THEMBISILE HANI LOCAL MUNICIPALITY

PROJECT No: THLM/SCM15/2025-2026/E02

APPOINTMENT OF PANEL OF ELECTRICAL CONTRACTORS FOR ELECTRIFICATION OF HOUSEHOLDS WITHIN THE THEMBISILE HANI LOCAL MUNICIPAL JURISDICTION FOR A PERIOD OF 36 MONTHS ON AN AS AND WHEN RQUIRED BASIS

SCOPE OF WORK

DESCRIPTION OF THE SCOPE OF WORKS

1.1. Employer's objectives

1.1.1. *The objective of the Employer is to electrify villages under Thembisile Hani Local Municipality*

1.1.2. ***Bidders must note that preference will be given to locally based companies and that this bid may be awarded to more than one company.***

1.2. Overview of the works

1.2.1. The work that must be executed under this contract is electrification of various villages under Greater Thembisile Hani Local Municipality in Nkangala District Municipality.

1.3. Extent of the works

1.3.1. The works entails the following:

- Contractor's site establishment, maintenance thereof and removal after completion.
- Site Establishment
- Pegging out the works (Medium Voltage and Low Voltage)
- Digging Holes (Medium Voltage and Low Voltage)
- Plant poles (Medium Voltage and Low Voltage)
- MV Structures and LV Stays
- LV Structures and LV Stays
- Service Boxes
- MV Stringing
- LV Stringing
- Transformer Installation
- Installation of Earthing
- Pole Numbering
- Installation of Base and Meters
- House Connections
- PSC Files collection
- Dealing with a nominated CLO and local Project Steering Committee regarding social aspects and local labour recruitment.

1.4. Location of the works

1.4.1. The works is located north-east of the municipal offices of the Thembisile Hani Local Municipality adjacent to the R537.

1.5. Temporary works

1.5.1. The following items shall generally form most temporary works required under this Contract, however, shall not be limited to such, and might be expanded or changed by the Engineer should circumstances on site validate such decisions.

1.5.2. These works will be as follows:

- Clearing site and surroundings to create accessible working areas as required
- Provide temporary fencing around Contractor's camp site and Contractor's site office;
- Provide Contractor's Camp site and Contractor's site office;
- Provide site and administrative personnel, including security staff etc. as required;
- Setting out of the works by the Contractor;
- Monitor and report levels as construction progresses;
- Manage all site staff, CLO and local labourers, plant, equipment and materials etc.

- Manage all required quality control procedures as specified and as instructed by Engineer;
- Provide all personnel, equipment, clothing, accessories etc. in order to adhere to the OHS Act
- Attend official Site Meetings scheduled and chaired by the Engineer and managed sufficient additional meetings on site with all personnel and CLO to ensure compliance with the OHS Act and to ensure progress on site according to the accepted Construction programme.

1.6. ENGINEERING

1.6.1. DESIGN

a) The Employer is responsible for the design of the Permanent Works as reflected in the Contract Documents unless otherwise stated.

b) The Contractor is responsible for the design of the Temporary Works and their compatibility with the permanent Works.

c) The Contractor shall supply all details necessary to assist the Engineer in the compilation of the as-built drawings.

1.7. EMPLOYER'S DESIGN

1.7.1. The Employer is responsible for the design of the entire scope of works, including all peripheral repair and site works.

1.8. CONTRACTOR'S DESIGN

1.8.1. Where Contractor is to supply the design of designated parts of the permanent Works or temporary Works he shall supply full working drawings supported by a professional engineer's design certificate.

2. Drawings

2.1. The Contractor shall use only the dimensions stated in figures on the Drawings in setting out the Works, and dimensions shall not be scaled from the Drawings, unless required by the Engineer. The Engineer will, on the request of the Contractor in accordance with the provisions of the Conditions of Contract, provide such dimensions as may have been omitted from the Drawings.

2.2. The Contractor shall ensure that accurate as-built records are kept of all infrastructure installed or relocated during the contract. The position of pipe bends, junction boxes, duct ends and all other underground infrastructure shall be given by either co-ordinates or stake value and offset. Where necessary, levels shall also be given. A marked-up set of drawings shall also be kept and updated by the Contractor. This information shall be supplied to the Engineer's Representative on a regular basis.

2.3. All information in possession of the Contractor, required by the Engineer and/or the Engineer's Representative to complete the as-built/record drawings, must be submitted to the Engineer's Representative before a Certificate of Completion will be issued.

2.4. The Drawings prepared by the Employed for the permanent Works are listed and bound at the back of this volume. The Employer reserves the right to issue amended and/or additional drawings during the Contract.

2.5. The following drawings are attached to the document:

Not Applicable

2.6. DESIGN PROCEDURES

2.6.1. New and existing infrastructure will be considered under this contract.

3. SUBCONTRACTING

3.1. The contractor will be required to sub-contract at least of **15%** of the value of the construction work to designated local sub-contractors, suppliers and/ or SMME's identified by the engineer on behalf of and/ or in liaison with the employer, which will be selected from a local database.

4. CONSTRUCTION

4.1. GENERAL SPECIFICATION

4.1.1. This section of the Contract documents should be read together with all other sections and Standardized and Particular Specifications included in the Contract documents or Standardized Specifications mentioned in the Contract documents, but separately available. The documents should be read and interpreted jointly to determine the full requirements of the Contract.

4.2. SITE ESTABLISHMENT

4.2.1. The Contractor is responsible for Site Establishment. The construction yard will not be serviced, and the Contractor shall make arrangements to connect all necessary services to specific points. The Contractor shall bring to the Site all his necessary construction equipment and install all stationary construction equipment and plant at locations and in the manner accepted by the Engineer. The Contractor shall submit sufficiently detailed plans showing the proposed locations of such stationary equipment and other pertinent data. No installation of such stationary equipment shall be undertaken unless the corresponding plans have been accepted by the Engineer.

5. Services and facilities provided by the Employer

5.1. Source of water supply

5.1.1. The Contractor shall make his own arrangements for the supply of water for construction and testing purposes. The Contractor will be required to supply, install, operate, and maintain at his cost, such temporary pipework and storage facilities as may be necessary to ensure sufficient supply. The supply shall be metered. The Contractor will also be required to pay all connection fees, cost of water drawn from the water supply authority's system at the ruling tariffs in force at the time as well as include all such requirements throughout the duration of the Contract.

5.2. Source of power supply

6. The Contractor shall make his own arrangements temporary power supply for construction purposes. The Contractor will be required to make his own arrangements with, and pay all the requisite connection and consumption charges for whatever temporary power supplies he may require for his use on the site as well as include all such requirements throughout the duration of the Contract.

7. Facilities provided by the Contractor

7.1. Contractor's camp

7.1.1. On this Site, the Contractor shall be responsible in establishing the final grade for his site establishment requirements including; construction offices, storage areas, warehouse, machine and repair shops, fuel tanks, storage tanks, power and water distribution lines and provide such related facilities and sanitary conveniences that are necessary for maintaining health, peace and order, and safety in the work areas. The positions of all buildings constructed by the Contractor for his own use will be subject to the acceptance of the Engineer. Temporary and permanent fencing around the Contractor's Site establishment areas and electrical and mechanical apparatus connected to the electrical supply shall be erected by the Contractor where needed. On completion of work on Site, buildings constructed by the Contractor for his own use shall be demolished, including foundations, and the ground reinstated. Underground services to these buildings shall be removed.

7.1.2. The Contractor shall be responsible for all temporary services required by him both for the site establishment area, camp site and for construction purposes, including water, electricity, sewage, and communication facilities.

7.1.3. Covered accommodation for perishable or corrodible materials, fittings and the like shall be adequate and suitable for their purpose and, particularly in the case of cement stores, shall be well ventilated, weatherproof and waterproof with floors raised off the ground, so as to keep the materials perfectly dry and freely aerated. All such accommodation shall be subject to the approval of the Engineer who shall always have free access to the premises.

7.1.4. In addition to the above, the Contractor shall provide one toilet per 10 workmen. Portable toilet facilities shall be made available to workers of both male and female genders, the number provided to be in proportion to the ration of the sexes. The toilets shall be in the vicinity of the work site, shall be screened from public view and the use thereof shall be enforced. The Contractor shall, where applicable, make the necessary arrangements for the regular removal of night soil. The Contractor is to ensure portable toilet facilities are cleaned on a regular basis.

7.2. Storage and laboratory facilities

7.2.1. The Contractor shall provide all storage and laboratory facilities required for the proper execution of the works.

7.3. Other services and facilities

7.3.1. The requirements of the Engineer's Site establishment are detailed in Project Specification PSA and PSAB.

7.4. Disposal of refuse

7.4.1. The Contractor shall be responsible for the disposal of refuse and waste generated by his staff daily. The site is to be kept clean, neat, and tidy, to the Employer's satisfaction.

7.5. Telephone facilities

7.5.1. The Contractor is to provide his own telephone facilities as well as facilities for the use of the Engineer, or his representative for the duration of the Contract.

7.6. Housing facilities

7.6.1. The Contractor will not be required to provide housing facilities for the Engineer's staff. No accommodation for the Contractor's employees will be permitted on site.

7.7. Notice boards

7.7.1. The Contractor will be permitted to display two notice boards advertising his Contract on or near the Site or access points to the project area. The notices shall be of a form and in a position accepted by the Engineer and shall include details of other parties involved (including the Employer) as well as the Contractor. No advertisement shall be displayed without the acceptance of the Engineer.

7.8. Site usage

7.8.1. Working with road reserves, Eskom servitudes, etc.

7.8.2. The Contractor is to confine his activities strictly to the indicated working areas and to the spoil sites and the direct access roads to these. He shall not work outside his designated working areas except with the prior approval of the Employer, in writing. It is advised that the Contractor takes note of damaged structures or parts thereof and report these to the Engineer in writing before work starts at or near an existing structure to prevent possible disputes with the occupant or owner.

7.9. Site safety and precautions against nuisance

7.9.1. The Works is to be conducted within residential areas with pedestrian and vehicular traffic. The watching, barricading, lighting, and traffic control on site shall be carried out where required in strict compliance with these specifications. The Contractor shall ensure that all safety measures are strictly adhered to.

7.9.2. Plant used on the Works shall be as efficiently silenced as possible and noisy operations will be permitted between the hours of 07:00 and 17:00 only. Any work outside normal working hours requires written approval by the Engineer 24 hrs in advance.

7.9.3. Dust suppression is required for all earthworks activities prone to form excessive dust. Any rock or debris falling from trucks on any haul road shall be removed immediately. Precautions shall be taken to prevent fouling of the site and public roads by trucks. The Engineer may instruct the Contractor to clean roads where any material or debris deposited by any construction vehicle may constitute a danger to the public.

7.9.4. The Contractor is solely responsible for the security of his camp, plant, and materials. The Contractor is to familiarize himself with the locality of the proposed site and allow sufficient security measures to protect the works. The Employer will not be held responsible for any damages, theft or

7.10. Permits and wayleaves

7.10.1. The Employer will make the arrangements for all security access permits and wayleaves necessary within the Works.

7.11. Alterations, additions, extensions, and modifications to existing works

7.11.1. Interfaces with existing works are indicated on the relevant drawings as far as possible. The Contractor shall take note of these and make appropriate allowances for dealing with, and where necessary, making modifications or tying into these services.

7.12. Inspection of adjoining properties

7.12.1. The Contractor will be required to inspect all properties within 50m radius of any excavation on site before and after completion of the works. A detailed written and photographic record of the inspections is to be submitted to the Engineer and Client prior to excavation activities commence.

7.13. Water for construction purposes

7.13.1. The Contractor is required to construct and maintain standpipes for construction water.

7.14. Survey control and setting out of works

7.14.1. Before commencing the operations, the Contractor shall locate and mark all survey pegs and beacons and shall immediately submit a written report in duplicate of any missing or damaged pegs and beacons to the Engineer's Representative, who shall verify the facts and return a countersigned copy of the report to the Contractor. Other than in the case of setting out pegs, the Contractor will be held responsible for the replacement by a registered land surveyor of all beacons or pegs found damaged or missing on completion of the Works which were not reported as such by the Contractor before commencing operations.

7.14.2. Survey records of beacons, bench marks, etc., replaced shall be submitted to the Engineer. Attention in this regard is drawn to Sections 35(1) and (2) of the Land Survey Act of 1927 which lays down the penalties applicable to those who are responsible for interfering with permanent survey beacons, bench marks, reference marks or trigonometric stations.

8. PLANT & MATERIALS

8.1. Materials supplied by the Employer

8.1.1. No materials will be supplied by the Employer. The construction yard will not be serviced, and the Contractor shall arrange to connect all necessary services.

8.2. Materials, samples, and shop drawings

8.2.1. All materials required for incorporation into the permanent works are to be supplied by the Contractor. Where possible, these materials shall be sourced from within the area, considering availability of supply, price, and continuity of supply. In-situ material can be used where suitable. Spoiling and spreading of material will not be permitted on site and suitable temporary stockpile areas must be identified by the Contractor and approved by the Engineer prior to stockpiling.

9. CONSTRUCTION EQUIPMENT

9.1. The Contractor shall provide all construction equipment and plant necessary to complete the works.

9.2. Requirements for equipment

9.2.1. All construction equipment shall be used for the purpose that it was designed for, should be in good working condition and shall be used in a safe manner and shall comply with all relevant legal and roadworthy aspects.

9.3. Equipment provided by the Employer

9.3.1. The Employer will not provide any plant and equipment required for construction purposes. All equipment and plant required shall be provided by the Contractor.

10. EXISTING SERVICES

10.1. Known services

10.1.1. The position of the known existing services is indicated on the layout drawings as far as reasonably possible. The Contractor shall, however, take note of the fact that this is a developed site which is adjoined and crossed by many services. The Contractor must therefore make provision for suitable means of locating and accommodating all services, including those not known or shown on the drawings. This, however, does not relieve the Contractor from responsibility of verifying if any additional services are present in the area by searching and probing the terrain in question for any existing services or indications of the presence of such services. The Contractor shall at all times exercise the utmost care when working in their vicinity and shall take all necessary steps to protect any existing services whatsoever against damage which may arise as a result of his operations on site. The Contractor shall bear the cost of the repair of damage to any service the possible existence of which could reasonably have been ascertained by him in good time. All cables and pipes shall be considered "live" unless confirmed otherwise by the relevant service authority.

10.2. Treatment of existing services

10.2.1. Work will be carried out in the vicinity of existing services and all such services shall remain in operation at all times, except where arrangements have been made for the interruption of the service for the purposes of carrying out the Works under this Contract.

10.2.2. Existing overhead and underground services may be indicated on drawings held by the respective service providers. Should the Contractor find evidence of possible buried services, he shall notify the Engineer immediately thereof. The Engineer will assess the situation and instruct the Contractor on an appropriate course of action to be taken.

10.2.3. The Contractor shall be responsible for checking the locations of all services and to ensure that no damage is cause by construction operations.

10.2.4. The Contractor, before starting any excavations or where indicated in the scope of work or site information that underground services either cross or are located adjacent to the Works that is to be constructed,

such services shall be exposed by hand ahead of trenching operations to enable any changes that might be needed in the design of the pipelines to be made timeously. Care shall be taken in exposing such services to avoid damaging them. An item has been allowed for in the Bill of Quantities for hand excavation or other methods to search for existing services.

10.2.5. All cables and pipes shall be considered "live" unless confirmed otherwise by the relevant service authority.

10.3. Use of detection equipment for the location of underground services

10.3.1. The Contractor shall be allowed to use non-intrusive equipment for the location of existing services if so agreed. Should excavation be required to identify and or expose any services this shall be for the account of the contractor and shall only proceed once the relevant permits or approvals have been issued by the Employer.

10.4. Damage to services

10.4.1. Should any existing services be damaged by the Contractor, the Engineer shall be informed immediately. The Contractor shall repair the damaged service if so instructed by the Engineer or shall assist in the repair of the service as instructed by the Engineer at the Contractor's own cost.

11. VARIATIONS AND ADDITIONS TO SANS 1200 STANDARDIZED SPECIFICATIONS AND PARTICULAR SPECIFICATIONS

11.1. Although not bound in nor issued with this document, the following standard specifications shall form part of the contract and notwithstanding the provision of sub-clause 2.2 of SANS, the editions specified below shall apply:

11.1.1.	SANS 1200 A		General
11.1.1.1.	SANS 1200 AB	:	Engineers Office
11.1.1.2.	SANS 1200 C		Site clearance
11.1.1.3.	SANS 1200 D		Earthworks
11.1.1.4.	SANS 1200 DB	:	Earthworks (Pipe Trenches)
11.1.1.5.	SANS 1200 GA	:	Concrete (small works)
11.1.1.6.	SANS 1200 L		Medium Pressure Pipelines
11.1.1.7.	SANS 1200 LB	:	Bedding (Pipes)

11.2. In addition, the following particular specification that is bound into this document shall apply.

11.2.1.	Specification PS L	:	Medium pressure pipelines
11.2.2.	Specification PS SL	:	Steel pipes
11.2.3.	Specification PS G	:	Concrete (Structural)

11.3. The following variations and additions to the SANS 1200 Standardized Specifications referred to above apply to this Contract. The prefix PS indicates an amendment to SANS 1200. The letters and numbers following these prefixes respectively indicate the relevant Standardized Specification and clause numbers in SANS 1200 to which the variation or addition thereto applies.

12. Procurement

12.1. Preferential procurement procedures

12.1.1. The works shall be executed in accordance with the Preferential Procurement Policy Framework Act and Preferential Procurement Regulation 2011.

PROJECT SPECIFICATION: ELECTRICAL

PSA WORKS & TECHNICAL INFORMATION: ELECTRIFICATION

SCOPE

Supply labour, transport and material to construct the complete electrical infrastructure and house connections for the Village in question including design, site establishment and everything else to complete the installation as described in the technical specifications and attached drawings.

The contractor produces and submits a quality plan and construction program to the employer within one week of acceptance. The construction program will be in bar chart format. The contractor provides all plant and materials - except the material under plant and materials which the employer will provide- equipment and labour for the whole of the works, which includes:

TEMPORARY WORK

Clear the right of way and campsites, in order to erect the necessary site offices, own accommodation facilities, sanitary units, bulk water containers, site store, etc. The works also include the cleanup of site camp and site store, as well as transportation of excess material not used, back to the stores.

PERMANENT WORK

- Position all poles and any stays associated with a particular structure, using the services of an ESKOM approved registered surveyor.
- Excavate pole, stay and strut holes, erect wooden poles, stays and struts and backfill and compact pole, stay and strut holes in layers of 300mm.
- Install MV and LV stays in accordance with the distribution standard.
- Assemble the MV structures as well as the aerial bundle conductor LV structures according to the distribution standards. Wooden poles of 9m and 11m are used and structures are single-pole design.
- Run out and string bare overhead line conductor (ACSR), code name fox.
- Run out and string 3 and 4 core self-supporting 35mm² and 70mm² ABC plus bare neutral.
- Install the transformers, including MV surge arrestors, MV drop fuses and LV fuse protection units.
- Pole mounted 100kVA, 22kV/415V three phase transformers to be used.
- Kiosk Meter: 3PH; RAT/DC Secure Pole Mount per transformer zone
- Interface: DC450 G3; PLC DCV; 230V per transformer zone
- Excavate trenches to a depth of at least 500mm for type 1 MV and LV three-point star earth electrodes, install electrodes and backfill and compact on completion.
- Install pole top distribution boxes complete with one pigtail bolt and one eye nut per distribution box.
- Connect pole top boxes to LV feeders with phasing as indicated on drawing.
- Excavate for 9m wooden poles (LV) and 11m wooden poles (MV) in accordance with D-DT-0332, backfill and compact pole in layers of 300mm.
- Install DIN Rail Single Phase PLC Smart Split Meter with CIU 20A
- Connect meters to pole top box via 10mm^2 overhead airdac, according to distribution standard.

- Some stands are currently vacant and these are indicated on the drawing. If the stands are still vacant at the time of installation, the ready boards and service conductor will not be installed.
- Demolish the existing LV ABC infrastructure as shown on the demolition drawing. Some of the poles which can be reused must be retained. To minimize power interruption to the already connected customers, the demolition must only be completed after the new electricity infrastructure.
- All materials must be brand new.
- Test and commission the entire infrastructure.
- Test and commission house connections and issue COCs.
- Capture all connections on CORDAPTIX prepaid bulk uploads, fill in connection slips in full.
- The work will be taken over by the employer on completion.

RESTRICTIONS IN PROVIDING THE WORKS

a) Visit every resident and arrange access for mid-block electrification.

b) Treat residents in a courteous, friendly and polite manner and keep them informed of changes to the required access.

c) Foster close relationships with recognized community structures.

d) Staff other than key contractor -staff is employed from the local community.

e) Definition of completion: The works are to be completed in accordance with the specifications in all respect and taken-over by the employer, except cleaning of the site and breaking of camp which may be done within 1 week after completion.

f) All services shall be in accordance with ESKOM distribution services standard and specifications.

TECHNICAL SPECIFICATIONS

Note: Unless otherwise specified the material shall be in accordance to the specifications listed in the ESKOM **NEC** small works contract.

WORK SPECIFICATION

NOTES:

a) All work shall be in accordance with the relevant ESKOM specification.

b) All labour cost shall be included in quoted rate.

1.1 .A PRELIMINARIES & GENERAL

1. A.1 TO 1.A.6 TRANSPORT

a) The specific contractor shall supply, transport and off-load all material on the site.

b) No additional transport charges will be entertained, except for ESKOM provided materials.

1.A.7 TO 1 .A. 12 SITE ESTABLISHMENT AND TIME RELATED COSTS

a) The specific contractor shall supply a suitable site office, site store with a store man, staff accommodation and security.

b) The specific contractor shall supply suitable supervision on site.

c) the contractor shall also be responsible to remove all facilities established on site after his work is complete.

1. A.13 DESIGN

a) The specific contractor shall supply a complete design to ESKOM specifications.

1.1. B PEGGING OUT THE WORKS

a) The contractor shall deliver the completed work in accordance with the specifications and to the total satisfaction of ESKOM in regard to the clarity, quality accuracy and neatness.

b) Reporting any incident pertaining to the environment, wild life, accidents and damages to property,

c) The routes of the power lines shall be pegged such that the said lines can be erected in strict accordance with the code of practice for overhead power lines and the specifications of the relevant sections of the Occupational Health and Safety Act, Act 85 of 1993, and any regulations which may apply.

d) The contractor shall obtain permission from the property owners to clear bush and/or trees before any work is carried out.

e) The contractor shall open a "line of sight" for survey purposes only for surveying lv routes. For surveying MV feeder routes the clearances shall comply with the relevant standards.

f) Cost to include for all bush clearing and/or tree felling

g) The contractor shall repair all fences damaged by him to the satisfaction of the property owner

h) The contractor shall set out the line route with its angle, tee-off, terminal and transformer pole positions in accordance with the stipulated route.

i) The contractor shall peg the pole, stay and/or strut positions at each bend, tee-off and transformer point.

j) The contractor shall peg on-line positions between points. It is important to take note of topographical features in the positioning of pole, stay and/or strut positions. All deviations should be referred back to the project engineer.

k) The contractor must return at least one township layout plan with the medium voltage and low voltage "as-pegged" lines indicated in different colours.

1.1. C DIGGING HOLES

a) The contractor shall provide all trenching, excavation of pole and stay holes, bedding material, back filling and surface reinstatement as required.

b) Pole holes shall be dimensioned as per drawing DDT-0332.

c) Stay holes shall be dimensioned as per drawing DDT-0350.

d) All excavations shall be kept covered or barricaded, if not attended to, in a manner accepted by ESKOM to prevent injury to people or livestock.

e) The contractor must allow for all soil conditions in his tender price. No additional payments will be considered.

f) Risk of collapse and keeping excavations free of water shall be included in the quoted rate

1 1.D POLES

a) All poles shall be positioned plumbed vertical in the centre of the excavations viewed from any direction.

b) Planting of poles and backfilling of holes shall be in accordance with SCSSCAA01.

1 1.E HV STRUCTURES

a) Supplying and installing all hardware according to the relevant structure drawings.

1.1. F HV STAYS

a) Supply and install complete stay assembly according to relevant structure drawing.

b) Planting of stays and backfilling of holes shall be in accordance with SCSSCAA01. C) risk of collapse and keeping excavations free of water shall be included in the quoted rate.

c) All stays shall be planted with the relevant stay plates fitted on the stay rod.

d) The stay plate shall be placed up against undisturbed soil on the pole side of the hole, the hole shall be backfilled and compacted in layers of 250mm.

e) Struts shall be fitted with barbed wire anti climbing devices.

1.1. G LV STRUCTURES

a) Supplying and installing all hardware according to the relevant structure drawings.

b) All in accordance with Eskom’s distribution construction standards.

c) LV ABC fittings shall conform to scsscaal4.

d) Non-tension phase connections on ABC shall be made using a 95/35 - 95/35 IPC in accordance with D-DT-3039 (part 9).

e) Non-tension neutral connections on ABC shall be made using one h crimp in accordance with D-DT-3019 (part 9) per connection.

f) The ABC shall be connected to the pole-top distribution box using 1 x 35 - 95/6-25 IPC (refer to D-DT-3039 (part 9)) for phase connections and 2 x 35-95 (pg)/6-25 (IPC) (refer to D-DT-3039 (part 9)) for neutral connections: or

g) The connector housing shall be made entirely of weather resistant plastic materials. No metallic parts outside the housing will be accepted (except for the tightening bolt).

h) The tightening bolt shall incorporate an over torque shearing head which will allow a clamping torque in conformity with the manufacturer's re-commendations. Without the use of any special tools.

i) No energized parts shall be exposed or accessible by the operators during installation.

j) All mounting hardware shall comply with the ESKOM distribution standard for bare neutral ABC.

k) Suspension bracket max. vertical load - 700 DAN

l) Strain clamps max. horizontal load - 1500 DAN

m) Brackets are to be manufactured from corrosion resistant materials. Galvanized steel brackets are not acceptable.

n) Cable ties in accordance with D-DT-3075 shall be used to avoid loosening the bundle at all structures including transformer structures. The general positions of cable ties are shown on the relevant structure drawings. Additional ties shall be fitted as required.

o) On all bare neutral ABC systems the neutral shall be insulated from the strain clamp to the transformer connection with a UV protected covering. Refer to d-dt-3127.

p) All ABC tails or ends shall be sealed using end caps.

1.1. H LV STAYS

a) Supply and install complete stay assembly according to relevant structure drawing.

b) Planting of stays and backfilling of holes shall be in accordance with scsscaa01.

c) Risk of collapse and keeping excavations free of water shall be included in the quoted rate.

d) All stays shall be planted with the relevant stay plates fitted on the stay rod.

e) The stay plate shall be placed up against undisturbed soil on the pole side of the hole. The hole shall be backfilled and compacted in layers of 250mm.

f) Struts shall be fitted with barbed wire anti climbing devices.

1. 1. I SERVICE BOXES

a) Supply and install pole-top distribution box complete with tails, stainless steel strapping and connectors to ABC

b) The pole-top distribution box shall be in accordance with SCSSCAAH3.

c) The pole-top box shall be connected so that the loads are, as far as practicable, balanced across phases with reference to the LV distributor. (see phasing on design drawing).

d) The pole-top box shall be secured to the pole using stainless steel strapping D-DT-3131.

1.1. J STRINGING

a) All stringing shall be done according to the approved sag and tension charts.

b) The contractor shall provide suitable dynamometer sighting rods or other approved apparatus necessary for proper checking of the work. Dynamometers shall be calibrated in kg or kN

c) All joints and connections shall be the compression type and shall comply with the requirements of SCSSCAAG5:

d) Only persons who have passed ESKOM approved compression jointing training and have proof of this are permitted to perform this work on the ESKOM network.

e) No joints shall be placed in crossing spans.

f) Joints shall, as far as possible, be made in the middle third of a span. No joint shall be placed within 20m of a structure.

1. 1. K TRANSFORMER STRUCTURES

a) Supplying and installing all hardware according to the relevant transformer structure drawing.

b) Supply all equipment to install the transformer.

c) Connection of transformer onto MV overhead line via relevant crimps.

d) all existing transformers to be upgraded to ESKOM specifications. In cases where bare LV at the transformer will not provide sufficient clearances, the bare LV conductor is to be replaced with ABC conductor to the first LV pole from the transformer.

1 1.L INSTALLATION EARTHING

a) Transformer earthing (electrode details and resistivity values) shall be in accordance with SCSASAAL9, distribution standard, part 2. (earthing standard)

b) Tendered rate shall include for excavation of cable trenches in all types of material, and shall include for backfilling of trenches in layers of 250mm.

1 1.M POLE NUMBERING

a) Supplying and installing all tags, punches and equipment to install MV and LV pole numbering.

b) All labelling and marking in accordance with ESKASAANO.

c) MV and LV poles shall be numbered as indicated on the issued for construction drawings.

1.1. N COMMISSIONING INFRASTRUCTURE

a) Infrastructure to be commissioned according to SCSASABZ1.

b) Handing over and documentation to be completed per transformer zone.

c) Contractor to supply all test equipment necessary for testing of infrastructure.

d) Contractor to timeously arrange for outages for commissioning purposes,

1.1.P OTHER

1.0.1 MORSDORFER FUSE ASSEMBLY INSTALLATION SHALL INCLUDE:

a) The LV fuse units shall be positioned in a way that facilitates ease of operation from ground level using a link stick with the appropriate attachments.

b) The units shall be placed below the LV conductor and the position shall also allow

c) For future LV units to be installed where upgrading of the network is anticipated.

d) The transformer structure drawing D-DT-0309 indicates proposed fuse unit

e) Positions for up to 4 units. Typically. Two LV feeders can be fed from one fuse unit.

1.1.0.2 CUT-OUT FUSE ASSEMBLY INSTALLATION

a) Supplying and installing all material and equipment necessary to provide a complete fuse assembly installation according to the relevant distribution drawing.

1.1.0.3 SITE ESTABLISHMENT TO INCLUDE:

SITE OFFICE

a) The contractor shall provide onsite a minimum of 1(one) well illuminated, insulated and ventilated site office. This site office shall be painted inside and outside and shall be of sufficient size and adequately furnished to ensure proper administration of this works. The employer or his authorized representative supervisory staff will utilize this site office.

b) One site office shall be of sufficient size to accommodate site meetings and to keep all drawings and documents needed for the works. A proper and updated indication of progress will be done on the layout plans and program for each site meeting.

c) Site office 3m x 4m (minimum) furnished with the following:

- 1 x table 1,6mx 1.2m
- 8 x chairs
- 1 x pin board 1,6mx 1,2m
- 1 x lockable filing cabinet
- 1 x toilet (chemical)
- Power outlets
- 1 x mini refrigerator
- 1 x WIFI
- Stationary
- emergency kit

d) Provision shall be made for a suitable water supply, sanitary facilities and first aid facilities at the site office. The contractor shall ensure a means of communication between the site office and project manager's office.

e) The contractor shall provide a fenced-in yard for the whole of the contract period.

f) The location of the site offices shall be determined on site in collaboration with the employer or his authorized representative. The contractor shall remove these site offices and the area cleared to the satisfaction of the employer or his authorized representative on completion of this works.

g) Tenderers shall take note that the total cost involved in these site offices shall be included in the rate for site establishment offered

h) Establishment of facilities on site such as plant, sheds, water, electricity, lighting, etc.

i) Removal of facilities from site after completion of work.

j) Any additional cost deemed necessary by the contractor to comply with contractual requirements.

1.1.0.4 STORE AREA

a) The contractor shall provide onsite a suitable site store for the temporary storage of material and equipment.

b) The location of the site store shall be determined on site in collaboration with the employer or his authorized representative.

c) This site store shall be removed and the area cleared to the satisfaction of the employer or his authorized representative on completion of the works.

d) The contractor shall provide a qualified store-man to receive and issue materials. This store-man shall maintain a proper administrative record reflecting all materials received and issued. Stock shall be taken of at the end of each calendar month and a full stock report shall be submitted to the employer or his authorized representative at the first site meeting following the end of a particular month.

1 1.0.5 SAMPLE LINE BOARD

a) The contractor shall build and provide onsite a sample line and material boards as specified in sample line and material board standard:

b) Greater Tzaneen Municipality

c) Rate to allow for all material necessary to build sample line and material board.

d) This sample line shall be removed and the area cleared to the satisfaction of the employer or his authorized representative on completion of the works.

P OTHER

1 1 P.2 PREPAID METER:

a) All meters to be supplied by contractor

b) Meter to be 20A prepaid keypad type meter

c) All meters to be sourced from approved ESKOM suppliers with whom ESKOM has current year contracts in place.

d) Details of order to be submitted to the engineer for approval before confirmation of order.

e) Rate to include for mounting of meter onto meter base.

1.1 .P.3 METER BASE, PLUGS AND U7 METER BOX:

a) Meters to be mount on outside of customers house inside an approved u7 meter box.

b) Contractor to supply and install meter box and ECU base and all mounting materials for fixing these to an outside wall of the customer's premises.

c) Contractor to supply and install double plug outlet boxes according to specification. These plug boxes to be installed on inside wall of houses, as close as possible to the meter box on outside wall.

d) Contractor to supply all fixing materials necessary

e) Contractor to supply and install all wiring and consumable necessary to electrically connect the meter, and the meter to the plug box.

1.1. P.4 OVERHEAD CONNECTION

a) Connections will be made overhead.

b) Contractor to supply and install all material necessary for a complete overhead connection to each dwelling.

c) Rate to include the supply of all material, installation of the material, stringing of the Airdac, connection of Airdac to meter base.

1.1. P.9 ENERGIZE, TEST& C.O.C. OF INSTALLATION

a) House connection to be commissioned and tested according to SCSASABZ1.

b) The contractor is to submit a copy of the certificate of compliance (COC) for each

c) Meter installed and tested to the project manager.

d) CRP data according to customer services department requirements and standards

e) (refer to Annexures C of SCSASABZ1) to be captured in electronic format (Excel)

f) After COC of installation has been issued, and submitted to the project manager monthly.

1.2 MATERIAL SPECIFICATION

NOTES:

a) The contractor shall supply all the material necessary to complete the construction of this line.

b) The contractor shall transport and off-load all material from the manufacturer to the construction camp.

c) The contractor shall transport all equipment and material for the day's work

d) From the construction camp and off-load it at the specific pole position.

1.2. A PRELIMINARIES

2. A.1 TRANSPORT

a) The specific contractor shall supply, transport and off-load all material on the site.

1.2. B PEGGING OUT THE WORKS

a) The contractor shall supply all the equipment necessary for the pegging of the work.

b) The contractor shall supply all the steel pegs and peg markers for the pegging of the work.

1.2. C DIGGING HOLES

The contractor shall supply all material and equipment necessary for the excavations of the pole and stay holes. The contractor shall transport all the material and equipment to and from the construction camp.

1.2. D POLES

a) Wood poles shall be used as the standard pole for reticulation through the town

b) Wood-poles shall have fibre strength of at least 55 MPa and shall be in accordance with SCSSCAAD7.

c) Only poles from ESKOM approved suppliers may be used.

1.2. E HV STRUCTURES

a) The contractor shall supply all the equipment necessary for dressing the structures according to the relevant distribution drawing.

b) The contractor shall supply additional bolts with nuts and washers.

c) Bolts, nuts and washers shall be hot dipped galvanized to specification.

d) bolts shall be to SABS 135 with a strength Grade of 4.8.

1.2. F HV STAYS

a) The contractor shall supply all the equipment necessary for planting the stay

b) Stay rods shall be M20 size with length 2.0m

1.2. G LV STRUCTURES

a) The contractor shall supply all the equipment necessary for dressing the structures according to the relevant distribution drawing.

b) Connectors shall be of the insulation piercing type for main and tap conductors, except for the bare neutral when a double PG clamp will be utilized.

c) The connector housing shall be made entirely of weather resistant plastic materials.

d) No metallic parts outside the housing will be accepted (except for the tightening bolt).

e) The tightening bolt shall incorporate an over torque shearing head which will allow a clamping torque in conformity with the manufacturer's re-commendations. Without the use of any special tools.

f) No energized parts shall be exposed or accessible by the operators during installation.

g) All mounting hardware shall comply with the ESKOM distribution standard for bare neutral ABC. Suspension bracket max. Vertical load - 700 DAN. strain clamps max. Horizontal load - 1500 DAN

h) brackets are to be manufactured from corrosion resistant materials. Galvanized steel brackets are not acceptable.

H LV STAYS

a) The contractor shall supply all the equipment necessary for planting the stay

b) Stay rods shall be M12 size with length 1 -5m

1.2. I SERVICE BOXES

The contractor shall supply the pole-top distribution box complete with tails, stainless steel strapping and connectors to ABC.

The pole-top distribution box shall be in accordance with scsscaah3.

The pole top boxes shall be equipped with one 50A MCB.

1.2 J STRINGING

a) All aluminium reinforced conductor to be Eskom marked conductor.

b) All joints and connections shall be the compression type and shall comply with the requirements of SCSSCAAG5:

1.2.K TRANSFORMER STRUCTURES

a) The contractor shall supply all the equipment necessary for installing the transformer structure complete with transformer according to the relevant transformer structure drawing.

1 2.L INSTALLATION EARTHING

a) The contractor shall supply all the material necessary to install the complete earth as required in the relevant distribution drawing.

1 2.M POLE NUMBERING

a) The contractor shall supply all the tags, punches and nails to install the pole numbering.

1 2.N COMMISSIONING INFRASTRUCTURE

a) The contractor to supply all material necessary to perform commissioning in accordance with SCSASABZ1.

b) Equipment labelling: the contractor is to ensure that the applicable standards regarding the labelling of equipment and poles are adhered to.

c) Data and information: the contractor shall be responsible to submit the following data to the employer in the correct format.

d) As-built drawings according to land development department requirements and standards (refer to Annexures for the requirements). The contractor will forward the updated drawings to the design consultant or the ESKOM project engineer (within one week after project completion) to be updated electronically. The project manager will ensure that the design consultant or the ESKOM project engineer then forward the drawings to the relevant land development office (within two weeks after capturing by the contractor).

ELECTRICITY STANDARDS

SANS 1507/2002 – Cable Specifications
SANS 10142 – Code of practice for the wiring of premises
SABS 780 – Transformer Specifications Standards
SABS 0225 – Pole Design Standard

Note: all the Electricity Related Construction Works must be done following Eskom Standards.

The contractor is to take note of the standards and specifications as listed in the table below.

SPECFICATION NO.	TITLE /DESCRIPTION OF STANDARD AND SPECIFICATION	DATE OF REVISION	TICK IF PUBLICLY AVAILABLE
SCSASAAMO	ESKOM DISTRIBUTION STANDARD PART 0: STRUCTURES, DEFINITIONS, ABBREVIATIONS AND EXEMPTIONS.	REV 1	
SCSPVABF3	ESKOM DISTRIBUTION STANDARD PART 0: OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS TO BE MET BY CONTRACTORS AND SUB-CONTRACTORS EMPLOYED BY ESKOM	REV1	
SCSASAAL9	ESKOM DISTRIBUTION STANDARD PART 2: MV AND LV RETICULATION EARTHING.	REV 2	
SCSASAAM2	ESKOM DISTRIBUTION STANDARD PART 3: LV OVERHEAD RETICULATION.	REV 4	
SCSAGAAF5	ESKOM DISTRIBUTION STANDARD PART 3: LV PROTECTION PHILOSOPHY.	REV1	
SCSASAAP2	ESKOM DISTRIBUTION STANDARD PART 4: 22KV OVERHEAD RETICULATION UP TO HARE/OAK CONDUCTOR.	REV0	
SCSASAAS3	ESKOM DISTRIBUTION STANDARD PART 8: ELECTRIFICATION	REV 2	
SCSASABZ1	HANDING OVER DOCUMENTATION: MAJOR/MINOR RETICULATION ELECTRIFICATION	REV0	

List of specifications

NOTES TO TABLE:

a) This is a list of all the specifications and other documentation referenced or described as being part of the works information.

b) The list includes publicly available standard specifications which may not be attached, but which are part of the works information.

c) Variations to standard specifications are also listed as applicable and are attached.

d) A detailed description of each part of the works, including a bill of quantities, is attached to this document.

e) The contractor must be in possession (on site) of the latest ESKOM distribution standards, parts 2, 3, 4, 8 and 9. Failure to adhere to this requirement may lead to the termination of this contract.

TABLE: REFERENCE TO NATIONAL AND INTERNATIONAL STANDARDS

Topic	Document
Aerial Bundled Conductor	SABS 1418, Part 1 to 3 DTS 0105 (NRS 018)
Bolts and Nuts	SABS 135
Bolts, Eye	SABS 178
Busbars	SABS 1195
CNE	
Cables, installation of electric	SABS 1268: 1979
Cables, low voltage	NRS 016: 1991
Cables, medium voltage	SABS 0198: 1988
Cables (house service split concentric)	NRS 012: 1991
Cable Glands	NRS 013:1991
Cables Ties	DTS 0084 (NRS 017)
Clamps (strain for split concentric)	SABS 808
Clamps (suspension for split concentric)	DTS 0086 (NRS 020)
Clamps Strain	
Clevis Tongue Adaptor (Twisted)	SABS 178
Clips for Wiring	SABS 178
Compression Fittings	
Concrete Poles	BS 3250 Part 1 (Tests)

Topic	Document
	SABS 470
Conductor ACSR/AAC and AAAC	DTS 0106
Conductor, Covered	SABS 182
Conduit	DTS 0087 (NRS 021)
Connectors, lug/ termination	
Connectors, insulation piercing	NRS 028
	EDF 6737/ HN 33 E60
Conductor, mid-span/ full tension	(Main cable 350 mm2 to 70mm, take-off 6mm to 35 mm)
Connectors	
Cross Arm Braces	
	SABS 0162
	SABS 1200 H/HA
Cross Arms	
D Fuses	SABS 0162
	SABS 1200 H/HA
	DTS 0048 Rev 0
Earthing Rods	
Electricity Dispenser	
Fitting (strain and suspension)	SABS 1063
ABC	SABS 0199
Fuse Holder	SABS 1524-1
Fuses	NRS 009-1
	DTS 0105 (NRS 018)
Galvanizing	SABS 172
	SABS 763: 1988
Harness Wiring	SABS 935
Insulator Hardware	IEC/ NWS 1536
Insulator Spindle	DTS 0092
Isolator	SABS 0162
	SABS 1200 H/HA

Topic	Document
Line Construction	NWS 1512
Links Trilinks	IEC/ NWS 1536
Links, ganged 3 phases (isolators)	IEC/ NWS 1536
Link, pull Stick (Knife links)	IEC/ NWS 1536
Links, single Pole “Hulinks”	IEC/ NWS 1536
Long Rod Insulators	DTS 0092
Miniature Circuit Breakers OHASA Act (1993) and it’s regulations and amendments	SABS 156
Pole Top Service Box	DTS 0104 (NRS 032)
Post Insulators	DTS 0092
Preformed Tension Wraps	SABS 178
Preformed Ties	
Ready Boards	DTS 0085 (NRS 019)
Reticulation LV	DTS 0090 (NRS 023)
Road crossing standard	DTS 0060
Safety on Construction Sites	NWS 1058
Service box	DTS 0104 (NRS 032)
Stainless Steel Straps and Buckles	
Stay Assemblies	BS 16
Stay Attachment Brackets	SABS 0162
Stay Insulators	
Stay Wires	SABS 182, Part 5
Surfix Wiring	SABS 1507
Surge Diverters	NWS 1108
Symbolic Safety Signs	SABS 186: 198

Topic	Document
Transmission line hardware	NWS 1827
Washers	SABS 135
Wire, PVC Covered	SABS 182
Wire Rope Grips	BS 462
Wood Poles, pine gum	SABS 753
	SABS 754

Guidelines and Recommended Practices

Title	Document
Overhead Reticulation: Recommended Practice for Low Cost Urban Reticulation	NRS 023: 1991 (DTS 0090)
Eskom Electrification Standard : Volumes 1 & 2	
Code of Practice for the Application of CNE on Low Voltage Distribution Systems.	NRS 016 : 1991 (DTS 0103)
Power Line Crossing of Proclaimed Roads, Railway Lines, Tramways and Important Communication Lines.	DTS 0060 z
Code of Practice for Joint use of Structures for Power and Telecommunication Lines.	NRS 043 of 1997