



## REQUEST FOR FORMAL WRITTEN PRICE QUOTATION FORM

Procurement from R30 000, 00 up to a transaction value of R200 000, 00 (including Vat). (For publication on Lesedi Local Municipality Website and Notice Board)

### SUPPLY AND CONSTRUCTION OF TRAFFIC LIGHTS IN LESEDI LOCAL MUNICIPALITY FOR AS AN WHEN REQUIRED

DATE OF ADVERTISEMENT	12 AUGUST 2020
DATE OF CLOSING	21 AUGUST 2020 @12H00
<b>DETAILS OF BIDDER</b>	
FULL NAME	
ADDRESS OF BIDDER	
ID NUMBER (SOLE PROPRIETOR) COMPANY OR CC NUMBER	
REGISTRATION NUMBER (PTY) LTD	
TAX REFERENCE NUMBER	
VAT REGISTRATION NUMBER (IF ANY)	
CONTACT PERSON	
ALTERNATIVE CONTACT PERSON	
TELEPHONE NUMBER	
CELL PHONE NUMBER	
FAX NUMBER	
CIDB NUMBER (IF ANY)	

**Must be completed in full**

QUOTATIONS MUST BE SUBMITTED IN SEALED ENVELOPES CLEARLY MARKED “**SUPPLY AND CONSTRUCTION OF TRAFFIC LIGHTS IN LESEDI LOCAL MUNICIPALITY,**” TO THE QUOTATION BOX SITUATED AT: SUPPLY CHAIN MANAGEMENT OFFICE (LESEDI OFFICES)  
 C/O LOUW AND HF VERWOERD STREET  
 HEIDELBERG  
 1438

ALL ENQUIRIES SHOULD BE REFERRED TO BOIKOKOBETSO MOFOKENG@ (016) 492 0250 OR MRS SIBULELO MOKOENA@ 016 492 0202 WITH REGARDS TO THE BIDDING PROCEDURE.

DEPARTMENT: INFRASTRUCTURE SERVICES

The following information must be submitted with the quotation, failure in submitting these documents/rules will result in a quotation being disqualified:

- Original tax clearance certificate/Tax Pin from SARS
- Forms listed below (MBD 1, MBD 2, MBD 4, MBD 6.1, MBD 8, MBD 9, Clearance Certificate for Water & Lights)
- Latest Municipal Account
- CSD Full Registration.
- CV of a qualified electrician with a trade certificate of Section 26 and N6 qualification.
- Bidder must submit a reference letter with contactable references for previous work that was successfully completed on traffic lights, failing the bid will be disqualified.

Bidders must arrange with Mr Boikokobetso Mofokeng at 016 492 0250 for site visitation. No briefing session will be conducted in an effort to curb the spread of Covid-19.

**Bidders who did not submit an original or certified copy of their BBBEE Certificate will not be allocated preference points and will only be evaluated on price.**

**EVALUATION CRITERIA:** 80/20 Preference point system as presented in the preferential procurement policy framework Act no 5 of 2000, for this purpose the MBD 1, MBD 2, MBD4, MBD 6.1 MBD 8 MBD 9 and the Clearance Certificate for Water & lights can be downloaded from our website on the following link: [www.lesedilm.gov.za/key/scm](http://www.lesedilm.gov.za/key/scm) MBD forms should be scrutinized, completed and submitted together with your quotation. All objections and complaints must be lodged within 14 days and in writing to the municipal manager’s office.

<b>Designated Group: An EME or QSE which is last 51% owned by:</b>	<b>EME</b>	<b>QSE</b>
Black people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		

All bidders must ensure that they are registered on the National Treasury Central Supplier Database via the following link: [business.support@csd.gov.za](mailto:business.support@csd.gov.za). No business will be conducted with any person who is not registered on this database.

**NB: 1) BIDDERS ARE NOT WELCOMED TO ATTEND THE OPENING OF QUOTATIONS AFTER SUBMISSION IN AN EFFORT TO CURB THE SPREAD OF COVID-19.THE QUOTATION OPENING REGISTER WIL BE AVAILABLE ON THE LESEDI MUNICIPALITY WEBSITE.**

**2) BIDDERS ARE ALSO REQUESTED TO OBEY ALL COVID-19 PROTOCOLS AT MUNICIPAL OFFICES WHEN SUBMITTING QUOTATIONS.**

## ANNEXURE A: INFORMATIVE SECTION

### THE SUPPLY AND CONSTRUCTION OF TRAFFIC LIGHTS IN LESEDI LOCAL MUNICIPALITY.

#### 1. Background

The traffic lights get damaged due to the car accidents that are happening in Lesedi area and as a result, this leaves the intersections not functioning anymore which increases the chances of more accidents as other vehicle drivers do not treat the dead traffic lights as a stop sign.

#### Scope

This contract calls for the supply and construction of traffic lights in Lesedi Local Municipality

#### Purpose

The purpose of this document is to prescribe the bid specification requirements for all Traffic lights in LLM: Electricity Department and also to refurbish the damaged traffic lights or construct the new traffic lights in order to decrease the chances of accidents.

**It is also a requirement that the successful bidder/s will be requested to provide specifications of the equipment.**

#### 3. Normative references

The following legal requirements and standards contain provisions that, through reference in the text, constitute requirements of this specification. At the time of publication the editions indicated were valid. All standards are subject to revision and all bidders bidding on this specification are requested to investigate the possibility of revisions to the documents in order to ensure that they comply too the most recent editions of the documents listed below. Information on currently valid national and international and CKS documents may be obtained from Standards South Africa.

Occupational health and Safety Act, Act No. 85 of 1993 (OHS Act)

#### 4. Definitions and abbreviations

##### 4.1 Definitions

**4.1.1 Approved:** Means approved by the Senior Manager: Electricity or his/her authorized representative.

**4.1.2 Networks:** The high, medium and low voltage distribution networks.

**4.1.3 Risk assessment:** An assessment of the probability that injury or damage may occur.

**4.1.4 Acceptable:** Acceptable to the authority administering this standard or to the parties concluding the purchase contract as relevant.

## 4.2 Abbreviations

- i. **OHS Act:** The Occupational Health and Safety Act, Act 85 of 1993.
- ii. **NFPA:** National Fire Protection Association
- iii. **SANS:** South African National Standards

## ANNEXURE B: SCOPE OF SERVICES

### LESEDI LOCAL MUNICIPALITY TRAFFIC SIGNAL UPGRADES / CONSTRUCTION

#### PROJECT SPECIFICATIONS

#### SECTION A: PROJECT DESCRIPTION AND GENERAL INFORMATION

##### 1. PROJECT DESCRIPTION

##### 1.1 DETAIL DESCRIPTION OF THE PROJECT

The project entails the execution of work related with the Supply & Installation of a traffic signal equipment in the CBD Area, including the excavation of trenches for cables, laying of cables, casting of concrete footings, erection of traffic signal poles, threading of cables and installation of traffic signal heads. The work also includes all electrical work related to connecting the signal heads with the controller, connection of the traffic signal to the main electrical power supply and related electrical work.

The Work has a programming / synchronization of intersections, as well as an electrical component. Tenderers must ensure that both capabilities are within their company or if subcontractors are to be used, the name and particulars of the specific subcontractor must be provided.

All material, equipment and labour necessary to execute the Works must be supplied by the Contractor.

All material to be used in terms of poles, signal heads, visors, backing boards, lenses and the traffic controller must be S.A.N.S. approved equipment.

The broad description of the work is briefly discussed below.

The civil works connected with the erection of traffic signals entail different aspects, and include the following:

##### **Existing ducts / sleeves to be utilized**

- (a) Erection of traffic light poles, which includes the excavation for footings and the mounting of the traffic signal poles onto the footings.
- (b) Assembling and mounting of traffic signal heads.
- (c) Erection of the **Existing** traffic signal controller.
- (d) Excavation of trenches for the laying of cables.

- (e) Threading of cables through ducts and laying of ducts in trenches next to the road.
- (f) Connection of electrical supply to the controller.
- (g) Connection of the signal heads to the controller.
- (h) The provision and erection of road signs.
- (i) The removal and / or relocation of existing road signs.
- (j) Commissioning of the traffic signal control installation including Synchronization.

## **2. GENERAL INFORMATION**

The traffic signals to be upgraded are as follows:

- Lesedi Area

### **2.1 CONSTRUCTION PROGRAMME**

The duration of the project will be as an when from the date of appointment till the contract amount is reached in terms of the work completed.

The construction period will be based on the time required to complete the erection of the traffic signals. This includes the following:

- a) excavation for and casting of concrete footings for traffic signal poles and the controller pole,
- b) mounting of traffic signal heads onto poles, erection of traffic signal poles,
- c) excavation of trenches next to road, laying of ducts, backfilling and compaction,
- d) threading of cables through ducts (all cables),
- e) installation of detectors,
- f) electrical connections and commissioning,
- g) all civil works.

All waste and surplus material has to be removed from the site within 24 hours after completion of the work.

### **2.2 SERVICES**

The Contractor has to acquaint himself with the locations of all existing services, such as sewerage pipes, stormwater pipes, culverts, water pipes, manholes, valve casings, electric cables, telephone cables or any other services, before any work is commenced that could affect existing services.

The Contractor will be held responsible for all damage to existing services or any damage caused by actions of the Contractor, and will be repaired at his expense.

The Contractor will also be held responsible for any damage caused to lawns, fences or other facilities inside the road reserve or adjacent thereto.

### **2.3 MINIMUM EQUIPMENT AND MANPOWER TO BE SUPPLIED BY THE CONTRACTOR**

The Contractor has to furnish a schedule of equipment and manpower as part of this tender document and has to provide proof that the equipment is sufficient to execute the work as described in this document and as contained in the Schedule of Quantities.

Given the nature of the work, the Contractor is expected to be available at all times via cell phone, and such cell phone number has to be provided to the Engineer Technician.

### **2.4 CERTIFICATION OF ELECTRICIAN**

The Contractor will have to provide proof that a person or subcontractor will be employed with the necessary qualifications to carry out the electrical work. The necessary documentation showing the qualification of the electrician needs to be attached to the tender document.

### **2.5. MEASUREMENT AND PAYMENT**

Measurement of all work will be carried out by the Engineer Technician together with the Service Provider, and final quantities for payment have to be approved in writing by the Engineer Technician. Payment Certificates will be completed in accordance with the General conditions of Contract and have to be approved by the Engineer Technician in writing. Payments will be made on the completion of the works and acceptance of the works by the **Lesedi Local Municipality (Engineer Technician)**. Payment shall be made within 30 days after submission of the Payment Certificate and the Contractor's invoice to the GMA.

### **2.6 DRAWINGS**

Only drawings that forms part of the documentation shall be used for the execution of Works.

### **2.7 INTERPRETATION OF CONTRACT DOCUMENTS**

Should any part or parts of the Contract not be clearly understood by the Contractor or should descriptions of the materials or articles to be used in the execution of the work be considered insufficiently lucid, it is to be understood that the Engineer Technician shall be requested in writing to make clear his requirements, failing which the Contractor shall be required to make alterations necessary due to incorrect interpretations of such Drawings or Specifications at his own expense.

## **SECTION B: REFERENCE TO THE STANDARD SPECIFICATIONS AND CHANGES TO THE STANDARD SPECIFICATIONS**

### **A Accommodation of Traffic**

The accommodation of traffic includes all road signs, arrangements with Lesedi Local Municipality and the Traffic Department or the provision of manpower as required to ensure the safe accommodation of traffic during construction.

The road signs supplied by the Contractor for the accommodation of traffic have to be in good condition and have to be approved by the Engineer Technician prior to the commencement of construction. Accommodation of traffic is paid as a lump sum, regardless of the number of days of construction where

work is carried out in the road reserve (See the South African Road Traffic Signs Manual, Volume 2, Chapter 13 for details on Accommodation of Traffic).

## **B Concrete pavement**

Where trenching is carried out through existing concrete sidewalks, the sidewalk shall be replaced as follows:

- 1) When breaking existing paving, sides of trenches will be straight saw cuts.
- 2) The bedding will be compacted to 93 % Mod AASHTO density.
- 3) The basic depth of the walkway concrete section will be 100 mm and shall be increased to 150 mm at vehicular entrances.
- 4) R10 steel reinforcing bars shall be placed on each side of the sidewalk, 300 mm from the edges and 40 mm from the bedding.

## **SECTION C: DESCRIPTION OF ITEMS NOT COVERED IN THE STANDARD SPECIFICATIONS**

### **A1 Tracing of existing ducts**

The tracing of existing ducts shall be carried out on instruction of the Engineer Technician and will consist of hand excavated trenches to determine the position of existing ducts. The trenches shall be backfilled and compacted to 93% Mod AASHTO on completion. The item will be measured in m<sup>3</sup> material excavated.

### **A2 Relocation and protection of services**

The item is provided as a provisional sum to be used to the discretion of the Engineer Technician to protect services or relocate services if required.

## **B1 CONCRETE FOOTINGS FOR TRAFFIC SIGNAL POLES**

### **B1.1 Excavations for traffic signal pole footings**

The footings for traffic signal poles will be hand excavated and the rate shall allow for excavation in all types of material. The item will be measured per number of complete excavated footings with dimensions as shown in the detail drawings, per type of traffic signal pole.

### **B1.2 Casting of concrete footings**

The concrete footing shall include the casting of in-situ concrete per detail drawing. The item will be measured per number of completed footings and the rate shall allow for all materials and labour.

### **B1.3 Casting of concrete slab**



The concrete slab shall include a concrete slab for the installation of inductive loops in paved areas or poor asphalt. The item will include cut of asphalt, excavation of existing material, removal of spoiled material from site, compaction of the work surface and casting of concrete. The item will be measured in m<sup>2</sup>.

**B1.4 Slab in front of controller cabinet**

The concrete slab in front of the controller cabinet will consist of 3x Fig 10 kerbs (250mm x 100mm x 1m) or similar placed on prepared in situ material, levelled properly as shown in detail. The necessity of this item to be confirmed with the Engineer. This item will be measured as a lump sum per controller.

**C SUPPLY AND ERECTION OF TRAFFIC SIGNAL POLES**

**B1.1 Supply and installation of Automotor or similar approved type base plate for high and cantilever poles**

The rate shall include the supply and installation of the steel frame base plate and separate rates shall be provided for the supply and installation of the steel frame and base plate. The item will be measured per number of frames provided.

**C1.2 Supply and erection of standard height poles**

Supply and erection of standard height poles. The pole shall conform to the dimensions shown in the detail drawings and to the specifications in the South African Road Traffic Signs Manual, Volume 3. Separate rates must be provided for the supply of the material, the cost (labour) of the erection of the pole and a total rate, which must be the sum of the supply and erection rates.

**C1.3 Supply and erection of totem (high) poles**

The totem pole shall be only approved totem (high) pole. Separate rates must be provided for the supply of the material, the cost (labour) of the erection of the pole and a total rate, which must be the sum of the supply and erection rates.

**C1.4 Supply and erection of cantilever poles**

The cantilever pole shall be only approved cantilever pole. Separate rates must be provided for the supply of the material, the cost (labour) of the erection of the pole and a total rate, which must be the sum of the supply and erection rates.

**C1.5 Painting of poles**

The poles shall be painted with golden yellow paint as specified in the South African Roads Traffic Signs Manual, Volume 3. The rate shall provide for the supply of paint and labour to paint the complete pole. It should be noted that the anti-corrosive paint is not measured under this item and is part of the supply of the pole. The item will be measured per type of pole and per number of poles painted.

**D SUPPLY AND LAYING OF CABLES**

This section of the Specifications includes the cables and wiring.

Cables between the controller and signals shall be PVC insulated, steel wire armoured, PVC sheathed, 600/1000 volt grade to SANS 1507. Cables shall be sized so that the total volt drop

from the point of connection of the controller to the supply mains and any signal head does not exceed 5% of the nominal supply voltage under normal maximum loadings. All cables shall operate within their current ratings and shall be protected by appropriately rated circuit breakers or fuses. No cables having core sizes less than 1,5 mm<sup>2</sup> shall be used.

Cables between the controller and signals shall have the number of cores as specified in the detail drawings. Care shall be taken to ensure that armour wires are correctly seated and that all parts are properly tightened.

Cores shall be designed to firmly clamp the conductor by means of a pressure plate such that the clamping pressure is not generated by direct contact between the terminal clamping screw and the conductor. There shall be no appreciable mechanical strain on the core at the termination.

Cores shall normally be terminated directly into circuit breakers or onto terminal strips fixed to suitable mounting rails such that modules of equipment can be removed without disconnecting incoming or outgoing cables. Adequate space shall be allowed to facilitate access for installation and maintenance.

The Service Provider shall be responsible for the connection of all equipment to the power supply network.

Joints in the cables will only be permitted at full drum lengths or at termination points. At all terminations, cable armouring shall be bonded to earth. Joints, if required, shall be of the cast resin type using joint kits from reputable suppliers approved by the cable manufacturer.

2 Metres of slack is to be looped at the base of each signal pole and at the controller to reduce the risk of breakage in the event of a vehicle colliding with the pole.

## **E SUPPLY, ASSEMBLY AND INSTALLATION OF SIGNAL HEADS INCLUDING BACKING BOARDS, VISORS, LENSES, LAMPS, CABLING, STRAPS FOR FIXTURES - ONLY APPROVED EQUIPMENT TO BE USED**

### **E1.1 Supply and installation of Signal heads**

The signal heads used shall in all cases be only approved supplied signal heads. These signal heads shall however conform to all the Standards as set in SANS 1459 and in the South African Road Traffic Signs Manual. The layout and symbols of the different types of signal heads are shown in the detail drawings.

Each signal head item, as specified in the schedule of quantities, shall include all the elements which shall consist of:

- a) Reflectors
- b) Lampholders
- c) Lamps (LED type)
- d) Lenses
- e) Visors
- f) Modular background screens
- g) Cables and transformers

#### Installation of Signal Heads

Universal pole mounting straps to fit poles from 100 mm to 250 mm diameter must be used to fit signal heads.

The height of the centre of the green signal aspect of the S1 signal heads shall not be less than 2.3 m and not more than 3 m above the level of the carriageway. The same height requirements apply to the amber right turn arrow of the S10 signal heads. Where indicated on the drawings, the green right turning arrow of the S10 signal heads shall be located to the right of and in a horizontal line with the green aspect of the S1 signal heads. Similarly, the amber right turning arrow of the S10 signal heads shall be in a horizontal line with the amber aspect of the S1 signal head.

The signal heads' aspects shall be covered with danger tape for the period between installation and commissioning.

When fitted, the background screens shall be practically on the same plane as the lenses and shall be rigidly mounted to withstand the rigorous weather conditions encountered in South Africa.

The unit of measurement will be the number of signal head, and the rate shall include all the items specified above and all other items to install the signal head to the satisfaction of the Engineer Technician.

**E1.2 Extra over items for the installation of signal heads on totem (high) poles and cantilever poles**

This shall be read as an extra over item over items E1.1 and shall cover the cost for additional equipment and/or labour necessary to install signal heads on totem poles or cantilever poles. The item will be paid as a lump sum per signal head installed on a totem (high) or cantilever pole.

**F SUPPLY AND INSTALLATION OF POLE TOP CONNECTORS, PEDESTRIAN PUSH BUTTONS AND EARTH SPIKES**

**F1.1 Supply and installation of push buttons**

This item will include the supply and installation of only approved push button assembly with backboard. The push button shall be installed at the height as shown on the drawings and with the layout of cabling as shown.

The item will be measured per number of push button assemblies supplied and installed. Separate rates must be provided for the supply of the push button and the installation thereof.

**F1.2 Pole top connectors (Z3 connectors)**

Pole top or Z3 connectors shall be only approved type and shall be installed at the positions shown on the detail drawings. The pole top connectors will be measured per number supplied and installed. Separate rates must be provided for the supply of the pole top connectors and the installation thereof.

**F1.3 Earth spikes**

The controller must be earthed with a copperweld earth spike of minimum 1.2m next to the controller and on intermediate areas within the intersection, designed in accordance with SANS 0199: Code of Practice for the Design and Installation of an Earth Electrode.

**G ERECTION OF CONTROLLER FOOTING AND CONTROLLER CABINET**

**G1.1 Excavation for controller footing**

The footing for the controller cabinet shall be hand excavated and the rate shall allow for excavation in all types of material. The item will be measured per number of complete excavated footings with dimensions as shown in the detail drawings.

## **G1.2 Installation of controller and controller pole**

The controllers should be upgrade as follows:

The detail of the controllers in terms of signal plans, number of phases etc. will be provided per intersection to the Service Provider. The **programming** of the software will be carried out by a reputable programmer of the Service Provider (Proof is required for competency).

## **H CONNECTION AND COMMISSIONING**

### **H1.1 CONNECTION OF SIGNAL POLES TO CONTROLLER**

After the physical installation of the traffic signal has been completed, including all poles, conduits, drawing of cables, installation of controller, road markings, road signs etc., the cables from the signal poles shall be connected to the controller.

The connection of these cables shall take place in the presence of a representative of the Electrical Department of the Municipality and shall be done to his/her satisfaction.

The rate will be a lump sum and shall provide for materials and labour required to successfully connect the cables from both the power supply and the traffic signal poles to the controller. The detail wiring diagram to connect to the controller will be provided by the Electrical Department.

### **H1.2 CONNECTION TO THE MAIN ELECTRICAL SUPPLY**

Existing power points will be utilized.

This will consist of either a low voltage connection or similar connection point. The Service Provider shall liaise with the electricity supplier to determine the nature and location of the power supply.

The item shall include the connection of cables to the power supply and the connection of cables to the controller.

The item will be paid as a lump sum per connection.

### **H1.3 COMMISSIONING**

On completion of the installation, the Contractor shall test each piece of equipment and each circuit for correct functioning under supervision of a representative of the Lesedi Local Municipality and the Engineer Technician. During this testing, any necessary adjustments and calibration procedures shall be carried out.

Acceptance tests to be carried out in the presence of the representative shall include, inter alia, any or all of the following:

- (i) All wiring shall be subjected to a test voltage of 2kV for one minute without any insulation failure.

- (ii) Operation of all pedestrian pushbuttons shall be demonstrated.
- (iii) Correct phase sequencing and timing shall be demonstrated for each of the specified operating modes and for each signal plan called for.
- (iv) Where the sequence and duration of phases vary, dependant on vehicle and pedestrian demands, these demands shall be simulated, using a portable test unit to operate controller inputs if necessary, and the correct response of the controller to these demands demonstrated.
- (v) In linked co-ordinated systems, all communications circuits shall be proven. Phase timing, extension times, offsets, force-off response and, where called for, pre-emption response shall be checked. Correct synchronisation of real time co-ordinated signals shall be checked.
- (vi) The correct functioning of all safety circuits shall be demonstrated. In particular, green conflict monitoring circuits shall be tested by externally interconnecting all potentially conflicting circuits, one pair at a time, and demonstrating transfer to the emergency flashing mode. Independence of the two green conflict monitoring circuits shall be demonstrated.
- (vii) Manual operation shall be demonstrated.
- (viii) Signals visible to road users shall be blanked off while tests are in progress.
- (ix) A list of defects or omissions which do prevent the proper functioning of the systems shall be compiled and the final acceptance from the Contractor shall be delayed until these items have been rectified.

## **Section D: SCHEDULE OF QUANTITIES**

### **PREAMBLE TO THE SCHEDULE OF QUANTITIES**

#### **1. General**

- (a) This preamble to the Schedule of Quantities provides the tenderer with guidelines and requirements with regard to the completion of the Schedule of Quantities. The Schedule has to be completed in black ink and the contractor is referred to the Notice to Contractors in regard to the correction of errors.
- (b) The Schedule of Quantities shall be read with all the documents which form part of this Contract.
- (c) The following words shall have the meanings hereby assigned to them:

Unit: The unit of measurement for each item of work in terms of the General and Special Conditions of Contract, the Specifications and the Project Specifications.

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

Rate: The payment per unit of work at which the tenderer tenders to do the work.

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

Lump sum: An amount tendered for an item, the extent of which is described in the Schedule of Quantities, the Specifications and the Project Specifications, but the quantity of work of which is not measured in any units.

## 2. Pay Items

- (a) The abbreviated descriptions of the payment items given in the Schedule of Quantities are only for the purposes of identifying the items and providing specific details. Reference shall be made, inter alia, to the Drawings, Specifications, Project Specifications for more detailed information regarding the extent of the work entailed under each item.
- (b) The item numbers appearing in the Schedule of Quantities refer to the corresponding item numbers in the Specifications and in the Project Specifications.
- (c) The units of measurement indicated in the Schedule of Quantities are metric units. The following abbreviations are used in the pay items of the Schedule of Quantities:

mm	=	millimetre
m	=	metre
km	=	kilometre
m <sup>2</sup>	=	square metre
m <sup>3</sup>	=	cubic metre
l	=	litre
h	=	hour
t	=	ton (1 000 kg)
No	=	number
%	=	percent
V	=	volt
W	=	watt
prov sum	=	provisional sum

## 3. Method of Measurement

- (a) The work shall be measured in accordance with the methods described in the documents which form part of this Contract. Attention is directed to the provisions of the Specifications and Project Specifications regarding the measurement of quantities.
- (b) Unless otherwise stated, items are measured nett in accordance with the Drawings and Project Specifications and no allowance is made for waste or work in excess of that specified. Rates tendered shall include for any waste or excess work.
- (c) All work that is required to provide a fully functional and complete traffic control system shall be measured according to the pay items and no additional work or pay items will be measured or paid over and above these included in the Schedule of Quantities.

### Note:

- 1.1 Price schedule on the advert must be completed even if you submit/attach a separate quotation to the document.
- 1.2 The bill of quantity is attached as (No1-3).
- 1.3 Price schedule to be completed in full i.e.: Rates; unit prices; sub-totals; vat if applicable and totals

**BILL FOR THE INSTALLATION OF TRAFFIC SIGNALS AT THE INTERSECTION OF LESEDI LOCAL MUNICIPALITY**

(NO. 1)

<b>Item No.</b>	<b>Description</b>	<b>Unit</b>	<b>Qty.</b>	<b>Rate (Excluding VAT)</b>	<b>Sub-Total (Excluding VAT)</b>
1	Re-install of Automotor ESA10 traffic signal controller	Each	1		
2	GPS clock correction & aerals for controller.	Each	1		
3	Supply and installation of LED traffic lights complete with background screens, mounting brackets and pole straps.  a) 3 aspect (SARTSM S1) b) 2 aspect Pedestrian (SARTSM S11) c) Removal of traffic signal heads, including delivery to depot.	Each Each Each	1 1 1		
4	Supply and installation of replaceable, flange-mount traffic signal poles  a) Hot-dip galvanised controller pole b) 3.3 m standard traffic light pole c) Removal of standard traffic signal pole, including delivery to depot. d) Removal of cantilever traffic signal pole, including delivery to depot.	Each Each Each Each	1 1 1 1		
5	Painting of poles with two coats of golden yellow enamel.  a) 3.3 m standard traffic light pole b) 5 m Cantilever pole	Each	1		

Item No.	Description	Unit	Qty.	Rate (Excluding VAT)	Sub-Total (Excluding VAT)
6	Supply and install three lines of reflective tape per pole a) 3.3 m standard traffic light pole b) 5 m Cantilever pole	Each	1		
7	Supply and installation of pole foundations (excavation, frames and concrete included) a) Controller pole foundation b) Slab in front of controller c) Standard pole foundation d) Cantilever pole foundation e) Removal of traffic signal pole foundations	Each Each Each Each Each	1 1 1 1 1		
8	Supply and installation of pole-top terminal boxes: a) Standard height	Each	1		
9	Supply and installation of cabling and earthing: a) 1.5 mm <sup>2</sup> 19-core pvc swa signal cable. b) 4 mm <sup>2</sup> earth cable (gp wire) c) 10 mm <sup>2</sup> 3-core pvc swa power supply cable d) Earth spike 1.2 m e) 1 mm <sup>2</sup> 7-core flex cabtyre f) 16 mm <sup>2</sup> earth cable (bare copper) g) Cable joint (supply)	m m m Each m m Each	1 1 1 1 1 1 1		
10	Excavate pickable soil	m <sup>3</sup>	1		



(NO. 3)

Item No.	Description	Unit	Qty.	Rate (Excluding VAT)	Sub-Total (Including VAT)
11	Excavate un-pickable soil over and above	m <sup>3</sup>	1		
12	Excavation to locate and prove existing ducts	m <sup>3</sup>	1		
13	Under-road boring including pits and ducts.	m	1		
14	Under-road directional drilling including pits and ducts.	m	1		
15	Backfilling and compaction	m <sup>3</sup>	1		
16	Paving: a) Cutting, lifting and stockpile b) Reinstatement c) Supply 60mm interlocking pavers	m <sup>2</sup> m <sup>2</sup> m <sup>2</sup>	1 1 1		
17	Cutting, lifting and reinstatement of tar	m <sup>2</sup>	1		
18	Importing of filling soil/crush	m <sup>3</sup>	1		
19	Exporting of soil and rubble	m <sup>3</sup>	1		
20	Commissioning	Lump Sum	1		
	<b>TOTAL CARRIED TO SUMMARY</b>				

**Recommended by: Ms Gugu Mncube**  
**Acting Chief Financial Officer**

**Approved by: Mr Sbusiso Dlamini**  
**Acting Municipal Manager**