)	m ² -pass	5 370		
		C5.2.8.3		By pad foot vibratory roller	m ² -pass	10 740		
		C5.2.8.4		By vibratory roller	m ² -pass	10 740		
	C5.2.9			Removal of oversize material	m ³	340		
P	C5.2	1.7.2		Hauling				
		C1.7.2.1		Hauling material for use in the Works and off-loading it on the site of the Works:				
		(a)		Soil, gravel, crushed stone and pavement layer material	m ³ -km	42 300		
		(b)		Boulders and hard material	m ³ -km	3 000		
P		C1.7.2.2		Hauling material to spoil or stockpile and off-loading it at a designated spoil or stockpile area:				
		(c)		Boulders, hard material and concrete	m ³ -km	1 700		
TOTAL CARRIED FORWARD TO SUMMARY								

C5.3			ROAD PAVEMENT LAYERS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
----- PERMANENT WORKS -----							
	C5.3.1		Compiling and implementing M&U plans for the construction of all the pavement layers.	No.	8		
P	C5.3.2		Construction of pavement layers:				
P		C5.3.2.1	Construction of layers using conventional construction methods:				
		(a)	Lower selected subgrade layer (150mm thick) compacted to 93% of MDD (Access Roads)	m³	1 460		
		(b)	Lower selected subgrade layer (150mm thick) compacted to 95% of MDD	m³	20 820		
		(c)	Upper selected subgrade layer (150mm thick) compacted to 95% of MDD	m³	47 260		
		(g)	Gravel wearing course layer (200mm thick) compacted to 95% of MDD (Access Roads)	m³	1 050		
		(h)	Gravel shoulder layer (150mm thick) compacted to 95% of MDD	m³	5 250		
		(i)	Lower subbase gravel layer (unstabilised) (150mm thick) compacted to 95% of MDD (Access Roads)	m³	1 380		
P		(q)	G5A crushed rock/boulder subbase layer (unstabilised or chemically stabilised) (layer thickness indicated) compacted to 97% of MDD				
		(ii)	200mm thick	m³	74 050		
		(iii)	250mm thick	m³	132 870		
		(aa)	G1 crushed stone base layer (150mm) compacted to 88 % of AD	m³	65 330		
	C5.3.6		Removal of oversize material	m³	1 270		
	C5.3.9		Construction of a trial section:				
		C5.3.9.1	Construction of a trial section using conventional methods of construction				
		(a)	Stabilised gravel layer (layer thickness indicated) trial section				
		(i)	200mm thick Subbase layer	m³	120		
		(ii)	250mm thick Subbase layer	m³	140		
		(c)	Crushed stone base layer (150mm thick) trial section	m³	90		
	C5.3.10		Removal of a completed trial section				
		C5.3.10.1	Stabilised layer	m³	260		
		C5.3.10.3	Crushed stone layer	m³	90		
	C5.3.11		Riding quality measurements:				
		C5.3.11.3	Using an inertial profilometer	km	240		
	C5.3.12		Surface regularity payment adjustments	Prov Sum	1	500 000.00	R 500 000.00
	C5.3	1.7.1	Loading:				
		C1.7.1.1	Loading from stockpile using machines and some hand labour where necessary	m³	319 510		
P	C5.3	1.7.2	Hauling:				
P		C1.7.2.1	Hauling material for use in the Works and off-loading it on the site of the Works:				
		(a)	Soil, gravel, crushed stone and pavement layer material	m³ -km	6 500 090		
		C1.7.2.2	Hauling material to spoil or stockpile and off-loading it at a designated spoil or stockpile area:				
		(c)	Boulders, hard material and concrete	m³ -km	6 350		
			TOTAL CARRIED FORWARD				

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
				----- INITIAL WIDENINGS (TRAFFIC ACCOMMODATION) -----				
	C5.3.1			Compiling and implementing M&U plans for the construction of all the pavement layers.	No.	5		
P	C5.3.2			Construction of pavement layers:				
P		C5.3.2.1		Construction of layers using conventional construction methods:				
		(c)		Upper selected subgrade layer (unstabilised or chemically stabilised)(150mm thick) compacted to 95% of MDD	m³	6 390		
P		(q)		G5A crushed rock/boulder subbase layer (unstabilised or chemically stabilised) (150mm thick) compacted to 97% of MDD				
		(i)		150mm thick	m³	31 290		
P		(dd)		Subgrade layers (150mm thick) (unstabilised or chemically stabilised) compacted to 93% of MDD	m³	12 390		
P		(ee)		G5A crushed rock/boulder base layer (unstabilised or chemically stabilised) (150mm thick) compacted to 97% of MDD	m³	30 600		
	C5.3.6			Removal of oversize material	m³	1 010		
	C5.3.9			Construction of a trial section:				
		C5.3.9.1		Construction of a trial section using conventional methods of construction				
		(a)		Stabilised gravel layer (150mm thick) trial section	m³	100		
	C5.3	1.7.1		Loading:				
		C1.7.1.1		Loading from stockpile using machines and some hand labour where necessary	m³	68 280		
	C5.3	1.7.2		Hauling:				
		C1.7.2.1		Hauling material for use in the Works and off-loading it on the site of the Works:				
		(a)		Soil, gravel, crushed stone and pavement layer material	m³ -km	1 397 690		
		C1.7.2.2		Hauling material to spoil and off-loading it at a designated spoil or stockpile area:				
		(c)		Boulders, hard material and concrete	m³ -km	1 900		
TOTAL CARRIED FORWARD TO SUMMARY								

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

C5.4			STABILISATION					
ITEM			DESCRIPTION		UNIT	QTY	RATE	AMOUNT
			----- PERMANENT WORKS -----					
	C5.4.2		Chemical stabilisation:					
		C5.4.2.1	Chemical stabilisation 150mm of selected layer		m³	22 500		
		C5.4.2.2	Chemical stabilisation 200mm of Lower Subbase layer		m³	91 990		
		C5.4.2.3	Chemical stabilisation 250mm of Upper Subbase layer		m³	112 590		
	C5.4.5		Cementitious stabilisation agents for pavement layers:					
		C5.4.5.2	Addition of cementitious stabilisation agents for pavement layers and spreading the agent using bags and labour enhancement methods.					
		(a)	Cement (CEM II B-L 32,5N)		t	18 680		
	C5.4.10		Provision and application of water for curing		kℓ	31 820		
	C5.4.11		Curing by covering with the subsequent layer		m²	1 000 400		
	C5.4.14		Trial section for a chemically stabilised layer:					
		(a)	200mm of Lower Subbase layer		m³	150		
		(b)	250mm of Upper Subbase layer		m³	150		
		(c)	150mm of Upper Selected layer		m³	90		
	C5.4	C4.4.4	Cementitious stabilising agents:					
		C4.4.4.1	Cement (CEM II B-L 32,5N)		t	18 680		
----- INITIAL WIDENINGS (TRAFFIC ACCOMMODATION) -----								
	C5.4.2		Chemical stabilisation:					
		C5.4.2.1	Chemical stabilisation (150mm thick) of subbase layer		m³	19 570		
		C5.4.2.2	Chemical stabilisation (150mm thick) base layer		m³	19 040		
	C5.4.5		Cementitious stabilisation agents for pavement layers:					
		C5.4.5.2	Addition of cementitious stabilisation agents for pavement layers and spreading the agent using bags and labour enhancement methods.					
		(a)	Cement (CEM II B-L 32,5N)		t	3 180		
	C5.4.10		Provision and application of water for curing		kℓ	12 810		
	C5.4.11		Curing by covering with the subsequent layer		m²	130 470		
	C5.4.14		Trial section for a chemically stabilised layer		m³	100		
	C5.4	C4.4.4	Cementitious stabilising agents:					
		C4.4.4.1	Cement (CEM II B-L 32,5N)		t	3 180		
TOTAL CARRIED FORWARD TO SUMMARY								

C5.5			RECONSTRUCTION OF PAVEMENT LAYERS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
----- PERMANENT WORKS -----							
C5.5.1			Compiling and implementing M&U plans for the reconstruction of an existing road pavement	No.	14		
C5.5.2			Reconstruction preparatory work:				
	C5.5.2.1		Undivided carriageway: Uniform Sections				
		(a)	± km 18.5 ± km 21.1	km	2.6		
		(b)	± km 21.1 ± km 23.4	km	2.3		
		(c)	± km 23.4 ± km 25.6	km	2.2		
		(d)	± km 25.5 ± km 27.4	km	1.9		
		(e)	± km 27.4 ± km 28.0	km	0.6		
		(f)	± km 28.0 ± km 29.5	km	1.5		
		(g)	± km 29.5 ± km 30.0	km	0.5		
		(h)	± km 30.0 ± km 32.1	km	2.1		
		(i)	± km 32.1 ± km 34.1	km	2.0		
		(j)	± km 34.1 ± km 35.5	km	1.4		
		(k)	± km 35.5 ± km 36.0	km	0.5		
		(l)	± km 36.0 ± km 37.9	km	1.9		
		(m)	± km 37.9 ± km 39.6	km	1.7		
		(n)	± km 39.6 ± km 41.9	km	2.3		
C5.5.3			Construction equipment for sampling of in-situ material for mix design procedure	No.	40		
C5.5.4			Sampling of in-situ material for mix design procedure	No.	40		
C5.5.5			Construction of a trial section using a recycler	m³	80		
C5.5.6			Construction of a trial section using conventional construction equipment	m³	80		
P C5.5.8			Pre-pulverising material in the existing pavement				
P	C5.5.8.5		Breaking up existing pavement, irrespective of material type and depth, using a milling/recycling machine capable of breaking up material to a depth of 350mm in one operation.	m³	63 640		
C5.5.9			Temporarily blading layer material to windrow	m³	1 900		
C5.5.10			Roller-pass compaction of an exposed pavement layer				
	C5.5.10.1		Smooth drum vibratory rollers	m²	15 950		
	C5.5.10.3		Pneumatic-tyred rollers	m²	7 980		
C5.5.11			Watering the exposed pavement layer	kl	240		
C5.5.12			Removal of surplus material from site	m³	100		
C5.5.13			Cross mixing of material (varying depths depending on layer)	m³	6 200		
C5.5.14			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised selected layer				
	C5.5.14.1	(d)	Chemically stabilised selected layer compacted to 95% of MDD: Using pre-pulverised material (as per item C5.5.8) compacted to 150mm thick	m³	23 340		
C5.5.15			In-situ reconstruction of a pavement layer using a recycler to construct a stabilised subbase layer				
	C5.5.15.1	(d)	Chemically stabilised subbase layer compacted to 97% of MDD: Using pre-pulverised material (as per item C5.5.8) compacted to 200 mm thick	m³	41 900		
			TOTAL CARRIED FORWARD				

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
P	C5.5.27			In-situ reconstruction of a pavement layer using conventional construction equipment to construct a selected layer				
P		C5.5.27.1	(a)	Selected layer (150mm thick) compacted to 95% of MDD	m³	40 010		
	C5.5.20			Material shortfall or make-up material				
		C5.5.20.1		For selected layer from:				
			(i)	Borrowpit	m³	7 760		
			(ii)	Quarry	m³	5 720		
		C5.5.20.2		For subbase layer	m³	14 430		
	C5.5	1.7.1		Loading:				
		C1.7.1.1		Loading from stockpile using machines and some hand labour where necessary	m³	27 910		
	C5.5	1.7.2		Hauling				
		C1.7.2.1		Hauling material for use in the Works and off-loading it on the site of the Works:				
			(a)	Soil, gravel, crushed stone and pavement layer material	m³ -km	462 770		
----- INITIAL WIDENINGS (TRAFFIC ACCOMMODATION) -----								
	C5.5.20			Material shortfall or make-up material				
		C5.5.20.1		For selected layer	m³	1 280		
P	C5.5.27			In-situ reconstruction of a pavement layer using conventional construction equipment to construct a selected layer				
		C5.5.27.1		Selected layer (150mm thick) compacted to 95% of MDD	m³	12 780		
	C5.5	1.7.2		Hauling				
		C1.7.2.1		Hauling material for use in the Works and off-loading it on the site of the Works:				
			(a)	Soil, gravel, crushed stone and pavement layer material	m³ -km	11 520		
TOTAL CARRIED FORWARD TO SUMMARY								

C6.2			SEGMENTAL BLOCK PAVING LAYERS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C6.2.1			Segmental block paving:				
	C6.2.1.1.	(a)	Concrete block paving using new Interlocking Pavers (Class 35 - Double Zig-Zag - Type A) 80mm thick in herringbone pattern	m²	24		
		(b)	Concrete block paving using recovered, stacked Interlocking Pavers (Double Zig-Zag) 80mm thick in herringbone pattern	m²	56		
	C4.3.13		Lifting of existing paving blocks (Double Zig-Zag, 80mm thick):				
	C4.3.13.2		Using labour enhanced methods of construction	m²	70		
	C4.3.16		Stacking paving blocks and road edging				
	C4.3.16.1		Interlocking Pavers (Type A, B or C, Double Zig-Zag) 80mm Thick	No	3 360		
	C4.3.20		Spoiling of paving blocks and road edging in spoil sites designated by the contractor:				
	C4.3.20.1		Paving blocks	m³	6		
C6.2.3		Provision and application of approved herbicide and ant poison:					
	C6.2.3.1		Provision of materials	PC Sum	1	50 000.00	R 50 000.00
	C6.2.3.2		Contractor's charges and profit added to the prime cost sum	%	50 000		
TOTAL CARRIED FORWARD TO SUMMARY							

CONTRACT SANRAL N.011-090-2016/1
 FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
 (KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

C8.1				PRIME COAT				
ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				----- PERMANENT WORKS -----				
	C8.1.1			Prime coat:				
		C8.1.1.2		MC -30 cut-back bitumen	ℓ	1 610		
		C8.1.1.3		Inverted bitumen emulsion	ℓ	353 050		
	C8.1.2			Aggregate for blinding:				
		C8.1.2.2		Crusher sand	m³	20		
				----- TEMPORARY WORKS -----				
	C8.1.1			Prime coat:				
		C8.1.1.2		MC -30 cut-back bitumen	ℓ	101 030		
	C8.1.2			Aggregate for blinding:				
		C8.1.2.2		Crusher sand	m³	2		
TOTAL CARRIED FORWARD TO SUMMARY								

C9.1			ASPHALT LAYERS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
----- PERMANENT WORKS -----							
C9.1.1			Asphalt mix designs				
	C9.1.1.1		Stone skeletal mixes:				
		(f)	Bitumen rubber open and gap graded mixes (PG58V-22, CRM binder, level III mix design)	L Sum	1		
	C9.1.1.2		Sand skeletal mixes:				
		(a)	Continuously graded base or surfacing				
		(i)	PG58H-22, EPM binder, level II mix design	L Sum	1		
		(ii)	PG58V-22, EPM binder and level III mix design	L Sum	1		
C9.1.2			Construction of trial sections				
	C9.1.2.1		Asphalt layers				
		(a)	Stone skeletal, gap graded, 14mm NMPS, PG58V-22, CRM binder, 50mm thick, placed by paver utilizing material transfer vehicle	m²	600		
		(b)	Sand skeletal, continuously graded, 10mm NMPS, PG58H-22, EPM binder, 35mm thick, placed by paver utilizing material transfer vehicle	m²	600		
		(c)	Sand skeletal, continuously graded, 20mm NMPS, PG58V-22, EPM binder, 90mm thick, placed by paver utilizing material transfer vehicle	m²	600		
	C9.1.2.2		Removal of trial section where so instructed by the Engineer	m²	1 800		
C9.1.3			Application of bond coat				
	C9.1.3.1		Stable-grade 30% net bitumen emulsion as specified. Applied with a calibrated distributor	ℓ	218 500		
	C9.1.3.2		Applied in restricted areas using a portable pressure sprayer	ℓ	25 000		
	C9.1.3.3		Applied by hand using brushes on all exposed transverse and longitudinal construction joints	ℓ	5 000		
C9.1.4			Asphalt base				
	C9.1.4.1		New Construction				
		(c)	Sand skeletal mix – continuously graded as defined (90mm thick, PG58V-22, EPM binder, level III mix design placed by paver utilizing material transfer vehicle)	m²	9 280		
C9.1.5			Asphalt surfacing				
	C9.1.5.1		New construction				
		(d)	Stone skeletal mix - gap graded as defined (50mm thick, PG58V-22, CRM binder, level III mix design placed by paver utilizing material transfer vehicle)	m²	441 520		
C9.1.8			Surfacing of bridge decks				
	C9.1.8.2		Surfacing (stone skeletal, gap graded, PG58V-22, CRM binder, 14 mm NMPS, level III mix design, placed by paver utilizing material transfer vehicle)				
		(a)	50mm Thick	t	240		
		(b)	60mm Thick	t	150		
C9.1.9			Application of rolled in chippings (10mm nominal size @ 3.5 kg/m²)				
	C9.1.9.1		By means of chip spreader	m²	442 500		
C9.1.10			Variation rates				
	C9.1.10.1		Bitumen (state type)				
		(a)	Crumbed rubber modified (CRM) PG58V-22 binder	t	1		
		(b)	Elastomeric polymer modified (EPM) PG58V-22 binder	t	1		
		(c)	Elastomeric polymer modified (EPM) PG58H-22 binder	t	1		
			TOTAL CARRIED FORWARD				

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
		C9.1.10.2		Aggregate	t	1		
		C9.1.10.3		Active filler	t	1		
		C9.1.10.5		Rolled-in chippings	t	1		
		C9.1.10.6		Bituminous bond coat – net bitumen (Stable–grade 30%)	t	1		
	C9.1.13			Coring of asphalt layers				
		C9.1.13.1		100mm diameter	No.	920		
		C9.1.13.2		150mm diameter	No.	24		
	C9.1.14			Surface regularity testing as described in Clause A9.1.8.4				
		C9.1.14.1		Establishment of equipment: Inertial laser Profilometer, Other Profilometer type, e.g. ARRB Walking or Face Dipstick	No.	25		
		C9.1.14.2		Profiler Surveys utilising equipment as specified - Base layers and				
		(a)		Base layer	km	120		
		(b)		Surfacing layers	km	120		
	C9.1.15			Milling of bridge decks and keys adjacent to bridge decks				
		C9.1.15.1		Provision of an appropriate sized milling machine	No.	1		
		C9.1.15.2		Milling of bridge decks and keys to bridge deck approaches	m³	100		
		C9.1.15.3		Cleaning of milled surfaces	m²	2 230		
P	C9.1.17			Milling of bridge decks and keys adjacent to bridge decks	Prov Sum	1	500 000.00	R 500 000.00
----- TEMPORARY WORKS -----								
	C9.1.3			Application of bond coat				
		C9.1.3.1		Stable–grade 30% net bitumen emulsion as specified. Applied with a calibrated distributor	ℓ	67 450		
	C9.1.5			Asphalt surfacing				
		C9.1.5.2		Rehabilitation				
		(e)		Sand skeletal mix – continuously graded as defined (35mm thick, EPM binder and level II mix design)	t	12 170		
	C9.1.10			Variation rates				
		C9.1.10.1		Bitumen (EPM)	t	1		
		C9.1.10.2		Aggregate	t	1		
		C9.1.10.3		Active filler	t	1		
	C9.1.13			Coring of asphalt layers				
		C9.1.13.1		150mm diameter	No.	210		
TOTAL CARRIED FORWARD TO SUMMARY								

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

C11.1		PITCHING, STONEWORK, CAST IN SITU CONCRETE FOR PROTECTION AGAINST EROSION					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
C11.1.2		Stone pitching:					
	C11.1.2.1	Plain stone pitching					
	(a)	Method 1	m²	45			
	(b)	Method 2	m²	45			
	C11.1.2.2	Grouted stone pitching with mortar					
	(a)	N11 Main Road	m²	540			
	(b)	B2966	m²	516			
	(c)	B1793	m²	60			
C11.1.5		Concrete pitching or paving:					
	C11.1.5.1	Cast in situ concrete pitching or paving (class of concrete and thickness of pitching or paving indicated)	m²				
	(a)	B1793 - Class C16/20-20, 150mm thick	m²	10			
P	C11.1.6	Concrete edge beam (300mm x 200mm, Class C24/30-20 concrete, U2 surface finish)		m	450		
C11.1.7		Provision of approved herbicide and ant poison:					
	C11.1.7.1	Provision of materials	PC Sum	1	20 000	R	20 000.00
	C11.1.7.2	Contractor's charges and profit added to the prime cost sum	%	20 000			
TOTAL CARRIED FORWARD TO SUMMARY							

C11.2		NON-STRUCTURAL GABIONS					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
C11.2.1		Foundation trench excavation:					
	C11.2.1.1	(a)	Excavating all material situated within the following depth ranges below the surface level				
	C11.2.1.2		Extra over sub-item C11.2.1.1 for excavation in hard material, irrespective of depth				
			C0631 - 0m to 1,5m	m³	1 070		
				m³	220		
C11.2.2		Surface preparation for bedding the gabion boxes and mattresses		m²	1 660		
C11.2.3		Gabion boxes and mattresses:					
	C11.2.3.1		C0631 - Galvanized gabion boxes, 2 m x 1 m x 1 m with mesh type 80 and 2,7 mm dia class A galvanised wire	m³	570		
	C11.2.3.3		C0631 - Galvanized reno mattresses, 0,3m deep with mesh type 60 & 2,2mm dia class A galvanised wire, and diaphragms at 1m centres	m³	500		
C11.2.4		Geotextile (continuous filament nonwoven needlepunched geotextile, grade 2)		m²	3 280		
C11.2		C11.1.2		Stone pitching:			
		C11.1.2.2	Grouted stone pitching with mortar	m²	181		
C11.2		C1.7.1		LOADING:			
P P		C1.7.1.2	Loading from heaps or windrows using machines and/some hand labour where necessary	m³	1 070		
		C1.7.2		HAULING:			
		C1.7.2.2	Hauling material to spoil or stockpile and off-loading it at a designated spoil or stockpile area:				
		(b)	Soil and gravel material	m³ -km	4 260		
		(c)	Boulders, hard material and concrete	m³ -km	1 070		
C11.2		C3.2.10		Reinforcement:			
		C3.2.10.2	High-tensile steel bars	t	4.2		
TOTAL CARRIED FORWARD TO SUMMARY							

C11.4		ROAD RESTRAINT SYSTEMS					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
P	C11.4.1			Erecting of guardrails at 3,81m spacing:			
P		C11.4.1.2	(h)	End treatments where double guardrail sections are specified (Drawing reference KBK/3100/08/016 to 018)			
			(i)	Type A, 34.290m	No.	12	
			(ii)	Type B, 19.050m	No.	10	
			(iii)	Type C, 11.678m including bridge adaptor	No.	20	
	C11.4.5			Additional guardrail posts for 3,81m systems:			
		C11.4.5.1		Timber	No.	30	
	C11.4.6			Reflective plates:			
		C11.4.6.1		Steel plates	No.	260	
	C11.4.7			Removing existing guardrails			
				m	940		
	C11.4.8			Renovating guardrail material:			
		C11.4.8.1		Painting guardrails, end wings and bullnoses	m	120	
	C11.4.9			Re-erection of guardrails with recovered or provided material:			
		C11.4.9.1		Single guardrail	m	120	
	C11.4.10			End treatments to existing guardrails with recovered or provided material:			
		C11.4.10.5		End treatments with double guardrails	No.	2	
	C11.4.11			New material required for the re-erection guardrails with recovered materials:			
		C11.4.11.1		Guardrails, 3,81m compliant to SANS 1350	No.	30	
		C11.4.11.2		Timber posts compliant to SANS 457	No.	30	
		C11.4.11.5		Spacer blocks compliant to SANS 457	No.	30	
		C11.4.11.6		Splice bolt complete with nut and washer compliant to SANS 1350	No.	24	
		C11.4.11.7		Post bolt complete with nut and washer compliant to SANS 1350	No.	6	
		C11.4.11.8		Reinforcing plates (Drawing reference KBK/3100/08/014 and 015)	No.	6	
	C11.4.12			Extra over items C11.4.1 and C11.4.2 for drilling and blasting holes for guardrail posts			
				No.	4		
	C11.4.14			Nailing of gang nail plates on top of timber guardrail posts			
				No.	80		
	C11.4.15			Disposal of existing guardrails:			
		C11.4.15.1		Straight or curved longitudinal guardrails	m	820	
		C11.4.15.3		End treatments with double guardrails	m	70	
TOTAL CARRIED FORWARD TO SUMMARY							

C11.5			FENCING				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C11.5.1			Supply and erect new fencing material for new fences and for supplementing material in existing fences which are being repaired or removed:				
	C11.5.1.1		Zinc-coated barbed wire (High-tensile grade, single-strand 3,15 mm x 2,5 mm oval-shaped wire, fully galvanized)	km	183		
	C11.5.1.7		Standards (1,850 m x 2,5 kg/m mild steel "y"-section)	No.	1 430		
	C11.5.1.8		Droppers (1,400 m x 0.56kg/m mild steel ridge back section)	No.	5 690		
	C11.5.1.9		Straining posts, stays and anchors:				
		(a)	Vertical				
		(i)	Steel straining posts (2,130 m x 100 mm x 3,0 mm mild steel tubing with steel cap and 230 x 230 x 3 mm base plate, fully galvanized)	No.	150		
		(b)	Inclined				
		(i)	Steel stays and anchors (1,690 m x 60 mm diameter x 3,0 mm mild steel tubing with 230 x 230 x 3 mm base plate, fully galvanized)	No.	300		
		(c)	Horizontal				
		(i)	Steel stays and anchors (2,4 m x 60 mm diameter x 2,95 mm mild steel tubing bent and flattened as shown, fully galvanized; ends press flat to ± 8 mm)	No.	40		
C11.5.2			New gates (3.6m x 1.2m government pattern farm gate)	No.	6		
C11.5.4			Dismantling existing fences and gates:				
	C11.5.4.1		Fences:				
		(a)	Stock-proof fences	km	18		
	C11.5.4.2		Gates (4.2m "W" pattern farm gate)	No.	6		
C11.5.6			Ringbolts for anchoring fencing to structures	No.	12		
C11.5.7			Drilling and blasting holes for posts and anchors	No.	45		
C11.5.10			Disposal of existing fencing materials:				
	C11.5.10.1		Stock-proof fences	km	18		
	C11.5.10.6		Gates (4.2m "W" pattern farm gate)	No.	6		
TOTAL CARRIED FORWARD TO SUMMARY							

C11.6		ROAD SIGNS					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
P	C11.6.1			Road signboards with painted or coloured semi-matt background. Symbols, lettering and borders in semi- matt black or in Class I retro-reflective material, where the sign board is constructed from:			
		C11.6.1.3		Prepainted galvanized steel plate:			
			(a)	Area 0 to 0,5 m ²	m ²	1	
			(b)	Area exceeding 0,5 m ² but not 2,0 m ²	m ²	100	
			(c)	Area exceeding 2,0 m ² but not 10 m ²	m ²	200	
		C11.6.1.4		Prepainted galvanized steel profiles (200mm high panels):			
			(c)	Area exceeding 2,0 m ² but not 10 m ²	m ²	170	
			(d)	Area exceeding 10 m ²	m ²	30	
	C11.6.2			Extra over on item C11.6.1 for using:			
		C11.6.2.1		Background of retro-reflective material:			
			(b)	Class III	m ²	490	
		C11.6.2.2		Lettering, symbols, numbers, arrows, emblems and borders of retro-reflective material:			
			(a)	Class III	m ²	490	
	C11.6.3			Road sign supports (overhead road sign structures excluded):			
		C11.6.3.2		Timber (diameter and type indicated)			
			(a)	125mm	m	400	
			(b)	150mm	m	1 930	
			(c)	175mm	m	180	
			(d)	200mm	m	60	
	C11.6.4			Kilometre Markers:			
		C11.6.4.1		Kilometre markers on posts (type and post indicated on drawings KBK/3100/10/001 and 002)			
				No.	234		
	C11.6.5			Excavation and backfilling for road sign supports (not applicable to kilometre posts):			
		C11.6.5.1		Excavating soft material and backfilling			
				m ³	70		
		C11.6.5.2		Excavating soft or intermediate material and backfilling using labour enhanced construction methods			
				m ³	20		
		C11.6.5.3		Extra over item C11.6.5.1 and C11.6.5.2 for cement-treated soil backfill			
				m ³	60		
		C11.6.5.4		Extra over item C11.6.5.1 for hard material excavation			
				m ³	30		
		C11.6.5.5		Imported backfill material from commercial sources			
				m ³	20		
	C11.6.6			Dismantling, storing and re-erecting road signs with a surface area of:			
		C11.6.6.1		Area 0 to 0,5 m ²			
				m ²	30		
		C11.6.6.2		Area exceeding 0,5 m ² but not 2,0 m ²			
				m ²	20		
		C11.6.6.3		Area exceeding 2,0 m ² but not 10 m ²			
				m ²	110		
		C11.6.6.4		Exceeding 10 m ²			
				m ²	10		
	C11.6.8			Danger plates at culverts/structures:			
		C11.6.8.1		Size 150 x 600mm (50X50 Galvanised Square tubing post)			
				No.	150		
		C11.6.8.2		Size 200 x 800mm (state post type and reflective material)			
				No.	20		
				TOTAL CARRIED FORWARD			

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
C11.6.10				Disposing of road signs with a surface area of:				
		C11.6.10.1		Area 0 to 0,5 m²	m²	30		
		C11.6.10.2		Area exceeding 0,5 m² but not 2,0 m²	m²	20		
		C11.6.10.3		Area exceeding 2,0 m² but not 10 m²	m²	110		
		C11.6.10.4		Exceeding 10 m²	m²	10		
TOTAL CARRIED FORWARD TO SUMMARY								

C11.7				ROAD MARKINGS AND ROAD STUDS				
ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	C11.7.2			Retro-reflective road marking:				
		C11.7.2.1		White lines broken or unbroken (paint type and width of line indicated)				
			(a)	100mm	km	50		
			(b)	150mm	km	10		
			(c)	200mm	km	1.5		
			(d)	500mm	km	0.2		
		C11.7.2.2		Yellow lines broken or unbroken (paint type and width of line indicated)	km			
			(a)	150mm	km	50		
			(b)	200mm	km	2		
		C11.7.2.4		White lettering and symbols (paint type indicated)	m²	570		
		C11.7.2.5		Yellow lettering and symbols (paint type indicated)	m²	60		
		C11.7.2.7		Transverse lines, painted island and arrestor bed markings (any colour) (paint type indicated)	m²	4 240		
	C11.7.5			Variations in rate of application:				
		C11.7.5.1		White paint	ℓ	10		
		C11.7.5.2		Yellow paint	ℓ	10		
		C11.7.5.4		Retro-reflective beads	kg	10		
	C11.7.7			Road studs:				
		C11.7.7.1		Permanent road studs compliant to SANS 1442 (type & colours stated)				
			(a)	RSA-2				
			(i)	Yellow/Red	No.	2 130		
			(ii)	White/Red	No.	1 310		
			(ii)	Red/Red	No.	1 700		
	C11.7.8			Setting out and premarking the lines (excluding traffic island markings, lettering and symbols)	km	110		
	C11.7.10			Removal of existing, temporary or final road markings by:				
		C11.7.10.1		Sandblasting	m²	250		
		C11.7.10.2		Water-jetting	m²	250		
Road marking at the end of the defects notifications period								
P	C11.7.3			Thermoplastic road marking				
		C11.7.3.1		Thermoplastic road marking, broken or unbroken				
			(a)	White lines				
			(i)	100mm wide	km	50		
			(ii)	150mm wide	km	10		
			(iii)	200mm wide	km	1.5		
			(iv)	500mm wide	km	0.2		
			(b)	Yellow lines				
			(i)	150mm wide	km	50		
			(ii)	200mm	km	2		
TOTAL CARRIED FORWARD								

[illegible]

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

C11.8				LANDSCAPING AND PLANTING PLANTS				
ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	C11.8.1			Trimming:				
		C11.8.1.1		Machine trimming	m²	7 000		
		C11.8.1.2		Hand trimming	m²	3 500		
	C11.8.3			Preparing the areas for grassing:				
		C11.8.3.2		Scarifying for loosening topsoil	ha	20		
		C11.8.3.3		Topsoiling within the road reserve where the following materials are used:				
			(a)	Topsoil obtained from within the road reserve or borrow areas	m³	14 580		
		C11.8.3.5		Providing and applying chemical fertilisers and/or soil-improvement material:				
			(b)	Superphosphate	t	12		
			(e)	3:2:1 (25)	t	6		
	C11.8.4			Grassing:				
		C11.8.4.3		Hydroseeding:				
			(a)	Providing an approved seed mixture for hydroseeding	kg	800		
			(b)	Providing an approved mulch	kg	1 600		
			(c)	Hydroseeding	ha	20		
	C11.8.6			Watering the already planted grass, trees and shrubs during the growing season	kℓ	19 430		
	C11.8.7			Mowing the grass	ha	20		
	C11.8.10			Unspecified work for landscaping	Prov Sum	1	75 000.00	R 75 000.00
								</

C11.9			FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C11.9.1			Finishing the road and road reserve:				
	C11.9.1.2		Single carriageway road	km	23.5		
C11.9.2			Treatment of old roads and temporary deviations:				
	C11.9.2.1		Conventional construction methods	km	1		
TOTAL CARRIED FORWARD TO SUMMARY							

C13.1			FOUNDATIONS					
ITEM			DESCRIPTION		UNIT	QTY	RATE	AMOUNT
B2966								
	C13.1.3		Excavation:					
		C13.1.3.1	Excavating soft material situated within the following successive depth ranges:					
		(a)	0m up to 1,5m		m³	294		
		(b)	> 1,5m and < 3,0m		m³	194		
		(c)	Etc. in increments of 1,5m		m³	124		
		C13.1.3.2	Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth		m³	384		
		C13.1.3.3	Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete		m³	20		
		C13.1.3.4	Extra over subitem C13.1.3.1 for excavation by hand		m³	136		
	C13/4.2.6	4.2.6	Widening of existing cuttings:					
		4.2.6.4	Hard excavation (other than by blasting), in existing cut slopes under the existing bridge and widening portions.		m³	413		
P	C13.1.6		Access and drainage:					
P		C13.1.6.1	Access		L Sum	1		
	C13.1.7		Backfill to excavations utilising:					
		C13.1.7.1	Material from excavation		m³	100		
		C13.1.7.2	Imported material		m³	330		
		C13.1.7.3	Soil cement		m³	50		
	C13.1.9		Fill within a restricted area (extra over item C5.2.2)		m³	60		
	C13.1.10		Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons		m³ - km	5 000		
P	C13.1.12		Overbreak in excavation in hard material		m²	204		
	C13.1.14		Foundation fill consisting of:					
		C13.1.14.4	Mass concrete (class indicated)		m³	20		
		C13.1.14.5	Concrete blinding (thickness and class of concrete indicated)		m³	15		
	C13.1.21		Foundation lining (type of material and thickness indicated)		m²	62		
P	C13.1.23		Lateral support for excavations:					
		C13.1.23.1	Excavation or fill at culvert foundations and foundation improvement:					
		(a)	0m to 2,5m depth		m²	135		
		(b)	2,5m to 5,0m depth		m²	370		
P	C13.1.33		Provision for payment to Transnet for occupation of tracks as per wayleave, protection and relocation of their services, and for any temporary works to be done by Transnet at the bridge crossing					
		(a)	Reimburse Transnet		PC sum	1	80 000.00	R 80 000.00
		(b)	Handling costs & profit in respect of sub-item (a)		%	80 000		
C0631								
	C13.1.3		Excavation:					
		C13.1.3.1	Excavating soft material situated within the following successive depth ranges:					
		(a)	0m up to 1,5m		m³	1 010		
		(b)	> 1,5m and < 3,0m		m³	662		
		(c)	Etc. in increments of 1,5m		m³	120		
			TOTAL CARRIED FORWARD					

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
				AMOUNT BROUGHT FORWARD					
		C13.1.3.2		Extra over subitem C13.1.3.1 for excavation in hard material irrespective of depth	m³	5			
		C13.1.3.3		Extra over subitem C13.1.3.1 for additional excavation required by the Engineer after excavation is complete	m³	50			
		C13.1.3.4		Extra over subitem C13.1.3.1 for excavation by hand	m³	10			
P	C13.1.6			Access and drainage:					
		C13.1.6.1		Access	L Sum	1			
		C13.1.6.2		Drainage	L Sum	1			
	C13.1.7			Backfill to excavations utilising:					
		C13.1.7.1		Material from excavation	m³	20			
		C13.1.7.2		Imported material	m³	100			
		C13.1.7.3		Soil cement	m³	24			
	C13.1.9			Fill within a restricted area (extra over item C5.2.2)	m³	720			
	C13.1.10			Haul in excess of 1,0 km on excavated material and on material imported for backfill, foundation fill and fill for caissons	m³ - km	15 000			
	C13.1.14			Foundation fill consisting of:					
		C13.1.14.1		Rock fill	m³	975			
		C13.1.14.2		Crushed-stone fill	m³	45			
		C13.1.14.4		Mass concrete, class C12/15-20	m³	5			
		C13.1.14.5		Concrete blinding, 75 mm thick, class C12/15-20	m³	45			
P	C13.1.23			Lateral support for excavations:					
		C13.1.23.1		Excavation or fill at culvert foundations and foundation improvement:					
		(a)		0m to 2,5m depth	m²	90			
		(b)		2,5m to 5,0m depth	m²	180			
P	C13.1.33			Lateral support for excavations:					
				Provision for payment to Transnet for occupation of tracks as per wayleave, protection and relocation of their services, and for any temporary works to be done by Transnet at the bridge crossing					
				(a) Reimburse Transnet	PC sum	1	250 000	R	250 000.00
				(b) Application for Transnet Wayleave, and handling costs & profit in respect of sub-item (a)	%	250 000			
TOTAL CARRIED FORWARD TO SUMMARY									

C13.2		FALSEWORK, FORMWORK AND CONCRETE FINISH					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
B2966							
C13.2.2			Vertical formwork to provide (class of finish indicated as F1, F2, F3 or board) surface finish to (description of member to which applicable)				
		(a)	Class F1 surface finish to:				
		(i)	Abutment footings	m²	56		
		(ii)	Abutment columns	m²	61		
		(iii)	Abutment seating beams and return walls	m²	40		
		(iv)	Approach slabs	m²	10		
		(v)	Pier footings	m²	47		
		(b)	Class F2 surface finish to:				
		(i)	Abutment seating beams and return walls	m²	49		
		(ii)	Pier columns	m²	144		
		(iii)	Pier capping beams	m²	35		
		(iv)	Deck	m²	47		
C13.2.3			Horizontal formwork to provide (class of finish Indicated as F1, F2, F3 or board) surface finish to (description of member to which applicable)				
		(a)	Class F1 surface finish to:				
		(i)	Abutment seating beams	m²	15		
		(b)	Class F2 surface finish to:				
		(i)	Deck	m²	6		
		(ii)	Pier capping beams	m²	9		
C13.2.4			Inclined formwork to provide (class of finish indicated as F1, F2, F3 or board) surface finish to (description of member to which applicable)				
		(a)	Class F1 surface finish to:				
		(i)	Abutment seating beams	m²	9		
		(ii)	Abutment return walls	m²	6		
		(b)	Class F2 surface finish to:				
		(i)	Pier capping beams	m²	5		
		(ii)	Deck	m²	22		
C0631							
C13.2.2			Vertical formwork to provide (class of finish indicated as F1, F2, F3 or board) surface finish to (description of member to which applicable)				
		(a)	Class F1 surface finish to:				
		(i)	Cell structure	m²	209		
		(ii)	In- and outlets	m²	92		
		(b)	Class F2 surface finish to:				
		(i)	Cell structure	m²	540		
		(ii)	In- and outlets	m²	32		
		(iii)	Energy breaker blocks	m²	9		
C13.2.3			Horizontal formwork to provide (class of finish Indicated as F1, F2, F3 or board) surface finish to (description of member to which applicable)				
		(b)	Class F2 surface finish to:				
		(i)	Cell structure	m²	416		
TOTAL CARRIED FORWARD TO SUMMARY							

C13.3		STEEL REINFORCEMENT					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
B2966							
C13.3.1			Reinforcement for:				
	C13.3.1.1		Parapet end blocks				
	(b)		High-yield-stress-steel bars (type indicated)	t	4.7		
	C13.3.1.2		Abutments and approach slabs				
	(a)		Mild-steel bars	t	0.1		
	(b)		High-yield-stress-steel bars	t	14.1		
	C13.3.1.3		Piers				
	(b)		High-yield-stress-steel bars	t	15.2		
	C13.3.1.4		Deck				
	(a)		Mild-steel bars	t	0.1		
	(b)		High-yield-stress-steel bars	t	10.7		
C13.3.4			Extra-over item C13.3.1 (a), (b), etc. for galvanising of reinforcement	t	4.7		
C0631							
C13.3.1			Reinforcement for:				
	C13.3.1.1		Culvert				
	(a)		Mild-steel bars	t	1.0		
	(b)		High-yield-stress-steel bars	t	60.0		
TOTAL CARRIED FORWARD TO SUMMARY							

C13.4			CONCRETE				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
B2966							
C13.4.1			Cast in situ concrete (Class of concrete and use or position in structure stated):				
	C13.4.1.1		Strength concrete (class C):				
		(a)	Abutment footings C24/30-20	m³	72		
		(b)	Abutment columns C24/30-20	m³	14		
		(c)	Pier Footings C24/30-20	m³	42		
		(d)	100 thick overlay slab on existing deck C24/30-20	m³	38		
		(e)	Approach slabs C24/30-20	m³	19		
	C13.4.1.2		Durable concrete (class D):				
		(a)	Abutment beam & return walls D24/30-20-XC4	m³	26		
		(b)	Pier columns D24/30-20-XC4	m³	29		
		(c)	Pier capping beams D24/30-20-XC4	m³	16		
		(d)	Deck in-situ concrete on widenings D32/40-20-XC4	m³	109		
C13.4.5			Curing and surface protection of cast in situ concrete, as and where specifically required:				
	C13.4.5.1		Abutment footings (curing compound)	m²	144		
	C13.4.5.2		Abutment columns (curing compound)	m²	61		
	C13.4.5.3		Abutment seating beams & walls (curing compound)	m²	141		
	C13.4.5.4		Pier footings (curing compound)	m²	95		
	C13.4.5.5		Pier columns (curing compound)	m²	144		
	C13.4.5.6		Pier capping beams (curing compound)	m²	67		
	C13.4.5.7		Deck top surface (keeping constantly wet)	m²	673		
	C13.4.5.8		Parapets and end blocks (curing compound)	m²	302		
	C13.4.5.9		Approach slabs (curing compound)	m²	73		
C13.4.9			Manufacturing precast concrete members				
		(a)	Pretensioned inner T-beams, length 10.375m, class D40/50-20-XC4 concrete, incl. pre-stressing & reinforcement complete as shown on the drawings	No	16		
		(b)	Pretensioned outer T-beams, length 10.375m, class D40/50-20-XC4 concrete, incl. pre-stressing & reinforcement complete as shown on the drawings	No	2		
		(c)	Pretensioned inner T-beams, length 10.540m, class D40/50-20-XC4 concrete, incl. pre-stressing & reinforcement complete as shown on the drawings	No	16		
		(d)	Pretensioned outer T-beams, length 10.540m, class D40/50-20-XC4 concrete, incl. pre-stressing & reinforcement complete as shown on the drawings	No	2		
		(e)	Pretensioned inner T-beams, length 9.215m, class D40/50-20-XC4 concrete, incl. pre-stressing & reinforcement complete as shown on the drawings	No	16		
		(f)	Pretensioned outer T-beams, length 9.215m, class D40/50-20-XC4 concrete, incl. pre-stressing & reinforcement complete as shown on the drawings	No	2		
C13.4.11			Transporting and erecting precast concrete members				
		(a)	Pretensioned T-beams, length 10.375m, with weight = 3,2 t/beam	No	18		
		(b)	Pretensioned T-beams, length 10.540m, with weight = 3,2 t/beam	No	18		
		(c)	Pretensioned T-beams, length 9.215m, with weight = 2,8 t/beam	No	18		
			TOTAL CARRIED FORWARD				

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
	C13.4.14			Controlled demolition of concrete from structural elements:				
		C13.4.14.1		Plain concrete in removing/scabbling of ±50mm thick portion from top of existing deck	m³	20		
		C13.4.14.2		Reinforced concrete in existing parapet walls and sidewalks	m³	33		
P	C13.4.15			Dowels for joining new and old concrete:				
			(a)	Y16 Dowel bars, 600mm long, in pier and abutment footings	kg	65		
			(b)	Y12 Dowel bars(Anchor bars) , 500mm long, bended, in top of existing deck, complete as shown on the drawings	kg	770		
C0631								
	C13.4.1			Cast in situ concrete (Class of concrete and use or position in structure stated):				
		C13.4.1.2		Durable concrete (class D):				
			(a)	Cell structure incl. head walls D24/30-20-XC4	m³	362		
			(b)	In- and outlets D24/30-20-XC4	m³	50		
			(c)	Energy breaker blocks D24/30-20-XC4	m³	1		
	C13.4.5			Curing and surface protection of cast in situ concrete, as and where specifically required:				
		C13.4.5.1		Culvert walls and vertical faces of culvert slabs(curing compound)	m²	749		
		C13.4.5.2		Vertical faces of In- and outlets, incl wing walls(curing compound)	m²	124		
		C13.4.5.3		Energy breaker blocks (curing compound)	m²	9		
		C13.4.5.4		Culvert floor slab top surface (curing compound)	m²	416		
		C13.4.5.5		Culvert in- and outlet slabs top surface (curing compound)	m²	115		
		C13.4.5.6		Culvert roof slab top surface (curing compound)	m²	462		
		C13.4.5.7		Culvert roof soffit (curing compound)	m²	416		
	C13.4.9			Manufacturing precast concrete members				
			(a)	Structure number mounting block, concrete class C32/40-14 concrete, incl. reinforcement complete as shown on the drawings (Size = concrete = 0.102 m³, reinforcement = 4 kg of mesh ref 341)	No	2		
	C13.4.11			Transporting and erecting precast concrete members				
			(a)	Structure number mounting block , weight=0.27 t	No	2		
	C13.4.13			Complete demolition and disposal of existing structural concrete elements or parts of existing structures:				
		C13.4.13.1		Existing bridge structure incl railings	m³	158		
TOTAL CARRIED FORWARD TO SUMMARY								

C13.6				BEARINGS				
ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
B2966								
C13.6.1				Bearings:				
		C13.6.1.1		Elastomeric bearing pads (300x150x35 mm) with the 3mm thick reinforcing plates made from 3CR12 stainless steel	No.	108		
		C13.6.1.2		Provision of Engineering drawings of proprietary bearings and certification after installation, by an ECSA Registered Professional Engineer or Technologist	L Sum	1		
C13.6.3				Bearing strips, two layers of 3-ply roofing felt	m²	16		
TOTAL CARRIED FORWARD TO SUMMARY								

C13.7			JOINTS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
B2966							
C13.7.1			Expansion joints:				
	C13.7.1.1		Buried type joints, 100kN/m glass fibre strands geocomposite for asphalt reinforcement, 1200mm wide as shown on the drawings	m	67		
	C13.7.1.2		Buried type joints, 100kN/m glass fibre strands geocomposite for asphalt reinforcement, 750mm wide as shown on the drawings	m	21		
C13.7.2			Filled joints:				
	C13.7.2.1		20 mm bitumen impregnated fibreboard	m ²	12		
	C13.7.2.2		20 mm expanded polystyrene	m ²	12		
C13.7.3			Unfilled joints:				
	C13.7.3.1		Two layers bituminous paint	m ²	6		
P C13.7.5			Supply and install of Agrément South Africa certified proprietary expansion joints				
	C13.7.5.2	(c)	Asphaltic plug type joints: 400 x 75 mm	m	46		
C13.7.6			Joint terminations in:				
	C13.7.6.1		Barriers and Parapets (Asphaltic plug type joint)	No.	4		
C13.7.7			Cover plates (non-metallic) in barriers, parapets and sidewalks where specified on the drawings in:				
	C13.7.7.1		Barriers and parapets at the joint terminations of the asphaltic plug type joints	No.	4		
C0631							
C13.7.2			Filled joints:				
	C13.7.2.1		10 mm bitumen impregnated fibreboard	m ²	62		
B1793							
C13.7.1			Expansion joints:				
	C13.7.1.1		Buried type joints, 100kN/m glass fibre strands geocomposite for asphalt reinforcement, 1200mm wide as shown on the drawings	m	146		
P C13.7.5			Supply and install of Agrément South Africa certified proprietary expansion joints				
	C13.7.5.2	(c)	Asphaltic plug type joints: 500 x 100 mm (Replace existing asphaltic plug type joint)	m	29		
C13.7.6			Joint terminations in:				
	C13.7.6.1		Barriers and Parapets (Asphaltic plug type joint)	No.	4		
C13.7.7			Cover plates (non-metallic) in barriers, parapets and sidewalks where specified on the drawings in:				
	C13.7.7.1		Barriers and parapets at the joint terminations of the asphaltic plug type joints	No.	4		
B1796							
C13.7.1			Expansion joints:				
	C13.7.1.1		Buried type joints, 100kN/m glass fibre strands geocomposite for asphalt reinforcement, 1200mm wide as shown on the drawings	m	137		
P C13.7.5			Supply and install of Agrément South Africa certified proprietary expansion joints				
	BC13.7.5.2	(c)	Asphaltic plug type joints: 400 x 100 mm (Replace existing asphaltic plug type joint)	m	25		
TOTAL CARRIED FORWARD							

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
	C13.7.6			Joint terminations in:				
		C13.7.6.1		Barriers and Parapets (Asphaltic plug type joint)	No.	4		
	C13.7.7			Cover plates (non-metallic) in barriers, parapets and sidewalks where specified on the drawings in:				
		C13.7.7.1		Barriers and parapets at the joint terminations of the asphaltic plug type joints	No.	4		
B1795								
	C13.7.1			Expansion joints:				
		C13.7.1.1		Buried type joints, 100kN/m glass fibre strands geocomposite for asphalt reinforcement, 1200mm wide as shown on the drawings	m	102		
P	C13.7.5			Supply and install of Agrément South Africa certified proprietary expansion joints				
		BC13.7.5.2		Asphaltic plug type joints:				
		(c)		400 x 100 mm (Replace existing asphaltic plug type joint)	m	29		
	C13.7.6			Joint terminations in:				
		C13.7.6.1		Barriers and Parapets (Asphaltic plug type joint)	No.	4		
	C13.7.7			Cover plates (non-metallic) in barriers, parapets and sidewalks where specified on the drawings in:				
		C13.7.7.1		Barriers and parapets at the joint terminations of the asphaltic plug type joints	No.	4		
TOTAL CARRIED FORWARD TO SUMMARY								

C13.8			ANCILLARY STRUCTURAL ELEMENTS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
B2966							
P	C13.8.1		Concrete barriers and parapets (refer to drawings)				
		C13.8.1.1	1,64m F-type parapets (Concrete Class D24/30-20-XC4 cast in-situ), complete as per drawings	m	62		
	C13.8.2		End blocks	No.			
		C13.8.2.1	3,5 m long end blocks, 1,64 m high (Concrete Class D24/30-20-XC4), complete as per drawings	m	4		
	C13.8.7		Numbers for structures: (refer to drawings)				
		C13.8.7.1	Number plates	No.	2		
	C13.8.10		Drainage pipes and weep holes:				
		C13.8.10.1	Drainage pipes:				
		(a)	(a) 100 mm dia heavy duty uPVC pipes in abutments	m	5		
		(b)	(b) 100 mm dia 90° heavy duty uPVC lobster-back bends with solvent cement-type socket, in abutments	No.	2		
	C13.8.17		Supplying and installing bolt groups complete with electrification brackets:				
		C13.8.17.1	Single-bolt groups (EX)	No.	4		
		C13.8.17.2	Double-bolt groups (CS and FB)	No.	6		
P	C13.8.18		Accessories				
			(a) 100mm x 10mm mild steel plate with R8 stirrups(100x100 stirrups) welded to plate at 200 spacing, and plate epoxy glued to side of existing deck complete as shown on the drawings	m	62		
C0631							
	C13.8.7		Numbers for structures: (refer to drawings)				
		C13.8.7.1	Number plates	No.	4		
	C13.8.10		Drainage pipes and weep holes:				
		C13.8.10.2	Weep holes:				
		(a)	(a) 50mm dia uPVC class 6 pipe	m	30		
	C13.8.15		Drainage strips, 200mm wide flownet drainage strips wrapped in approved geotextile (continuous filament nonwoven needlepunched geotextile, grade A4)	m	224		
	C13.8.16		Perforated drainage pipes:				
		C13.8.16.1	M65 Netlon drainage pipe wrapped in approved Geotextile (continuous filament nonwoven needlepunched geotextile, grade A4)	m	104		
B1793							
	C13.8.7		Numbers for structures: (refer to drawings)				
		C13.8.7.1	Number plates	No.	2		
	C13.8.11		Drainage gulley's				
			(a) Formed in asphalt at 75 mm deck drainage holes	No.	24		
B1796							
	C13.8.7		Numbers for structures: (refer to drawings)				
		C13.8.7.1	Number plates	No.	2		
	C13.8.11		Drainage gulley's				
			(a) Formed in asphalt at 75 mm deck drainage holes	No.	16		
			TOTAL CARRIED FORWARD				

ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				AMOUNT BROUGHT FORWARD				
B1795								
C13.8.7				Numbers for structures: (refer to drawings)				
	C13.8.7.1			Number plates	No.	2		
C13.8.11				Drainage gulley's				
				(a) Formed in asphalt at 75 mm deck drainage holes	No.	10		
TOTAL CARRIED FORWARD TO SUMMARY								

C14.1			ACCESS FOR BRIDGE REHABILITATION					
ITEM			DESCRIPTION		UNIT	QTY	RATE	AMOUNT
B2966								
P	C14.1.1			Temporary access structures and work platforms (by element)				
		C14.1.1.1		Access and platforms to locations as described as well as dismantling and removal at completion (heights assessed by Contractor)				
			(a)	To repair spalling and to provide concrete protective coating to existing bridge columns	L Sum	1		
B1793								
P	C14.1.1			Temporary access structures and work platforms (by element)				
		C14.1.1.1		Access and platforms to locations as described as well as dismantling and removal at completion (heights assessed by Contractor)				
			(a)	To repair spalling at top portions of Pier 1 wall	L Sum	1		
			(b)	To repair spalling at top portions of Pier 4 wall	L Sum	1		
			(c)	To repair concrete pitching below end spans	L Sum	1		
			(d)	To provide concrete protective coating to existing bridge balustrades and endblocks (all faces)	L Sum	1		
B1796								
P	C14.1.1			Temporary access structures and work platforms (by element)				
		C14.1.1.1		Access and platforms to locations as described as well as dismantling and removal at completion (heights assessed by Contractor)				
			(a)	(a) To repair spalling at pier walls	L Sum	1		
			(b)	(b) To provide concrete protective coating to existing bridge balustrades and endblocks (all faces)	L Sum	1		
B1795								
P	C14.1.1			Temporary access structures and work platforms (by element)				
		C14.1.1.1		Access and platforms to locations as described as well as dismantling and removal at completion (heights assessed by Contractor)				
			(a)	(a) To repair spalling at pier walls	L Sum	1		
			(b)	(b) To provide concrete protective coating to existing bridge balustrades and endblocks (all faces)	L Sum	1		
TOTAL CARRIED FORWARD TO SUMMARY								

C14.4				SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS				
ITEM				DESCRIPTION	UNIT	QTY	RATE	AMOUNT
B2966								
	C14.4.2			Epoxy mortar	ℓ	15		
	C14.4.4			Curing of repair surfaces				
		C14.4.4.1		By coating the surface with an approved wax-based curing compound	m²	2		
B1793								
	C14.4.2			Epoxy mortar	ℓ	15		
	C14.4.4			Curing of repair surfaces				
		C14.4.4.1		By coating the surface with an approved wax-based curing compound	m²	2		
B1796								
	C14.4.2			Epoxy mortar	ℓ	15		
	C14.4.4			Curing of repair surfaces				
		C14.4.4.1		By coating the surface with an approved wax-based curing compound	m²	2		
B1795								
	C14.4.2			Epoxy mortar	ℓ	15		
	C14.4.4			Curing of repair surfaces				
		C14.4.4.1		By coating the surface with an approved wax-based curing compound	m²	2		
TOTAL CARRIED FORWARD TO SUMMARY								

C14.7		PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
B2966							
C14.7.2			Application of protective coatings and treatments				
		(a)	Application of a polymer modified anti-carbonation cementitious protective coating to all faces of existing bridge columns	m²	162		
B1793							
C14.7.2			Application of protective coatings and treatments				
		(a)	Application of a polymer modified anti-carbonation cementitious protective coating to all faces of existing bridge columns	m²	325		
B1796							
C14.7.2			Application of protective coatings and treatments				
		(a)	Application of a polymer modified anti-carbonation cementitious protective coating to all faces of existing bridge columns	m²	210		
B1795							
C14.7.2			Application of protective coatings and treatments				
		(a)	Application of a polymer modified anti-carbonation cementitious protective coating to all faces of existing bridge columns	m²	155		
TOTAL CARRIED FORWARD TO SUMMARY							

C20.1			TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C20.1.1			Special tests on elastomeric bearings (150% vertical load and 150% shear distortion)				
	C20.1.2.2		Employer's contribution to other special tests	PC Sum	1	200 000	R 200 000.00
		(a)	Other special tests requested by the Engineer	PC Sum	1	200 000	R 200 000.00
		(i)	Handling costs and profit in respect of item C20.1.2.2(a)	%	200 000		
C20.1.4			Special tests using Automated Road condition assessment instruments operated by service providers as requested by the Engineer for acceptance control in terms of Clause A20.1.3.6b)(iii)				
	C20.1.4.4		Surface macro texture (Clause A20.1.5.5 b))	PC Sum	1	50 000	R 50 000.00
		(a)	Handling cost and profit in respect of item C20.1.4.4	%	50 000		
P	C20.1.5		Financial contribution for an independent site laboratory	month	30		
P	C20.1.6		Payment of independent site laboratory				
	C20.1.6.1	(a)	Direct payment by contractor	PC Sum	1	30 000 000	R 30 000 000.00
		(b)	Handling cost and profit in respect of item C20.1.6.1(a)	%	30 000 000		
B2966							
C20.1.2			Special tests requested by the Engineer				
	C20.1.2.1		Employer's contribution to concrete durability tests				
		(a)	Tests for water sorptivity	PC Sum	1.00	30 000.00	R 30 000.00
		(i)	Handling cost and profit in respect of item C20.1.2.1(a)	%	30 000		
		(b)	Tests for oxygen permeability	PC Sum	1.00	30 000.00	R 30 000.00
		(i)	Handling cost and profit in respect of item C20.1.2.1(b)	%	30 000		
		(d)	Tests for concrete cover	PC Sum	1.00	30 000.00	R 30 000.00
		(i)	Handling cost and profit in respect of item C20.1.2.1(d)	%	30 000		
C0631							
C20.1.2			Special tests requested by the Engineer				
	C20.1.2.1		Employer's contribution to concrete durability tests				
		(a)	Tests for water sorptivity	PC Sum	1.00	20 000.00	R 20 000.00
		(i)	Handling cost and profit in respect of item C20.1.2.1(a)	%	20 000		
		(b)	Tests for oxygen permeability	PC Sum	1.00	20 000.00	R 20 000.00
		(i)	Handling cost and profit in respect of item C20.1.2.1(b)	%	20 000		
		(d)	Tests for concrete cover	PC Sum	1	20 000.00	R 20 000.00
		(i)	Handling cost and profit in respect of item C20.1.2.1(d)	%	20 000		
TOTAL CARRIED FORWARD TO SUMMARY							

SECTION C: WORK OUTSIDE THE LIMITS OF THE CONTRACT

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)
SECTION C: WORK OUTSIDE THE LIMITS OF THE CONTRACT

C1.3			CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	C1.3.1		THE CONTRACTOR'S GENERAL OBLIGATIONS:				
P		C1.3.1.1	Fixed obligations	L Sum	1		
		C1.3.1.2	Value-related obligations	L Sum	1		
		C1.3.1.3	Time-related obligations				
P		(b)	Execution of the works	month	5		
		C1.3.1.4	Suspension cost				
		(a)	De-establishment	No.	1		
		(b)	Re-establishment	No.	1		
		(c)	Suspension period	month	1		
TOTAL CARRIED FORWARD TO SUMMARY							

C1.6			CLEARING AND GRUBBING				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
----- PERMANENT WORKS -----							
	C1.6.1		CLEARING:				
		C1.6.1.1	Clearing with machines and some hand labour where necessary	ha	0.15		
		C1.6.1.2	Clearing with hand labour only when labour enhanced work is specified	ha	0.15		
	C1.6.2		GRUBBING:				
		C1.6.2.1	Grubbing with machines and some hand labour where necessary	ha	0.15		
		C1.6.2.2	Grubbing with hand labour when labour enhancement work is specified or it is not practical to use a machine	ha	0.15		
TOTAL CARRIED FORWARD TO SUMMARY							

C2.1			GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C2.1.1			Location, identification, protection and relocation of existing services				
	C2.1.1.1		Contractor's obligations	L Sum	1		
C2.1.2			Existing services location, detection and verification				
	C2.1.2.3		Survey to verify existing service positions	PC Sum	1	50 000.00	R 50 000.00
	C2.1.2.4		Handling costs and profit in respect of item C2.1.2.3 above	%	50 000		
	C2.1.2.5		Using hand excavation to locate, expose and verify services	m³	20		
C2.1.3			Obtaining construction or work permits	L Sum	1		
C2.1.4			Provision of guarantees or deposits for services				
	C2.1.4.1		Providing guarantees and deposits	PC Sum	1	200 000.00	R 200 000.00
	C2.1.4.2		Handling costs and profit in respect of item C2.1.4.1 above	%	200 000		
C2.1.5			Provision of record drawings and applicable data	L Sum	1		
TOTAL CARRIED FORWARD TO SUMMARY							

C3.1			DRAINS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C3.1.1			EXCAVATION FOR OPEN DRAINS:				
	C3.1.1.4		Excavating soft material situated 0m to 1,5m below the surface level using labour enhanced construction methods	m³	920		
	C3.1.1.6		Excavating packed dump rock from the existing drain and stockpiling it in windrow adjacent to the road reserve boundary fence using labour enhanced construction methods for re-use in construction of new gabions and gabion mattresses	m³	600		
C3.1.2			CLEARING, SHAPING AND DISPOSAL OF ACCUMULATED SEDIMENT IN EXISTING UNLINED OPEN DRAINS				
	C3.1.2.2		Using labour enhanced construction methods	m³	20		
C3.1.17			BACKFILLING EXISTING ERODED SIDE DRAINS	m²	480		
C3.1.18			BACKFILLING OF DRAINS WITH SELECTED MATERIAL COMPACTED TO 93% OF MDD PRIOR TO CONSTRUCTION OF CONCRETE LINING AND/OR STONE PITCHED LINING	m³	340		
C3.1.22			SUBMISSION OF AS BUILT DRAWINGS BY THE CONTRACTOR	PC Sum	1	50 000.00	R 50 000.00
TOTAL CARRIED FORWARD TO SUMMARY							

C4.4			COMMERCIAL MATERIALS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C4.4.2			COMMERCIAL MATERIALS IDENTIFIED BY THE CONTRACTOR FROM COMMERCIAL, PRIVATE OR OTHER NON-COMMERCIAL SUPPLIERS				
		C4.4.2.5	Fill material in the earthworks:				
		(a)	Normal or coarse fill	m³	480		
TOTAL CARRIED FORWARD TO SUMMARY							

C11.1			PITCHING, STONEWORK, CAST IN SITU CONCRETE FOR PROTECTION AGAINST EROSION				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C11.1.2			Stone pitching:				
	C11.1.2.3		Grouted stone pitching with mortar	m²	20		
TOTAL CARRIED FORWARD TO SUMMARY							

C11.2			NON-STRUCTURAL GABIONS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C11.2.1			Foundation trench excavation:				
	C11.2.1.3		Excavating soft material within 1,5m below the surface level using labour enhanced construction methods	m³	760		
C11.2.2			Surface preparation for bedding the gabion boxes and mattresses	m²	2 400		
C11.2.3			Gabion boxes and mattresses:				
	C11.2.3.1		Galvanized gabion boxes, using using Type 80 double twist wire mesh with 2.7 mm diameter wire and:				
		(a)	Stockpiled dumprock from windrow adjacent to road reserve fenceline				
		(i)	1.0m (L) x 1.0m (W) x 0.5m (H) with 0.5m diaphragm spacing	m³	30		
		(ii)	1.0m (L) x 1.0m (W) x 1.0m (H) with 0.5m diaphragm spacing	m³	20		
		(iii)	2.0m (L) x 1.0m (W) x 1.0m (H) with 0.5m diaphragm spacing	m³	20		
	C11.2.3.3		Galvanized gabion mattresses, using using Type 80 double twist wire mesh with 2.7 mm diameter wire:				
		(a)	Stockpiled dumprock from windrow adjacent to road reserve fenceline				
		(i)	6.0m (L) x 2.0m (W) x 0.3m (H) with 1.0m diaphragm spacing	m³	130		
		(ii)	4.0m (L) x 1.0m (W) x 0.3m (H) with 1.0m diaphragm spacing	m³	70		
		(b)	Dumprock from commercial sources				
		(i)	6.0m (L) x 2.0m (W) x 0.3m (H) with 1.0m diaphragm spacing	m³	490		
C11.2.4			GEOTEXTILE:				
		(a)	Grade A4 non-woven polyester geotextile	m²	2 400		
TOTAL CARRIED FORWARD TO SUMMARY							

C11.6		ROAD SIGNS					
ITEM		DESCRIPTION		UNIT	QTY	RATE	AMOUNT
C11.6.8		Danger plates at culverts/structures:					
	C11.6.8.2		Size 200 x 800mm, using:				
		(i)	Square tubing cold-formed steel post and Class III retro-reflective road sign material, in accordance with the Typical Detail drawings	No.	12		
TOTAL CARRIED FORWARD TO SUMMARY							

C11.8			LANDSCAPING AND PLANTING PLANTS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C11.8.1			Trimming:				
	C11.8.1.2		Hand trimming	m²	5 000		
C11.8.3			Preparing the areas for grassing:				
	C11.8.3.2		Scarifying for loosening topsoil	ha	0.5		
	C11.8.3.3		Topsoiling within the road reserve where the following materials are used:				
		(b)	Topsoil obtained from commercial sources by the Contractor	m³	750		
	C11.8.3.5		Providing and applying chemical fertilisers and/or soil-improvement material:				
		(d)	2:3:2 (22)	t	2.5		
C11.8.4			Grassing:				
	C11.8.4.2		Sodding by using the following types of sods:				
		(a)	Nursery sods:				
		(i)	Giant rat's tail grass (Sporobolus pyramidalis)	m²	2 500		
		(b)	Veld sods	m²	2 500		
TOTAL CARRIED FORWARD TO SUMMARY							

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)
SECTION C: WORK OUTSIDE THE LIMITS OF THE CONTRACT

C11.9			FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS				
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT
C11.9.1			Finishing the road and road reserve:				
	C11.9.1.2		Single carriageway road	km	0.5		
TOTAL CARRIED FORWARD TO SUMMARY							

C2.3 SUMMARY OF PRICING SCHEDULE - SECTION C

CONTRACT SANRAL N.011-090-2016/1

FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

SECTION C: WORK OUTSIDE THE LIMITS OF THE CONTRACT

GENERAL			
C1.3	CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS		
C1.6	CLEARING AND GRUBBING		
SERVICES			
C2.1	GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES		
DRAINAGE			
C3.1	DRAINS		
EARTHWORKS AND PAVEMENT LAYERS MATERIALS			
C4.4	COMMERCIAL MATERIALS		
ANCILLIARY ROAD WORKS			
C11.1	PITCHING, STONEMWORK, CAST IN SITU CONCRETE FOR PROTECTION AGAINST EROSION		
C11.2	NON-STRUCTURAL GABIONS		
C11.6	ROAD SIGNS		
C11.8	LANDSCAPING AND PLANTING PLANTS		
C11.9	FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS		
TOTAL CARRIED FORWARD			

Section D - D1000			TRAINING, COACHING, GUIDANCE, MENTORING AND ASSISTANCE					
ITEM			DESCRIPTION	UNIT	QTY	RATE	AMOUNT	
D10.01			Target Group Participation					
		(a)	Contract Participation Performance bonus	PC Sum	1	3 300 000.00	R	3 300 000.00
D10.02			Stakeholder and Community Liaison and Social Facilitation					
		(a)	Cost of liaison, social facilitation and PLC support	PC Sum	1	720 000.00	R	720 000.00
		(b)	Handling cost and profit in respect of sub-item D10.02(a)	%	720 000			
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	No.	26			
		(ii)	Procurement process for the totality of all tenders concluded for the appointment of Targeted Enterprise subcontractors of CIDB 3 and 4 contractor grading	No.	14			
		(iii)	Procurement process for the totality of all tenders concluded for the appointment of Targeted Enterprise subcontractors of CIDB 5 and higher contractor grading	No.	14			
		(iv)	Procurement process for the totality of all tenders concluded for the appointment of Targeted Enterprise suppliers	No.	54			
		(b)	Targeted Enterprise Procurement Coordinator	month	30			
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	30			
		(b)	Targeted Enterprise Construction Manager	Person. Month	60			
		(c)	Targeted Enterprise Site Supervisors	Person. Month	135			
D10.05			Construction Works by Targeted Enterprises					
		(a)	Payments associated with the construction works carried out by Targeted Enterprise subcontractors of CIDB 1 and 2 contractor grading designation appointed in terms of Section D	Prov Sum	1	2 600 000.00	R	2 600 000.00
		(b)	Handling costs and profit in respect of payment associated with sub-item D10.05(a)	%	2 600 000			
		(c)	Fluctuation between the main contractor's rates and that of the Targeted Enterprise subcontractors	L Sum	1			
		(d)	Preliminary and General Obligations of Targeted Enterprise subcontractors appointed in terms of Section D of the Specifications	L Sum	1			
D10.06			Training, coaching, guidance, mentoring and assistance					
		(a)	Training Costs					
		(i)	Accredited generic skills training	Prov Sum	1	2 500 000.00	R	2 500 000.00
		(ii)	Community skills training	Prov Sum	1	2 500 000.00	R	2 500 000.00
		(iii)	Handling cost and profit in respect of subitems D10.06(a)(i) and (ii)	%	5 000 000			
		(b)	Other costs during training	Prov Sum	1	375 000.00	R	375 000.00
		(c)	Training venue	L Sum	1			
TOTAL CARRIED FORWARD TO SUMMARY								

C2.3 SUMMARY OF PRICING SCHEDULE

**CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)**

GENERAL			
C1.2	GENERAL REQUIREMENTS AND PROVISIONS		
C1.3	CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS		
C1.4	FACILITIES FOR THE ENGINEER		
C1.5	ACCOMMODATION OF TRAFFIC		
C1.6	CLEARING AND GRUBBING		
SERVICES			
C2.1	GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES		
C2.2	DRY SERVICES		
DRAINAGE			
C3.1	DRAINS		
C3.2	CULVERTS		
C3.3	CONCRETE KERBING AND CHANNELING, ASPHALT BERMES, CHUTES, DOWNPIPES, AS WELL AS CONCRETE, STONE PITCHED AND GABION LININGS FOR OPEN DRAINS		
EARTHWORKS AND PAVEMENT LAYERS MATERIALS			
C4.1	BORROW MATERIALS		
C4.2	CUT MATERIALS		
C4.3	EXISTING ROAD MATERIALS		
EARTHWORKS AND PAVEMENT LAYERS CONSTRUCTION			
C5.1	ROADBED		
C5.2	FILL		
C5.3	ROAD PAVEMENT LAYERS		
C5.4	STABILISATION		
C5.5	RECONSTRUCTION OF PAVEMENT LAYERS		
CONCRETE LAYERS			
C6.2	SEGMENTAL BLOCK PAVING LAYERS		
PRETREATMENT AND REPAIR EXISTING LAYERS			
C8.1	PRIME COAT		
ASPHALT LAYERS			
C9.1	ASPHALT LAYERS		
TOTAL CARRIED FORWARD			

C2.3 SUMMARY OF PRICING SCHEDULE

CONTRACT SANRAL N.011-090-2016/1

FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

AMOUNT BROUGHT FORWARD			
ANCILLIARY ROAD WORKS			
C11.1	PITCHING, STONework, CAST IN SITU CONCRETE FOR PROTECTION AGAINST EROSION		
C11.2	NON-STRUCTURAL GABIONS		
C11.4	ROAD RESTRAINT SYSTEMS		
C11.5	FENCING		
C11.6	ROAD SIGNS		
C11.7	ROAD MARKINGS AND ROAD STUDS		
C11.8	LANDSCAPING AND PLANTING PLANTS		
C11.9	FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS		
STRUCTURES			
C13.1	FOUNDATIONS		
C13.2	FALSEWORK, FORMWORK AND CONCRETE FINISH		
C13.3	STEEL REINFORCEMENT		
C13.4	CONCRETE		
C13.6	BEARINGS		
C13.7	JOINTS		
C13.8	ANCILLARY STRUCTURAL ELEMENTS		
REPAIR AND REHABILITATION STRUCTURES			
C14.1	ACCESS FOR BRIDGE REHABILITATION		
C14.4	SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS		
C14.7	PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE		
QUALITY ASSURANCE			
C20.1	TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP		
SECTION C: WORK OUTSIDE THE LIMITS OF THE CONTRACT			
C	WORK OUTSIDE THE LIMITS OF THE CONTRACT		
SECTION D: STAKEHOLDER AND COMMUNITY LIAISON, AND TARGET LABOUR AND TARGETED ENTERPRISES UTILISATION AND DEVELOPMENT			
D1010	TRAINING, COACHING, GUIDANCE, MENTORING AND ASSISTANCE		
TOTAL CARRIED TO PRICING SCHEDULE			

C2.3 SUMMARY OF PRICING SCHEDULE

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION
(KM 18.5) TO N4 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

SUBTOTAL A	
CONTRACT SKILLS DEVELOPMENT GOAL: 0.25% of Subtotal A	
SUBTOTAL B	
VALUE ADDED TAX: 15% of Subtotal	
TOTAL CARRIED TO C.1.1.1 : FORM OF OFFER	

SIGNED BY TENDERER:

PART C3: SCOPE OF WORKS

PART C3: SCOPE OF WORKS

TABLE OF CONTENTS	PAGE
SECTION A1: STANDARD AMENDMENTS ISSUED BY COTO	C3-3
SECTION A2: PROJECT SPECIFICATION AMENDMENTS TO THE COTO STANDARD SPECIFICATIONS	C3-4
SECTION B: SPECIFICATION DATA.....	C3-59
SECTION C: ENVIRONMENTAL MANAGEMENT PLAN.....	C3-120
SECTION D: STAKEHOLDER AND COMMUNITY LIAISON, AND TARGETED LABOUR AND TARGETED ENTERPRISES UTILISATION AND DEVELOPMENT	C3-139
SECTION E: REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS	C3-189

SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

CONTRACT SANRAL N.011-090-2016/1

FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION (KM 18.5) TO N1 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

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 8 December 2023 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.....	C3-6
COTO CHAPTER 2: SERVICES	C3-19
COTO CHAPTER 3: DRAINAGE	C3-20
COTO CHAPTER 4: EARTHWORKS AND PAVEMENT LAYERS: MATERIALS	C3-23
COTO CHAPTER 5: EARTHWORKS AND PAVEMENT LAYERS: CONSTRUCTION	C3-26
COTO CHAPTER 7: MAINTENANCE AND REPAIR OF CONCRETE LAYERS	C3-32
COTO CHAPTER 8: PRETREATMENT AND REPAIR OF EXISTING LAYERS	C3-33
COTO CHAPTER 9: ASPHALT LAYERS.....	C3-35
COTO CHAPTER 10: SURFACE TREATMENTS	C3-38
COTO CHAPTER 11: ANCILLARY ROAD WORKS.....	C3-40
COTO CHAPTER 12: GEOTECHNICAL APPLICATIONS	C3-44
COTO CHAPTER 13: STRUCTURES.....	C3-48
COTO CHAPTER 14: REPAIR AND REHABILITATION OF STRUCTURES	C3-54
COTO CHAPTER 20: QUALITY ASSURANCE	C3-57

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 reduce payment for substandard work may be accepted by the Engineer subject to prior approval by the Employer.

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

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

The following procurement methods is to be followed as appropriate:

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

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

- b) **Where the payment calculation is based on a formula specified in the contract document, or where the payment rate is pre-determined or fixed by the client.**

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

- c) **Where the supplier is not selected by the contractor and actual cost is reimbursable and/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 BEE level 1 or 2 and EME or QSE (Approval to deviate must be granted by the Employer, based on market research)
- Quotation to include form of quotation, CSD registration, CIDB (where applicable),

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

- f) **Where the particulars of the work is not scheduled and the estimated cost of the work is more than 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 BEE level 1 or 2 and EME or QSE (Approval to deviate must be granted by the Employer, based on market research)
- Tenders to close at the relevant site offices at a specific date and time
- Tender documents to include form of Offer, CSD registration, Tax compliance, CIDB (where applicable), SBD1, SBD 4, SBD 6.2, BEE certificate, Form A2.2
- Tenders to be evaluated on price and preference
- Evaluation by contractor for review by engineer

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

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

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

- h) **Where the work is unforeseen, urgent and the relevant procurement method as indicated above will result in a delay to the contract and payment for a claim for extension of time and/or cost, or where the above procurement methods are not applicable or cannot fully be complied with.**

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

SECTION 1.2: GENERAL REQUIREMENTS AND PROVISIONS

PART A: SPECIFICATIONS

A1.2.3 GENERAL

A1.2.3.4 Extension of time for delays caused by rainfall

Add the following after the third paragraph:

"Table B/A1.2.3.4/1 provide information on the number of N-days allocated to each month.

TABLE B/A1.2.3.4/1: AVERAGE DELAYS DUE TO RAINFALL

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Average rain days	3	3	3	2	0	0	0	0	1	3	4	3	22

A1.2.3.13 Prevention of damage to nearby properties and services

Add the following:

"Where blasting is undertaken within 500m from land or property owned or operated by other parties the Contractor shall enter into a formal agreement with the owner and/or occupant of such property with regards to blasting notification, control of access, restrictions during blasting and any other requirements such owner and/or occupant may require. The Contractor shall also obtain the applicable blasting permits and conform to any other requirements and mitigation measures required by the Department of Mineral Resources and Energy (DMRE)."

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."

A1.2.3.22 Wayleave/Agreements and Permits

Add the following new paragraph:

"The Contractor shall utilize the Mobilization period to obtain the necessary permits and agreements from utility service providers and Transnet."

A1.2.3.23 Work in restricted areas

Add the following new paragraph:

"Any omission of payitems from the pricing schedule with regard to additional or extra over payment for work in restricted areas or hand work should be regarded as deliberate and any additional cost incurred shall be included in the bulk rates tendered."

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).”

c) Scheme 2

Add the following items to the list of items for which the full programme shall make provision:

- “all the limitations stated under Section B: Specific Data section A1.2.3.5 Handing over the site of the Works, with specific reference to the accommodation of traffic requirements.
- all trial section approvals to be entered as key milestone dates.
- the availability of approved processed materials in the quarries for commencement with bulk layer works to be entered as key milestone dates. Line items to be provided for the various material types (e.g. G5A, G1, aggregate for concrete, etc.).
- the relocation of utility services to be entered as key milestone dates. Line items to be provided for the various services taking cognicance of the limitations stated in clause A2.1.3.
- the application and approval of all documentation by Transnet for Contractor to commence with work to be undertaken near or over railway lines, taking cognicance of the requirements and limitations stated in clause A1.2.3.22 as amended and under Section B: Specific Data section A1.2.3.22.
- non-working Saturdays.”

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”.

C1.2.8 Dayworks

C1.2.8.1 Personnel

Add the following subitems:

"Item	Unit
--------------	-------------

g) Qualified surveyor with all survey equipment and assistant's	hour (hr)"
---	------------

In the first payment description paragraph replace "C1.2.8.1(f)" with "C1.2.8.1(g)"

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 C: MEASUREMENT AND PAYMENT

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

C1.3.1 The Contractor's general obligations

Delete subitem C1.3.1.3 and replace with the following:

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

Add the following pay subitems:

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

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

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

Add the following new paragraphs:

"Item C1.3.1.4

The rates tendered under subitem C1.3.1.4 shall represent full compensation for all Costs for Suspension of Work and all Costs during Suspension of Works 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 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."

SECTION 1.4: FACILITIES FOR THE ENGINEER

PART A: SPECIFICATIONS

A1.4.3 GENERAL

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

PART C: MEASUREMENT AND PAYMENT

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

C1.4.1	Site Accommodation
--------	--------------------

Replace all the pay items with the following:

“C1.4.1.1	Conference room (as per detail drawings).....	number (No)
C1.4.1.2	Office Unit Type A (as per detail drawings)	number (No)
C1.4.1.3	Office Unit Type B (as per detail drawings)	number (No)
C1.4.1.4	Laboratory with open and roofed concrete work areas and Store Room (as per detail drawings)	number (No)
C1.4.1.5	Car ports (as per detail drawings).....	number (No)
C1.4.1.6	Ablution Unit (equipped as specified) (as per detail drawings)....	number (No)
C1.4.1.7	Change room with a shower (as per detail drawings).....	number (No)
C1.4.1.8	Kitchen unit: Type A (as per detail drawings)	number (No)
C1.4.1.9	Kitchen unit: Type B (as per detail drawings)	number (No)
C1.4.1.10	Type A prefabricated house (equipped as specified) (as per detail drawings).....	number (No)
C1.4.1.11	Rented housing paid for by the Contractor	provisional sum (Prov Sum)
C1.4.1.12	Contractor's handling costs, profit and all other charges in respect of item C1.4.1.11	percentage (%)”

Replace the first sentence of the first payment description paragraph with the following:

“The unit of measurement for items C1.4.1.1 to C1.4.1.10 shall be the number of complete units provided as specified on the drawings.”

Delete the second payment description paragraph

Delete item numbers “C1.4.11” and “C1.4.12” in the first sentence of the third payment description paragraph.

Replace item number C1.4.13 with “C1.4.11” in the first sentence of the fourth payment description paragraph.

Replace item numbers C1.4.14 and C14.1.13 with “C1.4.12” and “C1.4.11” respectively in the fifth payment description paragraph.

SECTION 1.5: ACCOMMODATION OF TRAFFIC

PART A: SPECIFICATIONS

A1.5.6 CONSTRUCTION EQUIPMENT

A1.5.6.1 Traffic control facilities

Change the heading of sub-clause “(c) Temporary Signs” to “(c) Temporary Signs and Moveable Barricade”.

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”.

PART C: MEASUREMENT AND PAYMENT

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

C1.5.2 Accommodation of vehicular traffic

Add the following payment description paragraph:

“The contract rate shall also include the cost to dismantle and remove temporary signage and all other traffic control facilities from the site on completion of the works.

The Contract rate shall also include the cost of providing continuous access to all properties along the project section, also during STOP/GO conditions and for all single access properties.”

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”.

P/C1.5.7 Temporary traffic control facilities

Add the following sentence to the sixth payment description paragraph:

“The contract rate shall also include the cost to remove the rumble strips and to re-instate the original surface.”

Add the following items:

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

“C1.5.7.10 Movable barriers:

- | | |
|--|-----------|
| a) Supply to site, initial placement and removal from site of barriers | |
| (i) Rented Barriers..... | metre (m) |

- (ii) Barriers obtained from Employers Depot
(state Barrier type and Depot location)..... metre (m)
- b) Dismantling and re-erecting barriers during the works metre (m)
- c) Renting of barriersmetre.month (m.month)
- d) Supply to site, initial placement and removal from
site of terminal section for temporary barriers number (No)
- e) Dismantling and re-erecting of terminal
section for temporarybarriers during the works number (No)
- f) Renting of terminal sections number.month (No.month)
- g) Supply to site of barrier connectors “fish plates” and bolts for barriers
obtained from Employers Depot number (No)
- h) Supply to site of retroreflective plates for barriers for barriers obtained
from Employers Depot number (No)
- i) Movable barriers (Plastic NJ barriers) metre (m)

The unit of measurement for subitems (a) and (b) shall be the metre of barrier provided.

The contract rate for subitem (a)(i) shall include full compensation to supply the rented barriers to the site, complete with connectors, bolts and reflectors, initial placement and erecting in position and removal off-site when no longer required. Barriers may only be removed from site on approval by the Engineer. All rented barriers to comply with the containment levels specified in Clause A1.5.6.1(a).

The contract rate for subitem (a)(ii) shall include full compensation to collect, load and transport barriers obtained from the Employers Depots to the site, initial placement and erecting in position, and removal off-site when no longer required. Barriers details (type) and location of Depots as stated in Section B, Specification Data.

The contract rate for subitems (b), shall include full compensation to dismantle, load, transport between locations on site, placement and re-erecting of the rented barriers and barriers obtained from the Employers Depots.

The unit of measurement for subitem (c) shall be the metre of rented barrier required for the period in use in months.

The contract rate for subitem (c) shall include full compensation for the cost of general maintenance of the barriers, including maintenance of connectors, bolts and reflectors, cost of insurance to replace structurally damaged barriers and other overhead cost.

The unit of measurement for subitems (d) shall be the number of terminal sections provided to the site.

The contract rate for subitem (d) shall include full compensation to supply the terminal section to the site, complete with connectors, bolts and reflectors, initial placement and erecting in position and removal off-site when no longer required. Terminal sections may only be removed from site on approval by the Engineer. Terminal sections may be Contractor designed and shall comply with the attenuation of head-on impacts of test levels specified in Clause A1.5.6.1(a).

The unit of measurement for subitems (e) shall be the number of terminal sections re-erected.

The contract rate for subitem (e) shall include full compensation to dismantle, load, transport between locations on site, placement and re-erecting, of terminal sections complete as and when approved by the engineer.

The unit of measurement for subitem (f) shall be the number of barrier terminal sections required for the period in use in months.

The contract rate for subitem (f) shall include full compensation for the cost of general maintenance of the terminal section, including maintenance of connectors, bolts and reflectors, cost of insurance to replace structurally damaged terminal sections and other overhead cost.

The unit of measurement for subitems (g) shall be the number of barrier connector plates ("fish plates") provided to the site by the contractor to connect barriers obtained from the Employers Depots.

The contract rate for subitem (g) shall include full compensation to supply and maintaining complete barrier connector plate units, including fish plates and bolts, compatible with the barriers obtained from the Employers Depots. The contract rate shall also include full compensations to maintain the connector units.

The unit of measurement for subitems (h) shall be the number of reflector plates provided to the site by the contractor in accordance with the drawings for barriers obtained from the Employers Depots.

The contract rate for subitem (h) shall include full compensation to supply and maintaining reflector plates that are compatible with the barriers obtained from the Employers Depots. The rate tendered shall also including full compensations to maintain the reflector plates.

The unit of measurement for subitems (i) shall be the metre of movable plastic barrier provided.

The contract rate for subitem (i) shall include full compensation to supply the movable barriers (Plastic NJ barriers) to the site, initial placement, erecting in position in accordance with manufacturers requirements and removal off-site when no longer required. The contract rate shall also include full compensation for the general maintenance of the barriers. The cost to relocate movable barriers (Plastic NJ barriers) to other locations on site shall be deemed to be included under item C1.5.2."

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”.

SECTION 1.7: LOADING AND HAULING

PART C: MEASUREMENT AND PAYMENT

Item		Unit
C1.7.2	Hauling	
C1.7.2.2	Hauling material to spoil and off-loading it at a designated spoil or stockpile area:	
<i>Change the item description to read as follows:</i>		
“C1.7.2.2	Hauling material to spoil or stockpile and off-loading it at a designated spoil or stockpile area:”	

COTO CHAPTER 2: SERVICES

SECTION 2.1: GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES

PART A: SPECIFICATION

A2.1.3 GENERAL

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

b) Location of existing services

add the following after the last paragraph:

The Contractor shall utilize the Mobilisation period to notify, commence, plan and agree with the utility service providers as to the relocation of their services and to agree to the associated time lines.”

d) Protection of services

i. Relocation

The Contractor shall give notices as follow:

in the sentence next to the first bullet replace “commencement of the contract” with “Commencement Date”.

COTO CHAPTER 3: DRAINAGE

SECTION 3.1: DRAINS

PART A: SPECIFICATIONS

A3.1.7 EXECUTION OF THE WORKS

A3.1.7.5 Manholes, outlet structures and cleaning eyes

Add the following:

“The backfill of all cleaning eyes shall be done using a soilcrete, with minimum 5% cement added to the backfill material.”

SECTION 3.2: CULVERTS

PART A: SPECIFICATIONS

A3.2.7 EXECUTION OF THE WORKS

A3.2.7.2 Excavation for construction by trench method

Replace the second sentence of sub-clause (c) Width of excavation, with the following:

“The width of excavation shall be the net external dimensions of the structure plus 0.5 metre (or as shown on the drawing) working space along or around the structure. If wet soilcrete is used with vibrators the extra working space shall be reduced to 150 mm.”

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	Unit
------	------

C3.2.12 Demolition of concrete members or elements:

Amend the sub-item C3.2.12.1 as follows:

“C3.2.12.1 Full member or element

- | | | |
|-----|--|-------------------------------|
| (a) | Plain concrete | cubic metre (m ³) |
| (b) | Reinforced concrete..... | cubic metre (m ³) |
| (c) | Breaking and removing existing downchute inlet structures..... | number (No) |
| (d) | Breaking and removing existing downchute outlet structures | number (No) |

The unit of measurement for subitems (a) and (b) shall be the cubic metre of existing concrete removed according to authorised dimensions.

The unit of measurement for subitems (c) and (d) shall be the number of concrete in- and outlet structures removed respectively.

The tendered rates shall include full compensation for all demolition to a specified maximum size of 300mm and as further specified in item C14.3.1 of Chapter 14. The tendered rate shall also include full compensation for the backfilling of the excavated area and compacting to 90% of Modified AASHTO density.”

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,”

SECTION 3.3: CONCRETE KERBING AND CHANNELING, ASPHALT BERMS, CHUTES, DOWNPIPES, AS WELL AS CONCRETE, STONE PITCHED AND GABION LININGS FOR OPEN DRAINS

PART A: SPECIFICATIONS

A3.3.7 EXECUTION OF THE WORKS

A3.3.7.1 Drainage structures

l) Construction sequence

Add the following:

“Where concrete edge beams are constructed at intersections areas and access points, the aforementioned specifications shall apply mutatis mutandis to edge beams.”

o) Demolition of existing kerb and channel and concrete lined drains

Replace “a specified maximum size” in the first sentence with “a maximum size of 300mm”.

A3.3.7.2 Inlet and outlet structures and transition sections

Add the following:

“Where inlet structures for downchutes are constructed on high fills in combination with kerbs and guardrails or concrete channels inlet structure shall be constructed after installation of the guardrails to ensure that inlet structures are spaced in-between guardrail posts. No additional spacer blocks on guardrail posts will be allowed, to accommodate inlet structure positions clashing with guardrail posts.

Where outlet structures for downchutes are constructed at the toe-line of high fills (>3m), the outlet structures shall only be constructed after the trimming of the high fill has been completed and the correct position of the toe-line has been established.”

PART C: MEASUREMENT AND PAYMENT

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

C3.3.8 Linings for open drains

Delete the first paragraph in the payment description.

Add the following payment item:

“Item	Unit
-------	------

C3.3.17	Inlet, outlet, transition and similar structures (typical designs)
---------	--

(a)	(Description of structure, type, etc. with reference to drawing and class of concrete) number (No)
-----	--

(b)	Etc. for other types.
-----	-----------------------

The unit of measurement and payment shall be the number of completed units of each type of structure constructed, and payment shall include full compensation for all formwork, concrete, excavation, trimming and backfilling, including such accessories as grids, etc. as may be specified on the typical drawings.”

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."

A4.1.7.3 STOCKPILES

(a) Preparation of the stockpile site

Add the following to the 6th paragraph:

"Stockpiling of material shall intentionally be managed to separately stockpile different types of materials including G4/G5, G6, G7, G8/G9 classified materials."

PART C: MEASUREMENT AND PAYMENT

(iv) Items specifically for this section of the specifications

Item

Unit

C4.1.12 Stockpiling the material

Add the following after the last sentence of the 7th and 8th paragraphs:

"The tendered rate shall also include full compensation to manage and separately stockpile different types of materials."

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.”

A4.2.7 EXECUTION OF THE WORKS

A4.2.7.1 EXCAVATION OPERATIONS

(h) Excavation of material in cuttings

Add the following to the 7th paragraph:

“The dimensions of benches as well as the extent to which existing fills have to be cut back to form benches shall be as indicated on the drawings or indicated by the engineer. In order to obtain sufficient working width for road-building equipment when the existing road fill is widened, it may be necessary to form benches that extend beyond the normal road prism or to cut back into the existing road fill or both. The contractor shall submit his proposals in this regard to the engineer for approval before proceeding with such work.”

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.”

COTO CHAPTER 5: EARTHWORKS AND PAVEMENT LAYERS: CONSTRUCTION

SECTION 5.1: ROADBED

PART C: MEASUREMENT AND PAYMENT

(viii) Payment items specifically for this Section of specifications

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

C5.1.13 Construction of a levelling layer	
--	--

Amend the required density of both subitems to read as follow:

“... material compacted to 93% of MDD cubic metre (m³)”

SECTION 5.2: FILL

PART A: SPECIFICATION

A5.2.7 EXECUTION OF THE WORKS

A5.2.7.3 Benching for fill construction

Add the following after the last paragraph:

“In order to obtain sufficient working width for road-building equipment when the existing road fill is widened, it may be necessary to form benches that extend beyond the normal road prism or to cut back into the existing road fill or both. The contractor shall submit his proposals in this regard to the engineer for approval before proceeding with such work. The contractor will be paid in accordance with the relevant payment items for work required to obtain a working width of up to 4 m. Additional work required to provide a working width in excess of 4 m shall be at the contractor's expense.”

A5.2.7.4 Widening of fills

Add the following after the last paragraph:

“No additional or extra over payment will be made for additional fill constructed for widening of existing fills less than 4,0m wide along the road. The widening of fills shall be measured as per drawings and paid for under relevant fill items or as instructed by the engineer.”

SECTION 5.3: ROAD PAVEMENT LAYERS

PART A: SPECIFICATION

A5.3.5 MATERIALS

A5.3.5.2 Pavement layer thickness and compaction requirements

(c) Crushed stone pavement layer compaction requirements (G1 to G4A and G5A materials)

Add the following at the end of the 2nd paragraph:

“The crushed stone base layer shall be tested for density at depths of 50 mm, 100 mm and 150 mm to determine the compaction gradient through the layer. The density measured for each depth shall conform to the specified density for crushed stone base layers.”

Add the following after the last paragraph:

“Crushed stone base on stabilised layers shall not be processed and compacted before 7 days after completion and approval of the stabilised layer.”

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

*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".*

PART C: MEASUREMENT AND PAYMENT

Item	Unit
P/C5.3.2 Construction of pavement layers	
P/C5.3.2.1 Construction of layers using conventional construction methods:	
<i>Amend or add the following sub-payment items:</i>	
“(q) G5A crushed rock/boulder subbase layer (unstabilised or chemically stabilised) compacted to 97% of MDD:	
(i) 150 mm thick	cubic metre (m ³)
(ii) 200 mm thick	cubic metre (m ³)
(iii) 250 mm thick.....	cubic metre (m ³)
(dd) Subbase layer (150 mm thick) (unstabilised or chemically stabilised) compacted to 93% of MDD	cubic metre (m ³)
(ee) G5A crushed rock/boulder base layer (unstabilised or chemically stabilised) (150 mm thick) compacted to 97% of MDD.....	cubic metre (m ³)”

SECTION 5.4: STABILISATION

PART A: SPECIFICATIONS

A5.4.3 GENERAL

A5.4.3.3 Construction limitations

(d) Weather restrictions

Add the following after the last paragraph:

“No in-situ recycling or stabilisation by conventional methods shall be commenced if the threat of rain appears likely. Performing recycling work in cold weather conditions, specifically in instances where water used in the processing of the recycling can freeze due to very low overnight temperatures, may result in a poor or non-conforming layer.

Any rain falling on the working area during the process of stabilization may be sufficient cause for the engineer to order any affected areas to be reconstructed at the contractor's own cost.”

A5.4.8 WORKMANSHIP

A5.4.8.3 Quality/process control

Add the following after the last paragraph:

“The Contractor shall exercise visual observations of the mixing process directly behind the recycling unit, consisting of the digging of holes in the mixed material to record the mixing depth, mixing width, uniformity of the mixing of the stabilizing agent and moisture content. Deficiencies in any of these parameters shall be rectified by the contractor, e.g. additional recycling, etc., before compaction of the layer may commence.”

A5.4.8.4 Tolerances

(b) Uniformity of cementitious stabilisation

Add the following after the last sentence of the 2nd paragraph:

“The maximum allowable difference in strength shall be 10%. The lowest strength obtained shall in all cases be higher than the **target minimum design** strength for that layer specified after testing.”

SECTION 5.5: RECONSTRUCTION OF PAVEMENT LAYERS

PART C: MEASUREMENT AND PAYMENT

(iv) Payment items specifically for this Section of specifications

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

C5.5.8	Pre-pulverising material in the existing pavement
---------------	--

Add the following sub-payment item:

"C5.5.8.5	Breaking up existing pavement, irrespective of material type and depth, using a milling/recycling machine capable of breaking up material to a depth of 350mm in one operation	cubic metre (m ³)"
-----------	--	--------------------------------

Add the following payment item to this section:

C5.5.27	In-situ reconstruction of a pavement layer using conventional construction equipment to construct a selected layer
----------------	---

"C5.5.27.1	Selected layer (150 mm thick) compacted to 95% of MDD	cubic metre (m ³)"
------------	---	--------------------------------

COTO CHAPTER 7: MAINTENANCE AND REPAIR OF CONCRETE LAYERS

SECTION 7.1: REPLACEMENT OF EXISTING JOINT SEALANT

PART D: GUARANTEES AND COMPLIANCE CERTIFICATES

D7.1.8 WORKMANSHIP

D7.1.8.8 Alternative materials and design

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

"and in addition to the postulated tender".

D7.1.8.9 Work on behalf of Employer

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

COTO CHAPTER 8: PRETREATMENT AND REPAIR OF EXISTING LAYERS

SECTION 8.1: PRIME COAT

PART A: SPECIFICATION

A8.1.5 MATERIALS

A8.1.5.1 Bituminous material

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

A8.1.8 WORKMANSHIP

A8.1.8.2 Testing

Replace the last sentence of the 1st paragraph with the following: “Unless agreed in advance and in writing, the Contractor shall only spray when the Engineer’s representative is present. No payment will be made if this condition is not adhered to.”

Add the following to the last paragraph:

“The Contractor shall provide an acceptable method statement for remedial action where the application of prime exceeds the tolerance for over application. The use of any dust for blinding shall not be permitted.”

SECTION 8.3: TEXTURE TREATMENT

PART A: SPECIFICATION

A8.3.5 MATERIALS

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 (<i>indicate type and binder content</i>).....	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

A9.1.5 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

A9.1.6.1 GENERAL

Add the following paragraph:

"The plant and equipment used in mixing, paving and compacting the asphalt shall where applicable, be as specified by the designer of the mix and shall in all aspects comply with their requirements."

A9.1.6.7 VEHICLES

Replace the last sentence of the last paragraph with the following:

"The use of the thermal blankets is obligatory and shall be fully attached to the truck on the front back and sides of the bucket."

A9.1.7. EXECUTION OF THE WORKS

A9.1.7.3 STORING THE ASPHALT MIX

Add the following paragraph:

"Limitations, requirements and storage requirements of mixed materials shall where applicable be as specified by the designer of the asphalt. Weather limitations shall be specified by the designer and shall be used on site for control purposes."

A9.1.7.7 COMPACTION

Add the following paragraph:

"Compaction of the asphalt shall where applicable be as specified by the designer of the asphalt mix and paving system."

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 “surfacing” 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

In the first paragraph replace “.... Prescribed in TMH5: Sampling Methods fo Road Construction Materials.” with “SABITA manual 37/TMH5 Sampling Methods for Road Construction Materials.”

Add the following paragraph after the last paragraph:

“At least 25% of the cores drilled on the completed asphalt layers to determine the density, must be drilled at areas near the joints.”

PART C: MEASUREMENT AND PAYMENT

Item	Description	Unit
------	-------------	------

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.”.

Add the following payment item:

“Item	Unit
-------	------

C9.1.17	Surface regularity payment adjustments provisional sum (Prov Sum)	
----------------	--	--

The unit of measurement shall be 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.”

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

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”.

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

In Table A10.1.3-7 in the last row of the 1st column, delete “1” and replace with “10”.

g) Cover sprays

Replace the 1st paragraph with the following: “The nominal application rate of a diluted emulsion cover spray (50/50) as specified, shall for tender purposes be 0,8 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

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

D10.1.5 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 11.1: PITCHING, STONEMWORK, CAST IN SITU CONCRETE FOR
 PROTECTION AGAINST EROSION**

PART A: SPECIFICATIONS

A11.1.7 EXECUTION OF THE WORKS

A11.1.7.5 Concrete Pitching

b) Edge Beams

Add the following:

“Where concrete edge beams are constructed at intersections areas and access points, the specifications for construction sequence under A3.3.7.1(l) shall apply mutatis mutandis to edge beams.”

PART C: MEASUREMENT AND PAYMENT

Amend item C11.1. 6 as follows:

Item	Unit
“C11.1.6 Concrete edge beam (Type and class of concrete).....	metre (m)

The unit of measurement shall be the metre of concrete edge beam complete as constructed, measured along the front face of the concrete edge beam.

The tendered rate for each metre of concrete edge beam shall include full compensation for the necessary excavation, backfilling, preparation of bedding, formwork, furnishing and installing all materials, protecting it against staining, protecting the existing road surface from contamination with concrete, placing of concrete, curing of concrete and protecting the concrete beam from damage by traffic.”

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.”.

PART C: MEASUREMENT AND PAYMENT

C11.4.1 Erecting of guardrails at 3.81m spacing:

C11.4.1.2 Terminal sections for 3.81 guardrails comprising of:

Add the following subitems:

- “(h) End treatments where double guardrail sections are specified (as per detail drawings)
- (i) Type A, 34.290m number (No)
- (ii) Type B, 19.050m number (No)
- (iii) Type C, 11.678m including bridge adaptor number (No)”

In the third payment description paragraph replace “C.11.4.1.2(a) to (f)” with “C.11.4.1.2(a to (f) and (g)”

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

C11.4.2 Performance based vehicle restraint systems

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

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".

A11.6.7.7 Dismantling, storing and re-erecting existing road signs

Insert "and disposed of" after "dismantled" in the first sentence of the third paragraph.

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:

Replace the last sentence of the third (3rd) payment description paragraph with the following:

"Payment for road sign supports shall be made under Item C11.6.3, except for temporary road signs where the contract rates provided for temporary signs under item C11.6.1 shall include the supply and erection of road sign support. Temporary road sign removal and re-erection is paid for under traffic accommodation items"

Add the following new pay item:

"C11.6.1.13 Moveable barricade/road sign combination (signboard material, background, symbol retro-reflective class and size indicated)	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 and removal off-site when no longer required. The Contract rate shall also include full compensation for the general maintenance of the movable barricade/road sign combinations."

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/m².lux” and replace with “mcd/m²/lux”.

PART C: MEASUREMENT AND PAYMENT

Item	Unit
C11.7.3 Thermoplastic road marking	
<i>Amend the retro-reflective luminance unit to be “mcd/m²/lux”.</i>	

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 (m³)".

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".

PART C: MEASUREMENT AND PAYMENT

Item	Unit
C13.1.6.1 Access	lump sum

Add the following to the payment paragraph:

"At the road-over-rail bridge, the tendered lump sum shall also include for the provision and erection of temporary vertical timber safety screens between the electrified rail lines and piers. The tendered lump sum must therefore include for the erection and removal of these temporary timber safety screens. It must also include for any associated design costs of these temporary timber safety screens, as these screens must be able to also withstand wind loads.

At all structures the tendered lump sum shall also include for all draining by pumping or in any other way and for any other work necessary for keeping the excavations dry or for working in the dry."

Item	Unit
C13.1.12 Overbreak in excavation in hard material	square metre (m2)

Replace the measurement paragraph with the following:

"The unit of measurement is the square metre of plan area of the foundations measured in accordance with the authorized concrete dimensions."

Item	Unit
C13.1.23 Lateral support for excavations	lump sum (LS)

Change the unit of measurement to lump sum, and replace the payment paragraph with the following:

"The work will be paid for by way of a lump sum, 50% of which shall become payable when all equipment and material is on site and the first element of the lateral support system has been installed. The second instalment of 40% of the lump sum shall become payable after the excavation platform has been completed, and the final 10% of the lump sum shall be paid after the system has been removed from the site.

The tendered lump sum shall include full compensation for design, supply, fabrication, installation, removal (if required), labour, materials, equipment, plant and incidentals to provide complete lateral support to the excavated or filled faces. The tendered lump sum shall also include inspections, supervision by safety officer and for maintenance of lateral support. The lateral support shall remain in position as long as required to complete construction and only removed with the approval of the Engineer.

Where lateral is not billed separately as per this item C13.1.23 it shall be deemed to be included in rates tendered and paid for excavation and backfill."

Add the following new pay item:

"Item	Unit
C13.1.33 Provision for payment to Transnet for occupation of tracks as per wayleave, protection and relocation of their services, and for any temporary works to be done by Transnet at the bridge crossing	
(a) Reimburse Transnetprime cost (PC) sum	
(b) Application for Transnet Wayleave, handling costs and profit in respect of sub-item (a).....Percentage (%)	

The PC Sum allowed is to reimburse Transnet the approved amount as required by Transnet's wayleave agreement. Payment will be made to Transnet when an invoice has been received by the Contractor and approved by the Engineer.

The tendered percentage for subitem (b) is a percentage of the amount actually spent under the sub-item (a), which shall include full compensation for all communications and meetings with Transnet, application for the Transnet wayleave, and all costs of the contractor to comply to the training and safety requirements of Transnet as per conditions set in Transnet's wayleave agreement, and must also include al handling costs of the contractor, and the profit in connection with subitem (a)"

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.”

Add the following:

Where the following listed concrete classes are mentioned on the drawings, it shall be replaced with the following new concrete class specifications as indicated in the following table:

Concrete Class specified on drawings	New Concrete Class Specification
W50/20 or W50/19	D40/50-20-XC4
W40/20 or W40/19	D32/40-20-XC4
W30/20 or W30/19	D24/30-20-XC4
30/20 or 30/19	C24/30-20
20/20 or 20/19	C16/20-20
15/20 or 15/19	C12/15-20

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.”

PART C: MEASUREMENT AND PAYMENT

Add the following new pay item:

“Item **Unit**

C13.4.15 Dowels for joining new and old concrete

(a) (description)kilogram (kg)

The unit of measurement shall be the kilogram of steel dowels installed. The tendered rate shall include full compensation for supplying all materials, all cutting, drilling and grouting, and any other operation or incidental cost necessary for the proper installation of the dowels as specified.”

SECTION 13.7: JOINTS

PART A: SPECIFICATION

A13.7.2 DEFINITIONS

Add the following:

“Where the following listed materials are mentioned on the drawings, it shall be replaced with the following new material specification as indicated in the following table:

Material specified on drawings	New Material Specification
Glass Grid 8502	100kN/m glass fibre geocomposite asphalt reinforcement

“

PART C: MEASUREMENT AND PAYMENT

Item	Unit
C13.7.5 Supply and install of Agrément South Africa certified proprietary expansion joints	
C13.7.5.1 Asphaltic plug type joints.....	metre (m)

Add the following to the payment paragraph:

“Where existing expansion joints are replaced with new joints, the tendered rates shall also include the removal of the existing joints, the forming of the new joint recesses and the cleaning of the expansion gaps. The rate shall include disposal of the old joint material at an approved municipal dumping site. The rate shall also include for the provision of recesses in existing balustrades where required.

Where asphaltic plug type joints are required the rate per metre shall include for variation in joint depth, and no extra over for variation in joint depth will be paid for.”

Delete sub item C13.7.5.2 (g)

PART A: SPECIFICATION

A13.8.7.2 Drainage for structures

Delete “19 mm nominal size” and replace with “20 mm nominal size”.

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

Add the following to the payment paragraph:

"The tendered rate shall also include for the stainless-steel dowels as specified on the drawings"

Add the following new pay item:

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

C13.8.18 Accessories

- (a) (100mm x 10mm mild steel plate with R8 stirrups (100x100 stirrups) welded to plate at 200 spacing, and plate epoxy glued to side of existing deck complete as shown on the drawings..... metre (m)

The unit of measurement for subitem (a) shall be the linear length of mild steel plate installed. The tendered rate shall include full compensation for supplying all materials, including fastening or adhesives, for stirrups, welding, including all labour and equipment, and for any wasted material, and any other operation or incidental cost necessary for the proper installation of the accessory as specified."

COTO CHAPTER 14: REPAIR AND REHABILITATION OF STRUCTURES

SECTION 14.1: ACCESS FOR BRIDGE REHABILITATION

PART C: MEASUREMENT AND PAYMENT

Item	Unit
C14.1.1 Temporary access structures and work platforms	
<i>Change the unit of measurement for the following item to lump sum.</i>	
C14.1.1.1 Access and platforms to locations as described as well as dismantling and removal at completion (heights assessed by Contractor):	Lump sum

**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

Replace all references to "TMH5" in this section with: "SABITA Manual 37 / TMH5"

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."

A20.1.7 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 SABITA Manual 37 / TMH5 ."

PART C: MEASUREMENT AND PAYMENT

C20.1.5 Financial contribution for an independent site/commercial laboratory

Delete reference to: "/commercial"

Replace reference to: "Independent laboratory" with: "Independent site laboratory".

Add the following new pay item:

Item	Unit
C20.1.6 Payment of independent site laboratory	
C20.1.6.1 a) Direct payment by contractor prime cost (PC) sum	
b) Handling cost and profit in respect of item C20.1.6.1(a) percentage (%)	

The contractor shall pay the appointed site laboratory monthly for the amount as certified by the Engineer.

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, profit, and payment of the service provider in providing the services. The Contractor shall forfeit his mark-up when the service provider is not paid in time."

SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

CONTRACT SANRAL N.011-090-2016/1

FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION (KM 18.5) TO N1 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

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 are provided on drawing No. XXX/3100/02/001. The work area limits extend from N11-9 km 18.5 to N11-9 km 41.97. The limits define the work area and do not include accommodation of traffic measures that may extend beyond these limits. Areas where accommodation of traffic measures will be in place will also be considered to fall within the site limits. The site offices and related yard, designated quarry and haul roads as well as Employer-owned material sources not listed above also form part of the site Part of the scope of the works is located outside the town of Hendrina between km 0.9 and km 1.5 as indicated on Drawing L0273-01-T-04D15, also form part of the Site of the Works.
	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.
			PA1.2.3.4 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 37. In calculations of payment for approved extensions of time granted for delays caused by rainfall, payment will be made utilising the applicable payment items for which the unit of measurement is "month" but excluding payment items with negative rates and non-applicable payment items such as pay item C1.3.1.4. In calculations of payment for approved extensions of time granted for delays caused by rainfall, payment will be made utilising the applicable payment items for which the unit of measurement is "month" but excluding payment

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				items with negative rates and non-applicable payment items such as pay item C1.3.1.4.
			A1.2.3.5 Handing-over of the Site of the Works	The conditions for handing-over of the Site of the Works are as follows: a) Sequence Sequence of work not prescribed but shall consider accommodation of traffic limitations stated below. The following work shall commence immediately: - Phase 1 Construction of Culvert C0631 - Widening of Railway Bridge B2966 b) Temporary deviations - Only a maximum of six (6) closures shall be allowed within the contract limits at any given time. Within the six (6) closure limitation, a maximum of only one (1) STOP/GO and four (4) Chicane (lane shift) closures will be allowed at any given time; - The maximum length of work areas shall be 2.5 km. Due to design considerations these lengths will vary between 1.3 km and 2.5 km. The minimum distance between two closures shall be 2 km measured between the work areas. The Engineer may reduce the distance between closures to 1.8 km to allow for design considerations; - For the widening construction of the railway bridge (B2966), the existing parapets and two-way traffic shall remain in place until the bridge widenings, including footings, piers, abutments, deck and parapets have been completed. Demolition of existing parapets and construction of new concrete overlay to be completed with two-way traffic accommodation also retained at all times; c) Half or partial width sections - Due to high volume of traffic, STOP/GO traffic accommodation measures shall in general not be allowed; - The only locations where STOP/GO traffic accommodation measures will be considered, are at Bridges B1793, B1795 and B1796. STOP/GO operations will be considered at these three (3) locations to allow for the full depth construction of new layer works up to the existing bridge abutments. STOP/GO traffic accommodation measures shall only be allowed within the following limitations and conditions: - Only one (1) STOP/GO control section may be operational within the Contract Limits at any given time;

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				2. The maximum length of the N11-9 (road), per location, that may be subject to STO/GO control, is 0.7km; 3. STOP/GO control not allowed for a period from two days before, until two days after the annual Easter Weekend (period of 8 days); 4. STOP/GO control not allowed during the Builders Break for a period from the 10th of December until the 10th of January each year; d) Unrestricted sections The minimum distance between two closures shall be 2 km measured between the work areas. The Engineer may reduce the distance between closures to 1.8 km to allow for design considerations; e) Routine Maintenance The Contractor shall take over the maintenance responsibility on the date of Access to site but may liaise with the routine maintenance contractor by arranging a transition period immediately after the Access to site to allow sufficient time to muster his resources required for routine maintenance of the road. However, the transition period may not extend beyond the end of the Mobilisation Period defined in sub-clause 8.1 of the FIDIC Conditions of Contract and C1.2.2 Contract Data. f) Other i. Implementation of traffic accommodation measures shall also be mindful of horizontal curve and super elevation changes that may impact on surface drainage; ii. Temporary line markings shall only be utilized where it corresponds with the permanent line marking position, when applied on the final overlay; iii. If blasting at the Vaalbank Quarry is undertaken within 500m of the N4 road reserve and N11 and R35 Interchanges, the N4 Concessionair TRAC shall be notified. Traffic shall then be stopped on the N4 for the duration of the blast in accordance with an agreement to be drafted between TRAC and the Contractor (Refer to Clause A1.2.3.13 for more details); iv. The Contractor shall plan the works in such a manner to ensure that access is maintained to all properties, including single access properties; v. The Contractor shall communicate lane closures details, accommodation of traffic measures and timelines with the affected adjacent land owners. Such communication shall be completed at

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA															
				least 7-days before lane closures and accommodation of traffic measures is to be implemented in a specific area.															
			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) c) Items on the critical path and their progress (percentage complete and days behind/ahead where applicable) in terms of time lapsed, works completed and financial expenditure relative to both the Rev 0 (Baseline) programme as well as the latest approved revision of the programme															
			A1.2.3.10 Notices, signs and advertisements	Details of the contract sign board is provided in Drawing XXX/3100/08/001															
			A1.2.3.12 Ownership of assets and disposal of non-usable assets	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>Reclaimed Asphalt</td><td>8 850m³</td><td>Hazardous material spoil site determined by the Contractor</td></tr><tr><td>Guardrails not suitable for re-use</td><td>190 m</td><td>At site determined by the Contractor</td></tr><tr><td>Roadsigns not suitable for re-use</td><td>170 m²</td><td>At site determined by the Contractor</td></tr><tr><td>Damaged paving blocks not suitable for re-use</td><td>6 m³</td><td>At site determined by the Contractor</td></tr></table>	Asset description	Estimated quantity	Disposal requirement	Reclaimed Asphalt	8 850m³	Hazardous material spoil site determined by the Contractor	Guardrails not suitable for re-use	190 m	At site determined by the Contractor	Roadsigns not suitable for re-use	170 m²	At site determined by the Contractor	Damaged paving blocks not suitable for re-use	6 m³	At site determined by the Contractor
Asset description	Estimated quantity	Disposal requirement																	
Reclaimed Asphalt	8 850m³	Hazardous material spoil site determined by the Contractor																	
Guardrails not suitable for re-use	190 m	At site determined by the Contractor																	
Roadsigns not suitable for re-use	170 m²	At site determined by the Contractor																	
Damaged paving blocks not suitable for re-use	6 m³	At site determined by the Contractor																	
			PA1.2.3.13 Prevention of damage to nearby properties and services	Structures that could be affected by excessive ground vibrations is listed in the following table: <table><tr><td>Structure</td><td>Type</td><td>Location</td></tr><tr><td>B2966</td><td>Railway Bridge</td><td>km 25.422</td></tr><tr><td>B1793</td><td>Bridge Road over River</td><td>km 27.600</td></tr><tr><td>B1795</td><td>Bridge Road over River</td><td>km 29.700</td></tr><tr><td>B1796</td><td>Bridge Road over River</td><td>km 35.700</td></tr></table> The Employer has entered into a Concession Contract with Trans African Concessions (TRAC) for the operation and maintenance of the N4 route. Blasting to process quarry material will be required in the Vaalbank Quarry (Quarry 7). Should blasting be required within 500m from the N4 national road. TRAC will require the signing of	Structure	Type	Location	B2966	Railway Bridge	km 25.422	B1793	Bridge Road over River	km 27.600	B1795	Bridge Road over River	km 29.700	B1796	Bridge Road over River	km 35.700
Structure	Type	Location																	
B2966	Railway Bridge	km 25.422																	
B1793	Bridge Road over River	km 27.600																	
B1795	Bridge Road over River	km 29.700																	
B1796	Bridge Road over River	km 35.700																	

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				a formal agreement between TRAC and the Contractor in this regard. The agreement to be entered into will provide for times and days for temporary road closures as well as allowed durations of closures for blasting purposes. Penalties may be introduced should the N4 be closed for periods longer than deemed acceptable. TRAC will require detailed method statements for blasting taking place within 500m from the N4 road reserve boundary, including the N4 on-and off ramps to the N11 and R35 interchanges forming part of TRAC's jurisdiction in terms of the Concession Contract.
			PA1.2.3.15 Routine maintenance	The Contractor shall be responsible for all the routine maintenance responsibilities except for the following activities which will continue to be the responsibility of the Routine Road Maintenance Contractor: a) Grass cutting; b) General litter picking; and c) Management and clearing of traffic accident scenes. 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 using one of the following methods: a) Existing road sections within the contract limits that at time of patching requirement, is not located within a section where traffic is deviated or accommodated, shall be backfilled with hot plant mixed asphalt. Base backfill, where required, will be undertaken with either stabilized crushed stone material (BSM1) or hot plant mixed asphalt as specified on the drawings. b) Existing road sections within the contract limits that at time of patching requirement, is located within a section where traffic is deviated or accommodated, where further accommodation of traffic is constrained, shall be backfilled using cold premixed asphalt (emergency patches) by removing loose material from the distressed area, backfilling with the cold premix and compacting the cold pre-mix.
			A1.2.3.18 Stakeholder liaison	Additional requirements related to structured engagement with project Stakeholders and affected Communities, as well as guidance on the selection and the enhanced utilisation and development of Targeted Labour and Targeted Enterprises is provided in Section D1000. a) The Employer has entered into a Concession Contract with Trans African Concessions (TRAC) for the operation and maintenance of

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				the N4 route. TRAC will require the signing of a formal agreement between TRAC and the Contractor for blasting activities in the Vaalbank Quarry (Quarry 7). b) Borrow Pit owners also to be notified before access is taken to Borrow Areas c) Also refer to Volume 7 (Environmental Management Plan) for additional requirements relating to engagement with Stakeholders. d) Transnet, Contractor to obtain Wayleave/Authorisation to proceed with construction to widen bridge over railway line. e) Eskom, Telkom and other Service Providers to relocate/protect services.
			A1.2.3.20 Road safety audits	A Work zone traffic management audit as well as a Pre-opening stage road safety audit, shall be carried out.
			PA1.2.3.22 Wayleaves/Agreements and Permits	The Contractor shall be responsible for applying for the following wayleaves/agreements and permits: a. All wayleaves, permits and agreements required by Transnet to proceed with construction of bridge widenings over their servitude. The Contractor shall utilize the Mobilization period to obtain the necessary permits and agreements. b. Eskom and Telkom wayleaves. c. All permits required in terms of legislation including those contained in Volume 7 (Environmental Management Plan), e.g. blasting permits, transport of explosives, etc. d. Entering into agreement with TRAC to manage blasting activities in Quarry 7 next to the N4. For the works located outside the town of Hendrina between km 0.9 and km 1.5:: a. Two (2) water mains running along the left-hand side of N11-09 between km 0.9 and km 1.4, property of Steve Tshwete Local Municipality (STLM) (CD Project). b. One (1) optic fibre cable running along either side of N11-09 between km 0.9 and km 1.4, property of Dark Fibre Africa (DFA) (CD Project).
		A1.2.7	EXECUTION OF THE WORKS	
			PA1.2.7.1 Programme of work	
			a) General	A scheme 2 programme shall apply.
			b) Scheme 2	The programme shall be drawn up or be compatible with MS Projects. Additional schedules, other than required in terms of Conditions of Contract Clause 8.3, to be provided are not applicable.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A1.2.7.4 Work on, over, under or adjacent to utilities	Details for the relocation and protection of Services are provided in the Schedule of Services Drawings contained in Volume 4 (Road Work Drawings) The Contractor shall obtain the latest official specification from the relevant utility owner for work on, over, under or adjacent to utility services. Contact details for the utility owners are also provided in the Schedule of Services Drawings. For the works located outside the town of Hendrina between km 0.9 and km 1.5: The works to be undertaken include the construction of gabion-lined trapezoidal channels adjacent and over existing water mains and optic fibre cabling. The Contractor shall obtain the necessary wayleaves from the utility owners as described in Sub-clause A1.2.3.22 prior to the commencement of these works.
	A1.3		CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS	
		A1.3.3	GENERAL	
			A1.3.3.1 Construction camps	There is no SANRAL owned land available to be utilised for construction camps.
	A1.4		FACILITIES FOR THE ENGINEER	
		PA1.4.3	GENERAL	Details of site facilities required by the Engineer are provided on the drawings contained in Volume 4. The Contractor shall provide security measures at the Engineer's site offices and laboratories as well as the Engineer's site accommodation in accordance with the Items included under C1.4.8.
		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	Fittings, furniture and equipment as specified on the Drawings in Volume 4 and in the Pricing Schedule.
			c) Laboratories	Site Laboratory layout as specified on the Drawings in Volume 4 and in the Pricing Schedule.
			f) Ablution unit	Ablution and shower units as specified on the Drawings in Volume 4 and in the Pricing Schedule.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				Ablution units to be provided at the Engineers Offices, Separate ablution facilities to be provided for male and female. Accommodation provided by the Contractor and at the Laboratory as indicated on the drawings. Separate shower and change rooms to be provided at the Accommodation provided by the Contractor.
			A1.4.7.2 Housing	
			a) Prefabricated houses	Prefabricated houses as specified on the Drawings in Volume 4 and in the Pricing Schedule.
			A1.4.7.3 Services	
			b) Water, electricity and gas	The constant supply of electricity in the area is a concern. A generator shall be provided to the site offices and the laboratory to maintain 24-hr per day power supply.
			A1.4.7.5 Office staff	The Contractor shall provide the following staff as listed in the Pricing Schedule (Part C3): a. Receptionist/Secretary b. Technical Assistants
	A1.5		ACCOMMODATION OF TRAFFIC	
		A1.5.3	GENERAL	
			A1.5.3.2 General requirements	All typical traffic accommodation measures are specified on the traffic accommodation layout and cross-section drawings for the applicable location scenarios in Volume 4.
			A1.5.3.3 Lane width	Lane widths during traffic accommodation may be reduced to a minimum width of 3.4m during construction of the initial widening (phase 1 – shoulder widening).
		A1.5.6	CONSTRUCTION EQUIPMENT	
			A1.5.6.2 Illuminated traffic signs and safety devices	
			d) Sign mounted flashing lights	Flashing lights mounted on signs are to be operated during the night and day.
		A1.5.7	EXECUTION OF THE WORKS	
			A1.5.7.3 Accommodation of traffic where the road is constructed in half or partial widths	The length of the half or partial width construction sections where the traffic can only pass in one direction at a time shall not exceed 0.7 km. The number of one-ways sections under construction at any one time shall not exceed one (1). No STOP/GO one-way traffic sections shall be in operation and two-way traffic shall be accommodated safely within the contract limits during the following additional periods:

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				a. for a period from two days before, until two days after the annual Easter Weekend (period of 8 days); b. during the Builders Break for a period from the 10th of December until the 10th of January each year; For the works located outside the town of Hendrina between km 0.9 and km 1.5: No STOP / GO one-way traffic sections shall be in operation for the works and two-way traffic shall be accommodated at all times.
			A1.5.7.6 Maintenance of existing roads used as detours	Maintenance of existing road sections with the contract limits shall be the responsibility of the Contractor. a. Existing road sections within the contract limits that at time of patching requirement, is not located within a section where traffic is deviated or accommodated, shall be backfilled with hot plant mixed asphalt. Base backfill, where required, will be undertaken with either stabilized crushed stone material (BSM1) or hot plant mixed asphalt as directed by the Engineer. Refer to Drawings in Volume 4. b. Existing road sections within the contract limits that at time of patching requirement, is located within a section where traffic is deviated or accommodated, where further accommodation of traffic is constrained, shall be backfilled using cold premixed asphalt.
			PA1.5.7.10 Construction of temporary deviations	
			d) Earthworks and pavement layers for temporary deviations	Earthworks and pavement layers for temporary deviations shall be constructed in accordance with the details provided on the Drawings in Volume 4.
			e) Surfacing of temporary deviations	Surfacing for temporary deviations shall be constructed in accordance with the details provided on the Drawings in Volume 4.
	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	
			A2.1.1.1 Installation of new services	Installation of sleeves for future use as indicated on the Schedule of Services and the Service Layout Drawings in Volume 4.
			A2.1.1.2 Location, identification, protection and relocation of existing services	Protection and/or relocation as indicated on the Schedule of Services and the Service Layout Drawings in Volume 4. For the works located outside the town of Hendrina between km 0.9 and km 1.5: Refer to Drawing No. L0273-01-T-04D15 for the indicative positions and depths of the known existing services.
		A2.1.2	DEFINITIONS	Existing services as indicated on the Schedule of Services and the Service Layout Drawings in Volume 4.
		A2.1.3	GENERAL	
			A2.1.3.1 Installation of new services	Installation of sleeves for future use as indicated on the Schedule of Services and the Service Layout Drawings in Volume 4.
			PA2.1.3.2 Location, identification, protection and relocation of existing services	
			a) Existing as-built records	Existing services as indicated on the Schedule of Services and the Service Layout Drawings in Volume 4. Existing As Built Records not available. For the works located outside the town of Hendrina between km 0.9 and km 1.5: Refer to Drawing No. L0273-01-T-04D15 for the indicative positions and depths of the known existing services.
			b) Location of existing services	Existing services as indicated on the Schedule of Services and the Service Layout Drawings and for the works located outside the town of Hendrina between km 0.9 and km 1.5 is indicated on drawing No. L0273-01-T-04D15 in Volume 4. The Contractor shall use Ground Penetrating Radar (GPR) equipment to determine the actual position of all electrical and water utility services.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				The exact position of affected services will be determined by means of careful hand excavation. The applicable lead times required to make the necessary arrangements for the protection, removal or relocation of services which the Contractor shall allow is indicated under Cl. A2.1.3.2(d)(i)
			d) Protection of services	
			<i>(i) Service owners</i>	a. Eskom The lead time to relocate Eskom Services is expected to be 12-months from the date when Contractor engagement with Service Provider commence. b. Telkom The lead time to relocate Telkom Services is expected to be 9-months from the date when Contractor engagement with Service Provider commence. c. Private Optical Fibre Service Providers (Neotel, Dark Fibre Africa, etc.) The lead time to relocate Private Optical Fibre Service Providers' (Neotel, Dark Fibre Africa, etc.) services is expected to be 4-months from the date when Contractor engagement with Service Provider commence. d. Municipal The lead time for the Main Contractor to start with the relocation, extension or tie-ins into Municipal services is expected to be at least 4 weeks from the date of the applicable wayleave application submission. For the works located outside the town of Hendrina between km 0.9 and km 1.5: The layout and long section drawings indicate the most probable position and depth of the existing services within the work area of the proposed new erosion protection works. The existing services consist of two (2) water mains running along the left-hand side of the road and optical fibre cables running along both sides of the road. The water mains are the property of the Steve Tshwete Local Municipality (STLM), while the optic fibre cables belong to Dark Fibre Africa (DFA). The Contractor shall allow at least four (4) weeks in his programme to obtain the necessary wayleaves from the service owners

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				prior to the commencement of the works within this area
			(ii) Protection	All known existing services are indicated on the Schedule of Services and the Service Layout Drawings in Volume 4. Further confirmation is however required from the various service providers during the mobilisation period to determine the need for the protection or relocation of any services. Ground Penetrating Radar (GPR) equipment also to be utilized to determine/confirm the position of all known electrical and water utility services. GPR also to be used to scan all road sections to locate unknown services. After location by GPR services shall be exposed by hand 14-days before work is to be undertaken in an area to allow for the planning of appropriate protection measures. For the works located outside the town of Hendrina between km 0.9 and km 1.5: No specific protective measures are envisaged for the existing services, as these services are well below or away from the planned erosion protection works. However, the Contractor shall encase any existing services with at least 300 mm cover of wet soil-cement mixture should any services be encountered within a depth or distance closer than 500 mm of the proposed erosion protection works.
			(iv) Relocation	The following service owners have been contacted: (1) Eskom (2) Telkom (Openserve) (3) Dark Fibre Africa (4) Optimum Mine (removal of redundant pipe line) (5) Transnet The status of negotiations with service owners: (1) Service owner informed of the project (2) Service owner provided input on the location of their services Contractor shall notify the Service Owner within 14-days of the Commencement date: (1) Of his intension to start with the works (2) Request quotations for the relocation and/or protection of their services where such service is to be relocated/protected by the Service Owner (3) Provide the Service Owner with time lines, and where required access limitations, in accordance with the Contractors programme of the works (4) Request the necessary wayleaves and permits

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				The Contractor to expedite the relocation and/or protection of services. Relocation and/or protection of services shall also be undertaken in accordance with the Contractors programme and the timelines stated in Clause 2.1.3.2(d)(i) For the works located outside the town of Hendrina between km 0.9 and km 1.5: No relocation of any existing services is envisaged for the planned erosion protection works.
			A2.1.3.3 Safety, Method Statements, safeguarding the works and accommodation of traffic	The Contractor shall notify the Service Provider before commencing with work near their Services. Appropriate protective measures involved in the construction of permanent works for existing services shall be provided in accordance with Section E of the Project Specifications as well as any further measures that the service owner may require.
			a) Safety and Method Statements	Additional to the OHS requirements in the Contract Document the Contractor shall also comply with Service Owners OHS and other requirements as stated in their official specification.
			A2.1.3.5 Programming for services	
			a) Trenching and installation sequence	Considering the depth of the relocated and new sewer lines, construction of these lines shall commence as soon as possible in order to not delay the mass earthworks for the roads construction.
			A2.1.3.6 Provision of record drawings and details	Contractor to accurately document the location and details of services by survey. The surveyor undertaking such survey to be registered with PLATO.
			A2.1.3.9 Limitations and restrictions	
			c) Installation under special conditions	Where road reserves are to be widened with fence relocation, fencing or markers shall be installed to demarcate the new road reserve boundary position. Clearing shall also be completed where required, before the Contractor and/or the Service Owner shall commence with the relocation of their services.
			e) Working widths	Relocation and protection of services deeper than 1.0m below final road level shall be carried out with appropriate benching and shoring of the trench excavations in accordance with the latest Construction Regulations requirements, while keeping the total working width (including trench, stockpiles and safety measures) to a minimum.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				Trench widths will be limited to the service diameter plus 300mm working width on both sides of the service line. Trenching details, where applicable, as per Typical Service Detail Drawings in Volume 4.
		A2.1.5	MATERIALS	
			A2.1.5.1 Trench backfill material	Suitability of a sufficient volume of trench excavated material to be used as backfill material to be confirmed on site.
			A2.1.5.2 Soil cement and stabilised trench backfill material	
			a) Soil cement backfill	Excavated material shall be used for soil cement backfill. Excavated material to be approved by the Engineer.
			b) Cement stabilised backfill	Selected G5B quality material or better shall be used for cement stabilised backfill. Selected material to be approved by the Engineer.
		A2.1.6	CONSTRUCTION EQUIPMENT	
			A2.1.6.1 Excavation equipment	Trenching details, where applicable, as per Typical Service Detail Drawings in Volume 4.
		A2.1.7	EXECUTION OF THE WORKS	
			A2.1.7.1 Trenching for Services	
			f) Safe placement of excavated material	Contractor to provide approved safe areas to temporarily stockpile excavated material for later use reuse in backfilling trenches.
			h) Excavation	Trenching details, where applicable, as per Typical Service Detail Drawings in Volume 4.
			j) Excavation using Labour Enhanced Construction Methods	Labour enhanced methods shall be utilised for all trench excavations and backfill for trench depths less than 1.0m, in pickable material
			k) Excavations outside the normal trench profile	Excavation for manholes, wingwalls, kerb inlet structures and junction boxes to be excavated outside the normal trench profile
			l) Timbering and shoring	
			<i>(ii) Contract Specific Shoring Requirements</i>	Timbering, strutting and shoring shall be provided to ensure the stability of, or for the protection of, structures or services etc where needed in accordance with the latest Construction Regulations.
			m) Soil cement backfilling	Soil cement backfilling to be utilised for all trenches crossing a road and for all overhead service pole and anchor pole backfilling and in confined spaces if required.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			n) Erosion protection with sandbags	Where new or relocated services are to be constructed in close proximity to any River or stream, sandbags shall be used alongside trenches to prevent the ingress of water and / or erosion during construction of the works if not protected by the excavated material.
			p) Preparation of the bottom of trenches	Trenching details, where applicable, as per Typical Service Detail Drawings in Volume 4.
			r) Dealing with water	
			<i>(i) Contractor's obligations for dealing with water</i>	The Contractor shall remain responsible for removing surface and sub-surface water from trench excavations by means of sump pumps or daylighting trenches.
			A2.1.7.2 Reinstatement of existing roads and existing road furniture	
			a) General	Trenching and backfill for services to be completed before the layerworks and asphalt overlay is constructed. All trenching below subbase level to be backfilled with soil cement. Refer to drawings in Volume 4 for backfill detail.
			b) Reinstatement of existing road carriageways and other paved areas	Trenching and backfill for services to be completed before the layerworks and asphalt overlay is constructed. All trenching below subbase level to be backfilled with soil cement. Refer to drawings in Volume 4 for backfill detail.
			d) Reinstatement of unpaved areas	All requirements defined in COTO Chapter 11.8 and as amended in the project specifications shall also be applicable to the unpaved areas within road reserves affected by works on services.
			A2.1.7.3 Railway reserves, bridge and other special crossings	Services located on the railway bridge to be re-located temporarily during the widening construction of the bridge and re-instated on completion of the bridge. Refer to Schedule of Services and the Service Layout Drawings in Volume 4. All services to cross new bridges to be constructed shall be located within the provided service ducts. Refer to the applicable structural drawings in Volume 5.
			A2.1.7.6 Ownership, removal and disposal of existing service materials	After the Contractor has constructed new service trenches and exposed the existing service, the new services shall be installed and the existing services shall be removed either by the Contractor or the Service Owner as agreed with the Service Owner in each case. Where the Service Owner is responsible for the removal of their own services, the Service Owner shall become the owner of their recovered service materials.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				The Contractor shall become the owner of specific recovered service materials and shall be responsible for the disposal of the materials and for providing the Engineer with a full record of the disposal of the materials for control purposes.
		A2.1.8	WORKMANSHIP	
			A2.1.8.2 Compaction	
			a) Relative density compaction control	Relative density compaction control shall be used over and above any road carriageways or lined drains or under any paved footways, sidewalks or walkways.
			<i>(ii) Areas subjected to vehicle traffic loads or within the road prism</i>	Areas over and above any road carriageways, lined drains or any paved footways, sidewalks or walkways where layers are backfilled in thickness (after compaction) that do not exceed 150mm the material shall be compacted to a minimum of 93% of MDD or a minimum of 100% of MDD where sand is used
			c) DCP compaction control	DCP acceptance criteria at fills, embankments or cut slopes will not be permitted. Backfill in such areas shall be undertaken in accordance with Clause A2.1.8.2 (a)(ii).
	B2.1		GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES PART B: LABOUR ENHANCEMENT	
		B2.1.1	SCOPE	Labour enhanced construction methods shall be used for trench excavation and trench backfill.
	C2.1		GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES PART C: MEASUREMENT AND PAYMENT	
			(ii) Notes on measurement and pay items	Trench depths will be measured from the surface of the ground along the centre-line of the trench to the bottom of the specified bedding layer (as applicable).
		C2.1.6	Trench excavation (in soft material)	The tendered rates shall include full compensation for setting out, clearing and grubbing the trench areas except for trees with a girth larger than 1,0 m, the temporary removal of improvements from the line of the trench, the removal and stacking of any surfacing and paving material as applicable, for excavating the trench, preparing the bottom of the trench, separating topsoil, material unsuitable for backfill and selected backfill material, for safeguarding and keeping the excavations safe, which includes the provision, installation and later removal of temporary timbering, shoring and strutting, dealing with any surface

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				or subsurface water and for the temporary stockpiling of material.
		C2.1.8	Excavations outside the normal trench profile	The tendered rate shall include full compensation for excavating outside the normal trench profile, trimming the excavations, preparing the bottom of the excavation, separating any material unsuitable for backfill from selected backfill material, keeping excavations safe, dealing with any surface or subsurface water and for the temporary stockpiling of material
		C2.1.9	Trench excavation using labour enhanced construction methods	The tendered rates shall include full compensation for setting out, clearing and grubbing the trench areas except for trees with a girth larger than 1,0 m, the temporary removal of improvements from the line of the trench, the removal and stacking of any surfacing and paving material as applicable, for excavating the trench, preparing the bottom of the trench, separating topsoil, material unsuitable for backfill and selected backfill material, for safeguarding and keeping the excavations safe, which includes the provision, installation and later removal of temporary timbering, shoring and strutting, dealing with any surface or subsurface water and for the temporary stockpiling of material.
		C2.1.17	Removal and disposal of spoil material from trench excavations:	All spoil sites to be identified by the Contractor
		C2.1.18	Timbering, strutting and shoring	Timbering, strutting and shoring details, where applicable, as per the latest Construction Regulations.
	A2.2		DRY SERVICES	
		A2.2.1	SCOPE	Refer to Schedule of Services and the Service Layout Drawings in Volume 4 for location of dry services. Further confirmation is however required from the various service providers during the mobilisation period, and through GPR scanning, exposing by hand excavation and survey by the Contractor to determine the need for the protection or relocation of any services.
			A2.2.1.1 General note	In certain SANS documents referred to in this Section the term "specified in the scope of work" is used. For the purposes of this specification the term shall be deemed to mean "specified in the Contract Documentation".
		A2.2.5	MATERIALS	Unplasticized PVC pipes and fittings, normal duty completes with couplings or HDPE flexible duct type DN supplied in rolls with compression couplings with double wall corrugated construction and smooth bore to ensure easy draw-in of cables directly buried in ground or HDPE ducts class 8 for road crossings

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A2.2.5.1 Ducts and sleeves	
			b) High Density Polyethylene (HDPE) ducts	
			<i>(i) HDPE ducts installed by trenching</i>	Where HDPE ducts are required for installation by trenching shall be of pliable type with compression couplings. HDPE ducts for telecommunications shall be obtained from the affected telecommunication service provider and shall be installed to their specifications. The Contractor to make the necessary arrangements and collect service ducts from the telecommunication Service Providers facilities.
			e) Other duct materials	The sleeves shall be heavy duty class 34 uPVC sleeving with a wall thickness of not less than 1,5mm thick and a smooth finish inside. Black U-PVC ducts to be installed at intersections and encased in concrete barriers for all electric cables. Green U-PVC ducts to be installed at intersections for telecommunication. Refer to the drawings in Volume 4 for further details.
			g) End caps or plugs	The ends of all sleeves shall be sealed with a non-hardening watertight compound after the installation of cables where duct specific plugs or caps are not available.
			h) Draw wires and marker tapes	Refer to Typical Services Detail Drawings in Volume 4 for details.
			A2.2.5.2 Bedding	Bedding material, as specified in the standard specification, to be placed simultaneously on both sides of the duct as shown on the drawings in Volume 4.
			A2.2.5.3 Backfill	
			a) Backfill for trenched (excluding micro or mini trenching)	Refer to Typical Services Detail Drawings in Volume 4.
			A2.2.5.4 Cable duct markers	Refer to Schedule of Services and the Service Layout Drawings in Volume 4 for location of dry services.
			A2.2.5.5 Concrete	All concrete required for duct installation shall comply with the applicable requirements of Section A13.4 of Chapter 13 for strength class (Class C) concrete. Refer to Typical Services Detail Drawings in Volume 4.
			A2.2.5.7 Handhole, manhole and access chamber types and covers	

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			a) Handhole, manhole and access chamber	
			<i>(i) Telecommunications handholes, manholes and access chambers</i>	Manhole covers and frames to be obtained from Telecom Service Provider and shall be installed to their specifications.
			<i>(iv) Other handholes, manholes and access chambers</i>	Refer to Typical Services Detail Drawings in Volume 4.
			b) Covers and frames	
			<i>(i) Telecommunications covers and frames</i>	Manhole covers and frames to be obtained from Telecom Service Provider and shall be installed to their specifications.
			<i>(ii) Other covers and frames</i>	Refer to Typical Services Detail Drawings in Volume 4.
		A2.2.7	EXECUTION OF THE WORKS	
			A2.2.7.2 Duct installation by methods other than by micro or mini trenching	
			a) Trench widths for duct installations	Refer to Schedule of Services and the Service Layout and Typical Drawings in Volume 4 for details.
			b) Bedding and compaction of bedding	All trenches below road pavement layers (below subbase layer) to be backfilled to 93% MDD. DCP testing not allowed.
			d) Concrete bedding and encasement	
			<i>(i) Concrete bedding</i>	Refer to Schedule of Services and the Service Layout and Typical Drawings in Volume 4 for details.
			<i>(ii) Concrete encasement</i>	Refer to Schedule of Services and the Service Layout and Typical Drawings in Volume 4 for details.
			A2.2.7.4 Duct markers	
			b) Route markers	Refer to Schedule of Services and the Service Layout and Typical Drawings in Volume 4 for details.
			c) Road crossing markers	Refer to Schedule of Services and the Service Layout and Typical Drawings in Volume 4 for crossing marker post details.
		A2.2.8	WORKMANSHIP	
			A2.2.8.2 Proving ducts	
			a) Standard proving requirements	Continuity test (mandrill) test to be undertake on all sleeves installed by the Contractor.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
	C2.2		DRY SERVICES PART C: MEASUREMENT AND PAYMENT	
		C2.2.6	Duct accessories (markers, marking, draw wires and end caps etc.)	The tendered rates shall include full compensation for the manufacture, delivery and installation of the markers, draw wires, end caps, plugs or other accessories complete as specified or for completing the marking on kerbs as specified
		C2.2.8	Covers and frames for duct handholes, manholes and access chambers	The tendered rates shall include full compensation for the manufacture, delivery and installation of the covers and frames complete as specified
		C2.2.9	Install duct handhole, manhole and access chamber covers and frames provided by others	The tendered rates shall include full compensation for the installation of the covers and frames complete as specified

COTO CHAPTER 3: DRAINAGE

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
3			DRAINAGE	
	A3.1		DRAINS	
		A3.1.5	MATERIALS	
			A3.1.5.2 Subsoil Drainage Materials a) Pipes	U-PVC pipes shall be applicable to this contract
		A3.1.7	EXECUTION OF THE WORKS	
			A3.1.7.4 Subsoil drainage a) Construction of subsoil drainage systems	
			<i>(ii) With polymer film lining to trenches for subsoil drainage systems</i>	Polymer film linings shall not be applicable to this contract
			<i>(v) With alternative drainage systems</i>	Alternative drainage systems shall not be applicable to this contract
			PA3.1.7.5 Manholes, outlet structures and cleaning eyes	Refer to drawings XXX/3100/15/018 and 019 in Volume 4
	A3.2		CULVERTS	
		A3.2.3	GENERAL	
			A3.2.3.1 Types of culverts	HDPE pipes (corrugated) with circular section, herein after referred to as "HDPE culverts" to be used for downchutes in accordance with the drawings in Volume 4.
		A3.2.5	MATERIALS	
			A3.2.5.2 Culvert materials	
			j) Alternative culvert materials	HDPE pipes shall be corrugated and shall comply to the requirements of SANS 674, and shall have socketed ends for joining.
		A3.2.7	EXECUTION OF THE WORKS	
			A3.2.7.4 Unsuitable founding conditions	Special construction methods required in areas with unsuitable founding conditions to be applied in accordance with the Roadbed Preparation drawings in Volume 4.
	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	
			PA3.3.7.1 Drainage structures	
			a) Prefabricated concrete kerbing and channelling	Refer to drawing XXX/3100/15/003 in Volume 4

COTO CHAPTER 4: EARTHWORKS AND PAVEMENT LAYERS: MATERIALS

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
4			EARTHWORKS AND PAVEMENT LAYERS: MATERIALS	
	A4.1		BORROW MATERIALS	
		A4.1.3	GENERAL	
			A4.1.3.1 Employer identified borrow pits and quarries	The following borrow pits were identified: • Borrow Pit 1 • Borrow Pit 6 • Vaalbank Quarry Refer to the drawings in Volume 4 for the locality of the material Sources as well as Volume 6 for further information.
			A4.1.3.2 Contractor identified borrow pits and quarries	The identified material sources are deemed sufficient to meet all granular material requirements on the project. The Contractor is thus not required to identify further material sources.
			A4.1.3.4 Contractor prepared plans for borrow materials	All relevant information is included in the drawings in Volume 4 as well as information in Volume 6.
		A4.1.5	MATERIALS	
			A4.1.5.4 Sand, normal and coarse fill material in the earthworks layers (Table A4.1.5-2)	Fills higher than 10m not applicable. For the works located outside the town of Hendrina between km 0.9 and km 1.5: No fill with depth of more than 1.5 m is required prior to the construction of the erosion protection works.
			A4.1.5.5 Rock fill material in the earthworks layers	Mudrock, soft weathered shales and highly weatherd tillite not permitted for use as Rock fill.
		A4.1.7	EXECUTION OF WORKS	
			PA4.1.7.2 Borrow pit and Quarry operations	
			a) General control at the borrow pits and quarries	A full-time materials manager is required and should be a materials technician with associated accredited civil engineering diploma with 10 years relevant experience.
			b) Classes of excavations	
			<i>(i) Soft excavation</i>	The reference construction equipment shall be as stated in the standard specifications. For the works located outside the town of Hendrina between km 0.9 and km 1.5: The reference construction equipment shall be a tractor loader backhoe (TLB) with minimum engine net power of 60 kW.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			<i>(iv) Hard excavation</i>	The reference construction equipment shall be a 180 kW to 225 kW hydraulic crawler excavator (30-ton excavator) with heavy duty bucket.
			g) Selection and excavation of material in borrow pits	A part-time excavation controller is required and should be a materials technician with associated accredited civil engineering diploma with 5 years relevant experience.
			h) Selection and excavation of material in quarries	Benching and excavation slope details for quarries as per Environmental requirements stated in Volume 7. The full-time materials manager as stated in Clause A4.1.7.2 (a) shall carry out the duties as specified.
			l) Use of the borrow material	The laboratory test results and borehole drilling results for borrow and quarry material sources are included in Volume 6 of the document.
			m) Closing of the borrow pits and quarries	Conditions and requirements for the closure of quarries as per Environmental requirements stated in Volume 7. The appointed Environmental Control Officer (ECO) shall also be consulted by the Contractor to provide input on the quarry M&U plan. The Contractor shall also obtain the ECO's assessment of Borrow and Quarry operations on a continuous basis to ensure that conditions and requirements for closure will be complied with.
			PA4.1.7.3 Stockpiles	
			b) Stockpiling of the material	A full-time stockpile controller is required and should be a materials technician with associated accredited civil engineering diploma with 5 years relevant experience.
			c) Reinstatement of stockpiles site	Conditions and requirements for the reinstatement of stockpiles as per Environmental requirements stated in Volume 7. The Contractor shall also obtain the ECO's assessment of stockpile re-instatement requirements as per the EMPr.
	C4.1		BORROW MATERIALS PART C: MEASUREMENT AND PAYMENT	
		C4.1.19	Excavating hard material	The unit of measurement for pay items C4.1.19, C4.1.20 and C4.1.21 shall be the volume of loose material measured in the stockpile.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
	D4.1		BORROW MATERIALS PART D: GUARANTEES AND COMPLIANCE CERTIFICATES	SANRAL obtained the necessary approvals and authorisations for the Borrow Pits and Quarry.
	A4.2		CUT MATERIALS	
		A4.2.7	EXECUTION OF WORKS	
			A4.2.7.1 Excavation operations	
			a) Control at the cuttings, designated excavations and box cuts	A full-time materials manager is required and should be a materials technician with associated accredited civil engineering diploma with 5 years relevant experience.
			b) Classes of excavation	The reference construction equipment shall be a 180 kW to 225 kW hydraulic crawler excavator (30-ton excavator) with heavy duty bucket.
			h) Excavation of material in cuttings	The dimensions of benches shall be as indicated on the drawings in Volume 4 or as indicated by the engineer. A part time excavation controller is required and should be a materials technician with associated accredited civil engineering diploma.
			i) Excavation of material in box cuts	The stepping of layers located within box cuts shall be a minimum of 1:1 or as specified on the drawings in Volume 4.
			j) Excavation of material in designated excavations	Refer to drawings in Volume 4.
			k) Selection and the use of the cut material	The laboratory test results for cut material test pits are included in Volume 6 of the document.
			n) Finishing of the side slopes of cuttings and designated excavations (<i>para 1</i>)	The minimum requirements listed in the standard specifications apply. Applicable finishing details for side slopes and measures for handling unstable slopes to be agreed with the Engineer on site.
	A4.3		EXISTING ROAD MATERIALS	
		A4.3.3	GENERAL	
			A4.3.3.1 Employer identified existing road materials	The laboratory test results for road test pits are included in Volume 6 of the document. The existing road materials to be utilised mainly in new or reconstructed fill, selected layers and gravel shoulders or gravel access road support layers depending on the material quality or as specified on the drawings and in Part C4 of the document.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
		A4.3.5	MATERIALS	
			A4.3.5.2 Reclaimed Asphalt Material	Milled asphalt material to become the property of the Contractor.
			A4.3.5.3 Bituminous Seal surfacings	Rubber modified seals will not be allowed for use as reclaimed material.
		A4.3.7	EXECUTION OF THE WORKS	
			A4.3.7.7 Excavation of crushed stone, macadam, cemented and gravel materials	A part-time excavation controller is required and should be a materials technician with associated accredited civil engineering diploma with 5 years relevant experience.
			A4.3.7.9 Removal of existing pavement blocks	Paving blocks removed shall be utilised in the construction of the works, including the construction of paved islands at intersections and sidewalks. Only damaged pavement blocks shall be disposed of.
			A4.3.7.12 Stockpiling of material	
			a) Preparation of the stockpile site	Stockpiling of milled asphalt material not required. Milled asphalt material to be disposed of.

COTO CHAPTER 5: EARTHWORKS AND PAVEMENT LAYERS: CONSTRUCTION

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
5			EARTHWORKS AND PAVEMENT LAYERS: CONSTRUCTION	
	A5.1		ROADBED	
		A5.1.2	DEFINITIONS	
			Batter	1:2 max for cut and fill; 3m minimum toe line or 1:6 min for fill
		A5.1.3	GENERAL	
			A5.1.3.1 Roadbed material Investigation	The laboratory test results for material investigations are included in Volume 6 of the document. Prior to commencing with roadbed treatment the quality of the in-situ material shall be confirmed with additional testing to be undertaken by the Site Laboratory. On receipt of test results the Engineer shall confirm the appropriate roadbed treatment method. The following types of normal roadbed treatment is expected on this project: • In-situ treatment by ripping and recompaction. • Excavation and replacement with G5 granular material in layers. • Pioneer layer using hard unweathered rock (max. 150 mm). • Geotextile laid directly on in-situ (restricted construction areas). It should additionally be noted that where a pioneer layer is required below the widening used for traffic accommodation, the depth of the pioneer shall be determined prior to excavation to ensure that the final pavement layers (subbase or higher) do not cut into the levelling layer on top of the pioneer.
		A5.1.5	MATERIALS	
			A5.1.5.2 Topsoil	Topsoil material is foreseen to mainly be obtained from the road reserve.
		A5.1.7	EXECUTION OF WORKS	
			A5.1.7.1 Clearing and grubbing	Material obtained from clearing and grubbing shall be removed from the site if not deemed suitable by the Employer and Engineer to be used as topsoil.
			A5.1.7.2 Removal and conservation of topsoil from roadbed	No amendment to the standard specifications is proposed unless required in the Environmental documentation in Volume 7.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A5.1.7.3 Normal roadbed treatment	
			a) Construction overview	In-situ material shall be ripped and recompacted as roadbed. If compaction is not achieved the material shall be removed and replaced with good quality granular material layers. The rock pioneer layer shall be compacted using 12 roller passes (minimum). Where instructed by the engineer or shown on the drawings the pioneer layer shall either consist of or be wrapped with geotextile (Grade 1).
			b) Removal of unsuitable roadbed material	Unsuitable roadbed material shall be spoiled at approved spoil sites.
			c) Percentage of Max Dry density (MDD)	If compaction of 90% of MDD is not achieved the material shall be removed and replaced with G5 quality granular material in 150 mm layers.
			f) Hard material	In-situ rock shall be removed by ripping or drilling and blasting, as required.
			<i>(i) In situ treatment by ripping</i>	The standard specified ripping depths are applicable. Shales and mudstone shall be treated shall be removed as directed by the engineer.
			i) Construction of a pioneer layer	The pioneer layer for use on this project shall consist of hard un-weathered rock with maximum rock size of 150 mm. Not more than 20% of the material shall pass the the 20.0 mm sieve size. The layer shall be compacted using 12 roller passes. Pioneer layer processing and compaction shall be as specified in clause A5.1.7.3 (I) of the Standard Specifications. Where instructed by the engineer or shown on the drawings the pioneer layer shall be wrapped with geotextile (Grade 1).
			A5.1.7.4 Special drainage measures, dewatering	No amendment to the standard specifications is recommended. It will however be required of the Contractor to take special care with appropriate planning to keep locations of deep excavation dry.
		A5.1.8	WORKMANSHIP	
			A5.1.8.2 Compaction requirements	Stratified random sampling methods shall be used for determining the sample/test position.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
	PC5.1		ROADBED PART C: MEASUREMENT AND PAYMENT	
		PC5.1.13	Construction of a levelling layer	The levelling course layer shall have an average compacted layer thickness of 200 mm, constructed to line and level, using minimum G6 quality granular material. The compacted density of the layer shall be 93 % MDD.
	A5.2		FILL	
		A5.2.3	GENERAL	
			A5.2.3.1 Fill Dimensions and shape	Refer to the drawings in Volume 4.
			A5.2.3.2 Fill adjacent to existing fill	Fills to be benched in accordance with detail drawings in Volume 4.
			A5.2.3.3 Fill layer thickness	The layer thickness depends on the type of fill material available and is as follows: • Normal fill: maximum 200 mm. • Coarse fill: 200 mm to 500 mm.
			A5.2.3.4 Fill compaction classification	
			a) MDD compaction	
			<i>(i) Sand fill</i>	Not applicable.
			<i>(ii) Normal fill and Coarse Fill</i>	All fill layers to be compacted to 93% of MDD.
			<i>(iii) Fill widening</i>	Fills to be benched in accordance with detail drawings in Volume 4.
		A5.2.7	EXECUTION OF THE WORKS	
			PA5.2.7.3 Benching for fill construction	The dimensions of benches as well as the extent to which existing fills have to be cut back to form benches shall be as indicated on the drawings in Volume 4 or indicated by the engineer.
			PA5.2.7.4 Widening of fills	The dimensions of benches as well as the extent to which existing fills have to be cut back to form benches shall be as indicated on the drawings in Volume 4 or indicated by the engineer.
		A5.2.8	WORKMANSHIP	
			A5.2.8.2 Materials Quality and compaction requirements	Stratified random sampling methods shall be used for determining the sample/test position.
			Table A5.2.8-1	All fill layers to be compacted to 93% of MDD.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
	A5.3		ROAD PAVEMENT LAYERS	
		A5.3.3	GENERAL	
			A5.3.3.3 Requirements prior to the construction of any pavement layer	The requirements for the underlying pavement layer shall be as indicated on the drawings before placement of the next layer.
			A5.3.3.4 Compaction of pavement layer material	The following compaction requirements are applicable: • Crushed stone (G1) base to 88% of apparent density. • Cemented (C3) subbase to 97% of MDD. • Gravel (G6) selected to 95% of MDD. • Gravel shoulder to 95% of MDD. • Gravel selected (access roads) to 93% of MDD. • Gravel subbase (access roads) to 95% of MDD. • Gravel wearing course (access roads) to 95% of MDD.
			A5.3.3.7 Joints between pavement layers	
			a) Location of joints	The longitudinal joint shall not be located in a wheel path of the final layout.
			b) Longitudinal joints	The saw depth into the crushed stone and stabilised layers shall be a minimum of 150 mm, but shall be adjusted if thicker layers are encountered or as indicated by the engineer.
			c) Transverse Joints	Transverse joints at the tie-ins between the crushed stone base and asphalt base shall be as specified on the drawings. Asphalt layer between old and new pavement layer to be cut. Existing pavement layers to be excavated to neat straight line for tie-in with new pavement layers.
			A5.3.3.8 Pavement Layer Drainage	Subsoil drainage will be required in all cuttings as specified on the drawings.
		A5.3.5	MATERIALS	
			A5.3.5.1 Material information	The required material properties for all pavement layers are specified on the drawings.
			PA5.3.5.2 Pavement Layer thickness and compaction requirements	
			a) Pavement layer thickness requirements	The required pavement layer thicknesses are specified on the drawings.
			b) Gravel and soil pavement layer compaction requirements (G4B to G9 material)	The pavement layer compaction requirements are as specified above and on the drawings. A nuclear density gauge capable of measuring to the required depth (including bulking where applicable) shall be used.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			c) Crushed stone pavement layer compaction requirements (G1 to G4A and G5A material)	The pavement layer compaction requirements are as specified above and on the drawings. A nuclear density gauge capable of measuring to the required depth (including bulking where applicable) shall be used.
		A5.3.7	EXECUTION OF WORKS	
			A5.3.7.1 Controlling pavement layer thickness	
			b) Minimum pavement layer thickness in transition areas	Refer to the drawings in Volume 4.
			A5.3.7.2 Combining Materials	The excavated existing road pavement material of different material quality may be combined to obtain suitable selected or subbase layers for use in gravel access roads or shoulders or as instructed by the engineer.
			A5.3.7.3 Construction of gravel pavement layers	
			a) Construction	The longitudinal joints shall not be located in the wheel path of the final layout.
			A5.3.7.12 Construction of trial sections	
			a) Trial Sections	The trial sections for the crushed stone base and cemented subbase layers shall be constructed over a full lane width and to a minimum length of 150 m. Trial Sections shall be constructed for: (a) 200mm thick stabilised subbase layer (b) 250mm thick stabilised subbase layer (c) 150mm thick G1 base layer
		A5.3.8	WORKMANSHIP	
			PA5.3.8.4 Construction tolerances for pavement layers	
			d) Width tolerances	Refer to the drawings in Volume 4.
			PA5.3.8.5 Surface regularity	The surface regularity of the base layer shall be assessed by the following methods: c) By using a profiler.
			c) By using a profiler	The payment items for adjustment shall be: • C5.3.2.1 (bb) (G1 Base); or • C9.1.4.1 (c) (BTB Base).

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
	C5.3		ROAD PAVEMENT LAYERS PART C: MEASUREMENT AND PAYMENT	
		C5.3.1	Compiling and implementing M&U plans for the construction of all the pavement layers	M&U plans will be required for each of the different types of new pavement layers.
	A5.4		STABILISATION	
		A5.4.3	GENERAL	
			A5.4.3.2 Work in restricted areas	No additional payment will be made for work in restricted areas.
		A5.4.5	MATERIALS	
			A5.4.5.1 General	Refer to the drawings in Volume 4.
			A5.4.5.3 Cementitious stabilising agents	The stabilizing agent application rate is 3.5% cement (CEM II B-L 32.5N). The maximum dry density of the material to be stabilised can be assumed to be 2 350 kg/m ³ for tender purposes.
		A5.4.6	CONSTRUCTION EQUIPMENT	Mixing in of the cement where part of the layer is in situ, shall be done using a recycler. Chemically stabilized layers will be cured with water until testing is complete. Where G1 base layer is constructed on top of the stabilised layer, curing after testing will be done by placing the G1 material as a protective layer and keeping it damp. Where BTB base layer is constructed on top of the stabilised layer, the layer will be cured with water for the full duration. Side-spraying tankers travelling off the layer is to be used when curing the layers with water.
		A5.4.7	EXECUTION OF THE WORKS	
			A5.4.7.3 Chemical pre-treatment and stabilization	
			e) Applying and mixing in the cementitious agent using a recycler	When applying the stabilising agent with an in-situ recycler adjacent cuts shall overlap by at least 150 mm. Over application of water in the overlap shall be avoided.
			A5.4.7.7: Protection and curing of chemically stabilised layers	The method of protection or curing shall be method (b) Damp protective layer curing, as described under Clause A5.4.6 above.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
	A5.5		RECONSTRUCTION OF PAVEMENT LAYERS	
		A5.5.2	DEFINITIONS	
			Rehabilitation	The lower subbase and selected layers will in some instances be reconstructed in-situ (if of sufficient quality). Make-up material shall be added where required.
			Uniform pavement sections	Three uniform pavement sections were identified as follow: 1. Km 18.5 to km 26.0. 2. Km 26.0 to km 33.5. 3. Km 33.5 to km 42.0.
		A5.5.3	GENERAL	
			A5.5.3.1 Traffic accommodation	Refer to the drawings in Volume 4.
			A5.5.3.3 Existing bituminous seal and/or asphalt layers	The upper portion (30 mm) of the existing bituminous surfacing shall be removed by milling. The remainder of the layer shall be mixed with the reconstructed layer, but only if it does not consist of rubber modified seals. Milled out bituminous material to be disposed of by the Contractor.
		A5.5.5	MATERIALS	
			A5.5.5.1 Existing crushed stone pavement materials	Existing crushed stone layers shall be processed as gravel layers.
			A5.5.5.5 Materials shortfall and make-up material	Suitable make-up material shall be obtained from the stockpiles (quarry / borrow pits).
		A.5.5.7	EXECUTION OF THE WORKS	
			A5.5.7.4 In situ pavement layer reconstruction preparation	
			a) Establishing construction levels – minor level changes	Design camber indicated on the drawings in Volume 4.
			b) Establishing construction levels – significant level changes	The new design levels shall be as specified on the drawings unless otherwise instructed by the engineer.
			c) Pre-milling the seal or asphalt surfacing	No pre-milling shall be required.
			d) Preparation of the road surface	The milled surfacing layer shall be disposed of by the Contractor unless otherwise instructed by the engineer.
			e) Pre-pulverising existing pavement layer material	All in-situ material shall be pre-pulverised to depth of 50 mm less than recycling depth before cross-mixing and recycling commence. Any exposed layers after excavation need to be recompacted to 93% of MDD (smooth

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				drum vibratory roller) or reconstructed in- situ (as indicated by the engineer).
			A5.5.7.5 In situ pavement layer reconstruction	
			a) Final recycler construction equipment checks	The recycler shall be checked for conformance to the standard specifications as well as any additional specifications provided by the engineer.
			c) In situ reconstruction using conventional construction equipment	The depth of in-situ reconstruction will be to the full depth of the layer as specified on the drawings.
	C5.5		RECONSTRUCTION OF PAVEMENT LAYERS PART C: MEASUREMENT AND PAYMENT	
		C5.5.5	Construction of a trial section using a recycler	The trial sections for reworking of in-situ (using recycler) shall be over a full lane width and to a minimum length of 150 m.
		C5.5.6	Construction of a trial section using conventional construction equipment	The trial sections for reworking of in-situ (using conventional equipment) shall be over a full lane width and to a minimum length of 150 m.
		C5.5.10	Roller-pass compaction of an exposed pavement layer	Not applicable – roadbed treatment applicable as specified elsewhere.
		C5.5.13	Cross mixing of material	The materials shall be cross-mixed after pre-pulverisation to the same depth as the loose material and to the width as specified on the drawings for the final layer.
		C5.5.20	Material shortfall or make-up material	The quantity shall be taken as 70% of the loose volume of material measured in the haulage trucks.

COTO CHAPTER 6: CONCRETE LAYERS

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
6			CONCRETE LAYERS	
	A6.2		SEGMENTAL BLOCK PAVING LAYERS	
		A6.2.5	MATERIALS	
			A6.2.5.1 Paving blocks	The paving blocks shall be of class 35, type A, Interlocking Paving Blocks, 80mm thick.
			A6.2.5.4 Concrete beams, kerbs and channelling	Prefabricated kerbing and channelling shall comply with the requirements of Section B3.3 of Chapter 3.
		A6.2.7	EXECUTION OF THE WORKS	
			A6.2.7.1 Preparing the underlying layers.	Import makeup material where required in accordance with Clause C4.4.2.1 and prepare the underlying layer in accordance with Clause C5.1.1. Also refer to the typical drawings in Volume 4 for more information.
			A6.2.7.4 Laying of the blocks.	The laying pattern for the the islands with recovered and new blocks shall be herringbone pattern, and dimensions as indicated on the Drawings in Volume 4.

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 be when at any position within the layer the moisture content of a granular base layer is more than 50% of the optimum moisture content. In the event of rain after priming, the base shall be allowed to dry out to meet the above moisture content requirement prior to surfacing.
		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 or Inverted bitumen emulsion.

COTO CHAPTER 9: ASPHALT LAYERS

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
9			ASPHALT LAYERS	
	A9.1		ASPHALT LAYERS	
		A9.1.2	DEFINITIONS	
			Asphalt mix types	50 mm thick, stone skeleton, gap-graded (BRAGG), 14 mm NMPS, crumbed rubber modified (CRM) binder, for use as permanent surfacing. 90 mm thick, sand skeleton, continuously graded, 20 mm NMPS, elastomeric polymer modified (EPM) binder, for use as permanent base. 35 mm thick, sand skeleton, continuously graded, 10 mm NMPS, elastomeric polymer modified (EPM) binder, for use as temporary surfacing. 50 mm (milled) / 60 mm (new) thick, stone skeleton, gap-graded (BRAGG), 14 mm NMPS, crumbed rubber modified (CRM) binder, for use as surfacing on bridge decks.
			Asphalt mixes Cold mix asphalt (CA)	Cold mix asphalt (CA) to comply with requirements in Table A8.8.5-2. Asphalt for emergency patches: Various thickness, cold premix (CA), placed by hand in cleaned patch area in accordance with the Agrément requirements of the mix.
			Aggregate	Stone skeleton mixes: Grading class 1. Sand skeleton mixes: Grading class 2.
		A9.1.3	GENERAL	
			A9.1.3.1 Nominal mix proportions and application rates	
			Table A9.1.3-1: Nominal Mix Proportions of Stone Skeletal Mixes for Tender Purposes Bitumen (type and grade according to Project Documentation) (%)	8.0% CRM binder (surfacing), PG58V-22.
			Table A9.1.3-2: Nominal Mix Proportions of Sand Skeletal Mixes for Tender Purposes Bitumen (type and grade according to Contract Documentation) (%)	5.0% EPM binder (base), PG58V-22. 6.0% EPM binder (temporary surfacing), PG58H-22.
		A9.1.4	DESIGN BY THE CONTRACTOR	

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A9.1.4.2 Mix design requirements	Permanent surfacing: - Stone skeleton - Gap graded - Level III mix design - 14 mm NMPS - CRM binder - 50 mm layer thickness Permanent base: - Sand skeleton - Continuously graded - Level III mix design - 20 mm NMPS - EPM binder - 90 mm layer thickness Temporary surfacing: - Sand skeleton - Continuously graded - Level II mix design - 10 mm NMPS - EPM binder - 35 mm layer thickness Bridge deck surfacing: - Stone skeleton - Gap graded - Level III mix design - 14 mm NMPS - CRM binder - 50 mm / 60 mm layer thickness - The before and after ageing properties of the EPM binder (as per TG1 guidelines) shall additionally be reported as part of the mix design process.
		A9.1.5	MATERIALS	
			A9.1.5.2 Bituminous binders for asphalt mixes	The binder types for use on this project shall be crumbed rubber modified (CRM) and elastomeric polymer modified (EPM). The specific properties relating to each binder type / class shall conform to the relevant requirements / product properties as listed in the latest version of the appropriate publications listed. The following is applicable to the asphalt layers: - PG 58 maximum temperature zone - Traffic speed > 80 km/h The binder performance grades are as follow: - PG 58V-22 (permanent works) - PG 58H-22 (temporary works) A complete method statement for the EPM binder manufacturing process and quality assurance procedures shall be submitted to the Engineer for review, in particular the following information on the manufacturing process shall be provided:

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				- o High shear blending process. - o Slow stirring mechanisms in the maturing tanks. The Contractor shall also state where this product has previously been used successfully.
			PA9.1.5.4Aggregates	
			a) Aggregate Properties	The resistance of dolerite to weathering shall be determined from the following tests: - o Petrographic analysis of thin sections for the identification of minerals. - o X-ray diffraction test to confirm the absence of smectite clays. - o Slake durability tests in ethylene-glycol. Refer to Clause A4.1.5.16 for test parameters and additional testing required.
			A9.1.5.5 Fillers	
			Table A9.1.5-7: Filler requirements	Properties, limits and test methods related to baghouse fines and / or limestone dust shall be in accordance with Sabita Manual 5: Guidelines for the Manufacture and Construction of Asphalt, as well as the National Environmental Management: Air Quality Act No 39 of 2004.
			A9.1.5.8Mix properties	Refer to A9.1.4.2.
		A9.1.6	CONSTRUCTION EQUIPMENT	
			A9.1.6.5Rollers	Only oscillating type vibratory compaction equipment may be used on bridge decks. The contractor shall also have a three-point roller (min. 12 tons) available at all times.
			A9.1.6.8Material transfer vehicle	For all asphalt works the asphalt shall be delivered to the paver via a material transfer vehicle of minimum holding capacity of 20 tons.
		A9.1.7	EXECUTION OF THE WORKS	
			A9.1.7.6Placing the asphalt	Due to the high stiffness of modified asphalt mixes hand work shall be limited as far as possible and, if done, shall be done while the mix is still at its specified paving temperature and in the shortest time possible. This precludes the paving of large areas by hand.
			PA9.1.7.7Compaction	Under no circumstances may any form of detergent or fuel oil on roller drums be used to prevent pick-up. Asphalt layers in excess of 50mm may need to be constructed in more than one layer. The contractor shall make provision in his trial section and method statements to ensure compaction as specified. No additional remuneration shall be due to the Contractor, should it be required to construct the asphalt in more than one layer to meet the specification.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A9.1.7.9Applying rolled-in chippings	The size of rolled-in chippings for the asphalt surfacing layer shall be 10 mm unless the mix are designed in such a way that the required surface specifications are achieved without the rolled-in chips.
			A9.1.7.11Surfacing of bridge decks	Stone skeletal, gap graded, 14 mm NMPS, PG58V-22, CRM binder, with nominal thicknesses of 50 mm (milled decks) or 60 mm (new decks).
		A9.1.8	WORKMANSHIP	
			PA9.1.8.8 Sampling	
			b) Coring of completed layers	The Contractor shall provide suitable coring machines capable of cutting 100mm or 150mm diameter cores from the completed asphalt layers.

COTO CHAPTER 11: ANCILLARY ROAD WORKS

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
11			ANCILLARY ROAD WORKS	
	A11.1		PITCHING, STONework, CAST IN SITU CONCRETE FOR PROTECTION AGAINST EROSION	
		A11.1.5	MATERIALS	
			A11.1.5.6 Geotextiles	Grade 2 nonwoven filter fabric (geotextile) shall be used with all gabions.
	A11.2		NON-STRUCTURAL GABIONS	
		A11.2.7	EXECUTION OF WORKS	
			A11.2.7.2 Constructing gabion boxes and mattresses	
			g) Assembly	For the layout and dimension requirements refer to drawings XXX/3100/15/22 and 23. The tolerance on the specified diameter of all wire shall be $\pm 2.5\%$. The length of the cages shall be subject to a tolerance of $\pm 10\%$, the width of the cages shall be subject to a tolerance of $\pm 5\%$ and the depth of the cages shall be subject to a tolerance of $\pm 5\%$. For the works located outside the town of Hendrina between km 0.9 and km 1.5: The gabions and gabion-mattresses shall be constructed in accordance with the details provided on Drawing No.'s L0273-01-T-04D15 to L0273-01-T-04D19. The gabions and gabion-mattresses shall be installed to horizontal and vertical tolerances of 30 mm from the dimensions shown on the drawings.
	PA11.4		ROAD RESTRAINT SYSTEMS	
		PA11.4.1	SCOPE	Method specification timber post systems, with appropriate amendments for steel posts where required, conforming to applicable SANS requirements is applicable on this Contract with detailed requirements specified on the typical detail drawings in Volume 4.
		A11.4.5	MATERIALS	
			A11.4.5.2 Materials	
			c) Guardrail posts	Timber posts and spacer blocks shall be treated in accordance with SANS 10005 with creosote that complies with SANS 616 as well as additional requirements on the drawings in Volume 4.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				Where offered or instructed to be used, steel posts shall be part of an approved guardrail system as tested and complying with SANS 51317, and galvanized in compliance with the requirements of SABS 763 for type A1 articles, shall be used.
		A11.4.7	EXECUTION OF THE WORKS	
			A11.4.7.2 Construction of guardrails on timber posts	The method of constructing the timber post systems shall be in accordance with typical detail drawings in Volume 4. Steel posts placed on concrete retaining walls or concrete structures shall be erected and fixed as shown on the drawings in Volume 4. For all other applications, steel posts shall be erected and fixed in compliance with the approved guardrail system as tested and approved in terms of SANS 51317.
	A11.5		FENCING	
		A11.5.5	MATERIALS	
			A11.5.5.2 Straining posts, stays, standards and droppers	Galvanised steel posts shall be used as specified on the typical detail drawings in Volume 4.
			A11.5.5.10 Hinge joint mesh	Refer to the typical detail drawings in Volume 4.
	A11.6		ROAD SIGNS	
		A11.6.1	SCOPE	Traffic signs to be erected in accordance with the SADC and SARTSM as well as the typical details in the drawings in Volume 4. No erection or relocation of permanent traffic signals are anticipated on this project.
		A11.6.5	MATERIALS	
			A11.6.5.2 Materials	
			d) Other plate material	No alternative materials will be accepted.
			m) Alternative materials	No alternative materials will be accepted.
		A11.6.7	EXECUTION OF THE WORKS	
			A11.6.7.1 Classification of Materials	Overbreak in width or depth shall be in filled by the Contractor and shall not be measurable for payment.
			A11.6.7.2 Manufacturing of road signboards and supports	
			d) Galvanizing	Galvanized steel will not require painting.
			A11.6.7.3 Road sign faces and painting	
			b) Preparing surfaces and applying paint	Aluminium road signs will not require painting.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			and retro-reflective sheeting	
			PA11.6.7.5 Erecting road signs	
			a) Position	Refer to the drawings in Volume 4. The works located outside the town of Hendrina between km 0.9 and km 1.5: Refer to Drawing No. L0273-01-T-04D15 for the positions of danger plates to be installed adjacent to the erosion protection works.
			b) Excavation and backfilling	Refer to the drawings in Volume 4.
			PA11.6.7.7 Dismantling, storing and re-erecting existing road signs	Some regulatory and warning signs may be re-used, but in most cases shall be dismantled and disposed of by the Contractor. Where existing road signs are deemed by the Engineer to be in good condition, the signs shall be re-erected in accordance with the details indicated in Volume 4. Dismantling and disposing of directional and diagramtic signs will include sign panels and ground mounted sign supports.
	C11.6		ROAD SIGNS PART C: MEASUREMENT AND PAYMENT	
			ii) Notes on measurement and pay items	Excavations will be measured from the ground surface.
			iii) Items that will not be measured separately	No separate payment will be made for backfilling excess excavations, disposing of surplus material etc.
	A11.7		ROAD MARKINGS AND ROAD STUDS	
		A11.7.5	MATERIALS	
			PA11.7.5.2 Materials	
			a) Marking materials	
			(ii) Retro-reflective road marking	The paint used for all road markings, whether permanent or temporary, shall be water-based road marking paint complying with the requirements of SANS 731 Part 2. If the paint to be used by the Contractor has not obtained a valid SANS mark yet, a recent certificate of compliance from the SANS shall be submitted before paintwork commences.
			b) Road studs	RSA-2 and RSA-T roads studs to be used in accordance with the drawings in Volume 4.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA																																													
	A11.8		LANDSCAPING AND PLANTING PLANTS																																														
		A11.8.5	MATERIALS																																														
			A11.8.5.2 Materials																																														
			b) Fertiliser/soil-improvement material	The type of fertilizer/soil-improvement material to be used shall be determined by the contractor in accordance with the requirements of Clause A11.8.7.4(b) to achieve acceptable cover. The Contractor may undertake topsoil testing to determine the most suitable fertilizer mixture.																																													
			d) Grass seeds	<table><tr><td colspan="3">Grassveld / Highveld</td></tr><tr><td colspan="3">Summer Mix:</td></tr><tr><td>Grass Species</td><td>Common Name</td><td>Application Rate (kg/ha)</td></tr><tr><td>Digitaria eriantha</td><td>Smutsfinger grass</td><td>8</td></tr><tr><td>Eragrostis curvula</td><td>Weeping lovegrass</td><td>4</td></tr><tr><td>Paspalum notatum</td><td>Bahia grass</td><td>20</td></tr><tr><td>TOTAL</td><td></td><td>32</td></tr><tr><td colspan="3">Winter Mix:</td></tr><tr><td>Grass Species</td><td>Common Name</td><td>Application Rate (kg/ha)</td></tr><tr><td>Dactylis glomerata</td><td>Cocksfoot</td><td>15</td></tr><tr><td>Digitaria eriantha</td><td>Smutsfinger grass</td><td>8</td></tr><tr><td>Eragrostis curvula</td><td>Weeping lovegrass</td><td>4</td></tr><tr><td>Medicago sativa</td><td>Lucerne</td><td>4</td></tr><tr><td>Paspalum notatum</td><td>Bahia grass</td><td>20</td></tr><tr><td>TOTAL</td><td></td><td>51</td></tr></table>	Grassveld / Highveld			Summer Mix:			Grass Species	Common Name	Application Rate (kg/ha)	Digitaria eriantha	Smutsfinger grass	8	Eragrostis curvula	Weeping lovegrass	4	Paspalum notatum	Bahia grass	20	TOTAL		32	Winter Mix:			Grass Species	Common Name	Application Rate (kg/ha)	Dactylis glomerata	Cocksfoot	15	Digitaria eriantha	Smutsfinger grass	8	Eragrostis curvula	Weeping lovegrass	4	Medicago sativa	Lucerne	4	Paspalum notatum	Bahia grass	20	TOTAL		51
Grassveld / Highveld																																																	
Summer Mix:																																																	
Grass Species	Common Name	Application Rate (kg/ha)																																															
Digitaria eriantha	Smutsfinger grass	8																																															
Eragrostis curvula	Weeping lovegrass	4																																															
Paspalum notatum	Bahia grass	20																																															
TOTAL		32																																															
Winter Mix:																																																	
Grass Species	Common Name	Application Rate (kg/ha)																																															
Dactylis glomerata	Cocksfoot	15																																															
Digitaria eriantha	Smutsfinger grass	8																																															
Eragrostis curvula	Weeping lovegrass	4																																															
Medicago sativa	Lucerne	4																																															
Paspalum notatum	Bahia grass	20																																															
TOTAL		51																																															
			Grass sods	The time limitation that will be applied to completion of harvesting, delivering, planting and watering of the appropriate grass sods as stated in the Standard Specification. For the works located outside the town of Hendrina between km 0.9 and km 1.5: Harvesting and planting of veld sods obtained from the road reserve shall be done within four (4) hours of the same working day, and the newly planted sods shall be watered immediately after planting thereof.																																													
			Nursery grown sods	To be determined by the Engineer in conjunction with the Contractor.																																													

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				For the works located outside the town of Hendrina between km 0.9 and km 1.5: "Giant rat's tail grass" (Sporobolus pyramidalis) sods shall be obtained from commercial sources for grassing of areas where no veld sods are available within the road reserve.
		A11.8.7	EXECUTION OF THE WORKS	
			A11.8.7.3 Grassing	
			c) Hydroseeding	Topsoil thickness shall be at least 75mm. Seed mixture and seed application rate as specified under Clause A11.8.5.2.
			f) Sowing by hand	Seed mixture and seed application rate as specified under Clause A11.8.5.2.
			A11.8.7.6 Alternative slope and erosion protection	Fill slope higher than 1.5m and cut slopes deeper than 1.0m to be covered with erosion protection product.
			A11.8.7.7 General	
			d) Proprietary brand materials used for erosion prevention	Contractor can propose erosion protection product. Product to be evaluated by the Engineer for acceptance in terms of price (price to be comparable to other similar products in the market) and product performance (obtain independent references from other contracts where product has been used previously). Approval of an erosion protection product at the sole discretion of the employer and the engineer.

COTO CHAPTER 12: GEOTECHNICAL APPLICATIONS

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
12			GEOTECHNICAL APPLICATIONS	
	A12.10		HARD EXCAVATION BY BLASTING	
		A12.10.3	GENERAL	
			A12.10.3.1 Method Statements	All blasting required for the contract shall be designed by the Contractor in accordance with Clause A12.10.4. Method statements to be submitted in accordance with Clause A12.10.3.2, Table A12.10.3-1 for acceptance by the Engineer before blasting may commence.
			A12.10.3.2 Materials, design and process approvals	All blasting required for the contract shall be designed by the Contractor in accordance with Clause A12.10.4. Before blasting activities may commence the Contractor shall submit the relevant Method Statements which will include the materials and processes that will be followed to the Engineer in accordance with the time lines and details provided in Table A12.10.3.2.
		A12.10.7	EXECUTION OF THE WORKS	
			A12.10.7.3 Process	
			b) Drilling	All blasting operations required for the contract shall be designed by the Contractor in accordance with Clause A12.10.4.
	D12.10		HARD EXCAVATION BY BLASTING	All controlled blasting operations required for the contract shall be designed by the Contractor in accordance with Clause A12.10.4.
	A12.11		GEOSYNTHETICS	
		A12.11.3	GENERAL	Table A12.11.5-1 shall be used for determining the grade of a geotextile to be used in accordance with the drawings in Volume 4.
		A12.11.5	MATERIALS	
			A12.11.5.1 General	Synthetic filter fabric to be tested in accordance with Table A12.11.5-1.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA																																							
			PA12.11.5.4 Grade Classification	Table A12.11.5-1 shall be used for determining the grade of the geosynthetics: TABLE A12.11.5-1: Grade Classification of Geosynthetics																																							
				<table><tr><th rowspan="2">Property</th><th colspan="3">Grade</th></tr><tr><th>1</th><th>2</th><th>3</th></tr><tr><td>Penetration load (CBR) (minimum), N Test Method: SANS 12236: 2013</td><td>6500</td><td>2400</td><td>1500</td></tr><tr><td>Puncture resistance (maximum), mm Test Method: SANS 13433: 2013</td><td>8</td><td>26</td><td>32</td></tr><tr><td>Water percolation (minimum), l/m²/s Test Method: SANS 11058: 2013</td><td colspan="3">40</td></tr><tr><td>Tensile strength (minimum), kN Test Method: SANS 1525: 2013</td><td>35</td><td>12</td><td>7</td></tr><tr><td>Tensile strength (elongation), % Test Method: SANS 1525: 2013</td><td colspan="3">40-60</td></tr><tr><td>Trapezoidal tear strength (minimum), N Test Method: ASTM D4533</td><td>1050</td><td>440</td><td>240</td></tr><tr><td>Permeability (minimum @ 50mm head), m/s Test Method: SANS 11058</td><td colspan="3">5x10⁻³</td></tr><tr><td>Pore Size (O_{95W}), μm Test Method: SANS 12956</td><td>100-200</td><td colspan="2">150-250</td></tr></table>	Property	Grade			1	2	3	Penetration load (CBR) (minimum), N Test Method: SANS 12236: 2013	6500	2400	1500	Puncture resistance (maximum), mm Test Method: SANS 13433: 2013	8	26	32	Water percolation (minimum), l/m ² /s Test Method: SANS 11058: 2013	40			Tensile strength (minimum), kN Test Method: SANS 1525: 2013	35	12	7	Tensile strength (elongation), % Test Method: SANS 1525: 2013	40-60			Trapezoidal tear strength (minimum), N Test Method: ASTM D4533	1050	440	240	Permeability (minimum @ 50mm head), m/s Test Method: SANS 11058	5x10 ⁻³			Pore Size (O _{95W}), μm Test Method: SANS 12956	100-200	150-250	
Property	Grade																																										
	1	2		3																																							
Penetration load (CBR) (minimum), N Test Method: SANS 12236: 2013	6500	2400		1500																																							
Puncture resistance (maximum), mm Test Method: SANS 13433: 2013	8	26		32																																							
Water percolation (minimum), l/m ² /s Test Method: SANS 11058: 2013	40																																										
Tensile strength (minimum), kN Test Method: SANS 1525: 2013	35	12		7																																							
Tensile strength (elongation), % Test Method: SANS 1525: 2013	40-60																																										
Trapezoidal tear strength (minimum), N Test Method: ASTM D4533	1050	440		240																																							
Permeability (minimum @ 50mm head), m/s Test Method: SANS 11058	5x10 ⁻³																																										
Pore Size (O _{95W}), μm Test Method: SANS 12956	100-200	150-250																																									

COTO CHAPTER 13: STRUCTURES

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
13			STRUCTURES	
	A13.1		FOUNDATIONS	
		A13.1.3	GENERAL	
			A13.1.3.2 Channel preservation	
			a) Work on, over, in or adjacent to watercourses	
			<i>(i) General</i>	Work in watercourses must be done in such a way that the flow in streams/rivers is not blocked off completely, i.e. the contractor must accommodate the natural flow during the construction period.
			<i>(iv) Water quality requirements</i>	Water quality measurements are required.
			A13.1.3.4 Method Statements	Excavations, foundation fill, or backfilling may not commence without an approved method statement.
			A13.1.3.5 Hold points	a) Approved method statement b) Approved wayleave from Transnet. c) Setting out of foundations d) Approved perimeter safety measures e) Approval of foundation floor prior to commencing with foundation fill. f) Any other hold points agreed to between the Engineer and the Contractor. g) Approved Foundation Check List
		A13.1.5	MATERIALS	
			A13.1.5.8 Soil cement	Soil cement to be handled and compacted with similar technique to concrete and must consist of G6 quality material and 6% cement content.
		A13.1.7	EXECUTION OF THE WORKS	
			A13.1.7.1 Work access and drainage	
			a) General	The required method statement above must include the provision of access and keeping the excavations dry.
			A13.1.7.2 Excavation	
			a) General	Blasting will not be permitted.
			g) The safety and protection of excavations	Detailed requirements: a Transnet approved safety fence between the perimeter of the excavation and the electrified railway line.
			j) Work on, over, under or adjacent to railway lines	Shall be carried out in accordance with the requirements from the approved Transnet wayleave.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A13.1.7.5 Backfill and fill near structures	
			a) General	Backfill behind walls of precast culverts and in-situ cell or frame structures, to be done simultaneously on both sides of the structure, with a maximum difference in level of 150mm, and only after the top slab has been cast, cured, and gained sufficient strength.
			b) Backfill	Backfill is measured to top of original ground surface.
			d) Fill within restricted area	Restricted fill area is all fill areas within a 3m distance from a structure wall, column or slab.
			A13.1.7.6 Foundation fill	Borehole/Test pit profiles are indicated on the drawings as well as the expected founding level Rock (for rock fill): Stones/rock shall be hard, angular veld or quarry stones or rock fragments of such quality that they will not disintegrate on exposure to water or weathering. The stones/rock shall be free from soil, shale or organic material. The size of the stone/rock fragments must be uniform, with a maximum largest stone/rock dimension of 250mm, and at least 85% of the rocks shall have an average least dimension of 100mm. Neither the breadth or the thickness of a single stone shall be less than one-third its length." Crushed stone foundation fill: Crushed stone used for construction of crushed stone foundation fill shall be 20mm stone used and approved for concrete works. Mass concrete: Concrete class C12/15-20 Concrete blinding: Concrete class C12/15-20
	B13.1		FOUNDATIONS	
		B13.1.7	EXECUTION OF THE WORKS	
			B13.1.7.2 Excavation	
			a) General	Culvert C0631: The footprint at founding level of the excavation profile will follow the perimeter of the imported foundation fill. It shall be 1m wider than the footprint of the concrete floor slab, as indicated on the drawings. Bridge B2966: Piers: The footprint at founding level of the excavation profile shall follow the footprint of the concrete pier footings as indicated on the drawings. Bridge B2966: Abutments: The footprint at founding level of the excavation profile shall follow the footprint of the concrete abutment footings as indicated on the drawings, and an

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				allowance for workspace may be added. This will be measured at maximum of 0,5m outside the concrete perimeter.
	A13.2		FALSEWORK, FORMWORK AND CONCRETE FINISH	
		A13.2.3	GENERAL	
			A13.2.3.1 Method Statements	Falsework and formwork to columns, walls, pier capping beams, deck, roof slab may not commence without an approved method statement. Method statement for a specific element to be submitted two weeks prior to work commencing on the specific element.
			A13.2.3.2 Hold points and approvals	a) Approved method statement b) Temporary works design for the falsework. It must include load capacity and technical specifications of all elements making up the falsework. Must also include preparation of founding material and bearing pressure under supports. c) Condition of forms d) Setting out of formwork e) Any other hold points agreed to between the Engineer and the Contractor. f) Approved Falsework, Formwork and concrete finish checklist.
		A13.2.7	EXECUTION OF THE WORKS	
			A13.2.7.2 Formwork	
			a) General	All visible corners must be chamfered 25mm x 25mm unless shown otherwise on the drawings.
			b) Formed surfaces: Classes of finish	
			<i>(i) General</i> 3. Class F3 surface finish	Steel forms may be used.
			d) Formwork for open joints	Formwork for open joints shall apply to distances between opposite concrete surfaces is equal to or less than 100mm.
			e) Openings and wall chases	As indicated on the drawings in Volume 5.
			A13.2.7.3 Removing the Falsework and Formwork	
			b) Technical criteria for falsework and formwork removal	(i) Stripping time for slabs and beam soffits: Bridge B2966: Abutment and Pier beam soffits: The minimum period for the falsework and formwork for the pier beam soffit slab to remain in place shall be 10 days, on condition that the concrete attained 80% of its specified strength by that time.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				Major culvert C0631: Roof slab soffit: The minimum period for the falsework and formwork for the pier beam soffit slab to remain in place shall be 10 days, on condition that the concrete attained 80% of its specified strength by that time.
	A13.3		STEEL REINFORCEMENT	
		A13.3.3	GENERAL	
			A13.3.3.1 Method Statements	Method statements to be submitted to the Engineer at least 14 days before the Engineer's approval is required.
			A13.3.3.2 Hold points and approvals	a) Approval of cover blocks b) Approval of reinforcement supplier c) Approved steel reinforcement checklist d) Any other hold points agreed to between the Engineer and the Contractor.
		A13.3.5	MATERIALS	
			A13.3.5.1 Steel bars	Bars (R and Y) are indicated on the drawings Volume 5, in accordance with SANS 282.
		A13.3.7	EXECUTION OF THE WORKS	
			A13.3.7.3 Placing and fixing	Placing position of the reinforcement are indicated on the drawings.
			A13.3.7.4 Cover and supports	Minimum cover and stools are indicated on the drawings.
			A13.3.7.5 Laps and joints	Position of laps, minimum lap/splice lengths are indicated on the drawings.
		A13.3.8	WORKMANSHIP	
			A13.3.8.2 Welding	Welding of reinforcement will not be permitted.
			PA13.3.8.4 Tolerances	
			c) Spacing between bars	Minimum spacing of closely spaced parallel bars is the maximum size of the aggregate used in the concrete plus 5mm.
	A13.4		CONCRETE	
		A13.4.3	GENERAL	
			A13.4.3.1 Method Statements	Method statements for the casting of the different structure elements are required, and must include items such as placing, compaction, curing, of the concrete. No part of the permanent works can be cast without the Engineer's approval. Method statement for a specific element to be submitted two weeks prior to work commencing on the specific element.
			A13.4.3.2 Hold points and approvals	a) Approval of concrete mix designs.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				b) Approval of curing compound and curing method. c) Approval of method statements d) Approved pre-concreting check list. e) Any other hold points agreed to between the Engineer and the Contractor.
		A13.4.5	MATERIALS	
			A13.4.5.1 Cementitious binder	
			c) Particular requirements for prestressed concrete	A site blend of cement and fly ash conforming to SANS 50450-1 up to a maximum replacement value of 20%, by mass of total cementitious binder may be used for prestressed concrete members.
			A13.4.5.2 Aggregates	
			a) Coarse aggregates	The 10% FACT value to be used.
		A13.4.7	EXECUTION OF THE WORKS	
			PA13.4.7.12 Placing and Compaction	
			a) Placing	Pumping of concrete will be permitted as per approved method statements.
			g) Construction joints	Construction joints will be allowed only where indicated on the drawings or where approved by the Engineer.
			h) Curing and surface protection	The minimum curing efficiency shall be measured in accordance with the water sorptivity test.
			i) Pipes, ferrules and conduits	Minimum cover to be 40mm.
			k) Precast concrete	
			<i>(i) Manufacturing</i>	Precast beams to be numbered with paint in neat lettering for identification of precast members. The treatment of surfaces of the of precast members intended for structural bond are indicated on the drawings.
			<i>(ii) Safety considerations</i>	
			2. Temporary supports	Temporary supports for the precast beams to be at the planned bearing positions, during storage.
	A13.5		PRESTRESSING	
		A13.5.3	GENERAL	
			A13.5.4.1 Method Statements	Method statement for the manufacturing, curing, transportation, storage and placing of the precast beams for bridge B2966 is required. Method statement for a specific element to be submitted two weeks prior to work commencing on the specific element.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				Precast beams cannot be cast, prestressed, moved without the Engineer's approval.
			A13.5.4.2 Hold points and approvals	For the prestressed precast beams: a) Approval of concrete mix designs. b) Approval of curing compound and curing method. c) Approval of all materials and systems d) Approval of cable cutting sequence e) Approval of method statements f) Approved pre-concreting check list g) Any other hold points agreed to between the Engineer and the Contractor.
			A13.5.4.3 Technical data	The following technical data is indicated on the drawings in Volume 5, for the precast beams: a) Tendon system b) Tensioning the tendons c) Tensioning force d) Extension e) Prestressing losses in tendons f) Anchorages g) Bursting reinforcement h)
		A13.5.5	MATERIALS	
			A13.5.5.2 Prestressing steel	
			f) Galvanising	Galvanised prestressing steel will not be permitted.
			A13.5.5.4 Sheaths	Galvanised sheathing will not be permitted.
	A13.6		BEARINGS	
		A13.6.4	DESIGN BY CONTRACTOR / PERFORMANCE BASED SYSTEMS	
			A13.6.4.1 Design of elastomeric bearings	
			a) Technical data	Technical data for the elastomeric bearings are indicated on the drawings in Volume 5.
			A13.6.4.2 Design of proprietary bearings	
			b) Technical data	Technical data for the elastomeric bearings are indicated on the drawings.
			f) Design	No amendments / additions to clause A13.6.4.2(f)
		A13.6.5	MATERIALS	
			A13.6.5.1 Bearings in structures	
			a) General	Materials used in the manufacture of bearings shall comply to EN 1337: Structural Bearings.
			c) Elastomer	
			(i) General	Natural Rubber with a 60° nominal hardness.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			g) Proprietary mortars	
			(iii) Mortar Thickness under bearings	Mortar thickness are indicated on the drawings in Volume 5.
	A13.7		JOINTS	
		A13.7.3	GENERAL	
			A13.7.3.1 Method Statements	Method statement for the installation of expansion joints is required. Method statement to be submitted two weeks prior to work commencing on the specific element. Joints may not be installed without the Engineer's approval.
			A13.7.3.2 Hold points and approvals	a) Approval of supplier b) Approval of all materials and systems c) Approval of method statements d) Approval of the cleaned-out joint prior to installation. e) Approved expansion joint check list f) Any other hold points agreed to between the Engineer and the Contractor.
		A13.7.4	DESIGN BY CONTRACTOR / PERFORMANCE BASED SYSTEMS	
			A13.7.4.1 Design and manufacture of proprietary joints	Movements to be accommodated by the expansion joints are specified on the drawings. Where cover plates are required the material for the manufacture of the cover plates is specified on the drawings in Volume 5.
		A13.7.7	EXECUTION OF THE WORKS	
			A13.7.7.1 Filled and unfilled joints	
			b) Filled joints	The dimensions and filler material to be used for filled joints are indicated on the drawings in Volume 5.
			c) Unfilled joints	The dimensions for unfilled joints are indicated on the drawings in Volume 5.
			A13.7.7.2 Asphaltic plug proprietary type expansion joint systems	Details are indicated on the drawings in Volume 5.
			A13.7.7.3 Sealing the joints	
			a) General	Sealed joints must be watertight
			b) Preparing the joints	The primer must be applied inside of the temperature range specified.
			A13.7.7.4 Proprietary expansion joints	
			b) Dimensions	As specified on the drawings in Volume 5.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			c) Installing the expansion joints	Expansion joints to be installed after the construction of the final surfacing.
	A13.8		ANCILLARY STRUCTURAL ELEMENTS	
		A13.8.7	EXECUTION OF THE WORKS	
			A13.8.7.1 Barriers, parapets, railings and sidewalks	
			a) Concrete barriers and parapets	As specified on the drawings in Volume 5.
			b) Steel railings	As specified on the drawings in Volume 5.
			d) Numbers for structures	
			<i>(i) Number plates</i>	As specified on the drawings in Volume 5.
			f) Service Ducts in Sidewalks and Structures	As specified on the drawings in Volume 5.
			PA13.8.7.2 Drainage for structures	
			a) Weep holes, drainage pipes and channels	As indicated on the drawings in Volume 5.
			c) Synthetic filter fabric	Non-woven geotextile, Grade A4. Placement as specified on the drawings in Volume 5.
			A13.8.7.3 Bolt groups for electrification brackets	As indicated on the drawings in Volume 5.

COTO CHAPTER 14: REPAIR AND REHABILITATION OF STRUCTURES

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
14			REPAIR AND REHABILITATION OF STRUCTURES	
	A14.1		ACCESS FOR BRIDGE REHABILITATION	
		A14.1.3	GENERAL	Rope access will not be permitted. Access platforms at bridge B2966 also to be compliant to the requirements of Transnet's wayleave agreement.
	A14.4		SURFACE AND STRUCTURAL REPAIR OF CONCRETE MEMBERS	
		A14.4.7	EXECUTION OF THE WORKS	
			A14.4.7.3 Batching and Mixing	
			d) Proprietary cementitious repair compounds	As specified with a forced-action mixer.
		A14.4.8	WORKMANSHIP	
			A14.4.8.1 Tolerances	As specified in Section A13.2 of Chapter 13.
	A14.7		PROTECTIVE COATINGS AND TREATMENTS FOR CONCRETE	
		A14.7.7	EXECUTION OF THE WORKS	
			A14.7.7.4 Protective surface treatment	Protective treatments to be applied at: Bridge B2966: All faces of existing pier columns. Bridge B1793: All faces of existing bridge balustrades and end blocks. Bridge B1796: All faces of existing bridge balustrades and end blocks. Bridge B1795: All faces of existing bridge balustrades and end blocks.

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 by an independent site laboratory as indicated under A20.1.3.3 a)(i)3.

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: Designated Environmental Officer 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.
	C1007	ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES	
		(h) On site plant	
		(ii) Asphalt plant	Obtaining the necessary authorisations for asphalt batch plants, erected by the Contractor or his Suppliers for supply of asphalt to the Contract, shall be the responsibility of the Contractor. The Contractor shall allow for this in his programme of the Works.
	C1012	PROJECT SPECIFIC CONDITIONS	Refer to Part C3 Section C for the project specific Environmental Management Plan. Specific attention is drawn to the following: - No activities will be allowed to encroach into a water resource without a water use authorisation being in place from the Department of Water and Sanitation. - No exotic plants may be used for rehabilitation purposes. Only indigenous plants of the area may be utilised. - Vegetation clearing must be kept to an absolute minimum. Mitigation measures as specified in the specialist studies, EMP and the BAR dated 01 September 2016 must be implemented to reduce the risk of erosion and the invasion of alien species. 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	

		(r) Target Area(s)	For Targeted Labour: Steve Tshwete Local Municipality
		(w) Targeted Labour	Target Group for Targeted Labour: a. black designated groups (As per latest PPPFA Regulations); b. black people; c. women; d. people with disabilities; e. Veterans.
	D1003	TARGET GROUP PARTICIPATION	
		D1003.04 Contract Participation Goal (CPG)	
		CPG for Targeted Labour:	Minimum of 8% of the Final Contract Value by the end of the contract to Targeted Labour.
		Targeted Labour minimum contributions by the following Target Groups:	
		a. black designated groups;	30% of targeted labour value
		(i) Black people who are youth	
		(ii) Black people who are persons with disabilities	0.5% of targeted labour value
		b. Black women;	30% of targeted labour value
		CPG for Targeted Enterprise	Minimum of 30% (Note to compiler: state the % if different) of the Final Contract Value by the end of the contract to Targeted Enterprises. The Final Contract Value for purposes of this clause, is defined in clause D1003.04.
		Targeted Enterprise minimum contribution by the following Target Groups:	
		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 1% of the Final Contract Value
		vi) Targeted Enterprise with CIDB 3 or 4 grading	Minimum of 1% of the Final Contract Value

	D1008	WORK SUITABLE FOR EXECUTION BY TARGETED ENTERPRISES	Refer to Section D1009 for details.
SECTION E		REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS	
	E1018	PROJECT SPECIFIC CONSTRUCTION REQUIREMENTS	Refer to Section E below for project specific Baseline Risk Assessment.

SECTION C: ENVIRONMENTAL MANAGEMENT PLAN

SECTION C: ENVIRONMENTAL MANAGEMENT PLAN

TABLE OF CONTENTS	PAGE
C1001 SCOPE	C3-122
C1002 DEFINITIONS.....	C3-122
C1003 LEGAL REQUIREMENTS	C3-123
C1004 ADMINISTRATION OF ENVIRONMENTAL OBLIGATIONS.....	C3-125
C1005 TRAINING	C3-126
C1006 ACTIVITIES/ASPECTS CAUSING IMPACTS.....	C3-127
C1007 ENVIRONMENTAL MANAGEMENT OF CONSTRUCTION ACTIVITIES.....	C3-130
C1008 AREAS OF SPECIFIC IMPORTANCE	C3-136
C1009 REHABILITATION	C3-137
C1010 RECORD KEEPING.....	C3-137
C1011 COMPLIANCE AND PENALTIES	C3-137
C1012 PROJECT SPECIFIC CONDITIONS	C3-138

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.

It is intended that this standard EMP be the base document for the development of the draft of each site-specific EMP that is to accompany each application to the relevant competent authority.

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

C1003.01 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.

C1003.02 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.

C1004.01 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.

C1004.02 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.

C1004.03 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.

C1004.04 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.

C1004.05 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 EMP (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

C1005.01 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 and subcontractor's 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.

C1005.02 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.

C1005.03 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 C1006.01: 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 &/or livelihood; change in land use;
Acquisition of building material from borrow pits	Change in landform and use

C1006.01 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.

C1006.02 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.

C1006.03 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, 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.

C1006.04 Vegetation management

The Contractor shall be responsible for the management of vegetation by protection of indigenous vegetation, especially identified protected species, and the prevention of alien vegetation germinating in areas disturbed by road construction activities within and outside the road reserve. This includes, for example, service roads, stockpile areas, stop/go facilities, windrows and wherever material generated for or from road construction has been stored temporarily. This responsibility shall continue for the duration of the defects notification period. The project specification may instruct the removal of CARA and/or NEMBA-listed category 1 and 2 alien species and planting of specified indigenous species.

C1006.05 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.

C1006.06 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.

C1006.07 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.

C1007.01 Site establishment

(i) Site Plan

The site refers to an area with defined limits on which the project is located. The Contractor shall establish his construction camps, offices, workshops, staff accommodation and testing facilities on the site in a manner that does not adversely affect the environment. However, before any site establishment can begin, the Contractor shall submit to the ECO for his comments and to the Engineer for his approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the Contractor proposes to put in place.

The plans shall detail the locality as well as the layout of the waste management facilities for litter, kitchen refuse, sewage and workshop-derived effluents. The site offices should not be sited in close proximity to steep areas, as this will increase soil erosion. Preferred locations would be flat areas along the route. If the route traverses water courses, streams and rivers, it is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course. No camp establishment, including satellite camps, can be placed within 150 metres of an identified watercourse unless the Contractor has applied to DWS and received authorisation to do so. Regardless of the chosen site, the Contractor's intended mitigation measures shall be indicated on the plan. The site plan shall have been submitted and approved before establishment commences. Detailed, electronic colour photographs shall be taken of the proposed site before any clearing may commence. These records are to be kept by the ECO and the Engineer for consultation during rehabilitation of the site in order that rehabilitation is, as a minimum, done to a standard similar to pre-construction activities.

(ii) Vegetation

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

The natural vegetation encountered on the site is to be conserved and left as intact as possible. Vegetation planted at the site shall be indigenous and in accordance with instructions issued by the Engineer. Only trees and shrubs directly affected by the works, and such others as may be indicated by the Engineer in writing, may be felled or cleared. In wooded areas where natural vegetation has been cleared out of necessity, the same species of indigenous trees as were occurring shall be re-

established. Protected trees may not be removed without a permit from the Department of Forestry, Fisheries and Environment.

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

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

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

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

(iii) Water management

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

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

(iv) Heating and cooking fuel

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

C1007.02 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. 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.

C1007.03 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.

C1007.04 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.

(iii) 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.

C1007.05 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.

C1007.06 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.

C1007.07 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.

C1007.08 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 relevant 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 EMP. 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.

C1008.01 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 meetings. The Engineer shall issue to the Contractor a notice of non-compliance whenever transgressions are observed. The DEO shall document the nature and magnitude of the non-compliance in a designated register, the action taken to discontinue the non-compliance, the action taken to mitigate its effects and the results of the actions. The non-compliance shall be documented and reported to the Engineer in the monthly report.

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

C1011 COMPLIANCE AND PENALTIES

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

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

C1012 PROJECT SPECIFIC CONDITIONS

The complete project specific Environmental Management Programme with all environmental requirements is included in Volume 7.

SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

CONTRACT SANRAL N.011-090-2016/1

FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER
STATION (KM 18.5) TO N1 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

**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	C3-141
D1002 DEFINITIONS AND APPLICABLE LEGISLATION	C3-142
D1003 TARGET GROUP PARTICIPATION	C3-147
D1004 STAKEHOLDER AND COMMUNITY LIAISON AND SOCIAL FACILITATION ...	C3-151
D1005 MOBILISATION PERIOD	C3-158
D1006 THE ROLE OF THE ENGINEER.....	C3-161
D1007 TENDER PROCESS FOR TARGETED ENTERPRISES	C3-162
D1008 GENERAL RESPONSIBILITIES OF THE CONTRACTOR TOWARDS TARGETED ENTERPRISES.....	C3-170
D1009 WORK SUITABLE FOR EXECUTION BY TARGETED ENTERPRISES	C3-175
D1010 TRAINING, COACHING, GUIDANCE, MENTORING AND ASSISTANCE	C3-176
D1011 LABOUR ENHANCED CONSTRUCTION	C3-183
D1012 COMMUNITY DEVELOPMENT	C3-184
D1013 MEASUREMENT AND PAYMENT.....	C3-184

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, Sub-contracting, and 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 14 principles for project liaison, sub-contracting, and 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 successful works execution, subcontracting, procurement, participation with MOU partners, supply of material, services and goods, and employment facilitation.*
2. *SANRAL will chair PLCs and provide secretarial support through the Consulting Engineer or its Agent. Representation on the PLC will comprise SANRAL, the Contractor, the Consulting Engineer or SANRAL's Agent, business representatives, traditional authority representatives, provincial and municipal government representatives (not politicians), community representatives, and any other critical local stakeholder that may be deemed necessary by SANRAL. While serving on the PLC, PLC members must declare any conflict of interest and recuse themselves if requested by the PLC Chairperson.*
3. *The selection of a Project Liaison Officer (PLO), who will be employed by the Consulting Engineer, must be acknowledged, and supported by the PLC.*
4. *The definition of a target area (sometimes referred to as a local area or traffic area) will be determined by SANRAL in consultation with the PLC.*
5. *The setup of databases for contractors, sub-contractors, consultants, and suppliers will be conducted with the input and support of the PLC. The final database will be disseminated to the PLC. The entities on the database must be assisted by the Consulting Engineer and the Contractor to be compliant with the relevant legislation required to conduct work for a SANRAL project.*
6. *The setup of databases for local labour in the target area will be done with the input and support of the PLC. The final list will be disseminated to the PLC. Entities on the database must be registered on the National Treasury Central Supplier Database (CSD). A system of labour selection from the database must be agreed at the PLC.*
7. *The databases for sub-contracting will be handed over to the Contractor for open tender processes. The labour database will be disseminated to the PLC and handed over to the Contractor to use for recruitment of local labour.*
8. *Tender processes for sub-contracting must be conducted by the Contractor using government principles (e.g., public opening of received bids, announcement of bidders and prices). Winning bidders shall be tabled, by the Contractor, in the PLC meeting for information purposes.*
9. *Appeals to the tender process must be escalated to SANRAL for an independent review which will be facilitated by the Transformation Unit.*
10. *Capability assessments of sub-contractors and suppliers will be done with the input and support of the PLC, prior to the sub-contract tender stage commencing, to identify any deficiencies in skills and experience. For labour, skills assessments will be done at recruitment stage.*
11. *Sub-contractor development support and training must be coordinated and conducted, prior to the sub-contract tender stage commencing, with the input and support of the PLC.*
12. *The PLC may identify works areas that are deliverable by local service providers, and areas where capabilities are not available locally. All works areas where capabilities are not available locally will be imported and local service providers will be given an opportunity to learn.*
13. *The PLC and Consulting Engineer must ensure that formal contracting arrangements between the main contractor and the sub-contractor are in place in all projects.*
14. *Communication will be streamlined through the PLC and used to manage expectations of local business and communities.*

These principles must be applied to facilitate better project level liaison with project Stakeholders and affected Communities. In addition, these principles serve to ensure communication and transparency in the execution of the Works and to facilitate inclusivity in the allocation of projects to benefit black business and local communities.

D1002 DEFINITIONS AND APPLICABLE LEGISLATION

The definitions and legislation listed below informs the requirements of this Section D of the Specifications for Stakeholder and Community Liaison, Targeted Labour employment and Targeted Enterprise sub-contracting.

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) Community¹

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

c) Contract Participation

A process by which the Employer implements Government's objectives by setting targets to enhance Targeted Labour and Targeted Enterprises' utilisation and development, which the Contractor shall achieve as a minimum.

d) Contract Participation Goal (CPG)²

- i) In the case of Targeted Enterprises, including manufacturers and suppliers, the amount equal to the value of goods, services and works for which the principal Contractor contracts to engage Targeted Enterprises in the performance of the Contract, expressed as a percentage of the tender value excluding escalation, contingency and value added tax associated with the targeting strategy that is identified in the Specification Data; or
- ii) In the case of Targeted Labour:
 - a. the sum of the wages and allowances, for which the principal Contractor, Sub-contractor, or Targeted Enterprises contract to engage Targeted Labour in the performance of the Contract, expressed as a percentage of the contract amount associated with the targeting strategy that is identified in the Specification Data; or
 - b. the amount equal to the person days worked for which the principal Contractor, Sub-contractors or Targeted Enterprises contract to engage Targeted Labour expressed as a percentage of the total person days worked associated with the targeting strategy that is identified in the Specification Data.

¹ CIDB Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Work Contracts, Refer to latest version on www.cidb.org.za, and as adapted from SANS 10845, Suite for Construction Procurement, 2015.

² Adapted from the CIDB Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Work Contracts, Refer to latest version on www.cidb.org.za, and as adapted from SANS 10845-5:2015 and SANS 10845-8:20SANS 10845, Suite for Construction Procurement, 2015.

e) Contract Participation Goal Plan (CPG Plan)

The plan which outlines how the Contractor intends to achieve the various CPG targets as stated in the Contract Data and includes the detail of the Targeted Enterprise work programme, as well as the contents and value of the work packages. See Appendix 7 in Part C4 for the CPG Plan template.

f) Contract Participation Performance (CPP)

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

g) Contract Skills Development Goals (CSDG)³

The number of hours or head count of skills development opportunities that a Contractor contracts to provide in relation to work directly related to the contract or order up to:

- i) completion in the case of a professional service contract,
- ii) the end of the service period in the case of a service contract, and
- iii) practical completion in the case of an engineering and construction works contract.

h) Designated Group

Unless otherwise permissible in terms of the PPPFA, "Designated Group" means:

- i) black designated groups,
- ii) black people,
- iii) women, or
- iv) people with disabilities.

i) Domestic Sub-contractors

A Domestic Sub-contractor 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 main contract. The appointment of the sub-contractor is treated as something entirely for the benefit of Main Contractor and is a purely "domestic matter".

j) Final Contract Value

Final Contract Value as defined under Section D1003.04 - Contract Participation Goal (CPG) of the Specifications, also means Contract Price as defined in FIDIC, sub-clause 1.1.4.2, (excluding CPA, adjustments for reduced payments, Rise and Fall adjustments, penalties, 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 Sub-contractor in the performance of the Contract, and

³ CIDB Standard for Developing Skills through Infrastructure Contracts, Refer to latest version on www.cidb.org.za.
N.011-090-2016/1 JANUARY 2024

- 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 Sub-contractor'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) 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.

n) Mobilisation Period

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

o) Project Area

The area through which the road under construction traverse or which is adjacent to and/or in proximity to project operations.

Based on market research and/or requisite resources availability, Project Areas other than defined above may be identified where preference would be given to Targeted Enterprises for sub-contracting opportunities.

p) Project Liaison Committee (PLC)⁴

The Committee that represents the Employer, Engineer, Contractor, project Stakeholders and the Communities affected by the project. It is important to note that:

- i) elected and/or nominated political office bearers shall not be members of the PLC, and
- ii) the Engineer and Contractor becomes members of the PLC on their appointment and participate in the Committee within the scope of their respective roles and responsibilities.

q) Project Liaison Officer (PLO)⁵

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.

r) Stakeholders⁶

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.

⁴ CIDB Standard for Minimum Requirements for Engaging Contractors and Sub-Contractors on construction Works Contracts, Refer to latest version on www.cidb.org.za.

⁵ CIDB Standard for Minimum Requirements for Engaging Contractors and Sub-Contractors on construction Works Contracts, Refer to latest version on www.cidb.org.za, CLO definition.

⁶ Derived from SANRAL communication Policy, Refer to latest version.

- ii) Relevant Municipal departments.
- iii) Traditional authorities.
- iv) Community interest groups.
- v) Organised youth representation.
- vi) Organised women representation.
- vii) Organised disabled people representation.
- viii) Other structured community groups such as religion, education, farming, etc.
- ix) Local transport industry forums, e.g., Bus and taxi.
- x) Business sector forums.
- xi) Road user forums.
- xii) Environmental interest groups.
- xiii) Road safety interest groups.
- xiv) Any other recognised relevant and representative structure.

s) Sub-contractor

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

t) Target Area

The geographic area defined in the Specification Data for Targeted Labour, and which typically are:

- i) one or more Provinces,
- ii) one or more Metropolitan or District Municipalities,
- iii) one or more Local Municipalities,
- iv) one or more Wards that are predominantly located within the Project Area, or
- v) one or more of the areas listed in the definition of Designated Groups.

u) Targeted Enterprise

A Targeted Enterprise is an entity to which the Contractor sub-contracts a percentage of the contract value as a condition of contract, and which is:

- i) an EME or QSE which is at least 51% owned by black people; or
- ii) an EME or QSE which is at least 51% owned by black people who are youth; or
- iii) an EME or QSE which is at least 51% owned by black people who are women; or
- iv) an EME or QSE which is at least 51% owned by black people with disabilities; or
- v) an EME or QSE which is at least 51% owned by black people who are military veterans; or
- vi) an EME or QSE which is 51% owned by black people living in rural or underdeveloped areas or townships; or
- vii) a cooperative which is at least 51% owned by black people; or

In addition, Targeted Enterprises must be:

- a. CIDB registered where applicable,
- b. registered with National Treasury's Central Supplier Database,
- c. tax compliant prior to award of the sub-contract, and
- d. COIDA compliant prior to award of the sub-contract where applicable.

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

v) 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.

w) Targeted Enterprise Monitor

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

x) Targeted Enterprise Procurement Coordinator (TE Procurement Coordinator)

The staff member or sub-service provider appointed by the Contractor to facilitate the procurement of Targeted Enterprise sub-contractors.

y) Target Group

It is a group of entities and/or persons selected from the Designated Group and may include both Targeted Enterprises and Targeted Labour.

z) Targeted Labour⁷

Persons:

- i) who are unemployed, and
- ii) who are then employed by the Contractor or a Sub-contractor (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 Sub-contractor'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 suppliers of goods and material are not defined as "Targeted Labour" for the purposes of this Contract.

aa) Trainee Targeted Enterprise

A Targeted Enterprise as defined in this Section D of the Specifications, but which is selected and sub-contracted as a Trainee in terms of the Community Development Project associated with this Contract.

bb) 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.

cc) Training and Skills Development Programme

The programme which outlines how the Contractor intends to achieve the CSDG targets, 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 cidb.org.za), by applying the various training methods described in Section D1010 of the Specifications.

⁷ Derived from SANS 10845-7:2015, definition 2.12
N.011-090-2016/1 JANUARY 2024

D1002.02 Applicable Legislation, Regulations and Standards

The following Acts, as amended from time to time, are predominant amongst those which apply to the Construction Industry and are listed here for reference purposes only:

- a) The Constitution of South Africa.
- b) Public Finance Management Act, 1999 (Act No. 1 of 1999).
- c) Construction Industry Development Board Act, 2000 (Act No. 38 of 2000).
- d) Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003).
- e) The South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7 of 1998).
- f) The Skills Development Act, 1998 (Act No. 97 of 1998).
- g) The Skills Development Levies Act, 1999 (Act no. 9 of 1999).
- h) The amended Construction Sector Codes published in Notice 931 of 2017 of Government Gazette No. 41287 on 1 December 2017 by the Department of Trade and Industry.
- i) The National Small Enterprises Act, 1996 (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) SANS 10845: 2015, Parts 5, 7 and 8; and
- ii) CIDB Standard for Contract Participation Goals for Targeted Enterprises and Labour through Construction Works Contracts (refer to latest version on www.cidb.org.za).

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 sub-contracting.

It also describes the measurement of, and penalties or bonus to be applied, with respect to the CPG as defined in the Specification Data.

D1003.01 Objectives of Target Group Participation

Amongst others, the key objectives of Government are to extend economic opportunities and build entrepreneurial capacity in rural and underdeveloped areas and townships by:

- a) optimising the utilisation of local resources in the Project Area,
- b) developing these local resources in the execution of the project, and
- c) maximising the amount of funds retained within the Project Area.

To give effect to these objectives the Contractor shall, over the full duration of the contract, from site establishment up to the completion of the works:

- i) employ Targeted Labour from the Target Area(s) as stated in the Specification Data, and
- ii) sub-contract 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 agreed with the PLC 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 and support 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 designated groups and Target Area. 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 assistance and inputs of the PLC, compile a Targeted Enterprise Database from which Targeted Enterprises shall be sub-contracted to construct portions of the work as 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 shall, as a minimum, use the National Treasury's Central Supplier Database (CSD) which can be obtained from the Employer's Supply Chain Management department via the Project Manager, as well as the CIDB contractor 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 to ensure Target Group participation as intended by the Employer.

d) Final Targeted Enterprise Database

Once the Preliminary Targeted Enterprise Database has been disseminated to the PLC, the Contractor shall invite Targeted Enterprises to tender for the Targeted Enterprise work packages. The Preliminary Targeted Enterprise Database shall remain a “live” database until the day of tender closure when a print-out of the CSD, based on the Database criteria, shall become the **Final** Targeted Enterprise Database for the tender and shall be disseminated to the PLC.

Any Targeted Enterprise may respond to the invitation to tender, but preference shall be given to those Targeted Enterprises that satisfy the tender criteria.

The Targeted Enterprise Database shall be updated at every instance that a new sub-contract tender or group of similar sub-contract tenders are to be let for Targeted Enterprise work packages.

Targeted Enterprises within the Project Area shall be encouraged and assisted to register on the CSD and to become compliant with all other statutory requirements.

D1003.04 Contract Participation Goal (CPG)

The CPG is the monetary value of the participation targets set by the Employer for Targeted Labour and Targeted Enterprises expressed as a percentage of the Final Contract Value. The participation targets comprise of the following:

% Targeted Labour (TL_{Total%}) = the sum of the % Targeted Labour employed by the Contractor, Sub-contractors, and Targeted Enterprises.

% Targeted Enterprises (TE_{Total%}) = the % Targeted Enterprises, including the % Targeted Labour employed by Targeted Enterprises.

While the individual participation targets, i.e., TL_{Total%} and TE_{Total%} must be met, the total CPG (CPG_{Total}) is not the sum thereof, but are calculated as follows:

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

Where:

Final Contract Value = the total value of the Contractor's final certified work measured at the date of issue of the Taking-Over Certificate. The Final Contract Value includes the value of scheduled work and extra work but excludes any Contract Price Adjustment and adjustments for reduced payments, Rise and Fall, Retention Money, Penalties and VAT.

The Contractor shall strive to distribute and implement the participation targets and opportunities equally and continuously over the duration of the Contract. Where the Contractor deems such an equal and continuous distribution of the participation targets to be unachievable, he shall provide reasons and motivate it clearly in the preliminary CPG Plan submitted with the tender document.

Both the Targeted Labour and Targeted Enterprise participation targets may consist of sub-targets which are stipulated in the Specification Data, clause D1003. The Contractor is required to achieve these individual sub-targets. If the Contractor fails to achieve any one of the individual sub-targets 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 target set by the Employer for

Targeted Enterprises. It is the Contractor's responsibility to assess the work required to meet the targets and, if necessary, to engage additional Targeted Enterprises to execute work on the Contract as well to ensure that the minimum targets are achieved.

D1003.05 Contract Participation Performance (CPP)

The CPP is the monetary value of the Contractor's actual progress towards achievement of the CPG calculated as follows:

$$\begin{aligned} \text{CPP} &= \text{CPG}_{\text{Actual}} \\ &= \text{total monetary value (excluding VAT) of Targeted Labour employed by the Contractor} + \text{total monetary value (excluding VAT) of Targeted Enterprises contribution, including Targeted Labour employed by the Targeted Enterprises.} \end{aligned}$$

The Contractor's CPP shall be monitored monthly to determine the extent to which it is striving to achieve the CPG. The basis of monitoring shall be a comparison of the actual expenditure on Targeted Labour and Targeted Enterprises with the planned expenditure for Targeted Labour and Targeted Enterprises as per the accepted CPG Plan. Monthly returns, in the format required by the Employer, shall be submitted by the Contractor with each interim Payment Certificate.

To assist in the measurement of the CPP the Contractor shall include the envisaged CPG programme in its initial contract programme which is to be submitted within 28 days after the Commencement Date. The CPG programme shall be updated in the accepted construction programme on acceptance of the CPG plan and with every subsequent revision.

As an incentive to encourage the Contractor to exceed the CPG, a bonus is offered, measured as follows:

a) CPP Bonus

$$\text{The bonus} = 0.015 \times (\text{CPP} - \text{CPG}_{\text{Total}})$$

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

b) CPP Penalties

Conversely, failure to reach either the CPG or any individual Target Group targets shall render the Contractor liable for a penalty as prescribed in clause 8.7 of the FIDIC Conditions of Contract unless there are compelling reasons why the target or sub-targets could not be achieved as stipulated in Section D1003.04 of the Specifications. Penalties for Targeted Labour and for Targeted Enterprises shall be calculated as follows:

$$\text{Penalty Targeted Labour} = 0.5 \times ((\text{TL} - \text{TG}) + \text{Sum}(\text{TL}_n - \text{TG}_n) - 1.2 \times \text{L dp})$$

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 (excluding VAT).
- TG = Cumulative monetary value of Targeted Labour employed on the contract by the Contractor and all Sub-contractors.
- L dp = Cumulative monetary value of black Disabled Persons employed on the Contract by the Contractor and all Sub-contractors.
- $(\text{TL}_n - \text{TG}_n)$ = The monetary values calculated unless if any calculated value is negative, then it shall be a zero value.

$$\text{Penalty Targeted Enterprises} = 1.0 \times ((\text{TE} - \text{TGE}) + \text{Sum}(\text{TE}_n - \text{TGE}_n) - 1.2 \times \text{TE mv} - 1.2 \times \text{TE dp})$$

Where:

n	=	Each lowest order sub-group of Targeted Enterprise stipulated in the Contract Data.
TE	=	Monetary value (excluding VAT) of Targeted Enterprises calculated at the percentage stipulated in the Specification Data applied to the final contract value (excluding VAT).
TGE	=	Cumulative monetary value (excluding VAT) by Targeted Enterprises sub-contracted to the contract by the Contractor and 50% of the cumulative monetary value (excluding VAT) by Targeted Enterprise suppliers of goods and/or services.
TE mv	=	Cumulative monetary value (excluding VAT) by Targeted Enterprises being majority owned by black Military Veterans, 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 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 not be applied to the interim certificate value, but 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 sub-contracting, as well as its associated risks, shall remain the sole responsibility of the Contractor.

The Employers CPG requirements, and the compulsory utilisation of project specific Targeted Labour and Targeted Enterprises databases, shall not relieve the Contractor of its obligations under the Contract and shall not attract any liability to the Employer.

D1004 STAKEHOLDER AND COMMUNITY LIAISON AND SOCIAL FACILITATION

This part of Section D of the Specifications describes the Employer's requirements with respect to Stakeholder and Community liaison and social facilitation. It also describes the roles and responsibilities of the Project Liaison Committee (PLC) and the Project Liaison Officer (PLO).

D1004.01 Purpose of Stakeholder and Community Liaison

To give effect to the need for transparency and inclusion in the process of delivering services, the Contractor shall liaise with the project Stakeholders and affected Communities for the duration of the Contract's life cycle. This shall be achieved through structured engagement with the PLC which was established by the Employer for this purpose.

D1004.02 Contractor's Responsibilities in Stakeholder and Community Liaison

The Contractor shall have the following general responsibilities in the Stakeholder and community Liaison process:

- a) Stakeholder and Community engagement shall be executed based on the Employer's social facilitation principles and processes described in this Section D of the Specifications.
- b) The Contractor shall make use of the PLC as the official communication channel, and utilise it to facilitate harmonious relationships, with project Stakeholders and affected Communities.
- c) PLC members, to which the Contractor is a party, shall be held accountable to disseminate project information discussed at the PLC meetings to the entities that they represent.
- d) As a party to the PLC, the Contractor shall delegate from among his site personnel a responsible person to participate in the PLC and its business.
- e) The Contractor shall provide the PLC with any assistance and information that it requires to execute its duties, which amongst others, include training, providing a meeting venue on site, provide Target Group reports, etc.

It is important to note that in terms of the Conditions of Contract, all Targeted Labour recruitment and employment, and Targeted Enterprises' selection and sub-contracting, as well as its associated risks, shall remain the sole responsibility of the Contractor.

The Contractor shall take cognisance of the Employer's PLC and PLO Forms, attached as Appendix 9 in Part C4, which shall be provided to the Contractor by the Engineer. While the Employer holds its own staff accountable for the deliverables listed in the checklist, the Contractor and the Engineer shall assist the Employer in accomplishing the deliverables.

The Employer's establishment of the PLC and 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. Once, the PLC has been established, the Employer's further Stakeholder engagement activities shall not prevent the Contractor from continuing with construction.

Typical Stakeholder representation on the PLC may include:

- i) A PLC member from the relevant RRM PLC.
- ii) Local Municipality LED Office.

- iii) Traditional leadership representation.
- iv) Forums representing people with disabilities.
- v) Forums representing women.
- vi) Forums representing youth.
- vii) Forums representing business sector.
- viii) Forums representing transport sector.
- ix) Any other Stakeholder forum/organisation recognised by the Employer and the Local Municipality's LED Office.

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 Councillors 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.

b) Seating Allowance for PLC Members

PLC membership is voluntary and PLC members shall not be remunerated for any time spent or work done associated with representing their constituency on the PLC.

Provision for the cost of liaison, social facilitation and PLC support has been made under pay-item D10.02(a). This pay-item provides for the Contractor's cost incurred in executing his responsibilities w.r.t. Stakeholder and Community liaison.

This pay-item may also be utilised to pay an allowance to PLC members for actual costs incurred in executing their PLC duties (other than time or work done related). The Contractor will determine and table to the PLC a realistic seating allowance which will be substantiated by an outline of the anticipated actual costs envisaged to be incurred by PLC members.

The seating allowance shall be increased annually based on the CPI figure contained in Table B2 of Statistical Release P0141 by StatsSA.

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 Fourteen Point Plan.
- 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 targets
 - d. Envisaged Targeted Enterprise packages
 - 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) General Matters and Membership
 - 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 may interact with the project team through the Mayor's Office.
 - c. If required, and in consultation with the Employer, a Political Steering Committee (PSC) may be established to address political matters. A

PSC will only be established where the Project Area traverse over more than one municipal area.

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 a new nomination process shall commence.

iii) Targeted Enterprise and Targeted Labour

PLC members shall:

- a. ensure that they, or companies in which they hold equity, will not tender on the Contract for any work or sub-contract that may be issued. Should they tender, this will be treated as a conflict of interest and 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 sub-contract tender if any other member is of the opinion that a member's participation in deliberations, which is rightly or wrongly construed as improper or irregular, may lead to the award of a sub-contract to a tenderer known to the member or to the member itself.
- d. recuse themselves from the operations of the PLC following a situation as described in paragraphs ii) above and shall cease to be a PLC member for this Contract.
- e. 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).
- f. 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 supplier/sub-contractor/service provider procurement or involvement in the contract.

iv) Confidentiality

- a. PLC members shall accept that all information, documentation, and decisions regarding any matter serving before the PLC are confidential and undertake not to communicate decisions or discussions of PLC meetings to external or internal parties unless so directed and approved by the Project Manager.
- b. Information for public dissemination shall be clearly indicated by the committee to ensure that sensitive information is only 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 believe 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 discuss and resolve the project's design stage matters which are of interest or concern to the parties to the PLC.
- b. Peruse the Project Liaison Committee 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 project Stakeholder and affected Community representatives of the PLC require to execute their duties.
- e. Assist the Engineer to source suitable candidates, based on the Employer's qualifying criteria, for the position of PLO.
- f. Observe and verify that the qualifying criteria and procedures applied by the Engineer to select and employ the PLO were executed in a fair and transparent manner and were within the prescripts of the relevant labour legislation and regulations.
- g. Assist the Engineer to identify the project's Target and Project Area(s) from which Targeted Labour and Targeted Enterprises could be employed and sub-contracted, respectively.
- h. Assist the Engineer to identify the project's Target Groups for inclusion in the Tender Documents and provide input and support the identified Target Groups.

ii) Project Construction Stage

- a. Meet formally prior to the Employer's monthly site meeting, or as may be required, to discuss and resolve project matters which are of interest or concern to the parties to the PLC.
- b. Assist the Contractor to establish the selection criteria and process to employ Targeted Labour
- c. Assist the Contractor to identify the eligibility, functionality, preference, and compliance criteria to select and sub-contract Targeted Enterprises.
- d. Provide input and support for 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. Verify 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. Verify 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. Make recommendations to the Contractor on the training needs, eligibility criteria and selection criteria for the provision of training to

- Targeted Labour, Targeted Enterprises, Designated Groups, project Stakeholders and the affected Communities.
- h. Verify that training and skills development programmes, which the Contractor committed to, are implemented, and executed as approved and intended.
 - i. Inform the entities whom they represent of any project matters which the respective party to the PLC wishes to communicate with each other.
 - j. Inform the entities whom they represent of any project matters that are impacting or may impact, either positively or negatively, on the respective parties to the PLC.
 - k. Inform the Contractor of Stakeholder and/or Community requests and/or needs, which could possibly be addressed within the project's Scope of Work.
 - l. Inform the Employer's Project Manager, Engineer, and Contractor of any road safety concerns within the Project Area(s) and advise them of possible mitigating measures and/or road safety programs that will be most suitable for acceptance by the affected Communities to promote road safety.
 - m. 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.
 - n. Assist parties to the PLC to liaise with their respective entities to resolve any disputes amongst the parties which may occur due to the project.

f) PLC Meetings

- i) Frequency
 - a. Meetings will be conducted monthly or as required by the Stakeholders or the project matters.
- ii) Notice of Meetings
 - a. The notice of the PLC meeting shall be given at least seven (7) calendar days prior to the meeting date.
 - 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 missed any meeting, he/she bears the onus of establishing 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's 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 all participants at the commencement of such meetings or the minutes of the previous meeting will serve as the agenda of such 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, or the Engineer. The Chairperson shall:
 - i. chair all meetings of the PLC,
 - ii. co-ordinate all the activities of PLC,
 - iii. ensure that members are fulfilling their tasks as assigned by the PLC,
 - iv. see to the execution of decisions taken by the PLC,
 - v. ensure the validity of members' claim for allowance,
 - vi. ensure compliance of all activities of the PLC with current rules, law and general SANRAL policy, 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%+1 ratio excluding co-opted members.
- viii) Apologies and Non-attendance
 - a. Apologies shall be in writing except in emergency where the member apologising cannot communicate the apology in writing.
 - b. Apologies may be sent through any media agreed to prior by the PLC for example through SMS or WhatsApp messaging or similar application.
 - c. The organization, represented by a member who fails to attend three (3) consecutive meetings without an apology, will be informed in writing and asked to nominate a replacement member.
- ix) Language
 - a. The meetings will be conducted in English to enable all participants at the meeting to understand the discussions of the meeting.
 - b. However, care and consideration must be given to provide non-English speakers an opportunity to participate. Therefore, where desirable, any of the 11 official languages may be used to conduct the meeting. If another language other than English is used, the minutes of the meeting will need to be transcribed, translated, and recorded in English.
- x) Other
 - a. The PMT shall provide a finger lunch for PLC members at PLC meetings.

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 acknowledged and 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 Community to formulate their communication to the PLC in writing.
 - f. Distribute written communication between the parties to the PLC.
 - g. Keep records of all PLC correspondence and documentation; and

- h. Provide any other reasonable secretariat function required by the PLC.
- ii) Attend all PLC meetings to report on the day-to-day project, Stakeholder and Community matters that impact on the parties to the PLC.
- iii) Attend all monthly project site meetings to report on the day-to-day project, Stakeholder and Community matters that impact on the parties to the PLC.
- iv) Attend any other meetings related to the project and in which any of the project Stakeholders, affected Communities, Targeted Labour and Targeted Enterprises are involved.
- v) Maintain a full-time presence on site to monitor and address the day-to-day project, Stakeholder and Community matters that impact on the parties to the PLC.
- vi) Maintain a full-time presence on site to assist the parties to the PLC in the day-to-day liaison with each other.
- vii) Assist the Engineer and the Contractor to disseminate information to PLC members such as:
 - a. the basic Scope of the Works and how it will affect the Community,
 - b. the project programme and regular progress updates,
 - c. the anticipated employment and 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 it pertains 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 and the Contractor in their resources and skills audits by providing a coordinating function between the Engineer, the Contractor, project Stakeholders and the affected Communities.
- xi) Ensure that the Contractor compiles the Targeted Labour databases based on the eligibility and selection criteria and that he updates it as and when required.
- xii) Coordinate the selection and employment of Targeted Labour based on the agreed eligibility and selection criteria and based on the Contractor's labour and skills requirements.
- xiii) Ensure that each Targeted Labourer enters an employment contract which adheres to current and relevant Labour legislation.
- xiv) Ensure that each Targeted Labourer understands the conditions of his/her employment contract, with an emphasis on the employment start date, end date and wages payable.
- xv) Identify and inform the Contractor of any relevant training required by the Targeted Labour.
- xvi) Attend all disciplinary proceedings to ensure that hearings are fair and conducted in accordance 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) Assist the parties to the PLC to resolve any disputes, which may occur due to the project.
- xix) Other than the document records to keep as mentioned above, keep record of all other documents and processes pertaining to the employment of Targeted Labour.
- xx) Produce and submit a monthly report to the PLC on PLC and other meetings attended by the PLO, as well as on Targeted Labour employment, and project Stakeholder, affected Community and any other project matters that impact on the parties to the PLC.

D1005 MOBILISATION PERIOD

The Mobilisation Period 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 sub-contracts 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 and the Training and Skills Development Programme, followed by acceptance of the Engineer.
- iii) Appointment of the initial Targeted Enterprise sub-contractors.

D1005.02 Duties of the Contractor

During the Mobilisation Period, the Contractor shall execute the following duties:

a) Compile a CPG Plan

The Contractor shall compile an acceptable CPG Plan, which sets out how he intends to achieve the various CPG targets as stated in the Specification Data. The Contractor shall distribute and implement the participation targets and Targeted Enterprise work opportunities equally and continuously over the duration of the Contract, i.e., from site establishment to completion of the Works. Where the Contractor deems such an equal and continuous distribution of the participation targets to be unachievable, he shall provide reasons and motivate it clearly in the CPG Plan.

The CPG Plan shall provide the detail of the Targeted Enterprise work programme, as well as the contents and value of the work packages. See Appendix 7 in Part C4 for the CPG Plan format.

The Targeted Enterprise work programme shall be in line with the Works Programme and once the CPG Plan has been accepted by the Engineer, it shall be captured in the Works Programme.

The Mobilisation Period shall only be concluded once the CPG Plan has been accepted by, and all the duties above have been executed to the satisfaction of, the Engineer after consultation with the Employer's Project Manager.

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 Plan

The Contractor shall compile an acceptable Training and Skills Development Plan, which sets out how he intends to achieve the various CSDG targets as per 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 Plan 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 Plan has been accepted by 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 Plan in the same manner as they would monitor the Works Programme.

c) Sub-contracting of Targeted Enterprises

During the Mobilisation Period the Contractor shall execute the following duties w.r.t. the sub-contracting of Targeted Enterprises:

- i) Liaise with the Employer's Project Manager, the Engineer and the PLC to structure and finalise the work packages to be sub-contracted 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 sub-contracting of Targeted Enterprises.
- iii) Compile the Targeted Enterprise Database(s) for input and support by the PLC.
- iv) Undertake a skills audit of the Targeted Enterprises which appear on the Targeted Enterprise Database(s).
- v) Based on the skills audit, and in consultation with the PLC, identify the pre-tender training requirements of Targeted Enterprises.
- vi) Provide an opportunity to Targeted Enterprises to receive the identified pre-tender training.
- vii) Tender the initial work packages and sub-contract the first group of Targeted Enterprises for commencement of the Works.

d) Employment of Targeted Labour

During the Mobilisation Period the Contractor shall execute the following duties w.r.t. the employment of Targeted Labour:

- i) Liaise with the PLC and the PLO on the compiled Targeted Labour Database(s) for the employment of Targeted Labour.
- ii) Undertake a skills audit of the Targeted Labour which appear on the Targeted Labour Database(s).
- iii) Based on the skills audit, and in consultation with the PLC, identify the training requirements of Targeted Labour to enhance their employability.
- iv) Provide an opportunity to eligible Targeted Labour to receive the identified training to enhance their employability.
- v) Select and appoint the first group of Targeted Labour for commencement of the Works.

e) Training Requirements

The Contractor will not be able to address all the training requirements identified for Targeted Labour and Targeted Enterprises during the Mobilisation Period and it is accepted that training will take place over the duration of the Contract.

The training provided to both Targeted Enterprises and Targeted Labour during the Mobilisation Period shall focus on the activities and/or skills required for the commencement of the Works and shall include the mandatory Occupational Health and Safety training.

D1006 THE ROLE OF THE ENGINEER

The role and responsibilities of the Engineer are clearly described in the Conditions of Contract. This section elaborates on the Engineer's duties with respect to Stakeholder and Community Liaison, Targeted Labour Employment and Targeted Enterprise sub-contracting.

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 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 Sub-contracting

- i) Make recommendations to the Contractor in identifying and structuring the work packages to be sub-contracted to Targeted Enterprises and approve the scope and extent of the work packages.
- ii) Verify that the Targeted Enterprise Database(s) has been updated prior to the letting of every new set of sub-contracts.
- iii) Approve tender procedures, tender documents, tender submission requirements and adjudication processes for the sub-contracting of Targeted Enterprises.
- iv) Review all tender adjudication reports and monitor that the criteria and procedures applied by the Contractor to sub-contract Targeted Enterprises are executed in a fair and transparent manner and are within the Employer's and Government's Supply Chain Management Policies.
- v) Verify that sub-contract agreements and the conditions of sub-contracting with Targeted Enterprises are fair and transparent and within the prescripts of the Contract requirements.
- vi) Monitor the management of Targeted Enterprise sub-contracts and ensure that conditions such as the application of penalties, the termination of contracts, etc. are applied in a fair and transparent manner and within the prescripts of the agreement.

b) Targeted Labour Employment

- i) Verify that the Labour Database(s) from which Targeted Labour will be employed is updated prior to every new Labour intake.
- ii) Monitor that the criteria and procedures applied by the Contractor to employ Targeted Labour are executed in a fair and transparent manner and is within the Contract requirements.
- iii) Monitor that the conditions of employment of Targeted Labour are applied in a fair and transparent manner and within the prescripts of the current and relevant Labour legislation.

c) Target Group Training Requirements

- i) Make recommendations to the Contractor in identifying the training requirements of Targeted Labour and Targeted Enterprises and approve the proposed training programmes.
- ii) Monitor that training programmes and support programmes, which the Contractor committed to, are implemented, and executed as intended.

D1007 TENDER PROCESS FOR TARGETED ENTERPRISES

While the Contractor may utilise service providers, sub-contractors and suppliers of its choice and selected via its own internal processes, for the sub-contracting 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 sub-contracting of work to Targeted Enterprises as defined in the Specification Data. For Contracts with a value of less than R 100 million the Contractor may appoint a TE Procurement Coordinator from its site staff. For Contracts with a value of more than R 100 million the Contractor shall employ or sub-contract a dedicated TE Procurement Coordinator, whose sole responsibility will be the management of Targeted Enterprise procurement and sub-contracting matters.

The TE Procurement Coordinator shall be knowledgeable of, and has experience in, the management of road construction and ancillary works, National Treasury supply chain management legislation and regulations, and stakeholder relations management.

With the input and support of the PLC, the TE Procurement Coordinator shall conduct the tender processes and procedures for Targeted Enterprise sub-contracting as prescribed in this Section D of the Specifications and shall adhere to the Employer's and Government's Supply Chain Management Policies and requirements.

D1007.02 Procedures for Targeted Enterprises Sub-contracting

The Contractor shall utilise the Employer's proforma tender and contract document for Targeted Enterprise sub-contracting. The proforma sub-contract document is attached as Appendix 10 in Part C4 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 sub-contracting include, amongst others, the following tasks:

a) Tender Preparation

i) Compile preliminary list of sub-contracting 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 sub-contracted to Targeted Enterprises.

The Contractor shall refer to the construction activities that has been identified as being suitable for construction by Targeted Enterprises as listed in Section D1009 of these Project Specifications, and to any other construction activities which are required to execute the Works in terms of this Contract, to determine how to unbundle or package sub-contracts 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 shall consult the following databases as a minimum:

- a. Construction Industry Development Board (CIDB)'s contractor database (not applicable to suppliers and non-construction services).
- b. National Treasury's Central Supplier Database (CSD) to be obtained from the Employer's Supply Chain Management Department.

iii) Call for an expression of interest.

In addition to consulting the CIDB contractor database and National Treasury's CSD, the Contractor shall call for an expression of interest, which shall be published in newspapers and at locations as agreed by the PLC.

For each group of work packages, the call for an expression of interest shall outline:

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

iv) Establish a Targeted Enterprise Helpdesk

Other than informing the Contractor's market analysis and resources and skills audits, the purpose of the call for an expression of interest is to alert Targeted Enterprises of the sub-contracting opportunities and inform them of the anticipated eligibility, preference, and functionality criteria, as well as of the compliance requirements.

The Contractor shall enhance the readiness of Targeted Enterprises to participate in the sub-contracting opportunities by establishing a helpdesk at a suitable and easily accessible location in the Project Area.

The Contractor shall provide guidance to Targeted Enterprises in getting their statutory requirements in order in anticipation of the sub-contracting opportunities. The helpdesk shall assist with, or provide guidance in, registering with the CSD and the CIDB, obtaining tax clearance and COID compliance and any other relevant qualifying requirements.

v) Compile Preliminary Targeted Enterprise Database

Based on the CPG targets listed in the Specification Data and the information obtained from the activities described in paragraphs ii) and iii) above, the Contractor shall compile a Preliminary Targeted Enterprise Database.

In compiling the preliminary Targeted Enterprise Database, the Contractor must bear in mind that the benchmark for an adequate number of tenderers to ensure a competitive tender process is ten (10) tenderers that are able to achieve the functionality threshold during the tender evaluation.

vi) Identify Targeted Enterprises, Target Groups and Project Area(s).

Based on the CPG targets listed in the Specification Data and the Preliminary Targeted Enterprise Database, the Contractor shall identify the:

- a. Targeted Enterprises (CIDB grades and types); and
- b. Designated Groups (woman, youth, etc.) which are anticipated to benefit from the sub-contracting opportunities; and
- c. Project Area(s) from which Targeted Enterprises will be given preference for sub-contracting opportunities.

vii) Compile a Contract Participation Goal (CPG) Plan.

The Contractor shall utilise all the information gathered from the activities described in the paragraphs above to compile an acceptable CPG Plan. The plan shall contain:

- a. a list of work packages (scope of work and number of packages) to be subcontracted to Targeted Enterprises,
- b. procurement, award and execution dates for the work packages, distributed over the duration of the Works Contract (from site

- establishment to completion of the Works) to ensure continuous work opportunities,
- c. the preliminary Targeted Enterprise Database(s) for each work package,
- d. the Targeted Enterprises (CIDB grades and types) and Designated Groups (woman, youth, etc.) which are to benefit from the sub-contracting opportunities,
- e. the Project Area(s) from which Targeted Enterprises will be given preference for sub-contracting 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 sub-contract work package and shall utilise the Employer's proforma document for Targeted Enterprise sub-contracting (see Appendix 10 in Part C4).

In compiling the sub-contract tender documents, the Contractor shall include in each tender document relevant Conditions of Tender and the FIDIC sub-contract agreement. The Contractor shall compile each sub-contract tender document in a manner that facilitates the achievement of all objectives and principles pertaining to the development of the Targeted Enterprises.

The draft sub-contract tender documents shall be approved by the Engineer before letting the tender.

b) Tender Process

i) Advertise the sub-contract packages.

The Contractor shall advertise and invite tenders from Targeted Enterprises for the respective sub-contract packages. Advertisements shall be placed in local newspapers, on community notice boards, on SANRAL's electronic supply development desk portal (<https://sanralesdd.co.za>), and any other place or medium as agreed with the PLC.

If the Employer 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 sub-contract packages, the Contractor shall conduct a compulsory briefing session to explain the tender process, the evaluation and selection criteria and the scope of the works to the Targeted Enterprises.

An Attendance Register shall be completed by all attendees and Minutes shall be taken during the briefing session. The Minutes of the briefing session shall be distributed to all attendees as an Addendum to the Tender Documents.

The Contractor shall conduct a “how to complete a tender document” training session as a component of the tender briefing to interested Targeted Enterprises. The level of detail and hence the duration, of the training session shall be informed by the findings of the resources and skills audit conducted during the Tender Preparation Phase.

The Contractor shall engage with the Employer’s Regional Transformation Officer on the Employer’s SMME Pre-tender Training and Development Programme and utilise this programme if it is available at the time in the Project Area. The Regional Transformation Officer’s contact details shall be provided by the Project Manager on award.

Notes of this training session shall be distributed to all attendees of the briefing session as an Addendum to the Tender Documents, irrespective if they have attended the training session or not.

A separate Attendance Register shall be completed for the training session for future reference.

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 sub-contract type, e.g., construction, supply, or services):

- a. Proof of the Tenderer’s B-BBEE contributor level.
- b. Proof that the Tenderer is an EME or QSE entity.
- c. Proof that the Tenderer is registered on National Treasury’s CSD.
- d. Proof of the Tenderer’s locality (address registered with the CIPC).
- e. Proof that the Tenderer is registered with the CIDB in the required grading and class (not applicable to suppliers).
- f. Proof that the Tenderer is compliant with the COID act.
- g. Proof that the Tenderer is tax compliant.

iv) Tender closure and opening of tenders.

Tenders for the sub-contract packages shall close at a stipulated time and date. Tenders shall be submitted to the Contractor in the format and at the address prescribed by the Contractor in the sub-contract Tender Data.

The tender opening shall be conducted by the Contractor who shall publicly announce and record the names of all bidders and their tender prices.

v) Finalise Targeted Enterprise Database

The purposes of the preliminary Targeted Enterprise Database are described in the Tender Preparation phase above of which one is to alert Targeted Enterprises to assess their readiness to participate in the project’s sub-contractor opportunities.

The period between the Contractor’s call for an expression of interest and the date of closure of the relevant sub-contract 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 relevant sub-contract tender and shall be submitted to the PLC for sign-off.

c) **Tender Evaluation**

The Contractor shall evaluate the tenders and it shall be a condition of tender that tenders will only be accepted from Targeted Enterprises that fully comply with the definition of a Targeted Enterprise as described in 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 sub-contract packages based on the following eligibility criteria:

- a. Proof that the Tenderer is registered with the CIDB (if applicable).
- b. Proof that the Tenderer is registered on National Treasury's CSD.
- c. Proof that the Tenderer is registered with the CIPC.
- d. Proof that the Tenderer is a level 1 to 4 B-BBEE contributor.
- e. Proof that the Tenderer is an EME or a QSE.
Proof that the Tenderer falls within one or more of the designated groups as per the Specification Data (if applicable).

Eligible Tenderers shall be further evaluated against the functionality criteria.

ii) Stage 2 – Functionality

No Targeted Enterprise may be prohibited from responding to the invitation to tender, however, preference shall be given to those Targeted Enterprises that adheres to the tender criteria, which amongst others, shall be measured by means of a functionality evaluation.

To ensure Targeted Enterprise participation as it is intended by the Employer and as defined in the Specification Data, Functionality shall be scored based on the type of sub-contract 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 sub-contracting (Appendix 10 in Part C4) 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 sub-contract, the same additional proof that the company has been operating from the branch office in the twelve (12) months prior to the tender advertisement date must be provided as listed in the paragraphs above.
- iv. If the above additional proof of address cannot be provided, locality points shall be awarded based on the tenderer's address registered with the CIPC in the twelve months prior to the tender advertisement date.

b. Equipment

For lower CIDB grade packages, the points allocated for Equipment typically has a lower weighting in the total evaluation points.

The combined points allocated for Equipment and Experience shall not be more than 35% of the total evaluation points.

c. Experience

For lower CIDB grade packages, the points allocated for Experience typically has a lower weighting in the total evaluation points.

The combined points allocated for Equipment and Experience shall not be more than 35% of the total evaluation points.

d. CIDB grade and class

The points allocated for CIDB grade and class shall not be more than 35% of the total evaluation points.

CIDB grade and class shall not be used as an evaluation criterion for packages pertaining to the supply of material, goods and/or services.

e. Project Specific Designated Groups, e.g., woman, youth, etc.

In addition to the eligibility criteria for preferential procurement functionality points may also be allocated for the following Designated Groups:

- i. Tenderer is 51%+ owned by black people who are youth.
- ii. Tenderer is 51%+ owned by black people who are women.
- iii. Tenderer is 51%+ owned by black people with disabilities.
- iv. Tenderer is 51%+ owned by black people who are military veterans.

The points allocated for Designated Groups shall not be more than 15% of the total evaluation points.

One, two or three of the Designated Groups listed above may be selected to count towards the score for Designated Groups.

If any one of the Designated Groups listed above is already an eligibility criterion, it must not be included as a functionality criterion as well.

The inclusion of any of the Designated Groups listed above shall be based on the Contractor's Resources and Skills Audit.

Youth and veterans may not be selected together.

iii) Stage 3 – Price and Preference

Tenderers that obtained the minimum threshold for functionality shall be further evaluated on their Price and Preference submissions, i.e.

- a. Price= 80 / 90 %
- b. Preference= 20 / 10 %

The highest scoring tenderer for each sub-contract package shall be checked for compliance.

The Contractor shall state in the tender advertisement and in the tender documents that only one sub-contract package shall be awarded to an entity at any one time for this project, meaning that a Targeted Enterprise may be awarded a work package and on conclusion thereof may be awarded a subsequent work package, but more than one work package may not be awarded simultaneously for this project.

If a tenderer tendered for more than one sub-contract 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 sub-contract package shall be checked for compliance with respect to the following criteria:

- a. Proof that the Tenderer is compliant with the COID Act (excl. CIDB 1 and 2 CE sub-contractors).
- b. Proof that the Tenderer is tax compliant.

If the highest scoring tenderer fails to meet any of the compliance criteria, he will be given seven (7) calendar days to become compliant.

If the highest scoring tenderer fails to submit the requested compliance information in the required timeframe, he shall be deemed non-compliant, and the evaluator shall check the second highest tenderer for compliance. This process is repeated until a compliant tenderer has been identified.

d) Appoint successful Targeted Enterprises

i) Table the Tender Report to the PLC.

The Contractor shall present the Tender Report for each sub-contract package to the Employer's Project Manager and the Engineer and thereafter table it to the PLC prior to award of the sub-contract.

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 sub-contract package and the tenderer who scored the highest points tendered higher rates than that of the Contractor, the Contractor may negotiate rates and the final sum with the tenderer.

If the Contractor fails to negotiate a reasonable tender sum or rates with the tenderer, he may:

- i. approach the second highest points scoring compliant tenderer for negotiation. This process may be repeated up to the third highest points scoring compliant tenderer, where after the package shall be retendered. the Contractor shall be limited to negotiate down to 25% above his own rates (this process must be clearly explained prior to negotiation, when the tender report is tabled to the PLC); or
- ii. accept the highest points scoring tenderer's higher rates and total sum and remunerate the sub-contractor, at the sub-contractor's tendered rates, from the Lump Sum which the Contractor has tendered for the fluctuation between the Contractor's rates and that of the Targeted Enterprise sub-contractors.

b. Provisional Sum

If the Employer has provided a Provisional Sum for the work items in the sub-contract 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 tenderers rates and total sum and remunerate the sub-contractor from the Lump Sum which the Contractor has tendered for the fluctuation between the Contractor's rates and that of the Targeted Enterprise sub-contractors. The Contractor shall not pay rates or tender sums that is more than 15% higher than what are deemed market related by the Engineer.

iii) Low tender sums submitted by Targeted Enterprises.

The Contractor shall report to the Employer's Project Manager and the Engineer on the feasibility of tendered rates, sums, or Provisional Sums of

tenderers who tendered exceptionally. Exceptionally low rates, sums or Provisional Sums are those that are more than ten percent (10%) less than what the Contractor tendered, or in the case of a Provisional Sum, what is deemed market related by the Engineer.

- a. If the tendered rates, sums, or Provisional Sums of those tenderers who tendered exceptionally low are deemed by the Engineer to still be feasible, the Contractor may continue to include these tenders in his tender evaluation.
- b. If the tendered rates, sums, or Provisional Sums of those tenderers who tendered exceptionally low are deemed by the Engineer to not be feasible, the Contractor may disqualify these tenders from his tender evaluation.

The Employer strongly discourages the appointment of Targeted Enterprises that did not tender feasible rates, sums, or Provisional Sums. If all prices submitted are deemed exceptionally low by the Engineer, the sub-contract 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 sub-contract packages.

iv) Payment to the Contractor

- b. 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.
- c. If the Contractor accepts tender sums that are higher than what have been provided for in the Contractor's tendered rates, or the Employer's provisional and/or prime cost sums, the costs shall be paid by the Contractor from the Lump Sum which he tendered for the fluctuation between the Contractor's rates and that of the Targeted Enterprise sub-contractors.

v) Entering the Sub-contract Agreement

The Contractor's TE Procurement Coordinator shall assist successful Targeted Enterprises to enter into a sub-contract agreement with the Contractor as described in this Specifications.

D1008 GENERAL RESPONSIBILITIES OF THE CONTRACTOR TOWARDS TARGETED ENTERPRISES

The Contractor shall have the responsibilities described in this Section, D1008 of the Specifications, towards all Targeted Enterprises sub-contracted 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 Contractors 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.

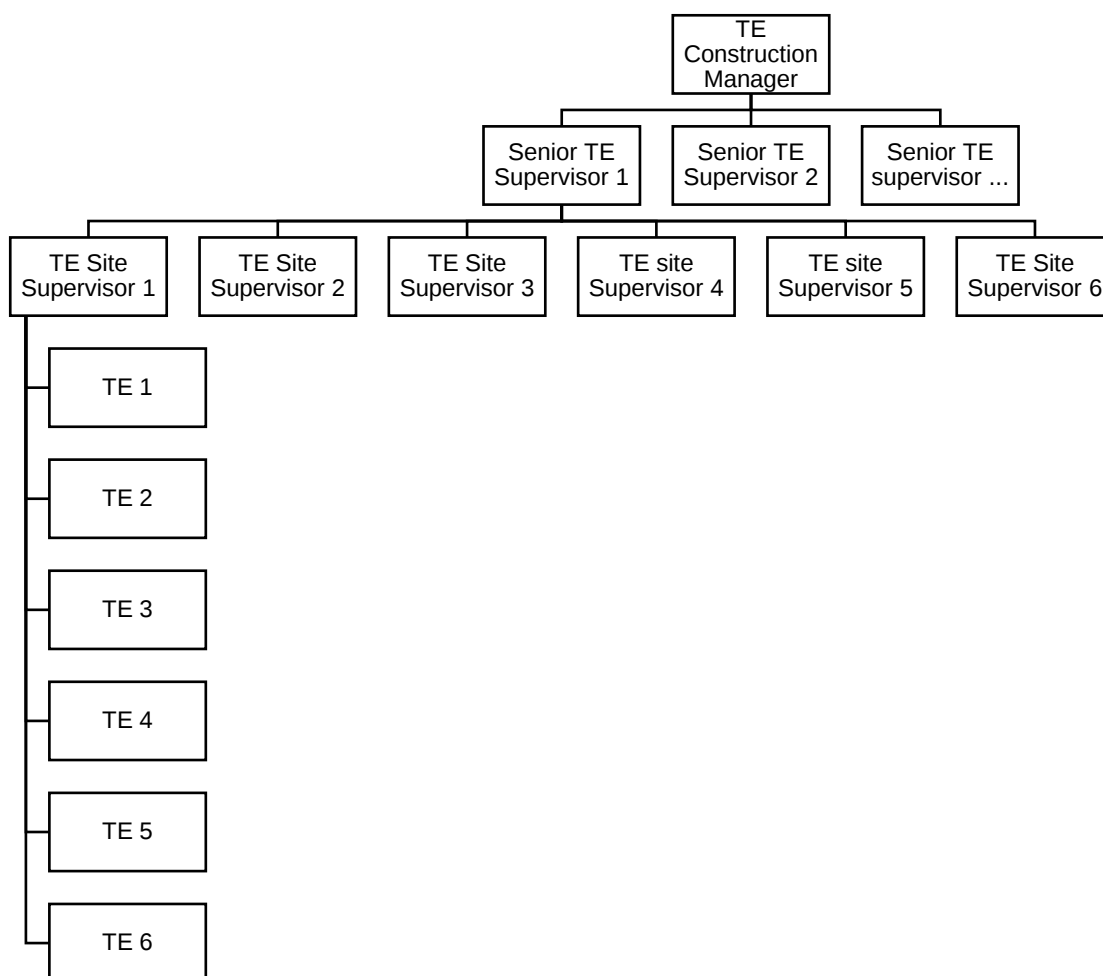
He shall have at least 5 years' experience as a Site Agent, managing construction processes in the fields of roads maintenance, new roads construction, roads rehabilitation, roads structures, etc. In addition, he shall have ample knowledge of, and experience in, the requirements of training and mentoring 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 sub-contract agreements with each sub-contracted Targeted Enterprise and shall utilise the Employer's proforma document for Targeted Enterprise sub-contracting (Appendix 10 in Part C4), 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

The following Special Conditions of Contract forms part of the sub-contract agreement:

- i) The Targeted Enterprise's entitlement to receive the training contemplated in this 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 this Contract (Part C1, C1.2.1, Part B, clause 6.5).
- iii) The allowable sources from which Labour may be drawn in terms of the Contract (Part C1, C1.2.1, Part B, clause 6.8).
- iv) The terms and conditions relating to the recruitment, employment and remuneration of Labour engaged on the Contract (Part C1, C1.2.1, Part B, clause 6.5).
- v) The training to be provided to the Targeted Enterprise's workforce (Part C1, C1.2.1, Part B, clause 6.8).
- vi) The terms and conditions related to payment of the Targeted Enterprise (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 sub-contract agreement (Part C1, C1.2.1, Part B, clauses 14.6 and 20.4 to 20.7).
- viii) Dispute avoidance and resolution procedures (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 sub-contract agreement once approved by the Employer and the Engineer.

b) Monitoring of Sub-contract Agreements

The proforma sub-contract 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 sub-contract agreements were entered into with the sub-contracted Targeted Enterprises. The PLC may request insight into the Conditions of Subcontract and Sub-contract Data.

To protect Targeted Enterprises' competitive advantage and/or tender strategy, only the sub-contract agreement shall be available to the PLC for perusal and not the pricing structure and/or Schedule of Quantities.

A copy of each sub-contract 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 sub-contract 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 sub-contract work items.

Where the Contractor's sub-contract work is not paid from a Provisional Sum, the P&Gs of the Targeted Enterprise shall be paid from the Lump Sum tendered by the Contractor for the P&Gs of Targeted Enterprises.

P&Gs shall be paid to Targeted Enterprises as per Section PC1.3.1 of the COTO specification payment items, i.e.:

C1.3.1.1 paid in 3 instalments of 50%, 35% and 15%.

C1.3.1.2 paid as a percentage of the total value progressively per certificate.

C1.3.1.3 paid monthly for the sub-contractor's contract duration.

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 sub-contracting 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 sub-contract. This shall typically include assistance with planning of the Works, sourcing and ordering of materials, labour relations, monthly measurements, and invoicing procedures. The extent and level of such training, coaching, guidance, mentoring, and assistance to be provided by the Contractor shall commensurate with the level of sub-contract applicable and shall be directed at enabling the Targeted Enterprise to achieve the successful execution and completion of its sub-contract.

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 sub-contract 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 (Part C, clause 3.1.12), give reasonable warning to the Targeted Enterprise when any contravention of the terms and conditions of the sub-contract 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 sub-contract 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 work items have been identified as being suitable for execution by Targeted Enterprises:

- a) Erection and maintenance of the Contractor's camp site.
- b) Clearing and grubbing.
- c) Removal of trees.
- d) Provision of traffic control facilities.
- e) Management of traffic control facilities and traffic safety as part of the accommodation of traffic.
- f) Construction and clearing of drains.
- g) Installation of prefabricated culverts including inlet and outlet structures.
- h) Concrete channelling and concrete linings for open drains.
- i) Construction of concrete paving, kerbs and channels.
- j) Construction of small concrete and other structures.
- k) Construction of block paving walkways.
- l) Pitching, stonework and protection against erosion.
- m) Construction of gabions.
- n) Patching and repairing edge breaks.
- o) Erection of guardrails.
- p) Landscaping.
- q) Fencing.
- r) Road signs.
- s) Road markings.
- t) Finishing the road and road reserve.
- u) Site Security Services.
- v) Haulage of materials.
- w) Supply of plant.
- x) Supply of fuel.
- y) Specialised sub-contract work such as:
 - i) Construction of concrete pavements.
 - ii) Laying of asphalt using asphalt pavers.
 - iii) Structural concrete such as culvert and bridges.
 - iv) Crushing of materials.
 - v) Precast manufacture.
 - vi) Batch plant erection and operations.
 - vii) Earthworks, layerworks construction.
 - viii) Structural steel fabrication, erection.

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

- a. Block paving sidewalks.
- b. Side drains and subsoil drains.
- c. Clearing and grubbing.
- d. Construction and clearing of drains.
- e. Construction of small concrete and other structures.
- f. Pitching, stonework and protection against erosion.
- g. Construction of gabions.
- h. Finishing the road and road reserve.
- i. Any other work approved by the Employer to be executed in the Target Area.

The work to be carried out by Targeted Enterprises is not limited to the work listed above and the Contractor may need to engage Targeted Enterprises on other aspects of the Works to achieve the CPG.

A Provisional Sum for the work by CIDB 1 and 2 Targeted Enterprise sub-contractors is allowed under pay-item D10.05.

D1010 TRAINING, COACHING, GUIDANCE, MENTORING AND ASSISTANCE

The Contractor shall with the input and support of the PLC develop a Training and Skills Development Programme which shall be managed by the Contractor's TE Construction Manager

D1010.01 Purpose of the Training and Skills Development Programme(s)

Skills development forms an integral part of the Employer's Transformation and Community Development Policies and hence, it is important to the Employer that Targeted Labour and Targeted Enterprises be equipped with skills that can be used to gain meaningful future employment and secure sub-contracting opportunities.

It is, therefore, a requirement of this Contract that the Contractor provide adequate training, coaching, guidance, mentoring and assistance to the Targeted Labour and Targeted Enterprises, to ensure skills development within the Construction Industry.

D1010.02 Skills Audit and Analysis

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, and skills sets. The outcome of the skills audit and analysis shall be used to develop a Training and Skills Development Programme(s) that will benefit both the employee and the Construction Industry at large.

Included in the skills audit and analysis shall be a separate section, analysing the education, qualifications and skills sets of the Targeted Enterprise's owners and 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.

D1010.03 Developing the Training and Skills Development Programme

The Employer shall, through its Project Manager, be involved in the decision making and quality control pertaining to the development and implementation of the Training and Skills Development Programme facilitated through this Contract.

The Employer has no service agreement or memorandum of understanding with any education and training quality assurance body and, therefore, does not function as the "Employer" as defined under any three-party-agreement between the Trainee, the Training Provider, and the Employer.

However, the Employer requires similar outcomes to that of formal learnership programmes and the Contractor shall structure a Training and Skills Development Programme in a manner that permits continued access to further learning and qualifications within a defined programme.

The complete Training and Skills Development Programme shall be developed during the Mobilisation Period, accepted by the Engineer after consultation with the Employer's Project Manager, and tabled to the PLC for their information before any training commence.

D1010.04 The Training Service Provider

While the Contractor's TE Construction Manager will manage the Training, Development and Support Programme and mentor Targeted Enterprise sub-contractors 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.

c) Accreditation of the Training Service Provider

The Training Service Provider entity shall be accredited, and have in its employ 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.

d) Qualifications and Experience of the Training Service Provider

The training and competency levels required of the Training Service Provider and his staff are outlined in the table below:

TABLE D1010/1: QUALIFICATIONS FOR TRAINING STAFF

Designation	Title and Unit Standard No	NQF Level	Credit
Practitioner	Train the trainer; No 7384	4	16
Assessor	Conduct outcome base assessment; No 115753	5	15
Moderator	Conduct moderation of outcome-based assessment; No 115759	6	10

In addition to the above qualifications, and in keeping with current CETA practical experience requirements for registration as a Practitioner, NQF Level 4 Unit Standards shall only be presented by Practitioners with NQF Level 5 (one level up) credentials.

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

Elective Unit Standards are typically more vocational orientated and may require specialist input. It is thus not a requirement that individual Practitioners and Assessors shall have all the necessary skills for all the different categories of Unit Standards. The Training Service Provider may and shall therefore, when necessary, appoint Practitioners and Assessors on an ad hoc basis with the levels of experience which are required for the Unit Standards to be presented.

D1010.05 Training and Skills Development Programme: General Requirements

The Training and Skills Development Programme shall consist of Learnerships that include multiple, but related Unit Standards which are (1) relevant to the Works to be constructed, (2) aimed at achieving the skills development objectives of the Programme, and (3) lead towards a formal qualification in the Construction Industry.

Learnerships shall include both the theoretical and practical components of each Unit Standard and shall be in accordance with the various laws and regulations contained in the South African Qualification Authority (SAQA) statutes.

a) Training Programme: Requirements and Considerations

The Skills Audit and Analysis shall inform the Contractor of every employee's Recognised Prior Learning (RPL) skills and competencies, which shall be taken into consideration in the development of the Training and Skills Development Programme so that the RPL skills and competencies, together with the Training Programme Unit Standards offerings, will lead to a full Learnership outcome and hence a formal qualification.

It is recognised that the Training and Skills Development Programme may consist of several Unit Standards but totalling insufficient credits for a full Learnership qualification. Nevertheless, the competencies and credits achieved in the Programme shall contribute to a full Learnership by a later acquisition of the outstanding Unit Standards required for the full Learnership.

The Training and Skills Development Programme shall be structured in a manner to prioritise those Unit Standards that will equip Trainees with the minimum skills 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:

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

The above criteria are not exhaustive, and the Training Service Provider shall apply the systems and processes required by the relevant SAQA and other related legislation pertinent to training. The Training Service Provider shall regularly consult the SAQA website (www.saga.org.za) to ensure that the most current Unit Standards are presented. In the event of any conflict, the legislated requirements shall apply.

While structuring the Learnership offerings, the Training Service Provider shall distinguish between the levels of learning required. The bulk of the training shall focus on NQF Levels 4 and 3. NQF Level 5 training is not anticipated but may be suitable for qualifying staff of established small contractors. The qualification titles for the respective NQF Levels are:

- a. NQF Level 3 National Certificate: Construction Roadworks.
- b. NQF Level 4 National Certificate: Supervision of Construction Processes
- c. NQF Level 4 National Certificate: Business Management
- d. NQF Level 5 National Diploma: Management of Civil Engineering Construction Processes

It may be necessary to include additional Core Unit Standards, e.g. "Tendering" or "Entrepreneurship" as an additional Unit Standard for NQF Level 4, to achieve the Contract's development objectives. The identification of any additional Unit Standards shall be discussed with the Engineer and shall not be implemented without prior approval.

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

All training shall take place within normal working hours, or as agreed with the trainees.

b) Selection of Trainees

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

c) Learning Material

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

The SAQA 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 a learning material contents shall be included in the Training Service Provider's costs.

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

- i) Purpose of the Unit Standard.
- ii) Specific outcomes (typically 4 per Unit Standard).
- iii) Assessment criteria (typically 4 per specific outcome).
- iv) Range as is defined for each specific outcome.
- v) Critical cross-field outcomes for the Unit Standard.
- vi) Unit Standard essential embedded knowledge.

d) Student Experiential Training or Learnerships or Internships

The Employer may deploy students to the construction site to obtain experiential training. The Contractor shall provide experiential training to these students in accordance with the relevant academic institution's requirements, which is typically a university, a university of technology, or a TVET.

The Contractor shall also provide students with all the tools (including appropriate information technology hardware and software) and site office space necessary to carry out engineering work as if they were the Contractor's own permanent staff.

Reporting on training progress of each student shall be compiled according to the formats and intervals set by the relevant academic institution.

e) Keeping of Records

The Training Service Provider shall keep comprehensive records of the training provided to each Trainee and shall ensure that Trainees' successful completion of successive Unit Standards are entered onto the national SAQA database. After the successful completion of generic skills courses each Trainee shall be issued with a certificate indicating the course contents as proof of attendance and completion. The Contractor shall keep a register of certificates issued. Whenever required, the Contractor shall provide copies of such records to the Engineer.

f) Skills Development Requirements

i) Contract Skills Development Goals (CSDG)

This section establishes a minimum CSDG which is to be achieved in the performance of a Contract (*as per the CIDB Standard for Developing Skills through Infrastructure Contracts August 2013*) in relation to the provision of different types of workplace opportunities linked to work associated with a Contract which culminate in or lead to:

- a. a part- or full occupational qualification registered on the National Qualification Framework,
- b. a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012),
- c. a national diploma registered on the National Qualification Framework, and

- d. registration in a professional category by one of the professional bodies listed in Table 1 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 Sub-contractors.

The CSDG shall not be less than the contract amount multiplied by 0.25 percent (%) for Civil Engineering work (CE). For this reason, the Contractor shall insert the CSDG amount in Form C.2.3 Summary of Pricing Schedule.

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 Trainees (LoL) towards the attainment of a part or a full occupational qualification.

This training method shall apply to Targeted Enterprises and Targeted Labour.

Method 2: Structured workplace learning opportunities for apprentices or other artisan Trainees (LoA) towards the attainment of a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012) subject to at least 60% of the artisan Trainees being holders of public FET college qualifications.

This training method shall apply to Targeted Enterprises and Targeted Labour.

Method 3: Work integrated learning opportunities for University of Technology or Comprehensive University students (LoUS) completing their national diplomas.

This training method shall apply to P1 and P2 Trainees, or Trainees with a 240 credits qualification. Both the permanently employed and temporary employed Trainees shall be considered under this training method.

Method 4: Structured workplace learning opportunities for candidates (LoC) toward registration in a professional category by a statutory council listed in Table 1 of the Standards.

This training method shall apply to Candidates with 480 credits qualification. Both the permanently employed and temporary employed Trainees shall be considered under this training method.

No single method shall contribute more than 75 percent of the CSDG. Permanently employed Trainees may not account for more than 33 percent (%) of the CSDG, and not more than one method may be applied to any individual concurrently in the calculation of the CSDG.

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.

The Contractor may source beneficiaries of the CSDG from a Skills Development Agency (SDA) recognised by the CIDB.

All beneficiaries shall be registered with a construction Skills Development Agency (SDA) recognised by the CIDB.

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 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

Failure to achieve the CSDG shall render the Contractor liable for a penalty as prescribed in clause 8.7 of the FIDIC Conditions of Contract. Penalties shall be as follows:

a. $\text{Penalty} = 0.5 \times \{[\text{LoAs} + \text{LoLs} + \text{LoUSs} + \text{LoCs}]\}$

Where:

LoLs = Monetary Value of the shortfall for structured workplace learning opportunities for Trainees towards the attainment of a part or a full occupational qualification.

LoAs = Monetary Value of the shortfall for structured workplace learning opportunities for apprentices or other artisan Trainees towards the attainment of a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012) subject to at least 60% of the artisan Trainees being holders of public FET college qualifications.

LoUSs = Monetary Value of the shortfall for work integrated learning opportunities for University of Technology or Comprehensive University students completing their national diplomas (LoUS).

LoCs = Monetary Value of the shortfall for structured workplace learning opportunities for candidates towards registration in a professional category by a statutory council listed in Table 1 of the Standards (LoC).

b. Delay the issuing of the Performance Certificate until all the required records described in clause 5 of the Standards are received.

g) Generic Skills Training

Generic skills shall be taught where the need has been identified and approved by the Employer'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 training programmes could comprise some or all the following modules:

- i) Basic hygiene and HIV/AIDS awareness.
- ii) Road safety.
- iii) Basic management of the environment.
- iv) Tourism awareness and opportunities.
- v) Managing personal finance.
- vi) Adult Basic Education and Training (ABET).
- vii) Community based training programmes (e.g., knitting, computer skills, plant/machine operator, etc.).

All generic skills training shall be accredited by the relevant Sector Education and Training Authority (SETA) and shall be provided with accredited entities and/or individuals.

h) Community Training

Community training shall be taught where the need has been identified. Affected Communities may submit their training needs to the PLC for 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 sub-clause (d). Priority shall be given to training that will equip Community members with skills that will enhance their employability.

All community skills training shall be accredited by the relevant Sector Education and Training Authority (SETA) and shall be provided with accredited entities and/or individuals.

i) 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 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

No CD component is anticipated for this Contract.

D1013 MEASUREMENT AND PAYMENT

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

D10.01 Target Group Participation

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

The prime cost sum for item D10.01(a) shall cover any CPP bonus due as specified in clause D1003.05. The prime cost sum shall be expended in accordance with clause 13.5 of the FIDIC Conditions of Contract.

Note:

No separate payment shall be made for any costs incurred by the Contractor, whether direct or indirect, for his efforts in accomplishing the specified requirements, and which are not recoverable from the pay-items allowed. Such costs shall be deemed to have been included in the rate offered under pay sub-item C1.3.1.3 Contractor's Establishment on Site and General Obligations: Time Related Obligations.

Item	Unit
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 sub-contractors 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 sub-contractors 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 sub-contractors of CIDB 5 and higher contractor grading.	Number (No)
(iv) Procurement process for the totality of all tenders concluded for the appointment of Targeted Enterprise suppliers.	Number (No)
(b) Targeted Enterprise Procurement Coordinator	Month

The unit of measurement for item D10.03(a) shall be the number of individual sub-contract agreements concluded with Targeted Enterprise sub-contractors 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(a) shall include full compensation for the provision of the relevant personnel on a full-time basis to carry out the requirements in terms of 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 (if required), the pre-tender training of eligible Targeted Enterprises, the compilation, printing, binding and issue of the tender documents for each tender, for the advertising of each tender, for the provision of the venue and the conducting of each compulsory briefing session for tenderers, for the conducting of each tender opening process, for the adjudication of the tenders received for each tender, for the preparation of each tender adjudication report and the review thereof in conjunction with the Employer, Engineer and the PLC, for the award of each tender and for the conclusion of the sub-contract 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 sub-contract agreements and the management of all the Targeted Enterprise sub-contracts, including for the provision of the necessary management, support, coaching, guidance, mentoring and supervision of the Targeted Enterprise sub-contractors.

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 sub-contractors of CIDB 1 and 2 contractor grading designation appointed in terms of Section D of the Specifications.	Provisional (Prov) sum
(b) Handling costs and profit in respect of payment associated with sub-item D10.05(a).	Percentage (%)
(c) Fluctuation between the main contractor's rates and that of the Targeted Enterprise sub-contractors.	Lump Sum (LS)
(d) Preliminary and General Obligations of Targeted Enterprise sub-contractors 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 Provisional 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 sub-contractors 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 Provisional Sum amount stated in the Pricing Schedule. Construction works by Targeted Enterprise sub-contractors of CIDB 1 and 2 contractor grading designation, exceeding the Provisional Sum amount shall be measured for payment from the applicable work items in the Contractor's pricing schedule

The tendered percentage for 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 sub-contractors, 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 sub-contractor 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 prorata basis to provide compensation for the fluctuation between the tendered rates of the Main Contractor and that of the Targeted Enterprise sub-contractors 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 sub-contractor'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 sub-contractors.

The Lump Sum tendered under item D10.05(d) is for the Preliminary and General Obligations of Targeted Enterprise sub-contractors (excluding CIDB 1 and 2 contractor grading designation) paid from the Provisional Sum. Payment of the Lump Sum shall be on a prorata basis to provide compensation for the P&Gs of Targeted Enterprise sub-contractors until the Lump Sum is depleted. Any costs incurred for the P&Gs of Targeted Enterprise sub-contractors 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) Training Costs	
(i) Accredited generic skills training.	Provisional (Prov) sum
(ii) Community skills training	Provisional (Prov) sum
(iii) Handling cost and profit in respect of sub-items D10.06(a)(i) and (ii).	Percentage (%)
(b) Other costs during training.	Provisional (Prov) sum
(c) Training venue.	Lump Sum

The Provisional Sums under sub-items D10.06(a) shall be paid in accordance with the provisions of sub-clause 13.5 of the FIDIC Conditions of Contract. The Provisional Sums shall include all charges for the provision and delivery of the service including an accredited Training Service Provider (if required), learning material and any other requirement as described in Section D1010 of the Specifications.

The rate tendered under sub-item D10.06(a)(iv) shall be deemed to cover all costs required to organise accredited trainers to provide training and shall include the Contractor's handling cost, profit, record keeping, reporting and all other costs associated with sub-items D10.06(a)(i) and (ii).

The Provisional Sum under pay-item D10.06(b) shall be paid in accordance with the provisions of sub-clause 13.5 of the FIDIC Conditions of Contract. The Provisional Sum shall cover the Contractor's costs for payment of wages of employed trainees attending training courses during working hours, for the provision of meals to trainees, for provision of transport and for all other incidentals required for the trainees and approved by the Engineer. No mark-up is payable to the Contractor under this item.

The unit of measurement for pay-item D10.06(c), shall be the Lump Sum. The sum tendered shall include full compensation for the provision of the training venue, for all necessary lighting, power, furniture, stationery, consumables and study material and all other costs necessary to maintain the venue for the duration of the contract. Payment of the Lump Sum shall be made in two instalments as follows:

The first instalment, 75% of the Lump Sum, shall be paid after the Contractor has met all his obligations regarding the provision of the training venue as specified.

The second and final instalment, 25% of the Lump Sum, shall be paid after the provision of all the accredited training as specified in the document.

No payment, nor pro rata payment, shall be made for trainees that, once selected, do not attend or only partially complete structured training courses. The Contractor's own staff may attend the courses provided. However, such attendants from the Contractor's staff shall not be considered for measurement and payment purposes unless they also qualify as Targeted Labour.

SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

CONTRACT SANRAL N.011-090-2016/1

FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER STATION (KM 18.5) TO N1 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

SECTION E: REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS

Note to tenderer:

Wherever reference is made in this section of the Scope of Works to contractor this is the equivalent of the *principal contractor* in the Occupational Health and Safety Act and Regulations. Similarly, reference to subcontractors is equivalent to *other contractors*.

SECTION E: REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS

TABLE OF CONTENTS	PAGE
E1001 SCOPE	C3-191
E1002 DEFINITIONS AND ABBREVIATIONS	C3-191
E1003 HEALTH AND SAFETY POLICY	C3-194
E1004 ROLES AND RESPONSIBILITIES	C3-194
E1005 HSE TRAINING AND COMPETENCE	C3-194
E1006 APPLICATION FOR CONSTRUCTION WORK PERMIT	C3-195
E1007 DUTIES	C3-195
E1008 MANAGEMENT AND SUPERVISION	C3-196
E1009 RISK MANAGEMENT	C3-196
E1010 LEGAL COMPLIANCE AND DOCUMENT CONTROL	C3-197
E1011 OPERATIONAL INTEGRITY	C3-200
E1012 OCCUPATIONAL HEALTH AND HYGIENE	C3-200
E1013 WASTE MANAGEMENT	C3-201
E1014 HAZARDOUS SUBSTANCE MANAGEMENT	C3-202
E1015 CONTRACTORS	C3-202
E1016 DESIGNING FOR HEALTH, SAFETY AND THE ENVIRONMENT	C3-206
E1017 INCIDENT MANAGEMENT	C3-206
E1018 PROJECT SPECIFIC CONSTRUCTION REQUIREMENTS	C3-207

E1001 SCOPE

The Occupational Health and Safety Act, Act 85 of 1993 (OHS Act) and its Regulations together with SANS Codes set out minimum standards with regards to Occupational Health and Safety. The South African National Roads Agency SOC Limited (SANRAL), has developed this Occupational Health and Safety Specifications with these minimum standards in mind and in certain aspects the requirements of SANRAL exceeds the minimum legal requirements to follow best practices and to ensure a healthy and safe workplace for all.

SANRAL in no way assumes The Principal Contractors legal liabilities and responsibilities. The Principal Contractor is and remains accountable for the quality and execution of his health and safety program for his employees. This Health and Safety Specification reflects minimum legal and SANRAL requirements and should not be construed as all encompassing.

It is realized that The Principal Contractor have its own Health and Safety Management system and safe work practices. The intention of this Health and Safety Specification is not to change The Principal Contractors Health and Safety management system, but for The Principal Contractor to use its current Health and Safety management system to draw up a project specific Health and Safety plan according to these specifications as well as to legally comply with the any applicable Regulations under the OHS Act and incorporated Standards.

It is the responsibility of the Principal Contractor and other Contractors to make themselves conversant and comply with the requirements and conditions contained in the various legislation pertaining to their profession and scope of works at all times.

This specification is not exhaustive of all duties imposed by the OHS Act and its Regulations, governing the duties and obligations, of a Designer, Principal Contractor and Contractor performing duties in terms of an agreement with the client (SANRAL). These duties are fully described in the OHS Act and its Regulations and it is the duty of every Designer, Principal Contractor and Contractor to acquaint themselves therewith before commencing work.

This specification is compiled to ensure that the Principal Contractor and any other Contractors working for SANRAL directly or through a Principal Contractor, are aware of the Occupational Health and Safety requirements when working on a SANRAL contract, as well as to make them aware of their legal liabilities and responsibilities as per the Occupational Health & Safety Act, Act 85 of 1993, and its Regulations.

Words used herein in the singular shall be deemed to include the plural and male shall include female and vice versa unless the context otherwise requires.

E1002 DEFINITIONS AND ABBREVIATIONS

Assessment – An opinion or a judgment about someone or something that has been thought about very carefully.

At-risk behavior – Conduct that unnecessarily increases the likelihood of an injury or incident.

Audit – A systematic and documented review of the effectiveness of implementation of processes, programs and procedures, based on general process criteria.

Baseline risk assessment: This is the initial assessment of risk in a workplace. It is a broad assessment and includes all activities taking place on site but does not include risk control measures or safeguards.

Client – Any organization or person for whom construction work is performed. For the purpose of this document, the client is the South African National Roads Agency SOC Limited, also identified in the contract document as the Employer.

Competence – A combination of attributes such as knowledge, training, experience and qualifications to assure successful performance.

Competent Person – Means a person who has in respect of the work or task to be performed the required knowledge, training and experience and, where applicable, qualifications, specific to that work or task: Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualification Framework Act, 2000 (Act No. 67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and is familiar with the Act and with the applicable regulations made under the Act.

Consequence – Outcome or impact of an event.

Continual Improvement – A recurring process of enhancing performance to achieve consistent improvements in overall performance.

Contractor – An employer as defined in section 1 of the OHS Act, who performs construction work and includes Principal Contractors and Sub-Contractors.

Construction Work – any work in connection with:

- The construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or
- The construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling, or any similar civil engineering structure or type of work.

Corrective Action – An action taken to eliminate the cause of a detected non-conformity or other undesirable situation.

Construction Regulations (CR) – Construction Regulations, GNR. 84 of 2014

Critical equipment – A piece of equipment or a structure whose failure to perform to design specification, has the potential to result in a major accident event.

Design – in relation to any structure, includes drawings, calculations, design details and specifications.

Designer –

- a) competent person who:
 - Prepares a design;
 - Checks and approves a design;
 - Arranges for a person at work under his or her control to prepare a design, including an employee of that person where he or she is the employer; or
 - Designs temporary work, including its components;
- b) an architect or engineer contributing to, or having overall responsibility for a design;
- c) a building services engineer designing details for fixed plant;
- d) a surveyor specifying articles or drawing up specifications;
- e) a contractor carrying out design work as part of a design and building project; or
- f) an interior designer, shop fitter or landscape architect.

DMR – Driven Machinery Regulations, GNR. 295 of 26 February 1988

Documents – Structured units of recorded information and its supporting medium (paper or electronic). Most records are documents, but not all documents are records. A document becomes a record when it is part of a business transaction, is kept as evidence of that transaction and is managed within a record-keeping system.

EIR – Electrical Installation Regulations, GNR. 242 of 6 March 2009

Emergency – An abnormal occurrence that pose a threat to the safety or health of employees, customers, or local communities, or which can cause damage to assets or the environment.

Employee – An individual who is employed by or works for an Employer and who receives or is entitled to receive any remuneration or who works under the direction or supervision of an employer or any other person.

Employer – Any person who employs or provides work for any person and remunerates that person or expressly or tacitly undertakes to remunerates him but excludes a labour broker as defined in section 1(1) of the Labour Relations Act, 1956 (Act No. 28 of 1956). The South African National Roads Agency SOC Limited, also identified in the contract document as the Employer.

EMR – Electrical Machinery Regulations, GNR. 250 of 25 March 2011

Environment – The surroundings or conditions in which a person, animal or plant lives or operates, including air, water, land, natural resources and habitats.

Epidemic Disease - An *epidemic* disease is one affecting many persons at the same time and spreading from person to person in a locality where the disease is not permanently prevalent. The World Health Organization (WHO) further specifies *epidemic* as occurring at the level of a region or community.

Excavation work – The making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping

GAR – General Administrative Regulations, GNR. 929 of 25 June 2003

GMR – General Machinery Regulations, GNR. 1521 of 5 August 1988

GSR – General Safety Regulations, GNR. 1031 of 30 May 1986

Harm – A significant and or long-lasting adverse effect on people, the environment or the community.

Hazard – A source, situation or act with a potential for harm in terms of human injury or ill health.

Health and Safety File – Means a file, or other record in permanent form, containing the information in writing as required by the Construction Regulations, GNR. 84 of 7 February 2014, Section 7(1)(b).

Health and Safety Plan – Means a project specific documented plan in accordance with the client's health and safety specifications, as required by the Construction Regulations, GNR. 84 of 7 February 2014, Section 7(1)(a).

Health and Safety Specification – Means a project specific document prepared by the client pertaining to all health and safety requirements related to construction work, as required by the Construction Regulations, GNR. 84 of 7 February 2014, Section 5(1)(b).

HSE – Health, Safety and Environment. Commonly used in the format HSE.

Incident – Work-related events (including accidents which give rise to injury, ill health, fatality or emergencies) that have resulted in, or has the potential to result in adverse consequences to people, the environment, property, reputation or a combination of these.

Likelihood – A description of probability or frequency, in relation to the chance that something will occur.

Lost Time Injury (LTI) – When a person is injured during the execution of his/her duties and as a result of the injury is unable to perform his/her regular duties for one full shift or more on the day following the day on which the injury has incurred, whether a scheduled work day or not (weekend).

Management System – Management processes and documentation that collectively provide a systematic framework for ensuring that tasks are performed safely, correctly, consistently and effectively to achieve a specified outcome and to drive continual improvement in performance.

Mandatory – An agent, contractor or sub-contractor for work, but without derogating from his status in his own right as an employer or a user.

MSDS – Material Safety Data Sheet

Near Hit / Near Miss – Any occurrence or situation which had the potential for adverse consequences to people, the environment, property, reputation or a combination of these.

Non-conformance – Any deviation from work standards, practices, procedures, regulations that could either directly or indirectly lead to injury or illness, property damage, damage to the environment or a combination of these.

OHS Act – Occupational Health & Safety Act, 85 of 1993

Pandemic Disease - a *pandemic* disease is an *epidemic* disease that has spread over a large area, that is, it is prevalent throughout an entire country, continent, or the whole world.

Policy – Statement by an organization of its intentions and principles in relation to its overall performance which provides a framework for action and for the setting of its objectives and targets.

PPE – Personal Protective Equipment

Preventive Action – An action implemented to eliminate the cause of a potential non-conformity or other undesirable potential situation.

Principal Contractor – An employer appointed by the client to perform construction work and who is in overall control and management of a part of or the whole construction site.

Procedure – A specific documented way to carry out an activity or a process.

Records – Recorded information, in any form that is kept as evidence. Records include monitoring results, evidence of training, audits, inspections and calibration reports.

Risk Assessment – A process of evaluating the risk(s) arising from hazards taking into account the adequacy of any existing controls and deciding whether or not the risk(s) is acceptable.

Risk Management – The ongoing treatment of risks through the application of management policies, processes, procedures and risk control measures.

Risk – A combination of the likelihood of an occurrence of a hazardous event or exposure and the severity of injury or ill health that can be caused by the event or exposure.

Root Cause – The cause of the incident that, when rectified, will prevent the recurrence of not just incidents with those exact circumstances, but others with similar causes.

SACPCMP – South African Council for Project and Construction Management Professions

SANRAL - South African National Roads Agency SOC Limited

Supplier – A person or company that supplies material or equipment to a contractor on a construction site but does not physically carry out construction work on the construction site.

The Act – The Occupational Health and Safety Act No. 85 of 1993

The Site – The area where work is carried out for SANRAL as defined on the front page of this document.

WAH – Acronym for Working at Heights.

E1003 HEALTH AND SAFETY POLICY

Contractors are expected to have their own written Health and Safety Policy. The policy should declare their attitude and approach to the health, safety and welfare of their employees and others. The policy should include a description of the company and provision must be made to review the policy annually and the CEO or Managing Director must sign and date the policy to indicate his commitment to ensuring the health and safety of his employees, as per Section 7 of the OHS Act.

E1004 ROLES AND RESPONSIBILITIES

Every Contractor is considered to be an employer in his own right and shall comply with all legal requirements pertaining to an employer, which include the responsibility to provide as far as reasonably practicable a safe and healthy working environment for his employees, as per Section 8 of the OHS Act.

In conjunction with Section 8 of the OHS Act, all employees on the project are responsible for their own health and safety as well as the safety of persons who may be affected by their acts, as per Section 14 of the OHS Act. It is the responsibility of each employee to ensure that he acts in a safe manner before and during work is carried out.

The Principal Contractor shall ensure that where required by the OHS Act and Regulations, competent employees are appointed in writing. These appointments must be project/contract specific and specific to the tasks that will be performed. Every appointment must display the duties of the person appointed and training certificates from a registered training provider must be attached to such appointment (where applicable). A list of possible appointments can be found in clause E1010 below.

E1005 HSE TRAINING AND COMPETENCE

Where appropriate qualifications and training are registered in terms of the provisions of the National Qualifications Framework Act, 2000 (Act No. 67 of 2000), those qualifications and training must be regarded as the required qualifications and training and employees must have attended courses of the aforementioned nature to be considered competent in the task.

All employees that forms part of the construction work must be trained and competent. Employees formally appointed to perform a certain duty must be in possession of a training certificate (where applicable), received from a registered training provider. All employees must as a minimum have received site specific safety induction training and must receive daily safe task instruction training (DSTI) before any work commences and thereafter on a daily basis.

a) Training Needs

There shall be a system in place to determine the training requirements of each individual, based on the tasks that the employee will perform as well as to ensure the health and safety of fellow employees and the public. Special attention should be given to employees who are new hires, new to the task or have combined responsibilities.

b) Basic Safe Work Training (Induction Training)

Every contractor shall ensure that his employees are inducted into his own company Health and Safety System as well as basic safe work training (HSE Induction Training). The Principal Contractor shall ensure that his, all his Contractor's employees and visitors are inducted on the specific site safety procedures.

A Daily Safe Task Instruction (DSTI) must be conducted on site with all employees involved in the project. The DSTI must be carried out each day before work commences and proof thereof must be available on site. Each work crew may conduct their own specific DSTI to discuss the hazards, risks and control measures associated with their task for the day.

Where two or more contractors or work crews work in the same area, they should have a combined DSTI to ensure they know of the additional hazards the other contractor or work crew will introduce to their operations and what precautions to put in place.

The Principal Contractor shall have evidence that employees have been trained on the relevant procedures prior to and during the project duration. The evidence will be in a form of attendance register.

c) Formal Training

All qualifications for which there are SAQA registered training courses, must be regarded as the minimum required qualifications and training. To be deemed "competent" an employee must have received training at a registered training provider, the training course must be registered and if there is an assessment, the employee must have been found competent after the assessment. A person cannot be deemed competent after awareness training only.

The Principal Contractor shall ensure that his employees, as well as the employees of any contractors that may be used, have received appropriate training for the type of work that will be performed, e.g. First Aid, Flag Man, Mobile Plant Operator, Working at Heights, Risk Assessment training etc.

d) Records

Record of all training shall be kept by the employer and shall be readily available. Records shall make provision for refresher training where applicable. Where an employee is legally appointed with certain duties and responsibilities a copy of the training certificate must be attached to the appointment.

E1006 APPLICATION FOR CONSTRUCTION WORK PERMIT

Construction Regulation, 2014 Section 3 requires that the client apply for a construction work permit at least 30 days before construction work is started, if the intended construction work will:

- exceed 365 days AND will involve more than 3 600 person days of construction work; or
- if the tender value limit is a CIDB grade 7, 8 or 9.

If approved, the provincial director will issue a construction work permit in writing to perform construction work within 30 days of receiving the application and assign a site-specific number for the construction site. It is the intention of SANRAL to apply for a construction work permit as soon as The Principal Contractor is appointed and his Health and Safety Plan is received, in order to minimize construction delays.

The site-specific construction work permit number must be displayed at the main entrance to the site and a copy of the construction work permit must be kept in the principal contractor's health and safety file for inspection purposes.

E1007 DUTIES

Various duties are imposed on the client, designer, principal contractor and other contractors by the Construction Regulation, 2014, Sections 5, 6 & 7. SANRAL will comply and carry out the required duties as contemplated in Section 5 of the Construction Regulations, 2014 and it is expected from the designer and every contractor to make themselves conversant with the requirements and duties imposed on them and to ensure that they comply with the requirements of section 6 & 7 at all times.

E1008 MANAGEMENT AND SUPERVISION

The Principal Contractor shall ensure that the project is managed safely, and legal compliance is ensured at all times.

A full-time competent person must be appointed as a Construction Manager to manage all construction work, including health and safety compliance. The construction manager may not be appointed to manage more than one single construction site. An Alternate Construction Manager must be appointed, to carry out the duties in the absence of the Construction Manager.

The construction manager must appoint construction supervisors responsible for construction activities and ensuring occupation health and safety on the construction site.

The Principal Contractor must appoint a full-time construction health and safety officer, who is registered with the SACPCMP, to assist in the control of health and safety aspects on site.

E1009 RISK MANAGEMENT

The Principal Contractor must follow a formal risk-based approach to ensure hazard control measures are implemented to an acceptable reasonable practical level. The Principal Contractor and his employees shall be responsible to ensure all hazards pertaining to his scope of activity are proactively identified, the risks assessed and appropriately eliminated or minimized and managed on an ongoing basis. Risk assessments shall also identify possible and potential environmental, health and hygiene issues pertaining to each hazard with potential exposures and limits.

a) Risk Assessment

i) Hazard Identification and Risk Assessment (Construction Regulation 9)

The Principal Contractor shall, before the commencement of any construction work or work associated with the aforesaid construction work and during such work, conduct a risk assessment by a competent person, appointed in writing and the risk assessment so produced shall form part of the OH&S plan and be implemented and maintained as contemplated in Construction Regulation 9(1). Competence is a factor of training, knowledge, experience and/or appropriate qualifications.

The risk assessment shall include, as far as is reasonably practicable, at least:

- The task or task step
- the identification hazards to which persons may be exposed to during the task or task step;
- The analysis and evaluation of the risks associated to the hazards identified, inclusive of a residual risk rating methodology. The method to be used is not prescribed;
- a documented plan of safe work procedures, to mitigate, reduce or control those residual risks that have been identified as unacceptably high, by means of the rating system;
- a monitoring plan;
- a review plan, inclusive of dates to be adhered to; and
- Ergonomic related risks are to be analysed, evaluated and addressed as part of the process.

Based on the risk assessments, The Principal Contractor shall develop a set of site-specific OH&S rules that shall be applied to regulate the OH&S aspects of the construction. The risk assessments, together with the site-specific OH&S rules shall be submitted to the Employer before construction on site commences. SANRAL has conducted a Baseline Risk Assessment as per clause E1009 (b) below, which must be used by The Principal Contractor to develop task specific risk assessments before work commences. This does not mean that all possible Risk Assessments must be attended to before work commences, but that all relevant Risk Assessments receive the necessary attention as the contract progresses, and this is the responsibility of The Principal Contractor.

All variations to the scope of work shall similarly be subjected to a risk assessment process.

ii) Risk Assessment Monitoring

The Principal Contractor shall ensure that a monitoring plan for all risk assessments are in place. Risk assessments must be monitored to ensure effectiveness and employee understanding. The monitoring of risk assessments shall be formal, and records thereof shall be available for audit purposes.

iii) Review of Risk Assessment

The Principal Contractor shall review the hazard identification, risk assessments and standard safe working procedures:

- prior to any work activity commencement,
- where changes are affected to the design and construction that result in a change to the risk profile,
- when an incident has occurred, or
- at least quarterly.

The Principal Contractor shall provide the Employer, sub-contractors and all other concerned parties with copies of any changes, alterations or amendments as contemplated above.

Activities carried out without conducting a risk assessment or found to be non-compliant with the risk assessment, will be stopped until such time a risk assessment is compiled, and work is carried out according to the risk assessment.

Risk assessments must be fully communicated to all relevant personnel and must be considered when establishing training, awareness and competency requirements. Records of risk assessment communications must be kept for inspection purposes.

b) **Baseline Risk Assessment**

SANRAL prepared a Baseline Risk Assessment from which the Health and Safety Specifications for this project was prepared. The Baseline Risk Assessment highlights all work for which The Principal Contractor must prepare safe work procedures and or work method statements. It must be noted that the Baseline Risk Assessment is not exhaustive and Principal Contractors are required to identify risks and come up with control measures, this must be identified by Principal Contractor when preparing the Issue Based Risk Assessments.

The Baseline Risk Assessment for this Project can be found in clause E1018.

c) **Continuous Risk Assessment**

The Principal Contractor shall continuously assess the risks of the activities that are carried out. Risk assessments must be in writing, site specific and must be reviewed continuously as per E1009 a(iii) to ensure it is current and it address all the relevant hazards and risks associated with the specific activity at the specific site.

The Risk assessment must be discussed with the whole work crew before the activity starts and the work crew must acknowledge in writing having discussed the risk assessment and that they understand it. This acknowledgement must be on site and must be available to the client for audit purposes.

E1010 LEGAL COMPLIANCE AND DOCUMENT CONTROL

The Principal Contractor is required to implement systems and procedures to ensure legal compliance through:

- Identification of all relevant HSE legislation, standards and codes applicable to its operations.
- Have available copies of all relevant HSE legislation, standards and codes for reference purposes.
- Update systems and procedures with changed/updated legislation, standards and codes.
- Communicate to all employees any changes that may affect their accountabilities and conformances
- Incorporate any legal requirements into their HSE management system

- Monitor and review their HSE management system for effectiveness.

The Principal Contractor shall, as a minimum, comply with:

- The Occupational Health and Safety Act and Regulations (Act 85 of 1993), an up-to-date copy of which shall be available on site at all times.
- The Compensation for Occupational Injuries and Diseases Act (Act 130 of 1993), an up-to-date copy of which shall be available on site at all times.
- Where work is being carried out on a quarry/borrow pit/"mine", The Principal Contractor shall comply with the Mines Health and Safety Act and Regulations (Act 29 of 1960) and any other OH&S requirements that the mine may specify. An up-to-date copy of the Mines Health and Safety Act and Regulations shall be available on site at all times.

Wherever in the Construction Regulations or this specification there is reference to other regulations (e.g. Construction Regulation 24: Electrical Installations and Machinery on Construction Sites) The Principal Contractor shall be conversant with and shall comply with these regulations.

All legal appointments of The Principal Contractor regarding the Health and Safety of his employees who are to work on the project are addressed and governed by the OHS Act and applicable Regulations. Legal appointments must be in place and must reflect in the project safety file before work commences.

a) Overall Supervision and Responsibility for OH&S

SANRAL will appoint the Principal Contractor in terms of Construction Regulation 5(1)(k). A Mandatory agreement as per Section 37.2 of the OHS Act, shall be signed between SANRAL and the Principal Contractor.

It is a requirement that the Principal Contractor, when he appoints other contractors in terms of Construction Regulations 7(1)(c), 7(1)(d), 7(1)(f) and 7(3) includes in his agreement with such Contractors the following:

- OH&S Act (85 of 1993), Section 37(2) agreement: "Agreement with Mandatory".
- OH&S Act (85 of 1993), Section 16(2) appointee(s) as detailed in his/her/their respective appointment forms. (Where applicable).

The signed Mandatory agreements shall be placed in the project file for reference and for audit trail purposes.

b) Specific Supervision Responsibilities for OH&S

The Principal Contractor shall appoint designated competent employees and/or other competent persons as required by the OHS Act and Regulations, as well as this specification. Appointments shall be in writing and the responsibilities clearly stated together with the period for which the appointment is made. This information shall be communicated to and agreed with the appointees. Where applicable, the training certificate must be attached to the appointment. Notice of appointments shall be submitted to the Employer. All changes shall also be communicated to the Employer.

Below is a list of possible appointments for the project, which is not an all-inclusive list, but for reference purposes only:

Appointment	Legal Reference
Assistant to CEO	OHS Act 16(2)
Health and Safety Representative	OHS Act 17(1)
Nominated Health and Safety Committee Member	OHS Act 19(3)
Contractor (Sub-contractor)	CR 7(1)(c)(v)
Construction Manager	CR 8(1)
Alternate Construction Manager	CR 8(1)
Assistant Construction Manager	CR 8(2)
Health and Safety Officer	CR 8(5)
Construction Supervisor	CR 8(7)
Assistant Construction Supervisor	CR 8(8)
Risk Assessor	CR 9(1)

Appointment	Legal Reference
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/worksites, The Principal Contractor shall ensure that there is at least one trained first aider for every group of 50 employees at the workplace/site. First Aid boxes must be provided where more than 5 employees are employed and must be readily available and accessible for the treatment of injured persons at the workplace.

To ensure immediate treatment of an injured person, it is recommended that all work crews have at least one trained first aider, with a fully stocked first aid box, irrespective of the number of people in the work crew. This is especially important when contractors work at great distances from the nearest emergency facility or town. These persons shall be appointed in writing as the first aiders with their certificates attached as proof of competency.

The minimum contents of the first aid box shall be as per the supplied list in the General Safety Regulations.

All treatments done must be recorded on a register and kept with the first aid box. A trained and appointed first aider must be responsible for the first aid box and its content. Used content must be replenished as soon as possible.

In order to ensure prompt response at the emergency facility it is recommended that the W.CI 2 forms be partially completed with the Employers' details.

c) Hygiene Facilities

The Principal Contractor and his contractors shall ensure compliance to Section 30 of the Construction Regulations with regards to facilities on the construction site as well as where accommodation is provided to employees on remote sites. The Principal Contractor shall ensure that the facilities are kept clean at all times, either through a service provider or self-employed persons. The Principal Contractor shall provide employees with at least one sanitary facility for each sex and for every 30 workers, changing facilities for each sex and sheltered eating areas.

d) Health related Epidemics and Pandemics

The contractor shall, as far as reasonably practicable describe in his health and safety plan how health related epidemics and pandemics will be dealt with. The Employer is aware that this section in the health and safety plan will not speak to specifics, but generic procedures. The Contractor must ensure that the requirements stipulated in the Hazardous Biological Agents (HBA) Regulation are addressed in his health and safety plan, training and information given to staff and procedures implemented on site to prevent health risks on site.

Once the nature and scale of the epidemic or pandemic is known, the Contractor must update his health and safety plan with the relevant information and send the updated plan to the relevant appointed OHS Agent for approval. Once approved, the Contractor must implement the updated health and safety plan and maintain the updated plan on site.

E1013 WASTE MANAGEMENT

The Principal Contractor shall comply with all applicable and relevant Waste management legislation, as well as municipal bylaws applicable to waste management.

The Principal Contractor shall remove all waste generated at the construction site as soon as possible after generation to ensure good housekeeping at all times. The Principal Contractor shall have a waste

management plan which must be implemented on the construction site and which will have the objective to ensure that waste is managed according to the Waste Management Hierarchy:

- Reduce what you can. If you cannot reduce then,
- Re-use what you can. If you cannot re-use then,
- Recycle what you can. What you cannot recycle,
- Convert into energy sources. If it cannot be converted to an energy source,
- Dispose of in a landfill – this is only to be done as a last resort and disposed without endangering human health and without using processes or methods which could harm the environment.

E1014 HAZARDOUS SUBSTANCE MANAGEMENT

The Principal Contractor shall ensure that hazardous substances brought onto site are easily identifiable and stored according to the requirements of the General Safety Regulations, GNR. 1031 of 1986, Section 4.

Where flammable liquids are being used or stored, this must be done in a manner which would not cause a fire or explosion hazard.

The Principal Contractor shall have Material Safety Data Sheets (MSDS) readily available for flammable, hazardous and toxic chemical substances and materials brought onto site and shall ensure that his employees are trained in these MSDS's.

Flammable, hazardous or toxic chemical substances may not be stored in empty food or drink containers. Empty flammable, hazardous and toxic containers must be disposed of in a safe manner, which will prevent further use of such a container.

A survey of the construction site must be done during site establishment, to locate any asbestos. Should asbestos be located, the conditions of the Asbestos Regulations, GNR. 155 of 2002 must be followed and complied with.

E1015 CONTRACTORS

a) Consultations, Communications and Liaison

OH&S liaison between the Employer, The Principal Contractor, The Contractors, the designer and other concerned parties will be through the OH&S committee. In addition to the above, communication may be directly to the Employer or his appointed agent, verbally or in writing, as and when the need arises.

Consultation with the workforce on OH&S matters will be through their construction managers and supervisors, OH&S representatives and the OH&S committee. The Principal Contractor shall be responsible for the dissemination of all relevant OH&S information to The Contractors e.g. design changes agreed with the Employer and the designer, instructions by the Employer and/or his/her agent, exchange of information between subcontractors, the reporting of hazardous/dangerous conditions/situations etc. The Principal Contractors' most senior manager on site shall be required to attend all OH&S meetings.

b) Operational Procedures

Each construction activity shall be assessed by The Principal Contractor so as to identify operational procedures that will mitigate against the occurrence of an incident during the execution of each activity. This specification requires The Principal Contractor:

- to be conversant with all relevant Regulations;
- to comply with their provisions;
- to include them in his OH&S plan where relevant

c) **Checking, Reporting and Corrective Actions**

i) Monthly Audit by Employer (Construction Regulation 5(1)(o))

The Employer will conduct monthly health and safety and document verification audits in compliance with Construction Regulation 5(1)(o) in order to ensure that The Principal Contractor has implemented and is maintaining the agreed and approved OH&S plan.

The Principal Contractor will be provided with a copy of the Health and Safety audit report within seven days after the audit. The Employer or his representative may stop any Principal Contractor from executing a construction activity which poses a threat to the health and safety of persons which is not in accordance with the client's health and safety specification and the Principal contractor's health and safety plan for the specific site.

ii) Other Audits and Inspections by the Employer

The Employer reserves the right to conduct other ad hoc audits and inspections as deemed necessary. This will include site safety walks.

iii) Principal Contractor's Audits and Inspections

The Principal Contractor must conduct his own regular internal audits to verify compliance with his own OH&S management system, as well as with this specification.

The Principal Contractor shall furthermore ensure that each contractor's health & safety plan is being implemented and maintained. The Principal Contractor will ensure that periodic health and safety audits and document verification are conducted at intervals mutually agreed upon between the Principal Contractor and any contractor, but at least once every 30 days.

iv) Inspections by OH&S Representatives and other Appointees

OH&S representatives shall conduct monthly inspections of their areas of responsibility and report thereon to their foreman or supervisor, as well as the OH&S Committee, whilst other appointees shall conduct inspections and report thereon as specified in their appointments e.g. vehicle, plant and machinery drivers, operators and users must conduct daily inspections before start-up.

v) Recording and Review of Inspection Results

All the results of the abovementioned inspections shall be in writing, reviewed at OH&S committee meetings, endorsed by the chairman of the meeting and placed on the OH&S File.

d) **Project Health and Safety Management Plan**

As per Section 5(1) (l) and Section 7(1) (a) of the Construction Regulations of 2014, The Principal Contractor shall develop, implement and administer a Health and Safety Management Plan. The plan shall be in writing and shall be negotiated between The Principal Contractor and SANRAL or designated OHS Agent and must be approved by SANRAL or the designated OHS Agent prior to the commencement of work on site. The plan shall demonstrate management's commitment to ensure employee health and safety as their primary objective during the contract. The H&S plan shall be site and project specific and must address all aspects of the project H&S specification.

e) **Project Health and Safety File**

The Principal Contractor shall compile a project specific Health and Safety File that consist of all the relevant project specific documentation. The Health and Safety file may consist of multiple files, which when combined should contain all the required documentation.

It is recommended that the project specific Health and Safety file contain at least the following:

- Scope and summary of the project as well as any scope changes.
- Notification of Construction Work to DoL / Copy of Work Permit
- Proof of COID registration (Letter of Good Standing)

- Contractor Health and Safety Policy statement signed by management
- Appointment of Principal Contractor
- Mandatory Agreement – OH&S Act 37.2 (Between Employer and Principal Contractor)
- Client Health and Safety specification
- Latest copy of the OHS Act and Regulations
- Company Organogram depicting Health and Safety Responsibilities, including sub-contractors
- Employee list including copy of IDs and medicals
- Project specific Health and Safety Management Plan agreed with the Employer – See E1015(d) above
- Relevant OH&S Legal appointments which includes duties and responsibilities as well as competencies (training certificate)
- Copies of minutes of meetings – OH&S committee and other relevant OH&S meeting minutes
- Site specific Fall Protection Plan (if applicable)
- Risk Assessments
- Contractor Induction material
- Waste management Plan
- Emergency preparedness (first aid, firefighting, emergency plan, etc.)
- Emergency Contact Telephone numbers
- List of hazardous chemical substances used on site
- Material Safety Data Sheets of hazardous chemicals on site
- List of plant & equipment to be used on site
- Inspection Checklists/Registers of plant & equipment and emergency equipment
- List of Sub-contractors including type of work
- Sub-contractor 37.2 Mandatory Agreements
- Sub-contractor appointments which shall include the type of work The Principal Contractor is appointed for.

f) **Contracting Philosophy**

Any site-specific hazards and safety management expectations will be made known to the Principal Contractor prior to the work commencing on site. This will be done through the OH&S Specification for the project. SANRAL as the Employer/Client may specify requirements that are stricter than Legislative requirements in this OH&S Specification. Legal OHS requirements contained in the OHS Act and Regulations, SANS Codes and the project OH&S Specifications are the minimum requirements the Principal Contractor must apply during this contract with regards to Occupational Health and Safety. The Principal Contractor shall implement the minimum OH&S requirements and ensure conformance to these at all times.

g) **Workers Compensation Registration**

The Principal Contractor shall ensure that his employees are covered for any occupational injuries and illnesses in terms of the Occupational Injuries and Diseases Act 130 of 1993, which cover shall remain in place and up to date for the duration of the project.

The Principal Contractor shall ensure that his sub-contractor employees are covered for any occupational injuries and illnesses in terms of the Occupational Injuries and Diseases Act 130 of 1993, which cover shall remain in place and up to date for the duration of the project.

h) **HSE Non-Compliance**

It is a legal duty of the client according to the Construction Regulation 5(1)(q) that a Principal Contractor is stopped from executing any activity which poses a threat to the health and safety of persons. Depending on the seriousness of the non-compliance only the specific activity may be stopped until the non-compliance is rectified or the whole operation may be stopped.

It is also the duty of every employee to take reasonable care of his own health and safety and of other persons who may be affected by his acts as per OHS Act, Section 14(a). Keeping this in mind, it is required of The Principal Contractor to ensure his employees has the right to remove themselves from any unsafe situation or work activity, without any negative consequence to them until such time as The Principal Contractor has made the unsafe situation or activity as safe as practicable possible.

i) **Indemnity by Contractor**

The Principal Contractor shall indemnify the Employer against and from all damages, losses and expenses (including legal fees and expenses) resulting from:

- i) the loss of output and delay caused by the slowing down or partial or total stoppage of work caused by:
 - all or any of The Principal Contractor's workforce as a result of a dispute between all or any of the Principal Contractor's workforce and The Principal Contractor; or
 - all or any of the Principal Contractor's suppliers' difficulty or impossibility to deliver goods or materials needed to perform the Works;
- ii) Any unlawful, riotous or disorderly conduct by or amongst the Principal Contractor's personnel."

j) **The Principal Contractor Conduct**

Guidelines to the most important rules that shall be implemented and maintained by the Principal Contractor:

- Complete compliance to the OH&S Act 85 of 1993 and Regulations,
- Hazard identification and Risk Assessments for all activities,
- Daily communication of DSTI's before work commences, even if it is a repetitive task,
- Safe access and egress to and from work areas,
- Compulsory use of lifelines, Safety Harnesses and Fall Arrestors (Lanyards to be attached at all times), when working in elevated positions,
- Scaffold shall comply with Legal and SANS standards at all times,
- Good housekeeping and stacking practices,
- Safe lifting, rigging and slinging practices,
- Complying to Legal standards for lifting machinery & equipment,
- No lifting in wind conditions exceeding 30km/h (This is a guide and is dependent on risk assessments),
- Securing of tools, equipment and material at heights,
- Wearing of appropriate personal protective equipment as identified in the risk assessment.

Supervisors in charge are responsible for ensuring that the employees are aware of the hazards/risks involved in the work they will be doing/are doing and shall ensure the safety rules are obeyed.

No person shall act in a manner that endangers or is likely to endanger, the safety of any other person, or cause harm to any other person.

An employee who observes any dangerous situation, shall as soon as possible inform the person who is responsible for that section of the site.

Any employee who becomes aware of any person disregarding any safety rules, shall remind that person of the rules. If he persists in disregarding the rules, the matter must be reported to his supervisor.

No person shall damage, alter, remove, render ineffective or interfere with anything that has been provided for the protection of the site, or for the health and safety of persons.

No person shall interfere with or use firefighting equipment without authority and training.

No person in a state of intoxication or condition that render him incapable of controlling himself shall enter or be allowed to enter the site.

No alcohol or illegal drugs shall be taken onto the site.

All safety and warning signs shall be obeyed.

Always be alert of construction vehicles as well as traffic. Never turn your back to oncoming traffic, always have a line of sight.

k) Principal Contractor and Contractor Management

The Principal Contractor shall establish, maintain and ensure that all his contractors establish and maintain OH&S standards and systems as necessary and to comply with the Legal requirements as well as these OH&S specifications.

The Principal Contractor shall be solely responsible for carrying out work on the project, having the highest regard for the health and safety of his employees and people in the vicinity of his work area.

l) Public Health and Safety

The Principal Contractor shall, as far as is reasonably practicable, be responsible for ensuring that non-employees affected by the construction work are made aware of the dangers likely to arise from said construction work as well as the precautionary measures to be observed to avoid or minimise those dangers.

This includes:

- Non- employees entering the site for whatever reason
- The surrounding community
- Passers-by to the site.

E1016 DESIGNING FOR HEALTH, SAFETY AND THE ENVIRONMENT

Designing for safety is a process aimed at minimizing injury, death, property damage or destruction and harm to the environment, by utilizing an approach to identify and eliminate or control hazardous conditions and material during the design process. The Principal Contractor is responsible for appointing the temporary works Designer and shall ensure that the temporary works Designer implement a process and designs the temporary works in such a way that ensure the safety of employees during the erection, use and dismantling of the temporary works. The temporary work designer shall comply with the duties of the Temporary Work Designer as per the Construction Regulations, 2014 Section 6(2).

The Principal Contractor must communicate the anticipated risks and hazards resulting from the design to his employees and establish safe work procedures for the temporary works.

E1017 INCIDENT MANAGEMENT

The Principal Contractor shall ensure that a culture exists within his company that promotes the recognition, response, reporting and investigation of incidents, including near misses (near hits). The Principal Contractor must implement a procedure for reporting and investigating accidents, incidents and near misses. The Principal Contractor should have a clear objective and target to obtain zero injuries for the duration of the project and such an objective must be communicated to all employees.

Appropriate corrective actions must be implemented, and the applicable learnings must be shared within The Principal Contractors business to prevent a recurrence of the incident or to prevent the near miss from becoming an incident in future.

(a) Incidents and Accidents

The Principal Contractor and his contractors shall coordinate their investigation of all accidents/incidents where employees and non-employees were injured to the extent that he had to be referred for medical treatment by a doctor, hospital or clinic. The results of the investigation shall be entered into an accident/incident register, which must be updated with each accident/incident.

The Principal Contractor shall notify the relevant SANRAL Project Manager and or SANRAL OHS Specialist of any incident/accident within the Principal Contractors or his Contractors area of responsibility in writing as soon as possible.

Although the accident/incident is reported to the client, the Principal Contractor has a responsibility and is required by law to report any Section 24 accidents and incidents to the Department of Labour. Any road traffic accident must be reported to the relevant authorities.

It is essential that the Principal Contractor demonstrate that corrective and preventative action has been taken to prevent a similar incident in future and that it is communicated to all the

Principal Contractors affected staff. A copy of the investigation, corrective and preventative action taken as well as the attendance register of the employees who attended the discussion of the incident and the action implemented to prevent a similar incident, must be forwarded to the SANRAL Project Manager and or the SANRAL OHS Specialist.

Investigations must be completed for:

- Near Miss Incidents (To prevent it from becoming an incident)
- First Aid case Incidents
- Medical treatment case Incidents
- Fatalities

(b) Incident Reporting

The Principal Contractor shall provide the Employer with copies of all statutory reports required in terms of the Act within 7 days of the incident occurring. In addition, The Principal Contractor shall update monthly the Disabling Injury Frequency Ratio (DIFR) and display this information on a signboard at the site office.

The Principal Contractor is responsible for collecting, recording, calculating and reporting his and his sub-contractors Health & Safety statistics to the SANRAL OHS Specialist.

The statistics should contain at least the following for all employees of all contractors working on the project:

- Total Number of workers
- Total Number of hours worked (on the SANRAL project)
- Total Number of Near Miss Incidents
- Total Number of First Aid case Incidents
- Total Number of Medical Treatment case Incidents (Excluding Section 24 type incidents)
- Total Number of Section 24 type Incidents
- Preventative actions taken on incidents that have occurred
- Communication to employees and contractors of incidents and preventative actions.

E1018 PROJECT SPECIFIC CONSTRUCTION REQUIREMENTS

The clause contains specific requirements for Contract SANRAL N.011-090-2016/1, which must be adhered to in addition to minimum legislative requirements.

a) Baseline Risk Assessment

The following is a list of activities, hazards and risks identified which forms the Baseline Risk Assessment for the project prepared by the Client in terms of Construction Regulation 5(1) (a):

Risks associated for identified activities and hazards:

<u>Activity</u>	<u>Associated Hazards</u>	<u>Associated Risks</u>	<u>Risk Rating</u> High Medium Low
Site establishment	Extreme temperatures; Pesticides, herbicides, dust. Fires caused by hazardous chemical substances (Petrol, Diesel used in generators) Snakes, bees, spiders, vermin (rats & mice); Portable electrical equipment; Hand tools; Lifting equipment; Aggrieved members of the public. Ladders Working with ccement	Heat exhaustion; Dehydration; Poisoning; Burns Fatality / Serious health effect; Electrical shock; Personal Injuries; Cuts; Abrasions Falling objects; Strikes / riots Fall from heights Silicosis	M

<u>Activity</u>	<u>Associated Hazards</u>	<u>Associated Risks</u>	Risk Rating High Medium Low
Security	Aggrieved members of the public; Uncontrolled people	Protest Riots Theft	M
Loading / Unloading of materials / plant & equipment from trucks	Lifting equipment; Inexperience operators; Inexperienced workers;	Material / plant falling from height; Operator losing control; Employees under / close to suspended loads.	M
Transportation of personnel / materials	Overloaded vehicles; Transportation of workers in vehicles not designed to transport people; Transporting vehicle defective / not roadworthy Unlicensed or incompetent drivers	Operator losing control of vehicle; Vehicle overturning; Vehicle accidents; Fatality or Serious injuries caused by vehicle accidents	H
Erection of temporary site offices / Laboratory	Extreme temperatures; Pesticides, herbicides Cement dust; Snakes, bees, spiders, vermin (rats & mice); Portable electrical equipment; Hand tools Lifting equipment; Temporary works; Aggrieved members of the public.	Heat exhaustion; Dehydration Poisoning; Silicosis Fatality / Serious diseases; Electrical shock; Personal Injuries (cuts and abrasions) Falling objects; Strikes / riots	M
Working with and handling of hazardous / flammable / toxic materials	Hazardous, flammable and toxic substances	Chemical burns; Fire; Lung disease Serious injuries; Fatalities	M
Disposal of waste materials	Hazardous waste	Environmental pollution Re-use of containers can have serious health effect on people or fatalities. Injuries and disease caused by chemical substances kept in unmarked containers	H
Traffic accommodation / calming	Working in close proximity to public vehicles; Farm vehicles and trucks from nearby coal mines Extreme temperatures Stop & Go	Employees run over by public vehicles – serious injuries /fatalities Heat exhaustion or hypothermia Public not adhering to stop & go signals / try to bypass stop & go – fatality / serious injuries / vehicle accidents. Slow moving farm vehicles and trucks from nearby coal mines	H

<u>Activity</u>	<u>Associated Hazards</u>	<u>Associated Risks</u>	Risk Rating High Medium Low
Working in elevated positions - Working at heights, on slopes, next to excavations, on trucks.	Defective / Inadequate fall prevention or fall arrest 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; Falls caused by slippery work surfaces; Electrical Shock; Electrical arching; Fatality / serious injuries;	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 above / near water environments	Working at heights Water environment	Hypothermia Drowning Water pollution	M
Working near existing services – overhead/underground power cables; telecommunication cables	Electricity	Electrical Shock; Electrical arching; Fire; Burns Fatality Serious injury	H
Working with portable electrical equipment – grinders, circular saws, generators	Electricity Electrical tools Portable electrical equipment	Electrical shock Cuts Personal injuries	M
Lifting / Lowering operations	Lifting machines and cranes Elevated objects Strong winds Improper rigging Electrical cables	Lifting machine / crane toppling; Falling objects Dropped loads Loads striking personnel, vehicles or equipment. People working underneath suspended loads High voltage power lines may arch onto crane boom.	H
Driving and operation of construction vehicles and mobile plant	Unlicensed or incompetent drivers; Distractedness or Recklessness; Impaired driving caused by poor visibility or poor road conditions; Unsecured loads or equipment failure; Unroadworthy public vehicles; Uneven ground surfaces	Fatalities or serious injuries caused by vehicle crashes; Vehicles, plant and equipment damage; Workers not seen by operators; Workers working too close to mobile plant and vehicles; Loads falling from vehicles Vehicle accidents caused by construction vehicles & mobile plant not road worthy / defective; Roll over of construction vehicles / plant.	H

<u>Activity</u>	<u>Associated Hazards</u>	<u>Associated Risks</u>	Risk Rating High Medium Low
Excavation work	Unstable ground Excavations not cordoned off Underground electrical cables; Underground pipelines; Excavation equipment, construction vehicles & plant.	Excavation collapse; Workers buried in excavation due to cave-ins; People falling into excavation; Construction vehicles / plant falling into excavation; Fatalities; Serious injuries	H
Use of explosives	Explosives; Flying debris	Fatality; Serious Injuries	M
Gabion work	Manual handling Slopes and slippery Rocks	Personal injuries such as cuts and abrasions caused by rocks or basket wires Trips, Slips & Falls	M
Work adjacent or in proximity of railway lines	Trains Electrical cables	Working too close to railway track can cause train draft to suck workers under trains. People falling onto or in front of trains while working above railway track. Electrocution caused by coming into contact with electrical cables Arching from live train lines under bridge	H
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;	Serious injury or fatality to members of the public; Damage to public property and assets;	H
Protection of public H&S	Unprotected temporary works, scaffolding; Stockpiles; Incomplete structures.	Public persons accessing construction area, stockpiles, scaffolding and incomplete structures. Fatality / Serious injury to members of the public	H
Welfare facilities – drinking water; eating facilities; sanitary facilities	Water not suitable for human consumption; Shortage of water; Hazardous substances;	Serious health effects; Dehydration Environmental pollution	M

<u>Activity</u>	<u>Associated Hazards</u>	<u>Associated Risks</u>	<u>Risk Rating</u> High Medium Low
	Environmental impact.		
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; Hypothermia	M
	Hazardous biological agents	Serious health effects; Fatality; Pandemic; Epidemic	H

b) **Daily Site Attendance Register**

The Principal Contractor shall keep a daily site register so as to be able to identify the entire Contractors personnel on site in case of an emergency or evacuation situation. The attendance register must include permanent as well as temporary workers working on the site.

All contractors shall report to security/reception upon arrival at site. The Principal Contractor will only grant first time access to work on the site if all required documentation has been provided by the contractor and has been approved by the Principal Contractor.

All site visitors, suppliers and any new contractors shall report to security/reception upon arrival at site. All visitors need to sign an attendance register when visiting the site. Visitors include all persons which are not permanently working on the site but excludes temporary site workers. Visitors must undergo site induction training before they are allowed on site to make them aware of the site dangers.

c) **Emergency Numbers / Emergency Evacuation**

A list with emergency numbers must be readily available to first aiders and supervisors. Emergency numbers must be site specific and must display the nearest emergency facilities.

The Principal Contractor shall identify and formulate emergency procedures in the event an incident does occur. The emergency procedures thus identified shall also be included in The Principal Contractor's OH&S plan and communicated as part of induction training. It is the responsibility of the first aid worker, together with the construction supervisor, to make an assessment regarding the severity of injuries and which actions are appropriate. For example: transfer to a medical facility by ambulance or helicopter.

The Principal Contractor must implement an emergency evacuation procedure on site to ensure that in case of an emergency, all staff will leave their place of work when the emergency siren is sound and proceed to the designated emergency assembly point. The emergency assembly point at the site office must display the sign "Emergency Assembly Point".

An evacuation route diagram must be displayed and visible at strategic points in the site office buildings and on notice boards.

All staff working on site must be given awareness training on the emergency evacuation procedure and evacuation drills must be exercised to ensure all staff know the correct procedure to follow in case of an emergency.

d) **Site Security**

Certain areas where work must be carried out, is recognized unsafe areas and certain other areas may from time to time become unsafe, due to 3rd party actions. The Principal Contractor must, as far as reasonably possible, anticipate unsafe areas and must ensure that his site staff is safe from 3rd party actions, which include but is not limited to:

- Unrests,
- Violent Demonstrations,
- Theft,
- Injury to staff due to 3rd party actions.

The Principal Contractor must, when work is to be carried out in the above-mentioned areas, make provision for security services to accompany site staff during the execution of their work, as The Principal Contractor is responsible for the Health, Safety and Security of his own staff. The provision for security services must form part of The Principal Contractors tender.

e) **Personal Protective Equipment**

Comply with General Safety Regulations, Section 2

The Principal Contractor shall identify the hazards in the workplace and follow the hierarchy of controls to prevent incidents. Where possible, hazards must be eliminated or, where impracticable, mitigate the hazards through implementing control measures. Where mitigated hazards still pose a risk to the health and safety of workers, take steps to protect workers and make it possible for them to work safely and without risk to their health under the hazardous conditions, by wearing personal protective equipment and clothing.

Personal protective equipment (PPE) should, however, be the last resort and there should always first be an attempt to apply engineering and other solutions to mitigate hazardous situations before the wearing of PPE is considered. The hierarchy of hazard control must be followed before the option of personal protective equipment is considered. The following hierarchy of controls must be followed:

- Elimination
- Passive Controls
 - Substitution – Using a cherry picker or man-lift instead of a ladder.
 - Engineering Controls – Installing barrier railings; Installing stairs instead of using vertical ladders.
- Active Controls
 - Administrative policies and procedures
 - Personal protective equipment

Where it is not possible to create an absolutely safe and healthy workplace, the Principal Contractor shall inform employees regarding this and issue, free of charge, suitable equipment to protect them from any hazards being present and that allows them to work safely and without risk to health in the hazardous environment.

It is a further requirement that the Principal Contractor maintain the said equipment, that he instructs and trains the employees in the use of the equipment and ensures that the prescribed equipment is used by the employee/s.

Employees do not have the right to refuse to use/wear the equipment prescribed by the Employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other reason, the employee cannot be allowed to continue working under the hazardous condition/s for which the equipment was prescribed but an alternative solution has to be found that may include relocating the employee.

The Principal Contractor shall include in his OH&S plan the PPE he intends issuing to his employees for use during construction and the sanctions he intends to apply in cases of non-conformance by his employees. Conformance to the wearing of PPE shall be discussed at the DSTI and Toolbox Talk meetings.

The Principal Contractor shall ensure that all his personnel, excluding those who are permanently office bound, are equipped with reflective safety jackets and that these are worn at all times when working on site. Any person found not wearing a reflective jacket on site must be removed from

the site until such time as he is in possession of and wearing a reflective jacket. Reflective safety jackets shall be kept in good condition and any jackets that are ineffective must immediately be replaced by The Principal Contractor.

f) **Site Supervision**

Comply with Construction Regulation, Section 8.

The Principal Contractor shall appoint a competent Construction Manager who shall be responsible for the construction activities and for ensuring occupational health and safety compliance on the construction site.

g) **Working in Elevated Positions**

Comply with Construction Regulation, Section 10

The Principal Contractor shall ensure that a fall protection plan, developed by a competent person who is designated as the Fall Protection Plan Developer, is available on site and understood by all employees who will be working in elevated positions.

All employees working in elevated positions shall protect themselves from falls by wearing a full body harness and the lanyard shall be attached as far as possible above the head of the worker to a life-line or other approved and anchor point indicated in the fall protection plan.

In addition to obvious elevated work activities, work activities which include:

- Working on the edge of an excavation where there is a risk of falling into the excavation; or
- Work on the edge of a vertical drop where there is a risk of falling;

shall be considered work in elevated positions and Section 10 of the Construction Regulations must be adhered to at all times. The hierarchy of controls must be implemented when such activities are carried out. As a minimum the employee must wear PPE as identified in the risk assessment, which shall include a full body harness.

h) **Structures**

Comply with Construction Regulations, Section 11.

The Principal Contractor shall ensure that all practicable measures are taken to prevent the uncontrolled collapse of new or existing structures or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work. No structure may be loaded in a manner which would render it unsafe.

When a structure is of temporary nature, all conditions as required by the Construction Regulations Section 12 - Temporary Works, must also be complied with.

i) **Excavations**

Comply with Construction Regulations, Section 13

The Principal Contractor shall ensure that all excavations are carried out under the supervision of a competent person who has been appointed in writing as Excavation Supervisor.

The Principal Contractor must evaluate the stability of the ground before excavation work begins as well as during excavation work.

Excavations must be barricaded to prevent unauthorized access.

Material removed from excavations, as well as heavy machinery and construction vehicles, must not be closer than 1 meter to the edge of the excavation, to prevent additional loads on the excavation edge, which could cause cave-ins, to prevent construction vehicles from falling into the excavation and to prevent the accumulation of carbon monoxide gas inside the excavation.

The principal contractor and its contractors must cause every excavation which is accessible to the public or which is adjacent to the public roads or thoroughfares, or whereby the safety of persons may be endangered, to be –

- Adequately protected by a barrier or fence and as close to the excavation as is practicable; and
- Provided with warning illuminants or any other boundary indicators that are clearly visible at night or when visibility is poor.

People working in the excavation must be adequately protected from cave-ins, by means of protection systems such as trench boxes and shielding and must have a safe means of access into the excavation and egress from the excavation.

j) **Scaffolding**

Comply with Construction Regulations, Section 16, General Safety Regulations, Section 6 and SANS 10085 – The Design, erection, use and inspection of access scaffolding

The Principal Contractor shall appoint a competent person in writing as scaffolding Supervisor. Scaffolding Inspectors and Scaffolding Erectors must be trained and found competent to carry out scaffolding work. It is important to note that only competent scaffold erectors are allowed to build the scaffolding. The scaffold inspector is not allowed to build the scaffold with the scaffold erector team.

Scaffolding shall be erected according to SANS 10085 and shall be tagged “Unsafe for use” while it is being build and “Safe for Use” after inspection indicated that the scaffold is safe to use. The inspection of the scaffold shall be in writing and proof thereof shall be available for any user of the scaffold as well as for audit purposes.

Scaffold left erected while The Principal Contractor is not in attendance, must be tagged with a “Not Safe for Use” tag and all reasonably practicable measures must be taken to prevent unauthorised access to the scaffold.

Scaffold must be inspected by the competent scaffold inspector on completion of the scaffold build, weekly thereafter or following severe weather conditions.

Hazards such as overhead power lines must be identified before the scaffold is build and must be reflected in the risk assessment.

When using mobile scaffold, employees and materials must be removed from scaffold before moving the mobile scaffold. Hazards such as overhead power lines must be identified before moving mobile scaffold and must reflect in the risk assessment.

k) **Suspended Platforms**

Comply with Construction Regulation, Section 17, SANS 10295-2 - Suspended access equipment Part 2: Temporary suspended platforms (TSPs)

All suspended platform work must be carried out under the supervision of a competent appointed Suspended Platform Supervisor. Suspended platform erectors, operators and inspectors must be competent.

The Principal Contractor must be in possession of a certificate of design for the use of the suspended platform system.

l) **Cranes**

Comply with Construction Regulation, Section 22, Driven Machinery Regulation, Section 18.

Crane operators must be trained and found competent to operate the particular type of lifting machine and have a valid operator's card. The crane operator must be in possession of a valid medical certificate of fitness, issued by an occupational health practitioner.

The wind factor should always be taken into consideration when operating cranes and a wind speed device must be fitted so that it provides the operator with an audible warning when the speed exceeds the safe lifting speed. Upon noticing that the wind speed is equal or more than the specified speed limit, the operator should stop immediately.

m) **Construction Vehicles & Mobile Equipment**

Comply with Construction Regulation, Section 23, National Road Traffic Act, 1996

Construction vehicle operators must have received training to operate the class of construction vehicle or mobile equipment and must be in possession of an operator's card as proof of competency. Construction vehicle operators must be authorised in writing and have a medical certificate of fitness issued by an occupational health practitioner to operate the construction vehicle and/or mobile equipment.

All construction vehicles operating on a public road, must be roadworthy, licenced and when operated on a public road, comply with the National Road traffic Act.

n) **Electrical Equipment**

Comply with Construction Regulations, Section 24.

The Principal Contractor shall take adequate steps to ascertain the presence of and guard against danger to workers from electrical cables or apparatus which is under, over or on the site.

The exact location of underground electric power cables must be determined before any excavators are used for excavation purposes.

The location of overhead electrical cables must be assessed when working with cranes and lifting equipment. Injury may be possible from touching the electrical cables with the crane boom, or from arching when the crane boom comes too close to the electrical cable.

All temporary electrical installations must be inspected at least once a week by a competent person and the records of the inspections must be recorded in a register which must be kept on site.

Electrical machinery and extension cords must be in a serviceable condition and must be inspected on a daily basis before use on a construction site by the authorised operator and the inspection checklist must be kept on the construction site.

Comply with Electrical Installation Regulations.

All electrical installations shall be inspected and approved by an accredited electrical inspector and a valid Certificate of Compliance must be issued for the installation.

All electrical installations carried out on site (permanent and temporary) must be in accordance and comply with the Electrical Installation Regulations.

All power supplies and generating units must be fitted with a functional earth leakage device.

o) **Temporary Storage of Flammable Liquids**

Comply with Construction Regulation, Section 25 and General Safety Regulations, Section 4

The Principal Contractor must ensure storage areas of flammable liquids are well ventilated and "No Smoking" signs are placed at the entrances and ventilation ducts of the storage areas. Firefighting equipment must be available in suitable positions around the storage areas.

The Principal Contractor must ensure that good housekeeping is practiced in and around the flammable storage areas.

p) **Water Environments**

Comply with Construction Regulation, Section 26.

The Principal Contractor must ensure that a lifejacket forms part of the employees PPE and is worn when the employee is exposed to the risk of drowning, by falling into water.

The risk assessment must make provision for the rescuing of persons in danger of drowning and for preventing employees from falling into the water.

When working next to a river, the Principal Contractor shall put a system in place to monitor the river water level in order to evacuate employee in case of a flood.

When working over water environments, Section 10 of the Construction Regulations – Fall Protection will also apply.

q) **Housekeeping**

Comply with Construction Regulation, Section 27, Environmental Regulations for Workplaces, Section 6(3).

The Principal Contractor shall ensure that suitable and acceptable housekeeping is continuously implemented and maintained on the construction site. Off-cuts and waste must be removed as soon as practicable.

r) **Stacking & Storage of Material, Plant & Equipment**

Comply with Construction Regulations, Section 28 and General Safety Regulations, Section 8.

The Principal Contractor shall appoint a competent person in writing with the duty of supervising all stacking and storage operations on site.

Stacking shall only take place in areas specifically demarcated for this purpose. Circular items must be secured with wedges or chocks.

Items removed from a stack shall only take place from the topmost layer of the stack.

Stacks shall not obstruct any fire extinguishing equipment, first aid equipment, electrical switchgear (DB Boxes) and ventilation or lighting installations.

Unstable stacks must be broken down immediately.

s) **Fire Precautions**

Comply with Construction Regulation, Section 29.

The Principal Contractor must provide his own firefighting equipment that is within the service date and safe for use. Firefighting equipment must be on a register and inspected by a competent person who has been appointed in writing.

Suitable and sufficient fire extinguishing equipment must be placed at strategic locations and a sufficient number of firefighters must be available, which must be trained in the use of it.

t) **Intoxicating Liquor and Drugs**

Comply with General Safety Regulations, Section 2A.

The principal Contractor must compile a Substance Abuse Policy, which must be communicated to all employees. This policy should form part of the induction material for employees as well as visitors.

The Substance Abuse Policy should set the limit for intoxication to zero in order to complement a vision of zero tolerance.

Any person found to be intoxicated, or consuming intoxicating liquor or illegal drugs, shall not be allowed onto the premises and/or must be removed from the premises.

The Principal Contractor has the right to test any person entering the premises for intoxicating liquor or illegal drugs and may refuse entrance on the basis of the outcome of the test.

The Principal Contractor shall ensure that employees taking prescription medicine informs the Principal Contractor of such and shall ensure that the side effect of such medicine does not constitute a hazard to the employee himself or people working with, or in close proximity to the employee.

u) **Confined Space Work & Tunnelling**

Comply with Construction Regulation, Section 15 and General Safety Regulations, Section 5.

The Principal Contractor shall ensure that only authorized persons enter confined spaces.

An entrance log must be kept to ensure people are not left inside the confined space. Adequate air monitoring must be carried out before entering the confined space. When air monitoring indicated the oxygen to be less than 20% by volume, the confined space must be purged and ventilated to obtain a safe atmosphere or self-contained breathing apparatus must be used.

v) Site Services

The Principal Contractor shall provide and maintain on the site adequate facilities for employees to use, which must be serviced and kept sanitary and hygienic at all. The following site services should be taken not of:

i) Drinking Water

The Principal Contractor must ensure that an adequate supply of potable drinking water is available for all persons engaged in managing and working on the construction site and, if necessary, similar facilities elsewhere for such personnel off the site. Employees working in hot conditions must consume enough water per hour to prevent dehydration.

Where water is unsafe for human consumption, it must be so indicated by means of adequate signage.

ii) Accommodation

The Principal Contractor shall comply with the requirements of Construction Regulation 30 with regards to employee's accommodation. Reasonable and suitable living accommodation must be provided to employees who are far removed from their homes.

iii) Sanitary Facilities

The Principal Contractor shall comply with the requirements of Construction Regulation 30 with regards to employee's sanitary facilities. Sanitary facilities must be positioned in close proximity of the work area. Sanitary facilities must be serviced regularly and kept in a clean and hygienic condition.

w) Traffic Accommodation

The Principal Contractor must develop a clear Traffic Management Plan, which must be approved by the Engineer. Traffic must be organized and controlled in accordance to the Traffic Management Plan and any work area must have adequate signage, signaling or other control arrangements to guard against the dangers relating to the movement of vehicles. Where reasonably practicable, solid barriers must be placed between workers and traffic passing by.

When the Principal Contractor is executing night work, permission should be obtained from the Engineer. The Principal Contractor must put in place visible or reflective signs that can be seen by motorist at a distance. If a stop and go method is used flag persons must be properly trained on how to control the traffic.

SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

CONTRACT SANRAL N.011-090-2016/1
FOR THE IMPROVEMENT OF NATIONAL ROUTE 11 SECTION 9 FROM HENDRINA POWER
STATION (KM 18.5) TO N1 INTERCHANGE (KM 41.97) (TOTAL 23.47 KM)

SECTION F:PROJECT SPECIFICATION AMENDMENTS TO THE STANDARD SPECIFICATIONS

NOT APPLICABLE

PART C4: PROJECT INFORMATION

PART C4: PROJECT INFORMATION

TABLE OF CONTENTS		PAGE
C4.1	DESCRIPTION OF THE WORKS	C4-3
C4.2	DRAWINGS	C4-10
C4.3	CAMP ESTABLISHMENT, POWER SUPPLY AND OTHER SERVICES.....	C4-11
C4.4	CONSTRUCTION IN CONFINED AREAS	C4-11
C4.5	MANAGEMENT OF THE ENVIRONMENT	C4-11
C4.6	TRAFFIC.....	C4-11
C4.7	SMALL CONTRACTOR DEVELOPMENT, TRAINING AND COMMUNITY LIAISON.....	C4-15
C4.8	CLIMATE	C4-15
C4.9	REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS 2014	C4-16
C4.10	SAFETY PROCEDURES	C4-16
C4.11	OTHER INFORMATION	C4-16
C4.12	APPENDICES.....	C4-16

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

C4.1.1 ROADWORKS

This project for the improvement of N11/9 is located from the Hendrina Power Station (km 18.50) to the N4 interchange (km 41.97) (total 23.47 km).

C4.1.1.1 Geometry

The cross-section of the existing single carriageway road (one lane per direction) with mostly gravel shoulders of varying widths includes widths as summarised in the following table:

Table C4.1: Summary of existing cross-section

km Distance		Widths (m) - Left side		Widths (m) – Right side	
Start	End	Paved Shoulder	Lane	Lane	Paved Shoulder
18.500	27.500	0.2	3.4	3.4	0.2
27.500	28.000	2.5	3.6	3.6	2.5
28.000	41.460	0.2	3.4	3.4	0.2
41.460	41.800	3.0	3.6	3.6	3.0

The final cross-section consists of a single carriageway with wide surfaced shoulders and intermittent passing lanes with no shift in the existing centreline. The following final road widths are required:

Table C4.2: Summary of final cross-section

Widths (m) – Non-passing lane side		Widths (m) – Passing lane side		
Paved Shoulder	Lane	Fast Lane	Slow Lane	Paved Shoulder
2.5	3.7	3.7	3.8	3.0

For the typical cross-sections refer to drawings XXX/3100/03/001 to XXX/3100/03/004 in Volume 4. The locations of the passing lanes are defined on the layout drawings XXX/3100/04/001 to XXX/3100/04/023 in Volume 4. Further road widenings at intersections and bridges are also defined in the layout drawings and applicable structures drawings in Volume 5.

Vertical alignment changes are required to achieve a 100 km/h design speed. Refer to the longitudinal sections in drawings XXX/3100/05/001 to XXX/3100/05/023 in Volume 4 for the final road levels.

Nine (9) formal intersections are included in the project to be upgraded to either standard or butterfly layouts as indicated on the layout drawings as well as the detailed spot-height plans in XXX/3100/07/001 to XXX/3100/07/012 in Volume 4.

C4.1.1.2 Drainage

All existing lesser culverts will be removed and replaced in accordance with the layout drawings as well as the drainage schedules in XXX/3100/14/001 to XXX/3100/14/017 in Volume 4.

17 570 m of unlined drains are required in shallow cuttings, to be excavated as part of the bulk earthworks and shaped in accordance with the typical cross-sections. 1 820 m of 2.5 m wide Type F concrete side drains are required in deep cuttings. 760 m of Figure 3 non-mountable kerb-and-channel combinations are required along the guardrails approaching bridges, with associated downpipes as indicated on the layout drawings in Volume 4.

New subsoil drains are to be installed beneath all Type F concrete side drains, with required outlets and cleaning eyes in accordance with the typical detail drawings in Volume 4.

In some areas existing aesthetic and drainage dyke/berms (between 1.0m and 2.0m high), constructed between the road and adjacent open pit mining, will required relocation to allow for the widening of the road reserve.

C4.1.1.3 Guardrails

Guardrails to be erected according to the Layout and Longsection and Typical Roadworks drawings in Volume 4. All existing guardrails to be replaced, except if their condition is acceptable for re-erection when confirmed by the Engineer.

C4.1.1.4 Road signs and markings

New road signs to be erected in accordance with the contract document and as indicated on the Road Sign Layout drawings XXX/3100/09/001 to XXX/3100/09/004 in Volume 4. The condition of all existing road signs to be determined at the start of the Contract in order to determine the suitability of the sign to be dismantled and stored or dismantled, stored and re-erected in accordance with items C11.6.6 or C11.6.7.

The painting of road markings will be carried out along the entire length of the road according to the detail provided in the Contract Documents. All new works to receive road markings.

It will be a requirement that the contractor should reference all the existing road markings before the construction commences on a portion. Any new markings will however be painted according to the Layout and Longsection and relevant Typical Detail drawings in Volume 4.

Provision has been made in the Pricing Schedule for a second application of road markings for the entire contract. The second application will be painted at the end of the defect's notification period.

As shown on the detail drawings road studs are to be provided.

All road signs and road markings will be provided in accordance with the SADC, South African Road Traffic Signs Manual (SARTSM) and the Road Marking Layout Drawings and Typical Road Marking Drawings provided in Volume 4 (Road Works Drawings).

C4.1.1.4 Fencing

19 350 m of new 9 strand stock proof fencing is required along the route in areas where the road reserve is widened or where no existing fencing exist. Repairs to existing fencing will also be required in isolated areas.

C4.1.1.5 Services

Details of the different services as discussed under Clause B/A2.1.3.2 is included in the Services Layout Drawings XXX/3100/16/001 to XXX/3100/16/023 and the Services Schedule XXX/3100/17/001 to XXX/3100/17/002 in Volume 4.

A steel pipeline with approximate diameter of 300mm and its associated pipeline support concrete plinths also to be removed to allow for the widening of the road reserve.

Relevant wayleave application information is included in Appendix 4.

C4.1.2 PAVEMENT DESIGN FOR ALL PARTS OF THE VARIOUS ROADS

C4.1.2.1 Pavement details for the widening and strengthening of N11/9:

Most of the road will be widened to consist of a minimum of three lanes and surfaced shoulders. Temporary widenings will also be required for contraflow traffic accommodation in this scenario. The following typical construction process is envisaged (including pavement layer details):

Stage 1 (construct temporary widening):

- a) Road levels remain unchanged.
- b) Excavate existing gravel shoulder and adjacent material in the widening to depth of -485 mm from top of existing surfacing. Use suitable material directly or from stockpile as fill or otherwise spoil the material if unsuitable.
- c) Cut / fill (whichever is applicable) in widening and prepare roadbed according to the in-situ material conditions (as indicated on drawings). Compact to 93% of maximum dry density (MDD).
- d) Import material and construct 150 mm selected layer (G6) to 95% of MDD.
- e) Additional 150 mm thick selected layers are, however, required to be constructed in certain areas during this stage. This is mainly required to avoid cutting into the pioneer layer during construction of the final layers. Refer to drawings for these estimated positions (to be confirmed by Engineer on site).
- f) Import material and construct 150 mm cemented subbase layer (C3) to 97% of MDD.
- g) Import material and construct 150 mm cemented base layer (C3) to 97% of MDD.
- h) Construct 35 mm thick continuously graded asphalt surfacing (sand skeleton, level II mix design, 10 mm NMPS, elastomeric polymer modified (EPM) binder).

Please note that the pavement structure for temporary deviations will be the same as described for the temporary widenings (where required).

Stage 2 (strengthen existing and widen road on one side):

- a) Road levels to be raised.
- b) Mill 30 mm into existing surfacing to spoil (remove possible rubber seal).

- c) Excavate existing gravel shoulder and adjacent material in the widening to between -650 mm and -950 mm from top of final surfacing. Use suitable material directly or from stockpile as fill or otherwise spoil the material if unsuitable.
- d) Cut / fill (whichever is applicable) in widening and prepare roadbed according to the in-situ material conditions (as indicated on drawings). Compact to 93% of maximum dry density (MDD).
- e) Excavate to stockpile and / or pre-pulverise existing pavement layers to required depth (650 mm to 950 mm), depending on levels, material quality and lane. The maximum depth of pulverisation is 350 mm. Import new and / or spread existing material uniformly across the width (existing and widening) and import make-up material (G5) where required.
- f) Construct 150 mm lower selected layer (G6) to 95% of MDD (new and / or in-situ material).
- g) Construct 150 mm upper selected layer (G6) to 95% of MDD (new and / or in-situ material). The upper selected layer, if constructed in-situ, shall be stabilised with cement (C4) in the slow or where only one lane is constructed in a direction.
- h) Import material and construct 200 mm cemented lower subbase layer (C3) to 97% of MDD.
- i) Import material and construct 250 mm cemented upper subbase layer (C3) to 97% of MDD.
- j) Import material and construct 150 mm crushed stone base layer (G1) to 88% of apparent density (AD).
- k) Construct 50 mm thick bitumen rubber, gap graded asphalt surfacing or BRAGG (stone skeleton, level III mix design, 14 mm NMPS, crumbed rubber modified (CRM) binder) with 10 mm rolled-in chippings.

Stage 3 (strengthen existing and widen road on final side):

- a) Road levels to be raised.
- b) Mill 35 mm into existing and temporary surfacing to spoil (also to remove possible rubber seal).
- c) Excavate to fill / stockpile / spoil or pre-pulverise the existing and temporary widening pavement to between -450 mm and -950 mm from top of final surfacing (depends on levels and material quality).
- d) Import new and / or in-situ reconstruct (cross-mix and add G5 as make-up where required) selected layers of 150 mm thickness to 95% of MDD after pre-pulverisation, depending on levels (refer drawings). The upper selected layer, if constructed in-situ, shall be stabilised with cement (C4) in the slow or where only one lane is constructed in a direction.
- e) Import new and / or in-situ reconstruct (cross-mix and add G5 as make-up where required) lower subbase layer of 200 mm thickness to 97% of MDD after pre-pulverisation, depending on levels (refer drawings).
- f) Import new material and construct 250 mm cemented upper subbase layer (C3) to 97% of MDD.
- g) Import new material and construct 150 mm crushed stone base layer (G1) to 88% of apparent density (AD).
- h) Construct 50 mm thick bitumen rubber, gap graded asphalt surfacing or BRAGG (stone skeleton, level III mix design, 14 mm NMPS, CRM binder) with 10 mm rolled-in chippings.

C4.1.2.2 Pavement details for the strengthening of N11/9:

The road will not be widened in the vicinity of the bridges. Stop/Go traffic accommodation will be applicable to these scenarios. The type of base layer was also changed to limit delays as result of this type of closure through reduced construction times. The following typical construction process is envisaged:

- a) Road levels remain unchanged at the bridges.
- b) Excavate existing pavement to depth of -890 mm from top of existing surfacing. Use directly or from stockpile where suitable as fill or selected layers otherwise spoil the material if unsuitable.
- c) Prepare roadbed according to the in-situ material conditions (as indicated on drawings). Compact to 93% of maximum dry density (MDD).
- d) Import material and construct 150 mm lower selected layer (G6) to 95% of MDD.
- e) Import material and construct 150 mm upper selected layer (G6) to 95% of MDD.
- f) Import material and construct 200 mm cemented lower subbase layer (C3) to 97% of MDD.
- g) Import material and construct 250 mm cemented upper subbase layer (C3) to 97% of MDD.
- h) Import material and construct 90 mm continuously graded asphalt base (BTB) layer (sand skeleton, level III mix design, 14 mm NMPS, EPM binder).
- i) Construct 50 mm thick bitumen rubber, gap graded asphalt surfacing or BRAGG (stone skeleton, level III mix design, 14 mm NMPS, CRM binder) with 10 mm rolled-in chippings.

C4.1.2.3 Pavement details for the gravel access roads:

Relatively short portions of the gravel access roads will be reconstructed or tied-into at the intersections and accesses. The following typical construction process is envisaged:

- a) Cut or shape existing to formation width.
- b) Construct fill layers (G9) where required to 93% of MDD.
- c) Construct 150 mm selected layer (G7) to 93% of MDD. Material to be obtained from existing road pavement layers, borrow pits, quarries or commercial.
- d) Construct 150 mm subbase layer (G7) to 95% of MDD. Material to be obtained from existing road pavement layers, borrow pits, quarries or commercial.
- e) Construct 200 mm gravel wearing course to 95% of MDD. Material to be obtained from quarries or commercial.

C4.1.2.4 Temporary pavement repair actions

Sections of the existing road (N11) will most likely require patch or remedial repair work during the contract period when traffic is accommodated on the existing pavements. The following will be required during the contract period:

- a) Edge break or edge drop repairs.
- b) Crack seal using C-E1 modified binder.
- c) Base patches (BSM1) using imported G1 crushed stone stabilised with 3.0% emulsion and 1.5% cement.
- d) Surface patches using hot mix asphalt with EPM binder (same mix as for temporary surfacing) or approved cold-mix asphalt (minimum 40 mm thickness).

It is anticipated that such repairs will be required during the contract period but the extent thereof is unknown. All repairs shall be confirmed with the engineer on site.

C4.1.3 *STRUCTURAL WORKS*

C4.1.3.1 *Culverts*

There is one new major culvert: Goeiehoopspruit Culvert C0631 at km 39,420.

The existing small four span bridge over the Goeiehoopspruit will be demolished, and will be replaced with a new insitu reinforced concrete 3/3300 x 1800 mm cell structure at a skew angle of 30 degrees.

The existing small bridge structure has four spans of 4m, is 12m wide, and approximately 2m high.

The new cell structure to be constructed is 42m long and must be founded on a 1,5m thick imported rock fill layer. It also includes reinforced concrete in- and outlet structures as well as erosion protection by means of gabions.

C4.1.3.2 *Existing Bridges*

There are the following four existing bridges on the project route:

- a) Woestalleen Railway Underpass Bridge B2966 at km 25,42
- b) Woestalleenspruit Bridge B1793 at km 27,56
- c) Coetzerspruit Bridge B1796 at km 29,73
- d) Arendsfonteinspruit Bridge B1795 at km 35,73

C4.1.3.3 *Upgrading of structures*

Upgrading is required only at Woestalleen Railway Underpass Bridge B2966.

(a) *Woestalleen Railway Underpass Bridge B2966 at km 25,42*

The N11-9 crosses the existing electrified railway line at a skew angle of 23 degrees. Bridge B2966 is a 30,9 m long simply supported bridge with three spans of 10,6 m, 10,8 m and 9,5 m. The railway line is in a ± 5 m deep cut at the crossing and on a horizontal curve with a 600m radius.

The current roadway width on the deck is 10,7m with a 0,8m and 0,45m raised sidewalks and 1,5m high concrete wall type parapets. The substructure comprises solid reinforced column type piers with a beam on top, and seating beam abutments. Founding is by means of spread footings on bedrock (Shale).

The bridge deck needs to be widened by 4,8m on either shoulder. The works at the bridge will comprises the following:

- (i) Widening of the existing bridge deck on both shoulders by means of precast pretensioned T-beam-and-slab type deck.
- (ii) Widening of the substructure on both shoulders. The two piers consist of column-type piers with a capping/seating beam. The piers are founded on spread footings on bedrock. The two abutments are 2,8m high spill-through abutments, also founded by means of spread footings on bedrock.
- (iii) Removing of the existing asphalt from the existing deck, and demolishing of the existing parapets and sidewalks.
- (iv) Relocating of services (cable through sleeve in existing sidewalk) to sleeve in newly constructed F-shape parapets.

- (v) The existing deck to be scabbled 50mm deep, and to be overlaid with new 100mm thick reinforced concrete.
- (vi) 60mm thick asphalt surfacing
- (vii) Bolt groups for brackets as per Transnet's requirements must be provided on the bridge deck soffit
- (viii) Cast-in-situ F-shape railway-type parapets (1,64m height) on the bridge.
- (ix) Elastomeric bridge bearings and asphaltic-plug type joints.
- (x) 3m long concrete approach slabs, which also supports in-situ F-shape endblocks.

C4.1.3.4 Rehabilitation of structures

The rehabilitation at the other three remaining bridges comprises the following:

(b) Woestalleenspruit Bridge B1793 at km 27,56

- (i) Remove existing asphalt, and replace with 45mm thick asphalt.
- (ii) Install buried-type joints at all concrete joints except at abutments where asphaltic plug-type joints must be installed.
- (iii) Minor concrete patching at piers
- (iv) Repair of concrete erosion protection slabs at abutments
- (v) Replace guardrails complete with terminal sections

(c) Coetzerspruit Bridge B1796 at km 29,73

- (i) Remove existing asphalt, and replace with 45mm thick asphalt.
- (ii) Install buried-type joints at all concrete joints except at abutments where asphaltic plug-type joints must be installed.
- (iii) Minor concrete patching at piers
- (iv) Replace guardrails complete with terminal sections

(d) Arendsfonteinspruit Bridge B1795 at km 35,73

- (i) Remove existing asphalt, and replace with 45mm thick asphalt.
- (ii) Install buried-type joints at all concrete joints except at abutments where asphaltic plug-type joints must be installed.
- (iii) Remove silted material in riverbed on the upstream side of the structure.
- (iv) Replace guardrails complete with terminal sections

C4.1.4 MAINTENANCE WORKS

Although limited in extent the contractor will be responsible for the routine maintenance of the existing road during the construction period such as repairing pavement failures, fences, road signs, guardrails, etc. A routine Road Maintenance (RRM) Contractor has been appointed for this section of road and it will be the Contractor's responsibility to ensure that these maintenance actions be effectively taken over from the RRM contractors when the site is handed over to the contractor.

The Routine Road Maintenance Contractor details are as follows:

Company:	Bottle Ba Afrika Roads (Pty) Ltd
Contract Manager:	Lindokuhle Mangele
Contact Details:	064 619 8522

C4.1.4 *ADDITIONAL EROSION PROTECTION WORKS*

Additional erosion protection for an open drain, located North of the town of Hendrina, adjacent to N11-09 between km 0.9 and km 1.4 is required.

The erosion protection works include the following work:

- (a) Removal of the existing temporary erosion protection measures consisting of loose stone pitching, and stockpiling of the removed dump rock material in windrow alongside the road reserve fenceline.
- (b) Exposing of the existing service utilities by means of hand excavation to confirm the positions and depths thereof, including all surveying requirements.
- (c) Encasing of the service utilities with minimum 300 mm thick soil-cement mixture where the services are located within 500 mm of the outside dimensions of the planned gabion boxes and mattresses.
- (d) Backfilling of eroded areas with material from excavations for the new gabion boxes and gabion mattresses, and compaction of the backfilled material to 93 % of maximum dry density.
- (e) Excavations for the formation of the gabion mattress lined trapezoidal open drains and energy breakers as shown on the drawings.
- (f) Erosion protection of pipe culvert inlet and outlet structures by means of gabion boxes of various sizes as shown on the drawings and measured in the Pricing Schedule.
- (g) Erosion protection of the open drains by means of gabion mattresses and energy breakers as shown on the drawings and measured in the Pricing Schedule.
- (h) Removal and spoil of excess material in areas of minor erosion within the road reserve between km 1.4 and km 2.5 of N11-09.
- (i) Installation of danger plates alongside the finished open drains as shown on the drawings.
- (j) Grouted stone pitching around gabion boxes at culvert inlet and outlet structures.
- (k) Finishing-off of the road reserve.

Planting of veld sods from the road reserve and nursery sods in areas of the road reserve as shown on the drawings.

C4.1.4 *COMMUNITY DEVELOPMENT WORKS*

Additional CD projects will be identified during the Contract Period in conjunction with the Employer and PLC.

The Contractor shall appoint targeted enterprise sub-contractors from within the boundaries of the Steve Tshwete Local Municipality (STLM) in accordance with the requirements of Section D of the SANRAL Standard Specifications.

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.

During landowner negotiations the owners of Ede Farm and the SIS Farming Group indicated that they would possibly be in a position to provide areas for construction camps. They can be contacted at miles@edefarming.co.za and desmond@sisgroup.co.za.

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

C4.6.1 TRAFFIC DATA

No permanent CTO station was identified on the route with representative historic data for the project section. The following table summarises the data collected from 7-day electronic traffic counts carried out in 2015:

Table C4.3: Summary of available traffic data

Station	Location	Year	ADT (No)	ADTT (No)	% HV
E1	km 20,4	2015	6428	1429	22,2
E2	km 29,7	2015	7007	1552	22,1
E3	km 38,7	2015	7524	1446	19,2

It was estimated that an annual growth rate of 4.0% per annum would be applicable to both the ADT and ADTT volumes.

C4.6.2 ACCOMMODATION OF TRAFFIC

Further to the actual embargo times and dates shown in C1.2.2 Appendix to Tender: Contract Data clause A8.3(l) and restricted working conditions in clause A8.3(m), the following general considerations and sequencing of traffic management was considered during the design of the project:

C4.6.2.1 General considerations

The following was taken into consideration during the design of the traffic management during construction:

- a) A total maximum of six (6) closures will be allowed within the contract limits at any given time. Within the six (6) closure limitation, a maximum of only one (1) STOP/GO and four (4) Chicane (lane shift) closures will be allowed at any given time;
- b) The maximum length of work areas shall be 2.5 km. Due to design considerations these lengths will vary between 1.3 km and 2.5 km. The minimum distance between two closures shall be 2 km measured between the work areas. The Engineer may reduce the distance between closures to 1.8 km to allow for design considerations;
- c) Due to high volume of traffic, STOP/GO traffic accommodation measures shall in general not be allowed;
- d) The only locations where STOP/GO traffic accommodation measures will be considered are at Bridges B1793, B1795 and B1796. STOP/GO operations will be considered at these three (3) locations to allow for the full depth construction of new layer works up to the existing bridge abutments. STOP/GO traffic accommodation measures shall only be allowed within the following limitations and conditions:
 - i) Only one (1) STOP/GO control section may be operational within the Contract Limits at any given time;
 - ii) The maximum length of the N11-9 (road), per location, that may be subject to STO/GO control is 700m;
 - iii) STOP/GO control not allowed for a period from two days before, until two days after the annual Easter Weekend (period of 8 days);
 - iv) STOP/GO control not allowed for the Builders Break for a period from the 10th of December until the 10th of January each year;
- e) For the widening construction of the railway bridge (B2966), the existing parapets and two-way traffic shall remain in place until the bridge widenings, including footings, piers, abutments, deck and parapets have been completed. Demolition of existing parapets and construction of new concrete overlay to be completed with two-way traffic accommodation also retained at all times;
- f) Minimum lane width required is 3,5 m;
- g) Implementation of traffic accommodation measures should also be mindful of horizontal curve and super elevation changes that may impact on surface drainage;

- h) Temporary line markings should be painted in its final position as far as practical possible;
- i) Due to the importance of the road the drainage structures, on short sections of temporary deviations, should be designed for a 1:10 year return period. These drainage structures will be replaced with the final culverts sized according to a return period appropriate to the road class.

C4.6.2.2 Sequence of traffic management

The following accommodation of traffic areas, and uniform construction sections have been identified on the project:

Table C4.4: Summary of uniform construction sections

No.	Location	Length	Description
1	km 18.5 to $\pm$ km 20.9	$\pm$ 2.4km	Passing lane on the left
2	$\pm$ km 20.9 to $\pm$ km 23.2	$\pm$ 2.3km	Passing lane on the right
3	$\pm$ km 23.2 to $\pm$ km 25.5	$\pm$ 2.3km	Passing lane on the left
	km 25.422	n/a	Railway Bridge B2966
4	$\pm$ km 25.5 to $\pm$ km 27.3	$\pm$ 1.8km	Passing lane on the right
5	$\pm$ km 27.3 to $\pm$ km 27.9	$\pm$ 0.6km	Bridge B1793 (STOP/GO)
6	$\pm$ km 27.9 to $\pm$ km 29.3	$\pm$ 1.4km	Passing lane on the left
7	$\pm$ km 29.3 to $\pm$ km 30.0	$\pm$ 0.7km	Bridge B1796 (STOP/GO)
8	$\pm$ km 30.0 to $\pm$ km 32.1	$\pm$ 2.1km	Passing lane on the right
9	$\pm$ km 32.1 to $\pm$ km 34.1	$\pm$ 2.0km	Passing lane on the left
10	$\pm$ km 34.1 to $\pm$ km 35.4	$\pm$ 1.3km	Passing lane on the right
11	$\pm$ km 35.4 to $\pm$ km 36.0	$\pm$ 0.6km	Bridge B1795 (STOP/GO)
12	$\pm$ km 36.0 to $\pm$ km 37.8	$\pm$ 1.8km	Passing lane on the left
13	$\pm$ km 37.8 to $\pm$ km 39.6	$\pm$ 1.8km	Passing lane on the right
	km 39.417	n/a	Major Culvert C0631
14	$\pm$ km 39.2 to $\pm$ km 41.4	$\pm$ 2.2km	Passing lane on the left

A phases construction proposal, to allow for traffic accommodation, is included in the Roadworks Drawings Volume 4 and can be described as follows:

a) Passing lane on the left-hand side

For the Construction of the new three lane carriageway, with a passing lane on the left-hand side, traffic management will consist of the following three phases:

Phase 1

Two-way traffic proceeds on the existing roadway. The road is widened to the right-hand side and layer works and temporary surfacing is constructed to tie in with the existing road levels.

Phase 2

Traffic is then shifted to the right, accommodated in part on the existing roadway and in part on the widened temporary surfacing. Two-way traffic to be maintained at all times. Construction of the left-hand side, two-lanes and a shoulder, is then completed to final road level.

Phase 3

Traffic then proceeds on the newly completed road section on the left-hand side, with two-way traffic maintained at all times. Construction of the right-hand side, one-lane and a shoulder are then completed to final level.

b) Passing lane on the right-hand side

For the Construction of the new three lane carriageway, with a passing lane on the right-hand side, traffic management will consist of the following three phases:

Phase 1

Two-way traffic proceeds on the existing roadway. The road is widened to the left-hand side and layer works and temporary surfacing is constructed to tie in with the existing road levels.

Phase 2

Traffic is then shifted to the left, accommodated in part on the existing roadway and in part on the widened temporary surfacing. Two-way traffic to be maintained at all times. Construction of the right-hand side, two-lanes and a shoulder, is then completed to final road level.

Phase 3

Traffic then proceeds on the newly completed road section on the right-hand side, with two-way traffic maintained at all times. Construction of the left-hand side, one-lane and a shoulder is then completed to final level.

c) Bridges

Existing Bridges B1793, B1795 and B1796

These three bridges are existing bridge over river structures. The bridges will be retained with no widening of the structures to be undertaken. Pavement strengthening is however required where the layer works tie-in to these structures.

Traffic accommodated in half-widths under 24-hour STOP/GO control will be allowed at these locations. The lengths of the closures should be limited to the absolute minimum required to limit the impact on the traffic.

Railway Bridge B2966

For the widening construction of the railway bridge (B2966), the existing parapets and two-way traffic will remain in place until the bridge widenings, including footings, piers, abutments, deck and new parapets have been completed. Demolition of the existing parapets and walkways, including the construction of the new concrete overlay over the existing structure to be completed with two-way traffic accommodation also retained at all times.

d) Major Culverts

New Major Culvert C0631

The existing drainage structure at km 39.417 (Goeiehoopspruit) will be replaced with a new Major Culvert. To accommodate traffic, phased construction of the new Major

Culvert and roadworks will be required at this location. The following phases of construction is proposed:

Phase 1

Two-way traffic proceeds on the existing roadway across the existing drainage structure. The first three 6m lengths (total 18m) of the new major culvert is constructed on the downstream side (right-hand side) of the existing structure. Construction to include the outlet structure of the new Major Culvert. Final roadworks also to be completed over the new structure (shoulder, left-turn lane and slow lane).

Phase 2

Two -way traffic is then relocated onto the newly constructed road section and major culvert section. Demolition of the old drainage structure can then be undertaken and the remaining portion of the new Major Culvert completed. Road and layer works can then be completed.

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:

- a) adherence to the policies of the Reconstruction and Development Programme and other similar Government initiatives,
- b) employment and/or creation of Targeted Enterprises,
- c) arrangement of generic skills, engineering skills and entrepreneurial skills training programmes for which provision has been made in the Pricing Schedule,
- d) construction using labour maximisation principles and,
- e) 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.

The Routine Road Maintenance Contractor with contact details included in Paragraph C4.1.4 can be contacted to verify the details of the existing community structures.

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 nearest weather station is located at Hendrina (Station No 0479369, Altitude of 1 682 m above MSL). The climatic data from these weather stations were obtained from South African Weather Services for records over a 66-year period.

The area has a typical Highveld climate with summer thunder storms (late-September to early-May) and a cold and dry winter period (late-May to early-September). The mean annual temperature is 15.3°C. Winter temperatures range from -3 °C to 25 °C, with summer temperatures ranging between 7 °C and 30 °C.

Rainfall occurs as strongly seasonal precipitation in summer with very dry winters. The annual precipitation varies between 454mm and 974mm, with a Mean Annual Rainfall of 711mm (Ermelo).

The rainfall and temperature records from 1990 to 2010 are included in Appendix 2 for the weather station located in Ermelo.

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 shall provide security measures at the Engineer's site offices and laboratories as well as the Engineer's site accommodation in accordance with the Items included under C1.4.8.

The Contractor shall provide all further security measures as he sees fit at no extra cost to the Employer. All associated costs shall be included in the rates for Items under C1.3.1.

C4.11 OTHER INFORMATION

The Contractor is expected to take ownership and/or dispose of some redundant road side furniture such as road signs and damaged guardrail sections as per Part C3 clause A1.2.3.12.

Additional information relating to testing of the existing pavement and testing and investigation of material sources are provided in Volume 6 of the Tender Documents.

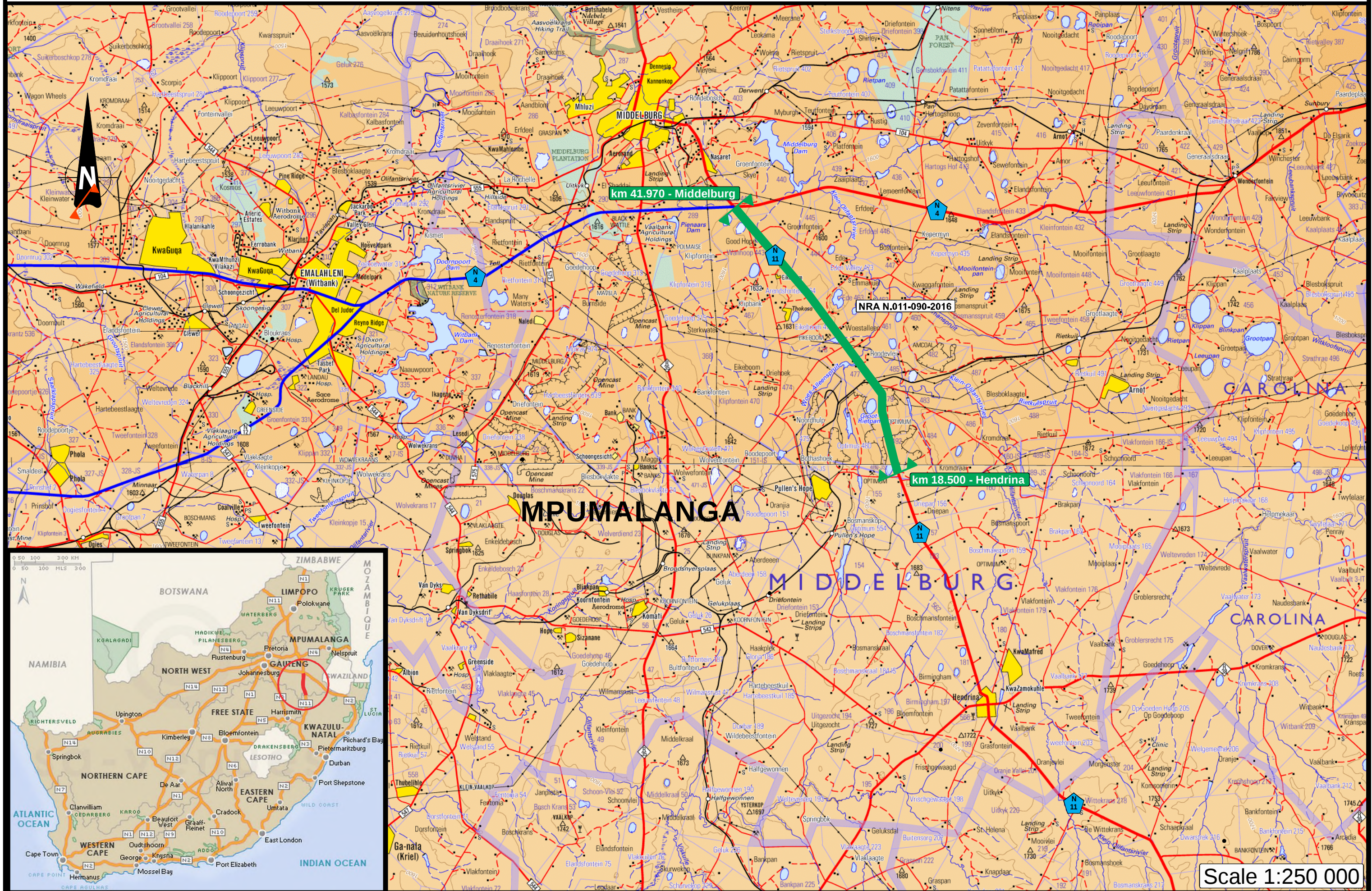
C4.12 APPENDICES

Appendix 1:	Locality Plan
Appendix 2:	Weather Data
Appendix 3:	Traffic Data
Appendix 4:	Wayleave Application Details for Services
Appendix 5:	Dispute Adjudication Agreement
Appendix 6:	Imported content
Appendix 7:	CPG Plan
Appendix 8:	SANRAL Project Liaison Committee Guidelines
Appendix 9:	Checklist for PLC and PLO
Appendix 10:	Proforma subcontract document

APPENDIX 1: LOCALITY PLAN

LOCALITY PLAN

NATIONAL ROUTE N11 km 18.500 (HENDRINA POWER STATION) TO N4 km 41.970



APPENDIX 2: WEATHER DATA

CLIMATE OF SOUTH AFRICA**WB 42****CLIMATE STATISTICS****1981 - 2010**

Number: 0479870 X

Name: ERMELO WO

 $\phi = 27^{\circ}57'S$ $\lambda = 24^{\circ}50'E$

HT: 1181 m

Period: 1990-2010

TABLE 1 - AIR TEMPERATURE IN DEGREES CELSIUS

	AVERAGE OF DAILY				MAXIMUM (TX) P = 21 Years												MINIMUM (TN) P = 21 Years												
	MAX	MIN	MEAN	RANGE	HIGHEST (TXX)			AVERAGE NUMBER OF DAYS WITH TX						LOWEST (TXN)			HIGHEST (TNX)			AVERAGE NUMBER OF DAYS WITH TN						LOWEST (TNN)			
	TX	TN	(TX+TN)/2	TX - TN	MAX	YY/DD	MEAN	>=35	>=30	>=25	>=20	>=15	<10	MEAN	MIN	YY/DD	MAX	YY/DD	MEAN	>=20	<15	<10	<5	<0	<-5	MEAN	MIN	YY/DD	
	TX	TN	(TX+TN)/2	TX - TN	MAX	YY/DD	MEAN	>=35	>=30	>=25	>=20	>=15	<10	MEAN	MIN	YY/DD	MAX	YY/DD	MEAN	>=20	<15	<10	<5	<0	<-5	MEAN	MIN	YY/DD	
J	23.9	13.5	18.7	10.4	32.0	95/27	27.2	0.0	0.3	13.3	25.5	28.6	0.0	14.1	11.6	03/10	17.6	95/28	15.5	0.0	24.2	1.4	0.0	0.0	0.0	9.0	5.2	01/03	J
F	24.0	13.4	18.7	10.6	31.3	97/22	27.3	0.0	0.3	11.4	23.7	26.5	0.0	16.1	12.0	96/5	17.1	98/03	15.3	0.0	22.7	1.2	0.0	0.0	0.0	8.8	7.6	02/09	F
M	23.0	12.0	17.5	11.0	30.8	95/20	27.8	0.0	0.1	9.3	26.3	30.1	0.1	15.3	9.7	08/17	16.5	97/09	15.2	0.0	28.9	4.6	0.1	0.0	0.0	7.6	4.5	99/30	M
A	21.3	9.4	15.3	11.9	28.8	98/06	25.6	0.0	0.0	3.4	21.1	28.7	0.1	14.1	9.2	09/21	14.8	98/08	12.7	0.0	30.0	16.7	1.3	0.0	0.0	4.2	0.4	97/07	A
M	19.1	6.0	12.5	13.0	25.7	98/06	23.5	0.0	0.0	0.5	13.7	27.7	0.5	11.5	4.4	97/29	12.8	98/03	10.3	0.0	31.0	29.3	9.3	1.1	0.1	0.2	-5.9	07/22	M
J	16.9	3.6	10.3	13.3	25.4	10/26	21.9	0.0	0.0	0.1	4.7	21.4	0.9	9.4	4.3	94/29	10.4	98/25	7.9	0.0	28.3	28.2	19.8	2.6	0.1	-1.3	-6.1	93/30	J
J	16.6	3.0	9.8	13.6	25.3	02/29	21.9	0.0	0.0	0.1	5.3	22.4	1.8	8.7	1.2	96/07	9.0	96/29	7.5	0.0	31.0	31.0	22.6	4.4	0.0	-2.4	-4.5	01/25	J
A	19.6	5.3	12.5	14.3	27.5	01/21	25.0	0.0	0.0	1.9	17.4	26.9	1.0	9.8	4.9	96/20	12.9	01/24	10.3	0.0	30.9	29.8	12.6	1.7	0.1	-0.8	-6.3	99/23	A
S	22.9	8.4	15.6	14.6	31.4	05/25	29.2	0.0	0.6	12.2	23.6	27.2	0.7	11.2	5.6	01/13	16.1	05/26	14.0	0.0	29.7	20.6	4.0	0.2	0.0	2.3	-1.8	99/11	S
O	23.2	10.4	16.8	12.8	32.6	03/04	30.0	0.0	1.6	13.8	23.8	28.4	0.5	11.4	5.7	03/19	18.0	03/05	15.0	0.0	30.2	11.6	1.4	0.0	0.0	4.5	0.2	04/09	O
N	23.3	11.7	17.5	11.6	33.3	05/03	29.3	0.0	0.4	12.1	24.5	28.3	0.2	12.8	6.8	98/07	16.6	05/03	15.4	0.0	28.8	6.3	0.3	0.0	0.0	6.5	2.1	02/27	N
D	24.1	12.9	18.5	11.2	31.1	03/17	28.5	0.0	0.3	13.3	27.7	30.8	0.0	16.4	10.7	94/11	16.9	97/10	15.8	0.0	27.1	2.1	0.3	0.0	0.0	7.9	1.6	94/12	D
YR	21.5	9.1	15.3	12.4	33.3	05/03	30.7	0	4	91	237	327	6	6	1.2	96/07	18	03/05	16.8	0	340	183	72	10	0	-3.4	-6.3	99/23	YR

TABLE 2 - PRECIPITATION (and FOG),**DRY- AND WETBULB TEMPERATURES,****RELATIVE HUMIDITY and CLOUD COVER**

	PRECIPITATION (R mm) P = 21 Years														P = 21 Years				TEMPERATURE (°C)						REL HUM (%)				CLOUD (eighths)					
	MONTH		24 HOUR MAX		TOTAL PER MONTH / YEAR				AVERAGE NO. OF DAYS WITH R (mm) >=								AVE NO OF DAYS WITH				MEAN on the hour			MEAN on the hour			MEAN on the hour			MEAN		MEAN on the hour		
	TOT	RXX	YY/DD	MAX	YEAR	MIN	YEAR	0.1			1	5	10	30	TH	HA	SN	FOG	DRY BULB (P = 21 years)			WET BULB (P = 21 years)			P=21 Years			MAX	MIN	P= 21 Years				
								AVE	MAX	MIN									8	14	20	8	14	20	8	14	20			8	14	20		
																																	8	14
J	141	108	03/17	245	2010	23	2001	14.3	22	0	11.1	7.1	4.3	1.2	3.9	0.1	0.0	0.0	16.7	22.6	17.3	15.1	17.0	15.4	85.0	59.0	84.0	94.0	26.0	5.2	5.5	5.1	J	
F	84	96	96/11	202	1996	4	1999	9.9	19	0	7.1	4.3	2.4	0.5	2.9	0.1	0.0	0.0	16.3	22.9	17.2	14.8	16.7	15.2	87.0	56.0	83.0	94.0	26.0	5.1	5.1	4.6	F	
M	73	53	95/25	151	2006	10	2003	11.4	18	2	7.6	4.4	2.5	0.4	3.3	0.0	0.0	0.0	14.8	21.9	15.8	13.6	15.5	13.8	87.0	53.0	81.0	99.0	26.0	5.0	5.0	3.9	M	
A	36	42	06/08	90	2000	0	2009	7.1	12	2	4.4	2.1	1.3	0.2	2.7	0.1	0.0	0.0	12.4	20.2	13.5	11.0	13.1	11.0	85.0	47.0	76.0	100.0	22.0	3.9	4.2	2.9	A	
M	11	23	97/25	63	1997	0	2007	3.2	7	0	1.8	0.9	0.3	0.0	2.2	0.1	0.0	0.0	9.3	18.2	10.6	7.1	10.2	7.3	77.0	37.0	65.0	99.0	15.0	2.5	2.6	1.6	M	
J	9	28	09/17	45	2009	0	1998	2.4	8	0	1.2	0.7	0.3	0.0	2.0	0.0	0.0	0.0	6.7	16.2	8.4	4.5	8.3	4.9	74.0	34.0	60.0	98.0	17.0	2.1	1.8	1.1	J	
J	4	20	04/27	42	2004	0	2007	1.3	5	0	0.5	0.3	0.1	0.0	2.0	0.1	0.0	0.0	5.9	15.9	8.2	3.7	7.7	4.3	72.0	32.0	55.0	99.0	9.0	2.0	1.6	1.1	J	
A	11	34	06/24	60	2006	0	208	2.8	6	0	1.6	0.7	0.3	0.1	2.3	0.1	0.0	0.0	8.8	18.8	10.8	6.0	9.4	6.5	70.0	30.0	56.0	99.0	9.0	2.4	2.1	1.6	A	
S	16	39	98/09	102	1998	0	1999	3.9	10	0	2.2	0.8	0.6	0.1	2.7	0.1	0.0	0.0	12.8	21.9	13.7	9.1	11.6	9.1	66.0	31.0	59.0	99.0	10.0	2.6	2.8	2.3	S	
O	91	69	96/22	226	2007	23	2006	12.6	19	0	8.1	4.9	2.9	0.7	3.8	0.1	0.0	0.0	14.8	21.8	14.6	11.8	13.9	11.6	74.0	45.0	73.0	99.0	13.0	4.2	4.9	4.5	O	
N	100	51	06/12	180	2007	0	2003	13.4	20	0	9.5	5.6	3.5	0.4	4.1	0.1	0.0	0.0	16.1	21.8	15.4	13.5	15.1	13.2	78.0	53.0	80.0	99.0	20.0	5.0	5.5	5.3	N	
D	145	66	95/22	301	1999	57	2005	15.4	19	8	11.3	7.3	5.2	1.3	5.9	0.0	0.0	0.0	17.0	22.7	16.6	14.7	16.5	14.5	80.0	56.0	81.0	99.0	24.0	4.9	5.5	5.3	D	
YR	711	108	03/17	974	2000	454	2001	98	115	57	66	39	24	5	38	1.0	0.0	0.0	13.0	20.0	13.0	10.0	13.0	11.0	78.0	44.0	71.0	100.0	7.0	3.7	3.9	3.3	YR	

Period = years covering the data for all the columns of both tables.

P = Average number of years covering the data in the columns concerned.

TX = Average maximum, TN = Average minimum air temperature

TXX = Highest maximum, MAX = highest in P years.

TXN = Lowest maximum, MIN = lowest in P years.

TNX = Highest minimum, MAX = highest in P years.

TNN = Lowest minimum, MIN = lowest in P years.

— = MEAN = AVE = AVERAGE e.g. 08, 14, 20 = MEANS of observations which were made on these hours (SAST).

YY/DD = Year/Day of occurrence of the extreme in the previous column.

(Number of days (NOD) with TX >= 10) = (NOD in the month - NOD with TX < 10).

TH = Thunder, HA = Hail, SN = Snow, FOG = fog.

> signifies greater than, >= signifies greater than or equal to.

(Number of days (NOD) with TN < 20) = (NOD in the month - NOD with TN >= 20).

< signifies less than, <= signifies less than or equal to.

APPENDIX 3: TRAFFIC DATA

Refer to volume 6

APPENDIX 4: WAYLEAVE APPLICATION DETAILS FOR SERVICES



Openserve – a Division of Telkom
61 Oak Avenue, Highveld,
Techno Park, Centurion 0157,
Private Bag X881, Pretoria, Gauteng, 0001
T: +27 12 311 4056
Nerwayleaves@telkom.co.za

Date : 23 August 2021
Expiry Date : 23 February 2022
Our Ref. No: TK21/767
Your Ref: 3100

KBK Engineers Pty) Ltd
Attention: **Mias van der Merwe**

WAYLEAVE APPLICATION: MIDDELBURG – HENRDIAN VARIOUS STREETS & ROADS – THE IMPROVEMENT OF NATIONAL ROUTE N11: TELKOM AFFECTED

With reference to your above-mentioned application, I hereby inform you that the proposed services are approved in terms of section 22 of the Electronic Communications Act 36 of 2005. This approval is valid for 6 months only, after which reapplication must be made if the work has not been completed.

The liaison officer is **John Meyer: 013 249 6246 & Judy Kruger 013 249 6149**
Contact: Benash Hanumunth (Cable Maintenance) 013 249 6510 or 081 413 5186 BenashH@openserve.co.za
Optic Fibre: Benash Hanumunth (Cable Network Services manager) prior to work commencing please.
Toll free number for damages 0800 203 951

As exact positions of the cables can only be assumed, due to various reasons, the positioning of the cables as indicated on the attached plan must be regarded as only a guideline. Telkom does not guarantee that the information provided is complete in every respect, and the fact that the information was requested and provided does not limit the responsibility of anyone who is working in the vicinity of Telkom SA SOC Limited's services, to ensure that no damage is caused to Telkom SA SOC Limited's network.

The person or organization responsible for any damages to cables or telecommunication equipment during their excavations or construction work will be held responsible for the repair costs.

Prior to the commencement of any work, Telkom must be contacted to have the position of the cables identified. Kindly advise this office after completion of the work.

All Telkom SA SOC LTD rights remain reserved.

Yours Sincerely,
Phemelo Hlaethwa (NER Wayleaves)

TELKOM INFRASTRUCTURE TO BE VERIFIED ON SITE

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 three 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 _____, who [Note to compiler: Delete the following for members other than for the Chairperson's agreement] will act as chairman of the DAB and who is one of the three persons who are jointly called the DAB.
- 1.1.9 **"Other Members"** means the persons other than the Member, forming part of the DAB
- 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 _____, 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 chairman 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

- 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

ANNEXURE 1

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.

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

Section 2: 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)

[illegible]

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 | ☐ 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 any provincial legislature | |
| ☐ a member of the National Assembly or the National Council of Province | ☐ a member of an accounting authority of any national or provincial public entity |
| ☐ a member of the board of directors of any municipal entity | ☐ an employee of Parliament or a provincial legislature |
| ☐ an official of any municipality or municipal entity | |

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 | ☐ 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 any provincial legislature | |
| ☐ a member of the National Assembly or the National Council of Province | ☐ a member of an accounting authority of any national or provincial public entity |
| ☐ a member of the board of directors of any municipal entity | ☐ an employee of Parliament or a provincial legislature |
| ☐ an official of any municipality or municipal entity | |

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 Restrict**Error! Hyperlink reference not valid.**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.

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 6: IMPORTED CONTENT DECLARATION

ANNEX D: IMPORTED CONTENT DECLARATION – SUPPORTING SCHEDULE TO ANNEX C

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

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 3 rd 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 3 rd 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	
(D46)	(D47)	(D48)	(D49)	(D50)	
(D52) Total of foreign currency payments declared by tenderer and/or 3 rd 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 exemption 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.

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.)

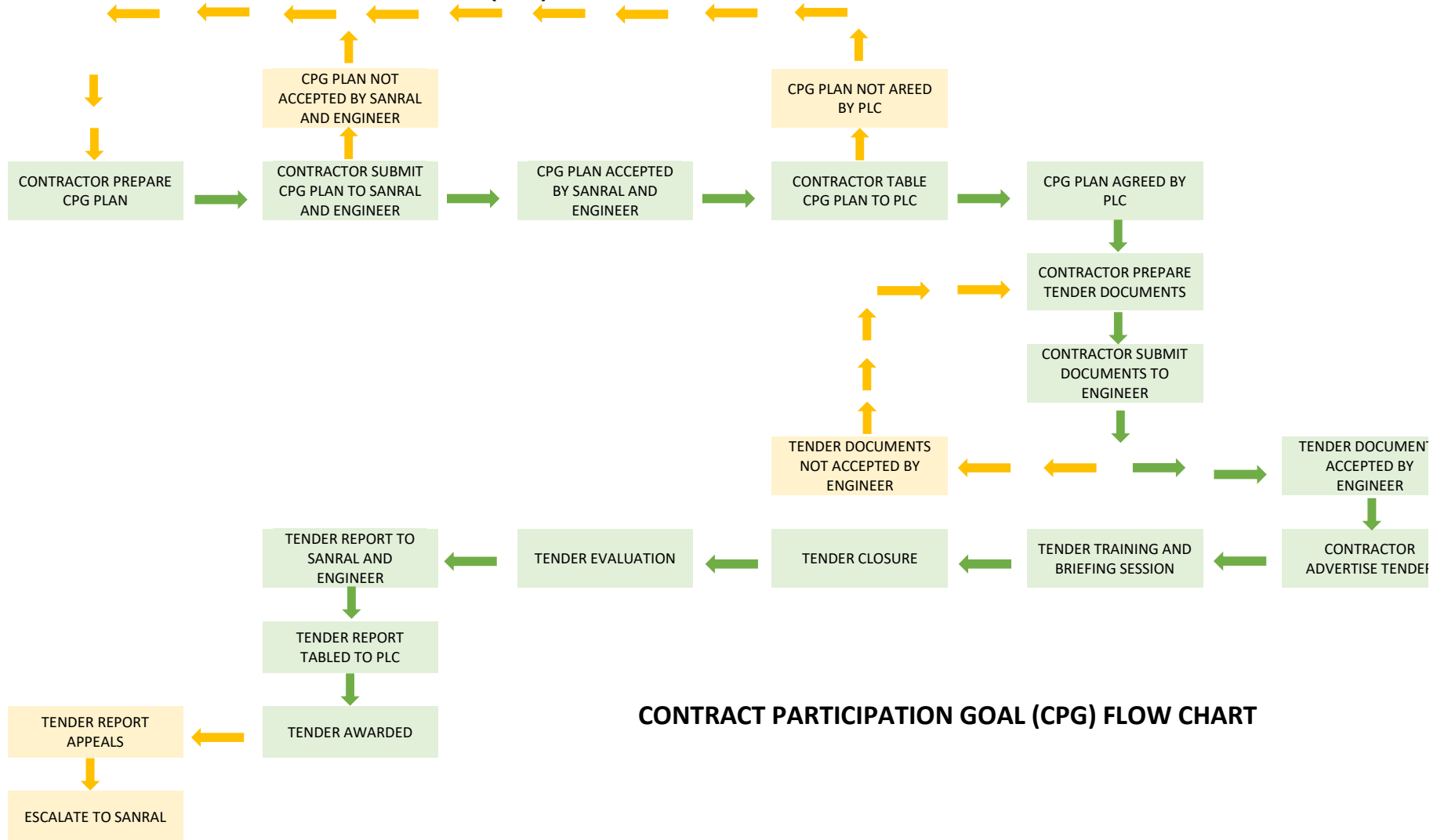
E12. Administration overheads and mark-up:

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 7 – CONTRACT PARTICIPATION GOAL (CPG) PLAN FORMAT



CONTRACT PARTICIPATION GOAL (CPG) FLOW CHART

Contractor Logo and details

Contract Participation Goal Plan

SANRAL Contract Number: XXXX

Contract Name: XXXX

(SANRAL Logo)



Author:

Date:

Version

1. INTRODUCTION

2. OBJECTIVE

3. TARGETED ENTERPRISES

- a. List of Work Packages for Targeted Enterprises
- b. List of Work Packages for Main Contractor

Table 1: CPG Expenditure Breakdown

Project Number				
Project Name				
Designated 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 Enterprise (TE)	Min. xx% of Final Contract Value	R	%	R
Youth				
Women				
Military Veterans				
Disabled				
CIDB 1 and 2				
CIDB 3 and 4				
Other				

c. Breakdown of Work Packages

The table below describes the work package breakdown with reference to Designated Groups and Functionality:

Table 1: Breakdown of Work Packages

[illegible]

- d. Schedule of works and CPG Expenditure Plan
- i. Schedule of work (Insert Programme)
- ii. 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

- e. Targeted Enterprises Procurement Program

Table 4: Example: Targeted Enterprise Procurement program

Item	Activity Name	Duration (Days)	Start	Finish

- f. Procedures for Targeted Enterprises Sub-contracting (*As Per Section D1000 of the Specifications*)
- i. Tender Preparation
 - 1. Compilation of TE Work Packages
 - 2. Establishment of a Help Desk
 - 3. Market Analysis and Resources and Skills Audit
 - 4. Compilation of Tender Documents
- ii. Tender Process
 - 1. Advertising of Works Packages
 - 2. Tender Briefing Sessions

3. Minimum Tender Submission Documents
4. Tender Closure and Opening of Tenders
- iii. Tender Evaluation
 1. Eligibility
 2. Functionality
 3. Price and Preference
 4. Compliance Check
- iv. Appointment of Successful Targeted Enterprise
 1. Price and Rates Discussion
 2. Sub-contract Agreement

4. TARGETED LABOUR

- a. Appointment of Targeted Labour

5. TRAINING DEVELOPMENT AND IMPLEMENTATION PLAN

- a. General Overview
- b. Purpose of the Training Interventions
- c. 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.							

- d. Training Methodology
- e. Selection of Participants
- f. Targeted Participants
- g. Training Materials
- h. Training Times
- i. Training Implementation Plan
- j. Supporting Documents

APPENDIX 8 – SANRAL PROJECT LIAISON COMMITTEE GUIDELINES



GUIDELINES FOR PUBLIC LIAISON COMMITTEE (PLC) & PUBLIC LIAISON OFFICERS	
BUSINESS UNIT / DEPARTMENT	ENGINEERING
CUSTODIAN	REGIONAL MANAGER: NR
DATE OF APPROVAL	
EFFECTIVE DATE	
APPROVED BY	EXECUTIVE COMMITTEE MEETING (EXCO)
VERSION	V1
EDMS No.	# 4477399

1 Contents

2	PART I – DEFINITIONS.....	4
3	PART II: PRINCIPLES FOR PROJECT LIAISON, SUB-CONTRACTING AND LABOUR SOURCING IN ALL SANRAL PROJECTS	10
4	ESTABLISHMENT OF A PROJECT LIAISON COMMITTEE.....	11
4.1	Purpose.....	11
4.2	Creation	11
4.3	Legal Nature.....	12
4.4	Structure	12
4.5	Composition.....	12
4.5.1	Dedicated Seats	13
4.5.2	Co-opted members.....	13
4.6	Selection of members	14
4.6.1	General Principles of Membership	14
4.6.2	Nominations	14
5	DUTIES OF THE PLC.....	14
6	DUTIES OF THE PLO	17
7	MEETINGS.....	19
7.1	Principles and procedure:	19
7.1.1	Agenda.....	19
7.1.2	Apologies	19
7.1.3	Non Attendance.....	20
7.1.4	Language.....	20
7.2	The Chairperson shall:.....	20
7.3	Notice of meetings.....	20
7.4	Quorum.....	20
7.5	Venue.....	20
7.6	Frequency	20
7.7	Confidentiality.....	21
7.8	Conflict.....	21

8	TERM OF OFFICE.....	21
9	APPLICATION AND AMENDMENTS	21

2 PART I – DEFINITIONS

As used in this guideline unless otherwise stated, the following terms are defined:

- (i) **Community¹**
South African Citizens, as defined in terms of the South African Citizenship Act, 1995 (Act 88 of 1995), who permanently reside within the Target Area(s).
- (ii) **Consultation**
The structured process by which the public is approached for comment on national roads policies.
- (iii) **Contract Participation**
A process by which the Employer implements Government's objectives by setting targets to enhance Targeted Labour and Targeted Enterprises' utilisation and development, which the Contractor shall achieve as a minimum.
- (iv) **Contract Participation Goal (CPG)**
The monetary value of the targets set by the Employer in the Contract Participation process and stated in the Contract Data.
- (v) **Contract Participation Performance (CPP)**
The measure of the Contractor's progress in achieving the CPG.
- (vi) **Designated Group^{2, 3}**
Unless otherwise permissible in terms of procurement regulations or the PPPFA, it is the groups used to define Targeted Labour and the ownership and/or control of Targeted Enterprises and shall be restricted to:
 - a. black designated groups as defined in the codes of good practice issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act 53 of 2003);
 - b. black people as defined in section 1 of the Broad-Based Black Economic Empowerment Act, 2003 (Act 53 of 2003);
 - c. black people who are women and who are South African citizens;
 - d. black people who are youth as defined in section 1 of the National Youth Development Agency Act, 2008 (Act No. 54 of 2008);

¹ SANS 10845, Suite for Construction Procurement, 2015.

² Derived from Preferential Procurement Regulations, 2017. Government Gazette N. 40553, 20 January 2017.

³ Derived from Preferential Procurement Regulations, 2017. Implementation Guide.

- e. black people who are people with disabilities as defined in section 1 of the Employment Equity Act, 1998 (Act No. 55 of 1998);
- f. black people who are military veterans as defined in section 1 of the Military Veterans Act, 2011 (Act No. 18 of 2011);
- g. black people who are living in rural or underdeveloped areas or townships;
- h. small enterprises as defined in section 1 of the National Small Enterprise Act, 1996 (Act No. 102 of 1996);
- i. Exempted Micro Enterprises (EMEs) as defined in terms of the code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003), with an annual turnover of R10 million or less (Amended Codes of Good Practice); and
- j. Qualifying Small Enterprises (QSEs) as defined in terms of the code of good practice on black economic empowerment issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003) with an annual total turnover of between R10 million and R50 million.

(vii) Guidance

Guidance is anticipating where one might go wrong, or where one is doing a task in a complicated, inefficient or ineffective way, and giving advice as to how to achieve a better result. Guidance is mostly given by a person in the direct reporting line, but can be given by anyone. Guidance is not imparting skills, but suggesting ways to improve performance.

(viii) Labour

Persons:

- a. who are employed by the Contractor or a Subcontractor in the performance of the Contract; and
- b. who permanently resides in the Target Area(s); and
- c. 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
- d. who are not necessarily Targeted Labour.

Note:

The personnel employed by suppliers are not defined as "Labour" for the purposes of this Contract.

(ix) Local Enterprise

An enterprise:

- a. that has a permanent physical presence (office) in the project's Target Area(s); and

- b. that can proof its presence by means of a rates and taxes account or a lease agreement; but
 - c. which is not necessarily a Targeted Enterprise.
- (x) Mentoring
Mentoring is assisting a person in developing a long-term career path. It is mostly about imparting skills that are often intangible and non-measurable. Mentoring is more about developing a relationship and taking a personal interest in a person.
- (xi) Mobilisation Period
The period from the Commencement Date until the commencement of the Works, as defined in the Conditions of Contract.
- (xii) National Road
The declared national roads which fall within the Liaison Committee areas
- (xiii) Project Liaison Committee (PLC)⁴
The Committee who represents the project's Stakeholders and affected Communities. The PMT will also become a party to this Committee.
- (xiv) Project Liaison Officer (PLO)⁵
The person who acts as the liaison officer for the PLC and the PMT. The PLO facilitates the employment of Targeted Labour and attends to the day to day project, Stakeholder, and Community matters that impact on the parties to the project.
- (xv) Project Management Team (PMT)
The Team comprising the Employer's Project Manager, the Engineer and the Contractor, or their duly delegated representatives. Together with the PLC, the PMT is responsible for successful project Stakeholder and Community liaison, and successful implementation of the Employer's Targeted Labour and Targeted Enterprise utilisation and development goals.`
- (xvi) SANRAL
The South African National Roads Agency SOC Limited, registration number 1998/009584/30.
- (xvii) Stakeholders⁶

⁴ Derived from CIDB Standard for Minimum Requirements for Engaging Contractors and Sub-Contractors on construction Works Contracts, 31 October 2017.

⁵ Derived from CIDB Standard for Minimum Requirements for Engaging Contractors and Sub-Contractors on construction Works Contracts, 31 October 2017; CLO definition.

⁶ Derived from SANRAL communication Policy, March 2018.

Any Stakeholder listed in the Employer's Communication Policy, March 2018, who is affected by the Employer's operations in the Target 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:

- a. Provincial departments;
- b. Municipal departments;
- c. Traditional authorities;
- d. Community interest groups;
- e. Organised youth representation;
- f. Organised women representation;
- g. Organised disabled people representation;
- h. Organised labour representation;
- i. Other structured community groups such religion, education, farming, etc.
- j. Transport industry forums;
- k. Business sector forums;
- l. Road user forums;
- m. Environmental interest groups;
- n. Road safety interest groups;
- o. Any other recognised relevant and representative structure.

(xviii) Subcontractor

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

(xix) Target Area

The geographic area defined in the Contract Data and which typically are:

- a. one or more Provinces;
- b. one or more Metropolitan and District Municipalities;
- c. one or more Local Municipalities; or
- d. one or more Wards that are wholly located within an area within a predefined radius of the construction activity.
- e. one or more of the areas listed in the definition of Designated Groups.

(xx) Targeted Enterprise⁷

A sole trader, partnership or legal entity which:

- a. is a business within the Target Area(s); and

⁷ Partially derived from SANS 10845-5:2015, definition 2.15

- b. is engaged in the performance of the Contract; and
- c. is defined as a Target Group in the Contract Data; and
- d. is at least 51% owned by black people; and
- e. the Contractor or any of its subsidiaries has no equity holding in; and
- f. is registered in terms of the Company's Act, 2008 (Act No. 71 of 2008) or Close Corporation Act, 1984 (Act No. 69 of 1984) or Co-operative Act (Act No. 14 of 2015); and
- g. is registered on the National Treasury's Central Supplier Database (CSD); and
- h. is an EME or a QSE; and
- i. is a Subcontractor who undertakes work within its registered CIDB grade and category; or
- j. is a supplier of goods and/or services for work done exclusively by the Contractor which satisfies (a) to (h).

(xxi) Targeted Enterprise Procurement Coordinator (TEPC)

The person or entity appointed by the Contractor to facilitate the procurement of Targeted Enterprises after award of the Contract.

(xxii) Target Group

It is a collection of business entities and/or groups selected from the Designated Group as defined in the Preferential Procurement Policy Framework Act Regulations, 2017.

(xxiii) Target Group Development Coordinator (TGDC)

The person or entity appointed by the Contractor to facilitate the training and development of Targeted Labour and Targeted Enterprises.

(xxiv) Targeted Labour⁸

Persons:

- a. who are employed by the Contractor or a Subcontractor in the performance of the Contract; and
- b. whose monthly earnings are derived from hours worked for a fixed hourly rate which is adjusted from time to time by legislation (as a statutory minimum) and the Contractor's or Subcontractor's employment policies; and
- c. 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
- d. who are defined as a Target Group in the Contract Data.

(xxv) Training

Training refers to the process of teaching a Learner, usually in a classroom or simulated work environment situation where principles and theory are taught and demonstrations are given.

⁸ SANS 10845-7:2015, definition 2.12

Assignments are then set to ensure that the Learner can apply what has been taught. Training is done by a specialist in the subject, and who is qualified and accredited to train.

3 PART II: PRINCIPLES FOR PROJECT LIAISON, SUB-CONTRACTING AND LABOUR SOURCING IN ALL SANRAL PROJECTS

These principles are applied to facilitate better project level liaison with local communities and structures. They also serve to ensure communication and transparency in the execution of works and to ensure inclusivity in the allocation of projects to benefit black business and local communities.

1. **Point 1:** Establish project liaison committees (PLCs) in each project to create a platform for project liaison, works execution, sub-contracting and employment facilitation.
2. **Point 2:** SANRAL to chair PLCs and provide secretarial support. Representation to comprise: SANRAL; contractor; consultant; business representatives; traditional representatives; provincial and municipal government representatives; community representatives; and any other critical local stakeholder that may be deemed necessary by the PLC.
3. **Point 3:** Community liaison officer (CLO) or public liaison officer (PLO) selection to be done under the auspices of the PLC.
4. **Point 4:** Definition of a target area (sometimes referred to as a local area or traffic area) to be done under the auspices of the PLC.
5. **Point 5:** Setup a database of contractors and suppliers (and consultants where relevant) to be done under the auspices of the PLC. The final database to be signed off by the PLC.
6. **Point 6:** Setup of database of local labour for the targeted area to be done under the auspices of the PLC. The final list to be signed off by the PLC. An agreed system of labour selection from the database is to be agreed at the PLC.
7. **Point 7:** Handover of signed-off databases for sub-contracting and labour to contractor for open tender process and recruitment respectively done by the PLC.
8. **Point 8:** Tender to be conducted by contractor using government principles (e.g. public opening of received bids, announcement of bidders and prices). Tabling of winning bidders in the PLC.
9. **Point 9:** Appeals on the tender process to be escalated to SANRAL for an independent review.
10. **Point 10:** Capability assessments of contractors and suppliers to be done under auspices of PLC prior to tender stage, to identify any deficiencies in skills and experience. For labour, skills assessments are to be done at recruitment stage.
11. **Point 11:** Contractor development support and training to be coordinated and conducted, ahead under the auspices of the PLC, prior to project commencement.
12. **Point 12:** Identification of works areas that are deliverable by local service providers, and areas where capabilities are not available locally. All works areas where capabilities are not available locally shall be imported and locals will be given an opportunity to learn.
13. **Point 13:** Formal contracting arrangements to be ensured for all projects.
14. **Point 14:** Communication to be streamlined through the PLC and used to manage expectations of local business and communities.

4 ESTABLISHMENT OF A PROJECT LIAISON COMMITTEE

Point 1: Establish Project Liaison Committees (PLCs) in each project to create a platform for project liaison, works execution, sub-contracting and employment facilitation.

4.1 Purpose

The PLC is intended to give effect to the need for transparency and inclusion in the process of delivering services, through ensuring that the Contractor liaises 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 is established by the SANRAL for this purpose.

The aims and objectives of the creation of the Public Liaison Committee shall be to:

- Facilitate constructive community participation in the formalization and implementation of the policies of SANRAL;
- Facilitate transparency in SANRAL allocation of resources;
- Facilitate involvement of local communities in the projects of SANRAL at a local level.

4.2 Creation

A PLC shall be established through the Routine Road Maintenance (RRM) contract. The PLC shall be established by SANRAL in partnership with the Engineer and the Contractor appointed under the RRM contract. The PLC shall consist of representatives of project Stakeholders and affected Communities, as well as the PMT and their representatives. This PLC, also termed the RRM PLC, shall form the building block of all other PLCs to be established in the area.

For any other contract, a project specific PLC shall be established. The Project specific PLC, which can be of a shorter duration, must comprise members of the RRM PLC(s) and seconded members representing the specific Local Municipality(ies). The project specific PLC shall co-opt one or more members from the RRM PLC(s) for the project area(s). In addition to normal PLC duties, the co-opted members will be responsible for facilitating communication between the RRM PLC and the project specific PLC or any other PLC established for the purposes of executing any other project being implemented in the area.

Once the project has been completed or the project specific PLC disbanded, the co-opted members shall return to the RRM PLC provided that their term of office has not expired.

4.3 Legal Nature

The Public Liaison Committee shall be a voluntary association established in terms of this guideline within a defined period set by SANRAL. The members will not be remunerated for their time. However, SANRAL shall consider paying an allowance to assist in covering some of the costs of the members.

Point 2: SANRAL to chair PLCs and provide secretarial support. Representation to comprise: SANRAL; contractor; consultant; business representatives; traditional representatives; provincial and municipal government representatives; community representatives; and any other critical local stakeholder that may be deemed necessary by the PLC.

4.4 Structure

PLC meetings shall be chaired by SANRAL while the Engineer's representative shall provide a secretarial service to take minutes of these meetings.

Secretarial support other than taking minutes at PLC meetings shall be provided by the PLO.

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.

The Contractor shall delegate from among its site personnel a responsible person to serve on, and participate in, the PLC and its business.

4.5 Composition

SANRAL shall be represented by the Project Management Team (Project Manager/ Engineer's Representative and Construction Manager). In addition, the Public Liaison Committee (PLC) shall consist of "elected" and nominated members representing various community organizations as set out below to include the following sectors:

Sector	Representatives
Traditional leaders	1
Members of ward committees	2
People with disabilities forums	1
Women Organisations	1
Youth Organisations	1
Business (incl. Contractor associations)	1
Transport Forums	1
Road Safety/Environmental Councils	1
Organized Agriculture	2

The composition and numbers of representatives above are provided as a guidance. Consultation between the PMT and municipal representatives, including the Mayor's office, will provide final guidance on the number and organisations to be represented. Where required, additional organisations will be added and others removed.

However, notwithstanding the guidance provided above, SANRAL does not desire that councillors become members of PLCs. While Councillors may be invited to some PLC meetings, it is highly recommended that they are not to become PLC members as a PLC is not a political structure.

4.5.1 Dedicated Seats

Notwithstanding the provision above, the following seats shall be dedicated:

(i) Traditional leaders/LED officer

The number of seats allocated by the election meeting shall be taken as dedicated seats. In areas where there are no Tribal Authorities, structures representing the interest of landowners may fulfil this role.

(ii) Business Sector

Seats allocated to the business sector shall be dedicated to SMME representative associations who shall have been elected to represent the interests of all the SMME's based within the PLC area for which the particular PLC is responsible. The association shall be registered in line with Legislations.

(iii) Organized Agriculture

Seats allocated to Associations and shall be dedicated to the predominant type of organized agriculture in the area of the particular Public Liaison Committee, provided that Organized Agriculture complies with the provisions of in this guideline.

4.5.2 Co-opted members

Co-opted members are those members that the PLC chooses to add in addition to those incorporated into the PLC from the process above. Co-opted members shall have limited rights of participation at PLC meetings. They will not vote and shall not claim allowances from SANRAL. Co-opted members can include councillors and other political representatives who can be invited from time to time.

4.6 Selection of members

4.6.1 General Principles of Membership

Membership as defined above is open to any person residing within the boundaries of the Project Area but does not apply to co-opted members.

4.6.2 Nominations

Nominations shall be forwarded using the prescribed nomination form (annexed to this document). All nominations shall indicate:

- The name of the nominee
 - The name of the proposer, and 5 seconders
 - The name of the residential area of the nominee
 - The organization for which the nomination is being made
 - Acceptance of nomination by the nominee
-
- (i) All candidates must comply with provisions of clause 4 of this constitution.
 - (ii) The duration of the Nominees participation in the PLC shall depend on the duration of the project or the duration of the PLC, whichever comes first.
 - (iii) The nomination process shall be conducted in consultation with the municipality(ies) in the project area.
 - (iv) The municipality shall be contacted through the Mayor's office and/the Local Economic Development (LED) office.

5 DUTIES OF THE PLC

The PLC is the official communication channel through which the PMT communicates with project Stakeholders and affected Communities on project matters, as well as to communicate the impact that the project has or might have on project Stakeholders and the affected Communities.

The PLC is also the official communication channel through which project Stakeholders and the affected Communities communicates with the PMT on the impact that the project has on them, or is anticipated to have on them, or on any other project matters.

The Standard Terms of Reference (TOR) for PLCs requires of the PLC to execute specific duties during each stage of the project, i.e. from project initiation to project completion. Some of these duties overlap project stages and hence, a full description is provided here.

The PLC shall execute the following duties:

Point 3: Community liaison officer (CLO) or public liaison officer (PLO) selection to be done under the auspices of the PLC.

- (i) Assist the Employer and Engineer to source suitable candidates where applicable, based on the Employer's prequalification criteria, for the position of PLO.
- (ii) Observe and verify that the prequalification criteria and procedures applied by the Employer and Engineer to select and employ the PLO were executed in a fair and transparent manner, and were within the prescripts of the relevant legislation and regulations.

Point 4: Definition of a target area (sometimes referred to as a local area or traffic area) to be done under the auspices of the PLC.

- (i) Make recommendations to the Employer and Engineer in identifying the project's Target Area(s), from which Targeted Labour and Targeted Enterprises will be employed and subcontracted, for inclusion in the Tender Documents and endorse the identified Target Area(s).
- (ii) Make recommendations to the Employer and Engineer in identifying the project's Target Groups for inclusion in the Tender Documents and endorse the identified Target Groups.

Point 5: Setup a database of contractors and suppliers (and consultants where relevant) to be done under the auspices of the PLC. The final database to be signed off by the PLC.

- (i) Make recommendations to the PMT in establishing the eligibility criteria, prequalification criteria, and tendering processes and procedures to be followed to employ Targeted Labour and subcontract Targeted Enterprises; endorse the agreed criteria and employment and subcontracting methodology(ies).

Point 6: Setup of database of local labour for the targeted area to be done under the auspices of the PLC. The final list to be signed off by the PLC. An agreed system of labour selection from the database is to be agreed at the PLC.

- (i) Peruse and endorse the Project Database(s) compiled by the PMT from which Targeted Labour will be employed and Targeted Enterprises will be subcontracted.
- (ii) Verify that the criteria and methodology(ies) applied by the Contractor to employ Targeted Labour and subcontract Targeted Enterprises were executed in a fair and transparent manner, and within the Employer's and Government's Supply Chain Management Policies.

Point 7: Handover of signed-off databases for sub-contracting and labour to contractor for open tender process and recruitment respectively done by the PLC.

Point 8: Tender to be conducted by contractor using government principles (e.g. public opening of received bids, announcement of bidders and prices). Tabling of winning bidders in the PLC.

- (i) Receive reports and ensure transparency in the appointment of Targeted Enterprises in local projects of SANRAL notwithstanding that the authority to appoint such Targeted Enterprises shall remain with SANRAL. (Observer status)

Point 9: Appeals on the tender process to be escalated to SANRAL for an independent review.

- (i) Agree with the PMT on a dispute resolution mechanism to resolve any disputes that may arise between the PMT and the PLC, project Stakeholders and/or affected Communities.
- (ii) Assist the PMT to liaise with project Stakeholders and the affected Communities to resolve any disputes between the Employer, Engineer and/or Contractor and project Stakeholders and the affected Communities, which occurred due to the project.
- (iii) SANRAL's ruling on any dispute regarding the tender process shall be considered to be final.

Point 10: Capability assessments of contractors and suppliers to be done under auspices of PLC prior to tender stage, to identify any deficiencies in skills and experience. For labour, skills assessments are to be done at recruitment stage.

Point 11: Contractor development support and training to be coordinated and conducted, ahead under the auspices of the PLC, prior to project commencement.

- (i) Make recommendations to the PMT on the training needs, eligibility criteria and selection criteria, for the provision of training to Targeted Labour, Targeted Enterprises, Designated Groups, project Stakeholders and the affected Communities.
- (ii) Observe and verify that training programmes and support programmes, which the Contractor committed to, were implemented and executed as intended.

Point 12: Identification of works areas that are deliverable by local service providers, and areas where capabilities are not available locally. All works areas where capabilities are not available locally shall be imported and locals will be given an opportunity to learn.

Point 13: Formal contracting arrangements to be ensured for all projects.

- (i) Verify that the conditions of employment and the conditions of subcontracting, in the employment of Targeted Labour and subcontracting of Targeted Enterprises were applied in a fair and transparent manner and according to the Employer's employment and subcontracting requirements.

Point 14: Communication to be streamlined through the PLC and used to manage expectations of local business and communities.

- (i) Inform the entities whom they represent of any project matters which the PMT wishes to communicate with project Stakeholders and the affected Communities.
- (ii) Inform the entities whom they represent of any project matters that are impacting or may impact, either positively or negatively, on project Stakeholders and the affected Communities.
- (iii) Inform the PMT of Stakeholder and/or Community requests and/or needs which could possibly be addressed within the project's Scope of Work.
- (iv) Inform the PMT of any road safety concerns within the project's Target Area(s) and advise the PMT of possible mitigating measures and/or road safety programs that will be most feasible for acceptance by the affected Communities to promote road safety.
- (v) Inform the PMT of any project matters that are impacting, or anticipated to impact, negatively on project Stakeholders and the affected Communities.

Additional duties

- (i) Meet prior to the monthly site meeting, or as may be required, to discuss and resolve project matters, which are of interest or concern to project Stakeholders and the affected Communities, the Employer, the Engineer and/or the Contractor.
- (ii) Inform the Employer of any training that members of the PLC require to execute its duties.
- (i) The PLC shall have full powers to decide on any matter which they are empowered to decide on falling within the Project Area and outlined duties.
- (ii) The PLC may assign members to report back to specific sectors and/or constituencies within the PLC.
- (iii) The PLC may establish working groups and/or adhoc committees to fulfill its work subject to fulfill tasks as per contract. This must be recommended by the PLO and authorized by SANRAL.

6 DUTIES OF THE PLO

The PLO shall facilitate the employment of Targeted Labour and shall coordinate communication between the PMT and the PLC to address the day to day project, Stakeholder, and Community matters that impact on the parties to the project.

The Standard TOR for PLOs requires of the PLO to execute specific duties during each stage of the project, i.e. from project initiation to project completion. Some of these duties overlap project stages and hence, a full description is provided here.

The PLO shall execute the following duties:

- (i) Except for taking the minutes of PLC meetings, which is a duty of the Engineer or his representative, 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 PLC to formulate their communication in writing;
 - f. Distribute written communication to and from the PMT and the PLC;
 - g. Keep records of all the above and any other PLC documentation; and
 - h. Provide any other reasonable secretariat function pertaining to 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 project.
- (iii) Attend all monthly site meetings to report on the day to day project, Stakeholder and community matters that impact on the parties to the project.
- (iv) Attend any other meetings related to the project and in which any of the project Stakeholders, affected Communities, Local/Targeted Labour and Local/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 project.
- (vi) Maintain a full-time presence on site to assist the PMT in the day to day liaison with project Stakeholders and affected Communities. Typical information to be disseminated by the PLO includes:
 - a. basic Scope of the Works and how it will affect the Community;
 - b. project programme and regular progress updates;
 - c. anticipated employment and subcontracting opportunities;
 - d. project programme as it pertains to the employment of Targeted Labour and subcontracting of Targeted Enterprises;
 - e. Occupational Health and Safety precautions; and
 - f. any other information relevant to project Stakeholders and the affected Communities.
- (vii) Be well acquainted with the contractual requirements as it pertains to Targeted Labour employment and training requirements.
- (viii) Assist the PMT and PLC to establish and agree the eligibility and selection criteria to be followed when employing Targeted Labour.
- (ix) Assist the PMT in its resources and skills audits by providing a coordinating function between the PMT, project Stakeholders, and the affected Communities.
- (x) Ensure that Targeted Labour databases, compiled from the resources and skills audits, are based on the agreed eligibility and selection criteria and that it is updated as and when required.
- (xi) Coordinate the selection and employment of Targeted Labour based on the agreed eligibility and selection criteria and based on the Contractor's labour requirements.

- (xii) Ensure that each Labourer enters into an employment contract which adheres to current and relevant Labour legislation.
- (xiii) Ensure that each Labourer understands the conditions of his/her employment with an emphasis on the employment start date, end date and wages payable.
- (xiv) Identify and inform the PMT of any relevant training required by the Targeted Labour.
- (xv) Attend all disciplinary proceedings to ensure that hearings are fair and conducted in accordance to the current and relevant Labour legislation.
- (xvi) Be proactive in identifying PLC, project Stakeholder, affected Communities (including Targeted Labour and/or Targeted Enterprise Subcontractor), requirements, disputes, unrest, strikes, etc. and bring it to the attention of the PMT.
- (xvii) Assist the PMT to liaise with the PLC, project Stakeholders and the affected Communities to resolve any disputes, which occurs due to the project.
- (xviii) Other than the document records to be kept as mentioned in (i) above, keep record of all other documents and processes pertaining to the employment of Targeted Labour and any other records that may be of relevance to the functions of the PLC.
- (xix) Produce and submit a monthly report to the PMT and the PLC on PLC meetings, other meetings attended by the PLO, Targeted Labour employment, and project Stakeholder, affected Community and any other project matters that impact on the parties to the project.

7 MEETINGS

7.1 Principles and procedure:

The PLC shall meet as often as required with the Employer and the Engineer, to discuss and resolve the project's initiation and design stage matters, which are of interest or concern to project Stakeholders and the affected Communities, the Employer and the Engineer.

7.1.1 Agenda

- (i) An agenda shall be made available or displayed to all participants 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.

7.1.2 Apologies

- (i) Apologies shall be in writing except in emergency where the member apologizing cannot communicate the apology in writing.

7.1.3 Non Attendance

- (i) The organization, represented by a member who fails to attend 3 consecutive meetings without an apology, will be informed in writing and asked to nominate a replacement member.

7.1.4 Language

- (i) The meetings will be conducted in ENGLISH to enable all participants at the meeting to understand the discussions of the meeting.

7.2 The Chairperson shall:

- (i) Chair all meetings of the PLC;
- (ii) Co-ordinate all the activities of PLC;
- (iii) Ensure that members are fulfilling their tasks as assigned by the PLC;
- (iv) See to the execution of decisions taken by the PLC;
- (v) Ensure the validity of members' claim for allowance;
- (vi) Ensure compliance of all activities of the PLC with current rules, law and general SANRAL policy; and
- (vii) Be a co-signatory to all official documents of the PLC.

7.3 Notice of meetings

- (i) The notice of the meeting for the PLC shall be given at least seven (7) days prior to the meeting date.
- (ii) Where meetings have been diarized over a period of time by the PLC, it shall be the duty of each PLC member to ensure his/her attendance on set dates.
- (iii) Where a PLC member has missed any meeting he/she bears the onus of establishing the date and venue of the next meeting.

7.4 Quorum

- (i) The quorum for PLC meetings shall be constituted by 50+1 ratio excluding co-opted members.

7.5 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.

7.6 Frequency

- (i) Meeting will be conducted monthly or as the need requires.

7.7 Confidentiality

- (ii) PLC members shall regard all information in their possession as confidential and shall treat it in line with the relevant legislation.

7.8 Conflict

- (i) 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 supplier/subcontractor/service provider procurement or involvement in the contract.

8 TERM OF OFFICE

- (i) The duration of the nominees participating in the PLC shall depend on the duration of the project but will be limited to 3 years.

9 APPLICATION AND AMENDMENTS

- (i) This guideline shall be in force after its initial adoption and signing by SANRAL.
- (ii) PLC members may peruse and make recommendations on the duties of, and procedures to be followed by, the PLC to fulfil its duties.

Note: The principles of the guidelines shall not be amended, but duties and procedures may be altered to be project specific and to improve the functionality of the PLC.

This guideline is adopted and will be in force with effect from this.....day of20....

Signed for and on behalf of SANRAL

Project Manager

Print Name

Date

Signed for and on behalf of the PLC

Chairperson

Print Name

Witnessed by

PLO

Print Name

PLC members:

	Sector representative	Representative name	Signature
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			

12			
13			

ANNEXURE 1

Nomination form

I RepresentingHereby accept
to be a member of the PLC for project

I hereby accept to be bound by the prescripts of the GUIDELINES FOR PUBLIC LIAISON COMMITTEE
(PLC) & PUBLIC LIAISON OFFICERS and will act in good faith at all times.

Signed.....

Date

APPENDIX 9 – 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, Councillors, and specialists such as environmental specialists, etc.
 - iii) Co-opted members will have limited participation rights in PLC meetings, will not have voting rights and will not receive any seating allowance for participating in the PLC meeting.
- d) 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 part of Section D of the Specifications 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. Once the PLC has been established, the Employer's further Stakeholder engagement activities shall not prevent the Contractor from continuing with construction.

Typical Stakeholder representation on the PLC may include:

- a) A PLC member from the relevant RRM PLC.
- b) Local Municipality LED Office.
- c) Traditional leadership representation.
- d) Forums representing people with disabilities.
- e) Forums representing women.
- f) Forums representing youth.
- g) Forums representing business sector.
- h) Forums representing transport sector.
- i) Any other Stakeholder forum/organisation recognised by SANRAL and the Local Municipality's LED Office.

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 Councillors 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. Seating Allowance for PLC Members

PLC membership is voluntary and PLC members will not be remunerated for any time spent or work done associated with representing their constituency on the PLC.

Provision has been made in the Contract for a seating allowance (stipend) to PLC members for actual costs incurred in executing their PLC duties (other than time or work related). The Contractor will determine and table to the PLC a realistic seating allowance which will be substantiated by an outline of the anticipated actual costs envisaged to be incurred by PLC members.

The seating allowance will be increased annually based on the CPI figure contained in Table B2 of Statistical Release P0141 by StatsSA.

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 Fourteen Point Plan.
- 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).

2. 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 may interact with the project team through the Mayor's Office.
- iii) If required, and in consultation with SANRAL, a Political Steering Committee (PSC) may be established to address political matters. A PSC will only be established where the Project Area traverse over more than one municipal area.

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 a new nomination process shall commence.

c) Targeted Enterprise and Targeted Labour

PLC members shall:

- i) ensure that they, or companies in which they hold equity, will not tender on the Contract for any work or sub-contract that may be issued. Should they tender, this will be treated as a conflict of interest 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 construed as improper or irregular, may lead to the award of a sub-contract to a tenderer known to the member or to the member itself.
- iv) recuse themselves from the operations of the PLC following a situation as described in paragraphs ii) above and shall cease to be a PLC member for this Contract.
- v) 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).
- vi) 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 supplier/sub-contractor/service provider procurement or involvement in the contract.

d) Confidentiality

- i) PLC members shall accept that all information, documentation, and decisions regarding any matter serving before the PLC are confidential and undertake not to communicate decisions or discussions of PLC meetings to external or internal parties unless so directed and approved by the Project Manager.
- ii) Information for public dissemination shall be clearly indicated by the committee to ensure that sensitive information is only 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 believe 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.

3. 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 discuss and resolve 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 SANRAL of any training that project Stakeholder and affected Community representatives of the PLC require to execute their duties.
- v) Assist the Engineer to source suitable candidates, based on SANRAL's qualifying criteria, for the position of PLO.
- vi) Observe and verify that the qualifying criteria and procedures applied by the Engineer to select and employ the PLO were executed in a fair and transparent manner and were within the prescripts of the relevant labour legislation and regulations.
- vii) Assist the Engineer to identify the project's Target and Project Area(s) from which Targeted Labour and Targeted Enterprises could be employed and sub-contracted, respectively.
- viii) Assist the Engineer to identify the project's Target Groups for inclusion in the Tender Documents and agree to and support the identified Target Groups.

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) Assist the Contractor to establish the selection criteria and process to employ Targeted Labour
- iii) Assist the Contractor to identify the eligibility, functionality, preference, and compliance criteria to select and sub-contract Targeted Enterprises.
- iv) Agree to and support 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) Verify 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) Verify 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 SANRAL's employment and sub-contracting requirements.
- vii) Make recommendations to the Contractor on the training needs, eligibility criteria and selection criteria for the provision of training to Targeted Labour, Targeted Enterprises, Designated Groups, project Stakeholders and the affected Communities.
- viii) Verify that training and skills development programmes, which the Contractor committed to, are implemented, and executed as approved and intended.
- ix) Inform the entities whom they represent of any project matters which the respective party to the PLC wishes to communicate with each other.
- x) Inform the entities whom they represent of any project matters that are impacting or may impact, either positively or negatively, on the respective parties to the PLC.
- xi) Inform the Contractor of Stakeholder and/or Community requests and/or needs, which could possibly be addressed within the project's Scope of Work.
- xii) Inform the SANRAL, the Engineer and Contractor of any road safety concerns within the Project Area(s) and advise them of possible mitigating measures and/or road safety programs that will be most suitable for acceptance by the affected Communities to promote road safety.
- xiii) Agree on a dispute resolution mechanism to resolve any disputes that may arise between the parties to the PLC.
- xiv) Assist parties to the PLC to liaise with their respective entities to resolve any disputes amongst the parties which may occur due to the project.

4. PLC Meetings

- a) Frequency
 - i) Meetings will be conducted monthly or as required by the Stakeholders or the 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 missed any meeting, he/she bears the onus of establishing 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 all participants 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, or the Engineer.
 - ii) The Chairperson shall:
 - a. chair all meetings of the PLC,
 - b. co-ordinate all the activities of PLC,
 - c. ensure that members are fulfilling their tasks as assigned by the PLC,
 - d. see to the execution of decisions taken by the PLC,
 - e. ensure the validity of members' claim for allowance,
 - f. ensure compliance of all activities of the PLC with current rules, law and general SANRAL policy, 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 except in emergency where the member apologising cannot communicate the apology in writing.
 - ii) Apologies may be sent through any media agreed to prior by the PLC for example through SMS or WhatsApp messaging or similar application.
 - iii) The organization, represented by a member who fails to attend three (3) consecutive meetings without an apology, will be informed in writing and asked to nominate a replacement member.
- i) Language
 - i) The meetings will be conducted in English to enable all participants at the meeting to understand the discussions of the meeting.
 - ii) However, care and consideration must be given to provide non-English speakers an opportunity to participate. Therefore, where desirable, any of the 11 official languages maybe be used to conduct the meeting. If another language other than English is used, the minutes of the meeting will need to be transcribed, translated, and recorded in English.
- j) Other
 - i) The PMT shall provide a finger lunch for PLC members at PLC meetings.

5. 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/Project Management Team (PMT)	
		b)	Where there are multiple entries, the team can select the member with the highest number of nominations.	SC/PMT	
		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/PMT	
		d)	The last alternative is to allow for a snap election in a community meeting.	SC/PMT	
		e)	Communicate the PLC membership to the affected stakeholders.	SC/PMT	
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	SC/PMT	

Form No.	Item	Explanatory Note for Compliance Check		Responsibility	Complete (Yes/No or N/A)
			(extract from 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.	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 ANGENCY 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 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		
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		

Form No.	Item	Explanatory Note for Compliance Check		Responsibility	Complete (Yes/No or N/A)	Source Document
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:					
1	Extension of validity period.	a)	Confirmation of issue of letters of extension of validity period.	Contractor		

Form No.	Item	Explanatory Note for Compliance Check		Responsibility	Complete (Yes/No or N/A)	Source Document
		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		
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		

Form No.	Item	Explanatory Note for Compliance Check		Responsibility	Complete (Yes/No or N/A)	Source Document
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 10 – PROFORMA SUBCONTRACT DOCUMENT FOR TARGETED ENTERPRISES

<https://docs.nra.co.za/otcs/cs.exe/link/19334307>