

28 June 2024

Enquiries : David Dowling
Our ref.: 301914
Your ref.: T/8/3/33-2024 (MN158-2024)
File ref.: 301914 – Addendum 1

For Attention: To all tenderers

TENDER NO.: T 8/3/33-2024 (MN158-2024) – BERGRIVIER HOUSING: PIKETBERG MAIN SUBSTATION UPGRADE AND ELECTRIFICATION OF HOUSING UNITS IN PIKETBERG, PORTERVILLE AND EENDEKUIL

Addendum 1

This addendum forms an integral part of the contract documents and must be duly considered in the submission of the tender. A signed copy of this addendum shall be submitted with the tender documents, and failure to do this may invalidate the tender. In addition, the "Acknowledgement of Receipt" form hereby attached must be completed immediately on receipt and returned by email to David Dowling at david.d@ixengineers.co.za

Addendum	Description
1.1.	See attached updated Bill of Quantities, including the section for the upgrade of the Main Substation (pages C2.4 – 2 to C2.4 – 36)
1.2	See updated layouts: <ul style="list-style-type: none">• 301914-02-E-LA-001-Rev.1• 301914-03-E-LA-001-Rev.1• P08772-E-SH-001-Rev.1
1.3	All queries to be submitted by close-of-business Wednesday, 10 July 2024.

Yours sincerely,



David Dowling Pr.Tech Eng, MSAIEE - Senior
HoD – Electrical Department (Cape Town)



ACKNOWLEDGEMENT OF RECEIPT: ADDENDUM TO TENDER - NO 1: T 8/3/33-2024 (MN158-2024) – BERGRIVIER HOUSING: PIKETBERG MAIN SUBSTATION UPGRADE AND ELECTRIFICATION OF HOUSING UNITS IN PIKETBERG, PORTERVILLE AND EENDEKUIL

Please sign this addendum and hand in with your tender document as it will form part of this contract.

SIGNED:

.....
TENDERER

.....
DATE

**NAME AND ADDRESS OF TENDERER
(Print)**

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.....
.....

CONTACT PERSON:

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SCHEDULE OF QUANTITIES A: MEDIUM VOLTAGE CABLE NETWORK

ITEM	REFER TO	DESCRIPTION	UNIT	QUAN-TITY	UNIT COST		TOTAL COST
					MATERIAL	LABOUR	
A.1	SABS 97-1991 Table 19	3-Core 6,35/11kV PILCDSTA cable:					
		a) 16 mm ² Cu	m				
		b) 25 mm ² Cu	m				
		c) 35 mm ² Cu	m				
		d) 50 mm ² Cu	m				
		e) 70 mm ² Cu	m	100			
		f) 120 mm ² Cu	m	1950			
		g) 120 mm ² Cu	m				
		h) 185 mm ² Cu	m	100			
A.2		Cable joints for use on 11kV PILCDSTA cables complete with all accessories to join the following cables					
		a) 16 - 70 mm ²	each				
		b) 95 - 120 mm ²	each	9			
		c) 150 mm ² and bigger	each	4			
A.3	PC	Pole mounted 11kV drop-out fuses, including support, holders and fuses in sets of three	set				
A.4		11kV Cable end box, pole mounted, complete with glands and bushings					
		a) With end box and compound	each				
		b) With heatshrink-ends	each	6			
A.5		Galvanised steel sleeves for protection of cables against poles	m	20			
A.6		Steel tape with buckles for fastening of cables and sleeves against pole	m	10			
A.7		Complete termination of 11kV cable in termination box of equipment with all accessories.	each	10			
A.8	SABS 1200LC	160mm dia Cable sleeves with couplings and draw wire as specified	m	60			
A.9		Supply and install cable slabs as specified.	m	72			
A.10		Supply and install with inscription, cable route and joint markers of pyramid type with plate insert on top.	each	6			
A.11		Salvage 11kV cables (all sizes) and deliver to owner's stores. Excavations excluded, but all disconnection included.	m	100			
A.12	PA	Supply and install miniature substation complete with all accessories as specified, allowing for cable boxes, oils, compound and other materials.					
		a) 160 kVA	each				
		b) 200 kVA	each				
		c) 315 kVA	each				
		d) 400 kVA	each				
		e) 500 kVA	each				
A.13	PA	Supply and install base for miniature substations	each				
A.14	PA	3-way Ring-main Unit (RMU) with 630 A Circuit Breakers (CVV) with self powered protection relays and instrument CT's for ESKOM	set	1			
A.15		Eskom VT/CT outdoor metering unit colocated with RMU with concrete base	set	1			
A.16	PA	3-way Ring-main Unit (RMU) (CCC-type) in outdoor enclosure	set	1			
A.17		Only the installation of a ring main unit	each				
A.18		Base of ring-main unit as specified	each	2			
Subtotal Carried Forward to next page							

SCHEDULE OF QUANTITIES A : MEDIUM VOLTAGE CABLE NETWORK- continued

ITEM	REFER TO	DESCRIPTION	UNIT	QUAN-TITY	UNIT COST		TOTAL COST
					MATERIAL	LABOUR	
Subtotal amount brought forward							
A.19	PA	Complete earthing for:					
		a) Miniature substation	each				
		b) Ring main unit	each	2			
A.20		80 mm ² bare hard drawn copper conductor for earthing, complete with lugs and accessories.	m	150			
A.21		Removal of existing equipment and material, and delivery to the owner's store.					
		a) Miniature substation	each				
		b) Ring main unit	each				
		c) Transformer	each				
		d) Overhead lines with all hardware, conductor and poles.	m				
A.22		PVC warning tape (300mm)	m	2000			
A.23		Existing cable to be excavated. Re-laying excluded.	m	20			
A.24		Any items not included in the above but deemed necessary for the completion of the works:					
		a)					
		b)					
		c)					
		d)					
TOTAL CARRIED FORWARD TO SUMMARY PAGE C2.4 - 35							

BILL OF QUANTITIES : PIKETBERG SUBSTATION UPGRADE

SCHEDULE OF QUANTITIES D : EXCAVATIONS

ITEM	REFER TO	DESCRIPTION	UNIT	QUAN-TITY	UNIT COST		TOTAL COST
					MATERIAL	LABOUR	
D.1	SABS 1200LC	All prices below includes the excavation of trenches and holes, separation of stones and soil, rocks etc, levelling of trench beds, backfill, compacting and reparation of all surfaces to the original finish.					
		a) Excavating in soft soil	m ³	800			
		b) Intermediate excavations	m ³	100			
		c) Excavating in hard rock	m ³				
		d) Provide sand or stone-free soil, handling cost included.	m ³	108			
		e) Remove waste material, handling cost included.	m ³	108			
D.2	SABS 1200DB	The following will apply where existing services are present:					
		a) Excavations done by hand to expose services	m ³	20			
		b) Excavations where services have to cross trenches					
		(i) Piped services	each				
		(ii) Electrical cables	each	2			
		(iii) Curbs	each				
		c) Excavations where services are adjacent to a trench:					
		(i) Piped services	m				
(ii) Electrical cable	m	35					
D.3		Reparations to surfaces. Only standard trench widths shall be measured.					
		a) Concrete surfaces with a minimum thickness of 75 mm.	m ²	1			Rate Only
		b) Tar surfaces according to SABS standards.	m ²	1			Rate Only
		c) Concrete or brick paving.	m ²	1			Rate Only
TOTAL CARRIED FORWARD TO SUMMARY PAGE C2.4 - 35							

SCHEDULE OF QUANTITIES E : TELEMETRY AND SCADA SYSTEMS

ITEM	REFER TO	DESCRIPTION	UNIT	QUAN-TITY	UNIT COST		TOTAL COST
					MATERIAL	LABOUR	
E.1	PS4.21	PRELIMINARY AND GENERAL					
		Site visits, site establishment, storage facilities, plant provision, contractual obligations etc.	sum	1			
		Commissioning of Complete system or expansion.	sum	1			
		Training for complete system or expansion	sum	1			
		Documentation for complete system or expansion	sum	1			
		Guarantee 12 months for complete system	sum	1			
		Maintenance visits to site during guarantee period	sum	1			
E.2	PS4.21	Supply and installation of the computer at the Central station	sum				
		Supply and install the Computer					
		Supply and install the Printer					
		Supply and install the UPS					
		Expansion of an existing installation.	sum	1			
E.3	PS4.21.1	Supply and install the SCADA Software, Configure it and (2) sets of manuals					
E.4	PS4.21.2	Supply and install the Telemetry at Control centre. (configure and update new outstation)					
		(Control Room)					
		The complete station					
		Cabling to the Computer					
		Antenna System, mast and earthing					
		Update and reconfigure existing installation	sum	1			
E.5	PS4.21.3	Supply and install outstation					
		The complete station					
		Signal cabling					
		Antenna System, mast and earthing					
		Equipment cabling	sum	1			
E.6		Any items not included in the above but deemed necessary for the completion of the works:					
		a)					
		b)					
		c)					
		d)					
TOTAL CARRIED FORWARD TO SUMMARY PAGE C2.4 - 35							

SCHEDULE OF QUANTITIES G : MV SUBSTATION EQUIPEMENT - INDOOR

ITEM	REFER TO	DESCRIPTION	UNIT	QUAN-TITY	UNIT COST		TOTAL COST
					MATERIAL	LABOUR	
G.1		Survey existing substation to identify constructability issues prior to construction	Sum	1			
G.2		Survey existing substation and surrounds to identify and advise contamination and hazardous materials and substances.	Sum	1			
G.3		Survey existing installaiton and validate existing cables and conductor sizes, joints and terminations that may not have been identified correctly.	Sum	1			
G.4							
G.5		Replace Existing Substation switchgear	Sum				
G.6		Prepare: Power Outage and Construction management plan for approval.	Sum	1			
G.7		Execute: Safety management and Execution of construction work in accordance with the approved outage plan.	Sum	1			
G.8		Design, Supply, Install, Test and Commission MV switchgear	Sum	1			
G.9	C3.3	AIS Switchgear					
G9.1		Bus coupler /Sectionaliser (1250A)	ea	1			
G9.2		Bus Riser	ea	1			
G9.3		Incomer cable feeders 1250A, Withdrawable.	ea	2			
G9.4		VT (Metering) 110V	ea	2			
G9.5		Bus Zone protection scheme on intelligent relays	ea	1			
G9.6		Feeders 630A	ea	6			
G9.7		Floor frame sections	ea	2			
G.10		Supply and install earthmat in trench and connected to equipment as specified	sum	1			
G.11		Supply and install substation AC supply cable as specified.	m				
G.12		Supply manuals, drawings and literature as specified	sum	1			
G.13		Supply rubber gloves as specified	pair	2			
G.14		Make, supply and install storage cabinet for equipment (worktop 1 200 x 500).	sum	1			
G.15		Supply, install, test and commission optical fibre communication bus as specified					
		Fibre optic communication link	sum				
		Any hardware to achieve communication between relay and interface unit.	sum				
G.16		Supply, install, test and commission low impedance busbar protection scheme (single busbar)	sum				
G.17		Design, supply, install and commission panels with cabling and auxiliary equipment for a functional scheme					
G.17.1		AC/DC Distribution panel	ea	1			
Subtotal Carried Forward to next page							

SCHEDULE OF QUANTITIES G : MV SUBSTATION EQUIPEMENT - INDOOR

C2.4 - 32

ITEM	REFER TO	DESCRIPTION	UNIT	QUAN-TITY	UNIT COST		TOTAL COST
					MATERIAL	LABOUR	
Sub-total amount brought forward							
G.18		Supply and install all substation and panel labels as specified.	sum	1			
G.19		Supply, terminate and install all auxiliary cables if not included elsewhere.	sum	1			
G.20		Earthing of equipment if not included elsewhere.	sum	1			
G.21		Supply and install crushed stone as specified.	m ³				
G.22		Commission complete substation as specified.	sum	1			
G.23		Supply, install and commission DC power supply and batteries	sum	1			
G.24		Supply and install 11kV lightning arrestors per phase	ea				
G.25		Supply, install, test and commission substation electrical distribution network as specified					
(a)		Double tube (1200 mm) Fluorescent	ea				
(b)		As (a) but with emergency power pack	ea				
(c)		60 W Incandescent lamps	ea				
(d)		Outdoor bulkhead fitting (Type B41 80 W MV)	ea				
(e)		Distribution board	sum				
(f)		Emergency lights and light fittings fed off 110 V DC	sum				
(g)		Complete wiring of substation building with PVC conduit in wall including switch socket outlets, switches and outdoor fittings	sum				
G.26		Test of substation LV electrical system with COC	sum	1			
G.27		Supply tools and test probes for 11kV switchgear	sum	1			
G.28		Guarantee of all equipment as specified	sum	1			
G.29		Any items not included in the above but deemed necessary for the completion of the works:					
		a)					
		b)					
		c)					
		d)					
TOTAL CARRIED FORWARD TO SUMMARY PAGE C2.4 - 35							

SCHEDULE OF QUANTITIES H : SUBSTATION BUILDING

ITEM	REFER TO	DESCRIPTION	UNIT	QUAN-TITY	UNIT COST		TOTAL COST
					MATERIAL	LABOUR	
G.1	SABS 1200C	SITE CLEARANCE					
G1.1	8.2.1	Clear and grub	m ²				
G.2	SABS 1200DA	EARTHWORKS (SMALL WORKS)					
G2.1	8.3.2(a)	Excavate for strip foundations and cable trenches in all materials and use for backfill or dispose	m ³				
G.3	8.3.4	IMPORTING OF MATERIALS FROM COMMERCIAL SOURCES					
G.3.1		Sand fill under floors compacted to 100% of AASHTO density	m ³				
	SABS 1200GA	CONCRETE (SMALL WORKS)					
G.4	8.1.1	FORMWORK					
G4.1	8.2.1	Horizontal to soffits of slabs over cable trench and sides of ramps	m				
G4.2	8.2.3	Narrow widths up to 150 mm wide along sides of floors	m				
G.5	8.3	REINFORCEMENT					
G5.1	8.3.2	High-tensile welded mesh reference 395	m ²				
G.6	8.4	CONCRETE					
	8.4.3	Strength concrete, 20 MPa/19mm					
G.6.1		Strip foundations and floors of cable trenches	m ³				
		Floors and ramps	m ³				
G.7	PS8.4.4	UNFORMED SURFACE FINISHES					
G.7.1		Wood-floated finish (See PSGA 5.4.8.4)					
G.7.2		Floor of cable trench	m ²				
G.8	8.6	SUPPLY AND ERECT PRECAST ELEMENTS					
G.8.1		Precast lintels over cable trench entries	no				
G.9.1		Cable duct covers - Pultreded , complete and installed with frames. Width -1.2m (PROVISIONAL).	m ²	18			
	PART. SPEC PG	BUILDING WORK					
G.10		BRICKWORK					
	8.2.1	(see PSPB 3.5)					
G10.1		110mm face brick beam filling	m ²				
G10.2		110mm walls of general purpose bricks	m ²				
G10.3		220mm walls of cable trenches general purpose (special) bricks both faces	m ²				
G10.4		280mm foundation walls, one side general purpose (special) bricks and the other side face bricks, including concrete fill in cavities	m ²				
G10.5		280mm cavity walls, one side general purpose bricks and other side face bricks	m ²				
G.11	8.2.2	AIR BRICKS					
G11.1		External air bricks	no				
G11.2		Internal air bricks	no				
G.12		Any items not included in the above but deemed necessary for the completion of the works:					
		a)					
		b)					
TOTAL CARRIED FORWARD TO SUMMARY PAGE C2.4 - 35							

BILL OF QUANTITIES : PIKETBERG SUBSTATION UPGRADE

C2.4 - 34

SCHEDULE OF QUANTITIES I : PRELIMINARY & GENERAL ITEMS

ITEM	REFER TO	DESCRIPTION	UNIT	QUAN-TITY	UNIT COST		TOTAL COST
					MATERIAL	LABOUR	
I.1		Erection and removal of notice board.	Total				-----
I.2	SABS 1200 A Par.8.3	Fixed-charge and Value-related items.					
		a) Contractual requirements	Total	1			
		b) Erection of facilities on site.	Total	1			
		c) Removal of facilities from site.	Total	1			
I.3	SABS 1200 A Par.8.3	Time-related Items					
		a) Contractual requirements	Total	1			
		b) Useage and maintenance of facilities on site	Total	1			
		c) Supervision	Total	1			
		d) Company and Head Office overhead costs	Total	1			
		e) On-site over-night security for the duration of the construction period	Total	1			
I.4		Health and safety regulations (Must be priced)					
		a) Cost of health and safety measures to be taken in relation to the Construction Regulations (2014)	Total	1			
		b) Compiling and maintenance of the health and safety plan including risk analysis, safe work procedures and work methods	Total	1			
		c) Compiling and maintenance of the health and safety file.	Total	1			
TOTAL CARRIED FORWARD TO SUMMARY PAGE C2.34 - 35							

SCHEDULE OF QUANTITIES : SUMMARY

ITEM	REFER TO	DESCRIPTION	UNIT RATES		TOTAL COST
			MATERIAL	LABOUR	
	PAGE C2.4 - 28	SCHEDULE OF QUANTITIES A: MV CABLE NETWORK	TOTAL	TOTAL	
	PAGE C2.4 - 29	SCHEDULE OF QUANTITIES D: EXCAVATIONS	TOTAL	TOTAL	
	PAGE C2.4 - 30	SCHEDULE OF QUANTITIES E: TELEMETRY	TOTAL	TOTAL	
	PAGE C2.4 - 32	SCHEDULE OF QUANTITIES G: MV SUBSTATION EQUIPMENT	TOTAL	TOTAL	
	PAGE C2.4 - 33	SCHEDULE OF QUANTITIES H: SUBSTATION BUILDING	TOTAL	TOTAL	
	PAGE C2.4 - 34	SCHEDULE OF QUANTITIES I: PRELIMINARY AND GENERAL	TOTAL	TOTAL	
TOTAL COST CARRIED FORWARD TO PAGE C2.4 - 36					

SCHEDULE OF QUANTITIES : SUMMARY

C2.4 - 36

ITEM	REFER TO	DESCRIPTION	TOTAL COST
	PAGE C2.4 - 26	TOTAL BROUGHT FORWARD - FROM PAGE C2.4 - 26	
	PAGE C2.4 - 35	TOTAL BROUGHT FORWARD - FROM PAGE C2.4 - 35	
SUB-TOTAL (1)			
CONTINGENCY @ 10%			
SUB-TOTAL (2)			
VAT @ 1 5 % ON SUB-TOTAL (2)			
TOTAL COST CARRIED FORWARD TO C1.1-1 FORM OF OFFER AND ACCEPTANCE			