

MORMUGAO PORT TRUST
ENGINEERING MECHANICAL DEPARTMENT

NOTICE INVITING BUDGETORY OFFERS

Name of Work	NAME OF WORK "ELECTRICAL WORKS AT DEEPPVIHAR PRIMARY AND HIGHER SECONDARY SCHOOL"
Date of submission of budgetary quotation	On or Before 15/05/2017 at 15:00 Hrs.
Address for communication:	Executive Engineer(E-HL), Mechanical Engineering Department, Mormugao Port Trust, Electrical Section, 1st Floor, Admin. Building, Headland sada Vasco-de-Gama Goa - 403804
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CHIEF MECHANICAL ENGINEER
MORMUGAO PORT TRUST

1.0 SCOPE OF WORK

- 1.1 Laying underground L.T. Aluminum armoured cable of size 3.5 Core 50 sq mm in trench of depth 60cms, width 40cms, from overhead tank panel room to Deepvihar Primary School panel room. Including supply and laying of bricks. After laying, the cable trench should be back filled with soil and route markers to be provided after every 20metres. Termination of the cable using necessary glands & lugs in the Primary School Main panel and overhead tank MCCB. (The cable will be supplied by the Port at M.M.)
- 1.2 Laying underground L.T. Aluminum armoured cable of size 3.5c x 25 sq.mm in trench of depth 60cms, width 40cms from Deepvihar Primary School panel room to sub-main panel room ICTP. Including supply and laying of bricks. After laying, the cable trench should be back filled with soil and route markers to be provided after every 20metres. Termination of cable at both ends. (The cable will be supplied by the Port at M.M.)
- 1.3 Supply, Installation, connection & commissioning of 12 way VTPN Double Door DB with MCCB incomer. Also it should accommodate one set C.T for the incomer. DB should be with following items:
 - Multi Function Meter – 1No.
 - MCCB 100A 4P – 1No.
 - MCB 63A 4P – 1No.
 - MCB 25A 2P – 10Nos.
 - MCB 32A 3P – 4Nos.
- 1.4 Removing existing outgoing wires from 13 nos feeders, re-laying through casing capping and terminating to the new DB.
- 1.5 Supply, installation, connection & commissioning of C.T operated 3 phase 4 wire MRT tested Digital Energy meter along with one set of 100/5A C.T and powder coated sintex make 3 phase energy meter box.
- 1.6 Supply, Installation, testing and commissioning of new earth stations, excavation in hard rocky area, use readily available 2 mtr. Long x 20mm dia copper bonded electrodes with termination bolts filled the gap with earthing compound mixture. Construct a chamber with fire bricks and covered with CI cover and provide watering GI pipe with funnel. Connect the earthing station to the DB with GI strip
- 1.7 Removing old existing panel and handing over to ELC-HL Section.
- 1.8 Laying of LT Cu 3c x 2.5sq.mm armoured cable & 10 pair telephone armoured cable from higher secondary school to security cabin and 10 pair telephone armoured cable from security cabin to streetlight pole. Laying the cable by excavation of soil at depth of 40cm including laying the cables through GI pipe for the pathway crossing of 2.4m. After laying of cable and refilling the trench, the surface should be made good. (The cables will be supplied by the Port at M.M.)
- 1.9 Supply, installation & connection of Outdoor type Telephone DB of size 10 x 15cm at higher secondary school building, security cabin & street pole.
- 1.10 Laying & terminating 10 pair flexible telephone cable. Laying through black PVC conduit pipe by clamping using GI fasteners & saddles on the wall of higher secondary school building and terminating at the outdoor telephone JB. (The cable will be supplied by the Port at M.M.)

1.11 Laying underground L.T. Aluminum armoured cable of size 4c x 10 sq.mm in trench of depth 60cms, width 40cms from Deepvihar Higher secondary School building outdoor JB to Borewell at School premises. Including supply and laying of bricks. After laying, the cable trench should be back filled with soil and route markers to be provided after every 20metres. Termination of cable at both ends. (The cable will be supplied by the Port at M.M.)

2.0 **TECHNICAL SPECIFICATIONS**

2.1 **ENCLOSURES**

- 12way VTPN Double door DB with MCCB incomer.
- CRCA sheet/FRP enclosures with detachable gland plates and ensure smooth, scratch resistant surface coatings, suitable for wall mounting.
- Confirming to IEC 60647-2
- With Aluminium bus bar with current density of 1A/sq.mm, neutral link and earth bar.
- IP43 protection.

Make: ABB/LEGRANDS/STANDARD

2.2 **EARTHING**

Earthing should be carried out in accordance with IS3043 and IER amended upto date. Use readily available 2mtr. Long x 20mm dia copper bonded electrodes – 99.9% pure electrolytic quality copper molecularly bonded to nickel coated electrode made up of low carbon, high tensile strength steel rod with termination bolts. Thickness of copper coating should not be less than 250 microns. Eco-friendly earthing compound mixture to be used for reducing soil resistivity. Construct a chamber with fire bricks and covered with CI cover and provide watering GI pipe with funnel. Connect the earthing station with GI strips to the DB in panel room.

2.3 **JUNCTION BOXES**

Outdoor type Boxes should be made up of FRP type. Top should be slanting for flow of water. Junction boxes should be of lockable type.

2.4 **MAKES AND SPECIFICATIONS**

Sr.No	ITEM	SPECIFICATIONS	MAKES
1	MCB	<ul style="list-style-type: none"> • Rated short circuit capacity 10kA • C curve MCB • Protection: IP20 • Rated voltage & frequency: 240V & 50Hz • Conforming to IS/IEC: 60898-1 2002 with latest amendments • Breaking capacity not less than 25KA. 	<ul style="list-style-type: none"> - LEGRANDS - SCHNEIDER

2	CT operated energy meter	<ul style="list-style-type: none"> • AC,3-PH,4-WIRE,3 x 240 V, -/5A, 50Hz, CL 0.5s, Category "C" (DLMS Protocol) & optical port fully static CT operated Tri-vector energy meter for measurement of different electrical parameters for balanced /unbalanced load. • MRT tested 	<ul style="list-style-type: none"> <input type="checkbox"/> L&T <input type="checkbox"/> SECURE
3	Current transformer	<ul style="list-style-type: none"> • Ratio: 100/5A • 15VA • Class 1 	<ul style="list-style-type: none"> - GOA ELECTRIC CO. - LOTLIKAR ELECTRIC WORK
4	Wires	<ul style="list-style-type: none"> • 650/1100V Grade • PVC Insulated • Conforming to IS: 694/1990 with latest amendments 	<ul style="list-style-type: none"> - FINOLEX - POLYCAB - NICCO - HAVELLS - RPG
5	CASING CAPPING	<ul style="list-style-type: none"> • Colour: White 	<ul style="list-style-type: none"> - PRESTO PLAST - SS
6	MCCB	<ul style="list-style-type: none"> • Breaking capacity: >35kA • The MCCB shall comply with the requirement of IS 13947 • MCCB shall be provided with 1 NO + 1NC Aux contact rated at 5A. • Conforming to relevant IS must be provided. • Making capacity 2.5 times breaking capacity. • Adjustable Over Load and Short Circuit protection. • The MCCB shall be manually operated, quick make and break, trip free mechanism as to ensure high speed closing and tripping independent of the operating forces. 	<ul style="list-style-type: none"> - L&T - LEGRANDS - SCHNEIDER - ABB

7	Cable lug & Cable Gland		DOWELLS / JHONSON / RAYCHEM
8	PVC conduit pipes		PRECISION, MODI
9	Multi-function Meter		ABB / C&S/SIEMENS / L&T / HPL SOCOMEK/CONZERVE (ENERCON)

2.5 INSTALLATION AND COMMISSIONING

- The Contractor shall commence and complete the work as per the BOQ and proper care should be taken of the charged electrical installation. The work is to be carried out as per the site conditions and relevant IS standards
- The Contractor shall complete the work to the satisfaction of the Chief Mechanical Engineer or his representative.
- The work should be carried out with utmost safety precaution with minimum possible disruption of power supply.

PRICE SCHEDULE (BILL OF QUANTITIES)

NAME OF WORK: **ELECTRICAL WORKS AT DEEPAVIHAR PRIMARY AND HIGHER
SECONDARY SCHOOL**

Sr. No.	Description	Unit	Qty	Unit Rate in (Rs.)		Amount in (Rs.)
				In fig.	In words	
1	Laying underground L.T. Aluminum armoured cable of size 3.5 Core 50 sq mm from overhead tank panel room to Deepvihar Primary School panel room. Termination of cable at both ends. (The cable will be supplied by the Port at M.M.)	m	210			
2	Laying underground L.T. Aluminum armoured cable of size 3.5c x 25 sq.mm from Deepvihar Primary School panel room to sub-main panel room ICTP. Termination of cable at both ends. (The cable will be supplied by the Port at M.M.)	m	70			
3	Supply, Installation, connection & commissioning of 12 way VTPN Double Door DB with MCCB incomer. Also it should accommodate one set C.T for the incomer. DB should be with following items: Multi function meter – 1No. MCCB 100A 4P – 1No. MCB 63A 4P – 1No. MCB 25A 2P – 10Nos. MCB 32A 3P – 4Nos.					
	Supply	No.	01			
	Installation, connection & commissioning	No.	01			
4	Removing existing outgoing wires from 13 nos feeders, re-laying through casing capping and terminating to the new DB.	LS	LS			
5	Supply, installation, connection & commissioning of C.T operated 3 phase 4 wire MRT tested Digital Energy meter along with one set of 100/5A C.T and powder coated sintex make 3 phase energy meter box.					
	Supply	SET	01			
	Installation, connection & commissioning	SET	01			

Sr. No.	Description	Unit	Qty	Unit Rate in (Rs.)		Amount in (Rs.)
				In fig.	In words	
6	Supply, Installation, testing and commissioning of new earth stations	nos	02			
7	Supply, Installation & connection of GI strip of size 50 x 6mm	mtr	20			
8	Removing old existing panel and handing over to ELC-HL Section	LS	LS			
9	Laying of LT Cu 3c x 2.5sq.mm armoured cable & 10 pair telephone armoured cable from higher secondary school to security cabin and 10 pair telephone armoured cable from security cabin to streetlight pole. (The cables will be supplied by the Port at M.M.)	m	50			
10	Supply, installation & connection of Outdoor type Telephone DB at the higher secondary school building, security cabin & street pole	nos	03			
11	Laying & terminating 10 pair flexible telephone cable. Laying through black PVC conduit pipe by clamping using GI fasteners & saddles on the wall of higher secondary school building and terminating at the outdoor telephone JB. (The cable will be supplied by the Port at M.M.)	m	30			
12	Laying underground L.T. Aluminum armoured cable of size 4c x 10 sq.mm from Deepvihar Higher secondary School building outdoor JB to Borewell at School premises. Termination of cable at both ends. (The cable will be supplied by the Port at M.M.)	m	60			
Total						

(In Words

Rupees _____ only)

Note: The offered rates shall be inclusive of all taxes and duties. Service Tax shall be paid as applicable. If, any new tax will be imposed by State/Central Govt. and same will be reimbursed on producing documentary proof.