Works Information

AS AND WHEN REQUIRED SCOPE OF WORK FOR SUBSTATION GENERAL SMALL WORKS CONTRACT FOR TRANSMISSION CENTRAL GRID FOR 36 MONTHS

1	**Description of the *Works***
2	**Scope of Work to be performed by the *Contractor* for the *Works***

INDEX

1. DESCRIPTION OF THE *WORKS*

The *works* includes 'as and when' inspections, general small works contract for transmission central grid for 36 months.

2. SCOPE OF WORK TO BE PERFORMED BY THE *CONTRACTOR* FOR THE *WORKS*

The *contractor* is required to perform the following scope of work per substation but not limited to:

2.1 Small works contract for transmission central grid

Maintenance, repairs and new works as directed by the Employer, in the Control rooms/buildings, HV yards and general premises of the Transmission Substations.

Substation infrastructure including buildings is an integral part of the whole Transmission Substation. The maintenance upkeep, repairs and improvements of the plant is important to maintain the whole integrity and safety of plant and personnel. This ensures good condition of plant, equipment and other general facilities. Good condition of substation plant will promote healthy environment and conditions for plant and personnel to attain optimal performance from plant. The Grid does not have the required and appropriate resources to carry out this type or nature of work.

The Contractor shall perform maintenance and new works as directed by the Employer, in the Control rooms/Buildings and HV Yards and general premises of the Transmission Substations on an "as and when needed" basis:
Such maintenance shall include, but not be limited to:

Item No.	***Description***	***unit***
1	**General**	
1.1	Complying with health and safety	Item
1.2	Workshop (fabrication)	Item
1.3	Supervision per day	day
1.4	Plant Hire - actual cost + 5% handling fee	%
1.5	Material supply - actual cost + 5% handling fee	%
1.6	Specialist tools and equipment hire - actual +5% handling fee	%
1.7	LDV Transport 4 x 2	km
1.8	LDV Transport 4 x 4	km
1.9	Transport for labour (minibus 13)	km

1.10	Transport for labour (minibus 23)	km
1.11	6 m³ Tipper Truck	km
1.12	10m³ Tipper Truck	km
1.13	Transport Truck 2-4 ton	km
1.14	Transport Truck 5-8 ton	km
1.15	Transport Truck 5-8 ton with crane	km
1.16	Transport Truck 9-14 ton	km
1.17	Transport Truck 9-14 ton with crane	km
1.18	Transport truck >22 ton	km
	Totals	
2	**Civils**	
2.1	Trenching Excavation and filling	m³
2.2	Remove and reinstate yard stone	m²
2.3	25Mpa concrete work	m³
2.4	encapsulate with conductive concrete	m³
2.5	Supply and Mount Bollard	each
2.6	Anchor copper straps in croncrete	m
2.7	Lifting an replacing trench covers	each
2.8	Painting of copper straps	m
2.9	Construct a bundwall with use of concrete slabs	m
2.10	Construct a bundwall	m²
2.11	Remove stone	m²
2.12	Lay yard stone	m²
2.13	Removal and replace of paving bricks	m²
	Totals	
3	**Steel structural work**	
3.1	Repair trench covers (Checker plate)	each
3.2	repair of HV Tower Antic limbs	each
3.3	Dismantling of steel structure	KG
3.4	Erection of steel	KG
3.5	Chemical anchors	each
	Totals	
4	**Cable work** (remove and Install)	
4.1	4 core2.5mm² steel wire armoured cable	m

4.1a	4 core2.5mm² steel wire armoured cable	m
4.2	4 core 4mm² steel wire armoured cable	m
4.2a	4 core 4mm² steel wire armoured cable	m
4.3	4 core 16mm² steel wire armoured cable	m
4.3a	4 core 16mm² steel wire armoured cable	m
4.4a	12/19 core 2.5 mm² steel wire armoured cable	m
4.4b	12/19 core 2.5 mm² steel wire armoured cable	m
4.4c	12/19 core 2.5 mm² steel wire armoured cable	m
4.4d	12/19 core 2.5 mm² steel wire armoured cable	m
4.5	37 core 2.5mm² steelwire armoured cable	m
4.5a	37 core 2.5mm² steelwire armoured cable	m
4.5.1	7 core 2.5mm² steelwire armoured cable	m
4.5.1a	7 core 2.5mm² steelwire armoured cable	m
4.5.2	4 core 70mm² steelwire armoured cable	m
4.5.2a	4 core 70mm² steelwire armoured cable	m
4.5.3	4 core 90mm² steelwire armoured cable	m
4.5.3a	4 core 90mm² steelwire armoured cable	m
4.5.4	4 core 120mm² steelwire armoured cable	m
4.5.4a	4 core 120mm² steelwire armoured cable	m
4.5.5	4 core 150mm² steelwire armoured cable	m
4.5.5a	4 core 150mm² steelwire armoured cable	m
4.6	10 pair comms armoured cable	m
4.7	25 paircomms armoured cable	m
4.8	50 pair comms armoured cable	m
4.9	Terminate cable	each

4.10	Supply and fit of cable glands No. 0,1,2,3,4	each
	Totals	
5	**Stringing /Jumpers**	
5.1	Bull conductor	m
5,2	Double Bull conductor	m
5,3	Triple Bull conductor	m
5,4	Centipede	m
5,5	Double Centipede conductor	m
5,6	insulated conductor (aux)	m
5,7	Clamping	each
5,8	Crimp join	each
	Totals	
6	**Earthing/ copper work**	
6.1	Install flat copper	m
6.2	Round copper	m
6.3	Brazing joint	each
6.4	CAD welt connection	each
	Totals	
7	**Dismantle/erect**	
7.1 a	CVT 765kV	each
7.1 b	CVT 765kV	each
7.2a	CVT 400KV	each
7.2b	CVT 400KV	each
7.3a	CVT 275kV	each
7.3b	CVT 275kV	each
7.4a	CVT 220kV	each
7.4b	CVT 220kV	each
7.5a	CVT 132kV	each
7.5b	CVT 132kV	each
7.6a	CVT 66kV	each
7.6b	CVT 66kV	each
7.7a	CT/VT 765kV	each
7.7b	CT/VT 765kV	each
7.8a	CT/VT 400kV	each
7.8b	CT/VT 400kV	each
7.9a	CT/VT 275KV	each
7.9b	CT/VT 275KV	each
7.10a	CT/VT 220KV	each
7.10b	CT/VT 220KV	each
7.11a	VT &CT 132kV	each
7.11b	VT &CT 132kV	each
7.12a	CT/VT 66kV	each
7.12b	CT/VT 66kV	each
7.13a	CT/VT 33kV	each
7.13b	CT/VT 33kV	each
7.14a	CT/VT 22kV	each
7.14b	CT/VT 22kV	each

7.15a	Breaker 765 kV	each
7.15b	Breaker 765 kV	each
7.16a	Breaker 400kV	each
7.16b	Breaker 400kV	each
7.17a	Breaker 275kV	each
7.17b	Breaker 275kV	each
7.18a	Breaker 132kV	each
7.18b	Breaker 132kV	each
7.18c	Breaker 44KV	each
7.18d	Breaker 44KV	each
7.19a	Breaker 66KV	each
7.19b	Breaker 66KV	each
7.19.1	Breaker 22KV	each
7.19.1a	Breaker 22KV	each
7.19.2	Breaker 11KV	each
7.19.2a	Breaker 11KV	each
7.20a	Breaker 765 kV Dead tank	each
7.20b	Breaker 765 kV Dead tank	each
7.21a	Breaker 765 kV Live Tank	each
7.21b	Breaker 765 kV Live Tank	each
7.22a	Breaker 33KV	each
7.22b	Breaker 33KV	each
7.23a	Surge arrestor 765kV	each
7.23b	Surge arrestor 765kV	each
7.24a	Surge arrestor 400kV	each
7.24b	Surge arrestor 400kV	each
7.25a	Surge arrestor 275kV	each
7.25b	Surge arrestor 275kV	each
7.26a	Surge arrestor 132kV	each
7.26b	Surge arrestor 132kV	each
7,27	Surge arrestor 66kV	each
7.27a	Surge arrestor 66kV	each
7,28	Surge arrestor 33kV	each
7.28a	Surge arrestor 33kV	each
7,29	Surge arrestor 22kV	each
7.29a	Surge arrestor 22kV	each
7,30	Capacitor Cans	each
7.30a	Capacitor Cans	each
7.31a	Auxiliary transformer	each
7.31b	Auxiliary transformer	each
7.32a	Reactors	each
7.32b	Reactors	each
7.33a	Air core Reactors	each
7.33b	Air core Reactors	each
7.34a	Isolators 765kV	each
7.34b	Isolators 765kV	each
7.35a	Isolators 400kV	each

7.35b	Isolators 400kV			each
7.36a	Isolators 275kV			each
7.36v	Isolators 275kV			each
7,37	Isolators 132kV			each
7.37a	Isolators 132kV			each
7,38	Isolators 66kV			each
7.38a	Isolators 66kV			each
7,39	Isolators 33kV			each
7.39a	Isolators 33kV			each
7,40	Isolators 22kV			each
7.40a	Isolators 22kV			each
7,41	Line traps			each
7.42a	Line traps 132kV			each
7.42b	Line traps 132kV			each
7.43a	Line traps 220kV			each
7.43b	Line traps 220kV			each
7.44a	Line traps 275kV			each
7.44b	Line traps 275kV			each
7.45a	Line traps 400kV			each
7.45b	Line traps 400kV			each
7.46a	Line traps 765kV			each
7.46b	Line traps 765kV			each
7.47a	insulator	string	132kV	each
7.47b	Composite insulator	string	132kV	each
7.48a	Composite insulator	string	220kV	each
7.48b	Composite insulator	string	220kV	each
7.49a	Composite insulator	string	275kV	each
7.49b	Composite insulator	string	275kV	each
7.50a	Composite insulator	string	400kV	each
7.50b	Composite insulator	string	400kV	each
7.51a	Composite insulator	string	765kV	each
7.51b	Composite insulator	string	765kV	each
7.52a	Composite insulator string	132kV	Glass	each
7.52b	insulator string	132kV	Glass	each
7.53a	insulator string	220kV	Glass	each
7.53b	insulator string	220kV	Glass	each
7.54a	insulator string	275kV	Glass	each
7.54b	insulator string	275kV	Glass	each
7.55a	insulator string	400kV	Glass	each

7.55b	insulator string 400kV Glass	each
7.56a	insulator string 765kV Glass	each
7.56b	insulator string 765kV Glass	each
	Totals	
8	**Elect/perimeter fences**	
8.1	Electric Fence Repairs (inc HV conductor and insulators)	m
8.2	Repair /adjust swing gate hinges	each
8.3	Repair and adjust end stop & roller guides	each
8.4	Readjust gate motors position and drive racks to eliminate slacks, align limit switches	each
8.5	Treat rust and re-paint with cold galvanizing paint	each
8.6	Seal motor covers and all cable entries to prevent moisture	each
8.7	Repair of faulty structures	each
8.8	Repair gate post	each
8.9	Supply and Install gate post	each
8.10	Repair gate drive rack	each
8.11	Supply and Install gate drive rack	each
8.12	Supply and Install Sliding gate track	each
8.13	Repair slide gate motor	each
8.14	Repair access booms	each
8.15a	Supply and Install slide gate motor	each
8.15b	Supply and Install slide gate motor	each
8.16	Supply and Install slide gate roller wheels	each
8.17	Modify access gate brackets	each
8.18	Supply and fit Servitude gate	each
8.19	Supply and fit Servitude gate posts	each
8.20	supply and fit pedestrian gate	each
8.21	Supply and Install 2m high Diamond mesh fencing	m
8.22	2m high Welded mesh fencing	m
8,23	supply and install fence posts 2 m high	each

3. QUALITY ASSURANCE AND CONTROL

3.1 QUALITY ASSURANCE

Proof of certification, theoretical & practical training required from the tenderer:

- SANS 10108 with ARP 0108 (South Africa only)
- SANS IEC 60079-10; SANS IEC 60079-14; SANS IEC 60079-17
- SANS 10086 (South Africa only);
- SANS 10089 (South Africa only);
- IP 15 3rd Edition (UK)
- API 505 (USA) for the construction, installation, maintenance and Inspection of Ex equipment.

Portfolio of evidence over and above the certification requirements:

- Curriculum vitae (CV);
- Certified copies of all qualifications, certificates and identity document;
- Statement from a Registered Person;
- ORHVS authorization
- The statement of results of the ORHVS course attended.
- Proof of registration with the department of labour as a master installation electrician.

Prior project experience clearly demonstrating the following competencies:

The project experience submitted should demonstrate that the MIE has completed projects during the following competencies have been attained.

- They have previously performed the small works scope of work
- They have performed calculations and selected equipment suitable for different types HV plant construction and civil works.

3.2 QUALITY CONTROL

All hand over and test reports should be signed by the accredited person who takes full responsibility.

4. ACCOMODATION AND TRAVEL

All travel and accommodation of the *Contractor's* staff whether permanent, non-permanent, part-time, sub-contracted is the *Contractor's* responsibility. It must be included in their quotation.

5. LABOUR

All staff whether permanent, non-permanent, part-time, sub-contracted, and labour only supply, is the *Contractor's* responsibility in terms of supervision and control.

The *Contractor's* supervisor shall be on site at all times seeing to it that all the workers under his supervision work properly and safely.

The *Contractor* shall indicate the man-hours required to execute each activity and this shall be used to gauge the efficiency of the bidder.

6. LETTER OF AUTHORIZATION

The Contractor must have an accreditation certificate indicating that they have been trained and certified to perform work in the high voltage environment. They should also have a valid registration with the department of labour.