



An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

ENQUIRY	Phone: +91 431 257 76 53 Fax : +91 431 252 00 31 Email : skaruna@bheltry.co.in Web : www.bhel.com
NOTICE INVITING TENDER	

TWO PART BID Tender to be submitted in two Parts	Enquiry Number: 2851400023	Enquiry Date: 17.02.2014	Due date for submission of quotation: 19.03.2014
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You are requested to quote the Enquiry number date and due date in all your correspondence. This is only a request for quotation and not an order.

Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of tender opening.

Item	Description	Quantity
10	Street Lighting and Fencing Lighting Installations – Supply and Erection/ Installation and Commissioning as per the Technical Specification & Commercial Conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	01 Set

Important points to be taken care during submission of offer:-

- Supply portion: Payment will be made as follows:**
 - 80% against supply of respective line item
 - 20% after completion of E&C of the total system & submission of 10% PBG for total order value (Supply + E&C).
- Service Portion: 100% Payment will be made on completion of each line item/works and against completion certificate and submission of 10% PBG for total order value (Supply + E&C).**
- The delivery requirement for the supply of the items for the tender is by 01.01.2015**
- In case of any quantity over & above the tolerance limit (of +10%) during the commissioning period (not exceeding 6 months), the vendor may confirm their willingness to supply the same at the original rate mentioned in the offer.**
- Compliance No. IND 01A as applicable to the vendor to be filled in and enclosed along with the offer failing which, their offer will not be considered for evaluation.**
- EMD for this Tender will be Rs. 1,50,000/-**

BHEL's General guidelines / instructions (refer MM/CE/GENL/001-EMD) including bank guarantee formats and list of consortium banks, commercial terms check-list can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under above Enquiry reference.

Tenders should reach us before 14:00 hours on the due date
Tenders will be opened at 14:30 hours on the due date
Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present

Yours faithfully,
For **BHARAT HEAVY ELECTRICALS LIMITED**


Engineer/ Capital Equipment / MM

PART-A
Pre-Qualification Criteria for providing the Street & Fencing lighting
at PEFP Bhandara

Sl. No.	Description	bidder to confirm
1	Only those bidders, who have supplied, erected, tested and commissioned atleast one factory-shop lighting/street lighting distribution project and other allied works as indicated in the tender in the past five years and such installation presently working satisfactorily more than one year after commissioning, should quote.	
2	List of the customers / companies on which similar lighting in factory/ shop lighting installations supplied & commissioned by the bidder.	
3	Performance certificate from minimum one customer / company (as per the suggestive format given in Annexure-VII) regarding satisfactory performance of the equipment/ electrical lighting installation in factory/shop for a minimum period of one year supplied to them in last five years.	
4	Bidder should submit the audited copy of last three years (2010-11, 2011-12 & 2012-13) balance sheet and Profit & Loss account.	
5	Bidders should quote for supply, erection, testing and commissioning of the installations and allied equipments as per the entire scope of items identified in the NIT.	
6	Bidder / Firm should have a valid Electrical ESB license – issued by the respective licensing board.	
7	Bidder should have the PAN, TIN and Service Tax Registration documents for the Firm and copies should be submitted along with the offer.	

Note: Bidder should conform all the above said points without which the offer will not be technically considered.

Part B

Item: 10 Supply of Street lighting and fencing lighting installations at PEFP Bhandara			
ITEM No.	ITEM TEXT	Unit	QTY
1	Supply of Integral type 150W HPSV Street lighting luminarie and lamp as per Annexure-I.	No	150
2	Supply of Non-Integral type 150W HPSV Flood lighting luminarie and lamp as per Annexure-II.	No	90
3	Supply of Non-Integral type 1000W HPSV Flood lighting luminarie and lamp as per Annexure-II.	No	8
4	Supply of 12 meter height MS double arm street light pole with minimum wall thickness of 4.5mm as per the BHEL drawing number 4E24B0128191 including one coat of red oxide and two coats of aluminium paint.	No	25
5	Supply of 9.5 meter height MS single arm street light pole as per the BHEL drawing number 3-E-24B01-11340 including one coat of red oxide and two coats of aluminium paint.	No	100
6	Supply of 5.5 meter height MS fencing light post as per the drawing in Annexure-VI including one coat of red oxide and two coats of aluminium paint.	No	45
7	Supply of timer control boxes as per Annexure-IV.	No	8
8	Supply of terminal box as per the Annexure-V.	No	175
9	Supply of single core,unsheathed,Flame retarant,Low smoke heat resistant (FRLS),bare high conductivity,Flexible multi-strand Bright Annealed Electrolytic copper conductor,IS 8130/2006, insulated with PVC type A of IS 5831/2006, 650/1100 Volts grade, confirming to PVC insulated and rated upto 1100v as per IS 694/1990. Size. 2.5 sqmm with 100 Mtr. per roll. (20 rolls each of Red, Black and Green colour). Makes: Elkay/ Delton/ Gloster/ Nicco/ L&T/ Havells/ Finolex/ Kundan/ Mardia/ Siechem/ RR .	Rolls	60
10	Supply of 4 core, 10sq.mm XLPE Insulated, Armoured, Multicore and cores colourcoded, Outer sheathed with extruded FRLS PVC type ST2of IS 5831/84, annealed - bare high conductivity, stranded Aluminium Conductor, Voltage grade 650/1100as per IS 7098/P-1/1998. Make:RPG,KEI, Gloster, Universal, Mansfield, , APAR industries limited, Cable corporation of india ltd., Diamond power infrastructure ltd, Hindusthan vidyut products ltd., Havells india limited, kei industries ltd., Krishna electrical industries ltd., KEC International limited, Nicco corporation ltd., Paramount communications ltd., Polycab wires pvt. ltd., Ravin cables limited, Sriram cables pvt. ltd., Torrent cables ltd., Universal cables ltd.	meter	4500
11	Supply of 3.5 core, 25sq.mm XLPE Insulated, Armoured, Multicore and cores colourcoded, Outer sheathed with extruded FRLS PVC type ST2of IS 5831/84, annealed - bare high conductivity, stranded Aluminium Conductor, Voltage grade 650/1100as per IS 7098/P-1/1998. Make:RPG,KEI, Gloster, Universal, Mansfield, , APAR industries limited, Cable corporation of india ltd., Diamond power infrastructure ltd, Hindusthan vidyut products ltd., Havells india limited, kei industries ltd., Krishna electrical industries ltd., KEC International limited, Nicco corporation ltd., Paramount communications ltd., Polycab wires pvt. ltd., Ravin cables limited, Sriram cables pvt. ltd., Torrent cables ltd., Universal cables ltd.	meter	3000
12	Supply of 8SWG copper wire	Kg	50
		Total-I	

Item: 20 Erection of Street lighting and fencing lighting installations at PEFP Bhandara

ITEM No.	ITEM TEXT	Unit	QTY
1	Erection of the 12M Double arm pole with the following activities: 1)Excavation of earth to a depth of 2m and erection of 12 M tubular street light pole with double arm. 2) The excavated pit should be covered by mud mat cement concrete (PCC) of ratio 1:4:8 for the full depth of size 0.5 x 0.5 x 2m. 3) Coping with 1:3:6 cement concrete mixture for size 0.3 x 0.3 x 0.4m above the concrete base with suitable column box arrangement. 4) Suitable cable entries,laying and connecting of 8 swg copper wire shall be provided in the coping and concrete with suitable size PVC pipe & bend before concreting and coping. The PVC pipe (2 nos) should be terminated upto cable terminal box. 5) Fixing of street light cable connector Junction box in the street light pole at a height of 800 mm from the ground level near the 15mm dia hole provided in the pole.	No	25
2	Assembling and fixing of 150W HPSV street light fittings (2 nos/pole) with lamps on the existing 12 M double arm street light MS pole.	No	25
3	Erection of the 9.5M Single arm pole with the following activities: 1) Excavation of earth to a depth of 1.5m and erection of 9.5 M tubular street light pole. 2) The excavated pit base should be covered by mud mat cement concrete (PCC) of ratio 1:4:8 for the full depth of size 0.5 x 0.5 x 1.5m. 3) Coping with 1:3:6 cement concrete mixture for size 0.3 x 0.3 x 0.4m above the concrete base with suitable column box arrangement. 4) Suitable cable entries,laying and connecting of 8 swg copper wire shall be provided in the coping and concrete with suitable size PVC pipe (2 nos) & bend before concreting and coping. The PVC pipe should be terminated upto cable terminal box. 5) Fixing of street light cable connector Junction box in the street light pole at a height of 800mm from the ground level near the 15mm dia hole provided in the pole.	No	100
4	Assembling and fixing of 150W HPSV street light fittings with lamps on the existing 9.5 M single arm street light MS pole.	No	100

ITEM No.	ITEM TEXT	Unit	QTY
5	Erection of the 5.5M Single arm pole with the following activities: 1) Excavation of earth to a depth of 1m and erection of 5.5 M tubular street light pole. 2) The excavated pit base should be covered by mud mat cement concrete (PCC) of ratio 1:4:8 for the full depth of size 0.5 x 0.5 x 1m 3) Coping with 1:3:6 cement concrete mixture for size 0.3 x 0.3 x 0.4m above the concrete base with suitable column box arrangement. 4) Suitable cable entries, laying and connecting of 8 swg copper wire shall be provided in the coping and concrete with suitable size PVC pipe (2 nos) & bend before concreting and coping. The PVC pipe should be terminated upto cable terminal box. 5) Fixing of street light cable connector Junction box in the street light pole at a height of 800mm from the ground level near the 15mm dia hole provided in the pole.	No	45
6	Fixing of control gear box and 150W HPSV non Integral street light fittings with lamps on the existing 5.5 M street light pole of the cross arm mounted at a height of 1500 mm above ground level (Two fittings per pole). Note: All the materials required for this work will be in the scope of contractor.	No	45
7	Assembling and fixing of 1000W Halogen light fittings with lamps & control gear on the existing lighting towers with the provision of suitable clamps.	No	8
8	Excavation of earth (in ordinary soil) to a depth of 0.8m & 0.3m width and laying the 4 Core 10 sq.mm/ 3.5 Core 25 Sqmm XLPE AA cable in the Excavated trench and supply & laying of quality brick and river sand over the cables and closing the trench with the excavated soil to make good.	Mtr	7500
9	Making end termination of 4 core, 10 sqmm XLPE AA cable with supply of suitable cable glands, copper lugs, gland earthing etc.	No	300
10	Making end termination of 3.5 core, 25 sqmm XLPE AA cable with supply of suitable cable glands, copper lugs, gland earthing etc.	No	30
11	Wiring of 6 runs 2.5 sq.mm PVC copper cable through the 12 M height street light pole for connecting 150W HPSV Street light fittings and making necessary inter connections at street light junction box & at 150W HPSV street light fitting at the top.	Mtr	300

ITEM No.	ITEM TEXT	Unit	QTY
12	Wiring of 3 runs 2.5 sq.mm PVC copper cable through the 9.5 M height single arm street light pole for connecting 150W HPSV Street light fittings and making necessary interconnections at street light junction box & at 150W HPSVstreet light fitting at the top.	Mtr	1000
13	Wiring of 3 runs 2.5 sq.mm PVC copper cable along the 5.5 M height fencing light post for connecting 150W Flood light fittings and making necessary interconnections at street light junction box & at 150W HPSVstreet light fitting at the top.	Mtr	250
14	Fixing of the street light Timer control box on suitable iron frame as per the following scope: 1) Excavation of earth (size 0.25 x 0.5 x 0.5 M depth) and erection of iron frame work in it. 2) The pit base should be covered by mud mat cement concrete of ratio 1:4:8 for the full depth of the pit (size 0.25 x 0.25 x 0.5 M depth). 3) After erection of iron frame work,painting of the same to be carried out with one coat of red oxide paint and two coat of aluminium paint. 4) Fixing of the street light Timer control box on the iron frame work with fasteners. cable interconnection etc.	No	8
15	Providing earth electrodes for the timer control boxes: Excavation of earth,supply and installation of earth electrode generally conforming to IS:3043-1987.The electrode should be of 50 mm dia.G.I pipe,class C having wall thickness of 5 mm and length 2500 mm.with supply and filling of alternate layers of Bentonite,river sand and charcoal around the electrode, construction of masonry chamber and cover etc.,with supply of massonry materials. Earth resistance value(to be measured using earth megger),earth electrode No.and date of inspection are to be painted inside the chamber wall and on the top of the cover. Interconnection should be made between the earth electrode and the timer control box with 2 runs of 25x3mm GI flat. SPECIAL INSTRUCTIONS for making earth pits :- a).After excavation of earth & before closing the same it should be shown to Electrical in charge. b).After erection of earth pit,the ohmic value to be measured in the presence of Electrical incharge and final report to be submitted. The value of the earth pit should be less than 5 ohms. c).All materials involved for this work to be supplied by the contractor. d).Location of the earthpit shall be finalized after discussing with the electrical in-charge.	No	8

ITEM No.	ITEM TEXT	Unit	QTY
	<p>General Conditions:</p> <ol style="list-style-type: none"> 1. The contractor should supply necessary civil materials for grouting, floor concreting etc. 2. Electric Power for welding and other erection purpose in contractor scope. 3. All the tools including Welding m/c, welding consumables, gas cutting set, regulator, etc., are under contractors scope.. 4. Any clarification & modification of the work should be directly discussed with the Electrical In charge. 5. Minor paint touching should be done in the panel, poles for damages caused during transport are under contractors scope. 6. Storing, unloading, transportation of the electrical equipment/materials to specified location are in the contractor scope. 7. The contractor should get proper registration/permission from the security Gate/ personnel while taking their supply materials inside and outside the site. They should maintain an invoice register, which is liable for inspection by the BHEL authorities 8. Required height of ladder/lift/ mobile crane in contractor scope. 11. Any other miscellaneous items like fasteners, connectors, lugs, insulation tape, earthing necessary for the erection, testing and commissioning is in the scope of contractor. 12. As indicated in the scope poles should be painted with one coat of red oxide and two coats of Aluminium. 13. Necessary PVC pipes required for the street light in contractor scope. 14. Necessary Material "IN" gate pass to be kept safe and it to be produced when billing. 15. Personal protective Safety Equipments to be supplied to the their workers by the Contractor. 16. Safety precautions to be strictly adopted by the workers of the Contractor. 17. Pre despatch inspection should be arranged for all the items. 		Vendor to confirm
	<p>Note: For the erection of the items, quantity on Pro-Rata basis to be considered. Incase of any quantity over & above the tolerance limit (of +10%) during the commissioning period (not exceeding 6 months), the vendor may confirm their willingness to supply and erect the same at the original rate mentioned in the offer.</p>		Vendor to confirm

Annexure-I

Technical specifications for the 150W Street Lighting luminaire and Lamp

Sl. No	Description/Specifications	Vendor to confirm	Deviations
	Supply of Integral, street Lighting Luminaire with control gear box, reflector and lamp as specified below:		
1.0	Luminaire Suitability: Suitable for operation with 150 Watts High Pressure Sodium Vapour lamp		
1.1	Housing: Made out of single piece high-pressure die cast aluminum alloy and powder coated finish. Heat resistant toughened flat glass cover fixed to the housing with stainless steel hinges and toggles and provided with special gasket.		
1.2	Reflector construction: High purity aluminum reflector electro chemically brightened and anodized.		
1.3	Input Power supply: 1 phase, 230V,50 Hz. A.C supply.		
1.4	Control Gear: Control gear shall comprise of Copper wound ballast, power factor improvement capacitor, mains connector and electronic ignitor on a easily detachable gear plate.		
1.5	Protection: Conformance to IP65 Protection for lamp and gear compartment.		
1.6	Provision for Installation: Pole entry suitable for pole diameter of max. 60mm.		
1.7	Access for Maintenance Access to gear compartment shall be provided to facilitate easy maintenance, replacement and connection		
1.8	Technical catalogue/ drawing: Vendor to furnish with the offer		
2.0	Specification for lamp: High Pressure sodium vapour 150 Watts, elliptical/ Tubular version, suitable for 230V, 50Hz, 1 phase supply with E40,screw cap to house the lamp.		
3.0	Preferable makes of the luminaire/ lamp: Philips, GE, Bajaj,Crompton Greaves makes.		
3.1	Type no./Make offered: Vendor to specify		

Annexure-II

Technical specifications for the 150W Flood Lighting luminaire and Lamp

Sl. No	Description/Specifications	Vendor to confirm	Deviations
	Supply of NON Integral, Flood Lighting Luminaire with control gear box, reflector and lamp as specified below:		
1.0	Luminaire Suitability: Suitable for operation with 150 Watts High Pressure Sodium Vapour lamp		
1.1	Housing: Made out of single piece high-pressure die cast aluminum alloy and powder coated finish.		
1.2	Reflector construction: High purity aluminum reflector electro chemically brightened and anodized.		
1.3	Input Power supply: 1 phase, 230V, 50 Hz. A.C supply.		
1.4	Control Gear: Control gear shall comprise of Copper wound ballast, power factor improvement capacitor, mains connector and electronic ignitor on a easily detachable gear plate.		
1.5	Protection: Conformance to IP65 Protection for lamp and gear compartment.		
1.6	Provision for Installation: Suitable bracket for installtion		
1.7	Access for Maintenance: Access to gear compartment shall be provided to facilitate easy maintenance, replacement and connection		
1.8	Dimensional details and net weight: Vendor to specify		
1.9	Nominal Power factor, mains current: Vendor to specify		
1.10	Technical cataalogue/ drawing: Vendor to furnish with the offer		
2.0	Specification for lamp: High Pressure sodium vapour 150 Watts , elliptical/ Tubular version, suitable for 230V, 50Hz, 1 phase supply with E40,screw cap to house the lamp.		
3.0	Preferable makes of the luminaire/ lamp: Philips, GE, Bajaj,Crompton Greaves makes.		
3.1	Type no./Make: Vendor to specify		

Annexure-III

Technical specifications for the 1000W Flood Lighting luminaire and Lamp

Sl. No	Description/Specifications	Vendor to confirm	Deviations
	Supply of NON Integral, Flood Lighting Luminaire with control gear box, reflector and lamp as specified below:		
1.0	Luminaire Suitability: Suitable for operation with 1000 Watts High Pressure Sodium Vapour lamp		
1.1	Housing: Made out of single piece high-pressure die cast aluminum alloy and powder coated finish.		
1.2	Reflector construction: High purity aluminum reflector electro chemically brightened and anodized.		
1.3	Input Power supply: 1 phase, 230V, 50 Hz. A.C supply.		
1.4	Control Gear: Control gear shall comprise of Copper wound ballast, power factor improvement capacitor, mains connector and electronic ignitor on a easily detachable gear plate.		
1.5	Protection: Conformance to IP65 Protection for lamp and gear compartment.		
1.6	Provision for Installation: Suitable bracket for installation		
1.7	Access for Maintenance: Access to gear compartment shall be provided to facilitate easy maintenance, replacement and connection		
1.8	Dimensional details and net weight: Vendor to specify		
1.9	Nominal Power factor, mains current: Vendor to specify		
1.10	Technical catalogue/ drawing: Vendor to furnish with the offer		
2.0	Specification for lamp: High Pressure sodium vapour 1000 Watts, elliptical/ Tubular version, suitable for 230V, 50Hz, 1 phase supply with E40,screw cap to house the lamp.		
3.0	Preferable makes of the luminaire/ lamp: Philips, GE, Bajaj,Crompton Greaves makes.		
3.1	Type no./Make: Vendor to specify		

Annexure-IV

Technical specifications for the supply of street light timer box

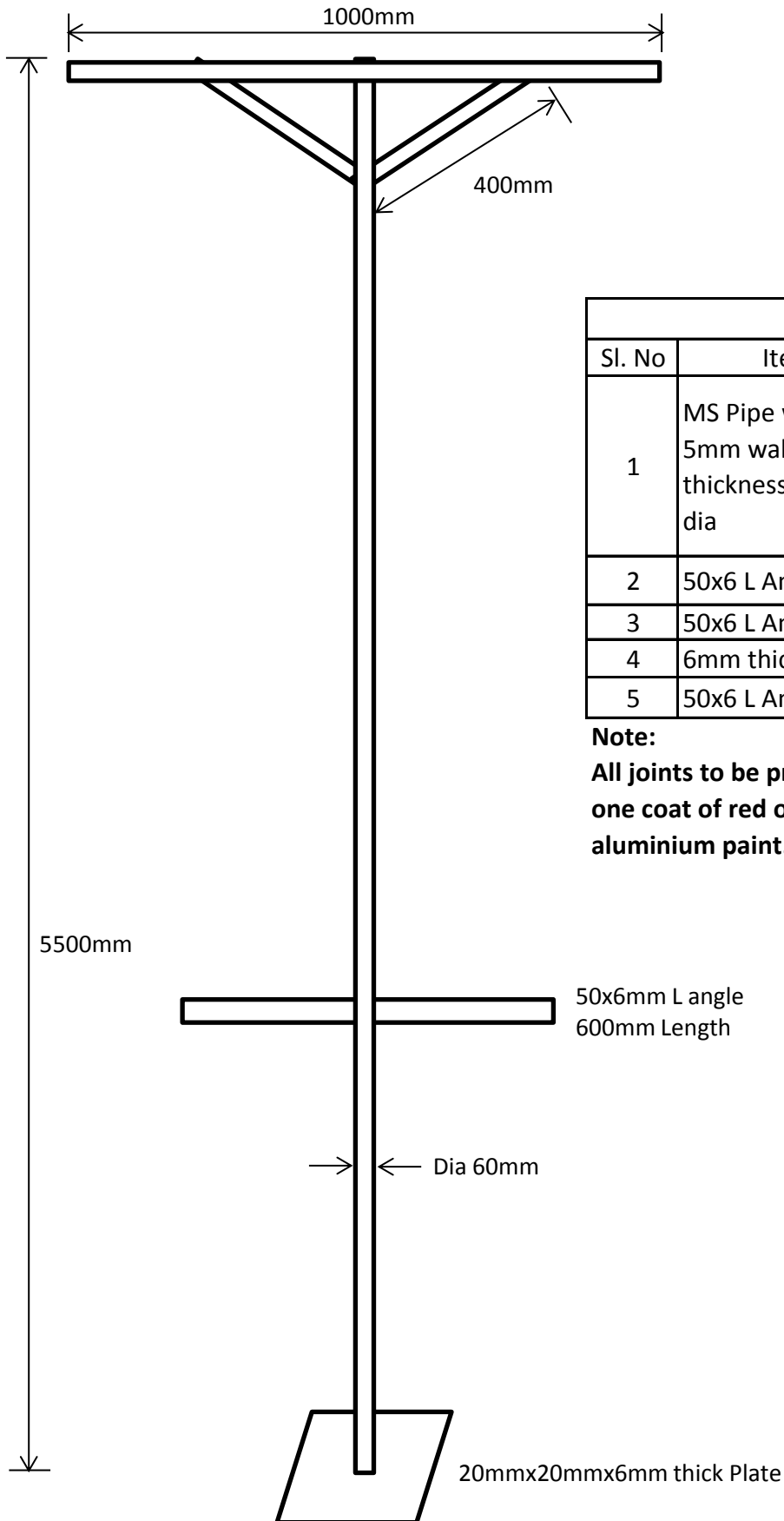
Sl. No	Description/Specifications	Vendor to confirm	Deviations
1	Manufacturing and supply of weather proof outdoor type, street light Timer controller Box of approximate size 750x400x250mm using 2 mm thick CRCA sheet, with continuously hinged door & 10mm gasket to be provided in the door for protection from water and dust with locking arrangement. The timer box should contain the following components & suitable to mount on the street light pole.		
2	63 Amps power contactor suitable for coil voltage 230 V AC- 1no Make: Siemens/L&T/ABB make		
3	EAPL make timer 203B model digital timer suitable for coil voltage 230 V AC- 1No.		
4	63 Amps 4 pole MCB - 1 No. Make: Siemens/L&T/ Legrand/ABB		
5	32 Amps single pole MCB - 6 No. Make: Siemens/L&T/Legrand/ABB		
6	6 Amps single pole toggle switch- 1 No.		
7	63 Amps 6 way din rail mounting terminal strip elmax make - 1 No		
8	Steel Mounting clamps.		
9	One No. of punch hole of size 25mm dia to be provided in the back side of box.		
10	Three Nos. of punch hole of 25mm dia. to be provided for cable/ conduit entry at the bottom of the terminal box.		
11	32 X 6 mm GI flats 2 Nos. are to be provided as a mechanical support for clamping arrangement of the box with pole.		
12	Two Nos. of separate earth terminals duly welded to the box.		
13	Conformance to IP54 Protection for the Street light Timer control box.		
14	All the above items should be mounted on a base plate duly wired with 6 sqmm multi strand flexible insulated copper wires for the power wiring and with 1.5 sqmm single strand copper wire for control wiring for automatic controls of street lights. The sheet steel MS box should be undergone with Degreasing, De rusting, Phosphating and applied with 2 coat of primary enamel paint and powder coating of finishing paint -color-Siemens Grey.		

Annexure-V

Technical specifications for the supply of street light Junction box

Sl. No	Description/Specifications	Vendor to confirm	Deviations
1	Manufacturing and Supply of street light pole terminal junction box of size 300 x225 x 135mm with terminal arrangement fuse unit with following specifications		
2	The enclosure should be made of 2mm thickness CRACA SHEET with Galvanizing to protect from the formation of rust as well as the earth discharge conduction at the time of electrical short circuit.		
3	Top side of the box to be provided in such a way that it should prevent entering of rain water i.e. water proof.		
4	10mm gasket to be provided in the door closing location as an additional protection from water and dust.		
5	Two Nos.of punching of size 25mm dia to be provided for easy approach of wires and cables to the light fittings.		
6	Three Nos. of punching to be provided for the easy installation for cable termination at the bottom of the terminal box.		
7	32 X 6 mm GI flat 2 Nos. are to be provided as a mechanical support for clamping arrangement of the box with pole.		
8	Two Nos. of steel bushing with welding is provided for firm continuity with the box for earthing arrangement of the box as well as the light fittings.		
9	Providing of ELEMEX make CBT,M6, 4 WAY Terminal Block with suitable end plate and stopper plates. The terminal block should be dinrail mounted.		
10	Terminals are to be provided with voltage withstanding capacity of minimum of 1.5 KV for on minute.		
11	Terminals are to be provided with M6 stud with plate and spring washer to avoid loose contact.		
12	Cable joints in the terminal looping are to be with cadmium coated bus links to carry a continuing current rating of 87 A.		
13	Door closing arrangement to be provided with locking system for water and air tight closing.		
14	Doors are to be provided with continuous hinges for reliable operation and long life of the system		

Annexure-VI
Drawing for fence lighting Post



BOQ			
Sl. No	Item	Size	Qty
1	MS Pipe with 5mm wall thickness, 60mm dia	5500mm	1
2	50x6 L Angle	1000mm	1
3	50x6 L Angle	600mm	1
4	6mm thick plate	400 SQmm	1
5	50x6 L Angle	400mm	2

Note:

All joints to be properly welded, painted with one coat of red oxide and two coats of aluminium paint.

ANNEXURE-VII

Suggestive Format of Performance Certificate:

The Performance certificate should contain minimum of the below said data and it shall be produced on **Customer's Letter Head** and submitted along with the offer.

1.0	Electrical Factory-Shop Lighting/street lighting installation supplied to (Customer Details)	
2.0	Project Name	
3.0	Details of Equipment/installation supplied	
4.0	Purchase Order / Work Order Number	
5.0	Scheduled date of completion	
6.0	Actual date of completion	
7.0	Reasons for delay (if any)	
8.0	Performance of the contractor during erection & commissioning on turnkey basis	
Date:		Signature & Seal of the Authority Issuing the Performance Certificate