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MORMUGAO PORT AUTHORITY
ENGINEERING MECHANICAL DEPARTMENT
ELECTRICAL HARBOUR (HEADLAND) SECTION

NOTICE INVITING BUDGETORY OFFERS

Name of Work	**NAME OF WORK** "Supply, Laying, Testing and Commissioning of 4C x 240 sq. mm LT XLPE Aluminium armoured Cable from Guest House to Signal Station."
Date of submission of budgetary quotation	on or Before **14/08/2023 at 1500 Hrs.**
Address for communication:	Executive Engineer (E-HR), 2nd floor, Mechanical Engineering Department, Mormugao Port Authority, Admin. Building, Headland sada Vasco-de-Gama Goa - 403804
Contact Details	Phone : (0832) 2594207/2594271 Email : mohamed.shaik@mptgoa.gov.in
Website	**www.mptgoa.gov.in**

EXECUTIVE ENGINEER (E-HR)
MORMUGAO PORT AUTHORITY

आईएसओ 9001-2015 पत्तन
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CME/XEN(E-HR)/HL03/2023/0370 31.07.2023

Sub: "Supply, Laying, Testing and Commissioning of 4C x 240 sq. mm LT XLPE Aluminium armoured Cable from Guest House to Signal Station."

Ref: Budgetary Quotation No. CME/XEN(E-HR)/HL03/02

Mormugao Port Authority intends to carryout work of "Supply, Laying, Testing and Commissioning of 4C x 240 sq. mm LT XLPE Aluminium armoured Cable from Guest House to Signal Station."

As such, it is requested to kindly furnish budgetary quotation for the same (Scope of work, technical specifications are enclosed at Annexure-I and Price Schedule enclosed at Annexure-II).

Your budgetary quotation should reach to this office on or before 14.08.2023 at 1500 Hrs.

Thanking you,

Yours sincerely,

EXECUTIVE ENGINEER (E-HR)

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ANNEXURE-I

TITLE OF WORK: **"Supply, Laying, Testing and Commissioning of 4C x 240 sq. mm LT XLPE Aluminium armoured Cable from Guest House to Signal Station."**

TECHNICAL SPECIFICATIONS

1. GENERAL

Mormugao Port Authority proposes to lay cable from Port Guest House panel to signal station and HOD enclave by laying 4C x 240 sq.mm LT underground cable along sea view road near HOD enclave. The work includes supply, laying, testing and commissioning of cable along with outdoor panel as per the relevant IS standards.

2. SCOPE OF WORK

I. Supply of 4C x 240 sq.mm LT XLPE Aluminium armoured underground cable of length 900 metres.

II. Excavation of cable trench from Guest House Electrical panel to outdoor panel on sea view road near HOD enclave, thereafter from outdoor panel on sea view road near HOD enclave to Signal Station panel room and from outdoor panel on sea view road near HOD enclave to distribution panel in HOD enclave summing up of total length of 870 metres.

III. Laying of 4C x 240 sq.mm LT XLPE Aluminium armoured underground cable in the excavated trench and through the Hume pipe at road crossings and supply and laying of Kadappa tiles for protection of cable.

IV. Terminating the ends of the above 3nos. cables by providing suitable lugs, glands and connecting the same on both ends in panels by using nuts and bolts. The gland shall properly be grounded to ensure safety.

V. Design, Manufacture, Supply, Installation, testing and commissioning of Load Point Panel Outdoor Pedestal type with top Canopy.

VI. Providing 30 nos GI pipe Earthing for outdoor panel, HOD enclave panel, 8 nos. HOD bungalows in HOD enclave, Signal station panels and Guest House panels using 40 mm dia. 2.9 mm thick, 3 meter long GI pipe with GI funnel with mesh and suitable size reducer fixed on the top of the earth electrode.

VII. All labours, materials, tools plants, machinery, equipment and any other things required for execution for work shall be arranged by the contractor at his own cost.

3. Applicable Standards:

I. The following shall be the Reference Standards for the work:

	Code No.	Title
i.	IS 7098	Specification for Crosslinked polyethylene insulated PVC sheathed cables
ii.	IS 1255	Code of practice for installation and maintenance of power cables
iii.	IS 4237	General requirements for switchgears and control gears
iv.	IS 3043	Code of practice for Earthing.

4. DETAILED TECHNICAL SPECIFICATION

I. SUPPLY, LAYING and TERMINATION of 4C x 240 sq.mm LT underground armoured Aluminium XLPE cable by excavation.

i. **Supply of 4C x 240 sq.mm LT underground armoured Aluminium XLPE Cable**

Supply and laying of Aluminium LT underground XLPE cable of 1.1KV voltage grade, extruded PVC inner sheathed, single layer of galvanized steel wire / strip armoured, over all PVC sheathed conforming to IS standards with latest amendments with ISI mark.

Note: Test certificates from the manufacturers for the cable shall be submitted along with the supply of cable.

ii. **Excavation of cable trench in hard rock/ cement flooring/ bituminous road.**

Excavation of cable trench of length 870 metres, size 40cm width x 75 cm depth in hard rock/ cement flooring and 100cm depth at bituminous road crossing. The excavated soil shall be backfilled in the trench and made good in original condition with cement concrete at road crossing.

iii. **Laying of LT, 4C x 240 sq.mm underground armoured Aluminium cable.**

The cable shall be laid in the excavated trench and through Hume pipes at road crossings, from Guest House panel to outdoor panel on sea view road and distributing further to Signal station panel room and HOD Enclave panel. The cables are to be laid as per IS: 1255. Tiles shall be provided over the cable for protection. The trench shall be covered/backfilled with excavated soil and making it in original condition with cement concrete at road crossing. The Hume pipe shall be laid at an angle to avoid sharp cable bends at the point of entry and exit.

iv. **Termination of LT, 4C x 240 sq.mm underground armoured Aluminium cable.**.

The end termination for 1.1 KV grade underground cables shall be carried out by glanding the cable to the gland plate and crimping lugs confirming to relevant IS specification.

All the tests shall be carried out as per relevant IS specifications and IER 1956 before charging the panel. The testing of cable shall be carried out in the presence of EIC.

MORMUGAO PORT AUTHORITY
ENGINEERING MECHANICAL DEPARTMENT
ELECTRICAL HARBOUR (HEADLAND) SECTION

II. DESIGN and SUPPLY of LT Distribution outdoor Panel

i. Design, Manufacture, Supply, Installation, testing and commissioning of Load Point Panel Outdoor Pedestal type with top Canopy. The panel shall be designed to be IP 66 compliant/degree of protection dust, damp, vermin and weather proof fabricated from SS-316 grade Sheet. It shall be provided with, single door type (Right side door hinge) with cam lock door sealing Gasket.

ii. The panel shall be spacious for easy maintenance and shall be provided with following Items.

a. 4 pole, 200 Amps, MCCB – 1 no. (as an Incoming MCCB).
b. 4 pole, 160 Amps, MCCB – 2 nos. (as distribution MCCB's).
c. Aluminium Bus bars of size 25x5 mm -- 4 nos. (1no. for neutral and 3nos. for phases)
d. PVC insulated single core aluminium cable - interconnection between MCCB's & bus bars

iii. The MCCBs, bus bars and connecting cable shall be mounted in the Panel by means of suitable anti-corrosive hardware (nuts, bolts shall be of stainless steel). The Panel shall be complete in all respects with cable glands, lugs for incoming and outgoing cables including interconnection with PVC insulated cable single core aluminium cable. The connections from the main MCCB to the bus bars and from bus bars to distribution MCCB's shall be through PVC insulated single core aluminium cable.

iv. Removable 2mm thick SS gland plates shall be provided at the bottom for bringing in the external cables. The gland plate shall have provision for terminating 3 nos of 4 C x 240 sq. mm Aluminium armoured XLPE cable.

v. The minimum thickness of SS sheet used for the panels shall not be less than 3 mm for load bearing members, and not less than 2.0 mm for non-load bearing members as per the relevant standards. All sheet metal work shall be pre-treated adequately for the removal of oil, grease, dirt and rust by cleaning and pickling method and then two coats of primer/zinc chromate shall be given after phosphating.

vi. Load Point Legs shall be of stainless steel of 316-grade in reinforced foundation of suitable design. The Load Point Panel shall be tested as per IS: 4237. All the components shall be panel mounting type and stainless steel hardware and shall be provided with 2 Nos. SS terminals for Earthing.

vii. The Earthing strip shall run through the length of the panel and nut bolt arrangement shall be made to connect the earth pits.

VIII. The base frame of panel shall also be made up of stainless steel SS 316. The size of angle shall not be less than 35mmx35mmx5mm.

IX. The panel shall comply with all the latest IS standards for LT panel and in general and for all the components used within it.

X. The technical features specified are indicative. However, the contractor shall provide any other feature/accessories as found necessary for proper functioning of panel.

XI. The Design/drawing of the panel shall require approval of the Engineer in charge before commencement of fabrication.

III. Installation, Testing and commissioning of LT Panel

The contractor shall install LT panel on a raised concrete platform at 60 cm height from the ground, completed in all respects with all Civil Works as per the approved drawing and as directed by E.I.C.

IV. Earthing

i. Pipe Earth electrode Earthing system shall be used to provide earthing and shall conform to IS: 3043.

a. GI pipe Earthing shall be provided for outdoor panel, HOD enclave panel, water pump at HOD enclave, 8 nos. HOD bungalows at HOD enclave, Signal station panels and Guest House using 40 mm dia. 2.9 mm thick, 3 meter long GI pipe with GI funnel with mesh and suitable size reducer fixed on the top of the earth electrode. The funnel should be enclosed in a CC chamber of 400 x 400 x 400 mm with a hinged RCC cover. The electrode shall have staggered holes of 12-mm dia. and the electrode should be covered 150 mm around with alternate layers of salt and charcoal from the bottom of the pipe to the bottom of the CC chamber the connection from the electrode is to be established through GI Flats of size 25mmx5mm. The earth lead from earth electrode to nearest wall of the building shall be GI strip of size 25mm x 5mm & from termination point of GI strip on the wall to Distribution Box shall be of GI wire of size 8 SWG. Also interconnection of GI wire & GI strip to be done by means of galvanized bolts, nuts & washers. Earthing Strips which are installed below the ground should be covered adequately with insulating Sleeve to avoid corrosion. For installation of GI wire on the walls, PVC pipes shall be used and dressed properly with GI clamps at an interval of every one meter. GI strip shall be clamped on wall using GI clamps at an interval for every one meter. Work includes supply & fixing of required GI flats and GI wire for Earthing connection. All materials used for connecting the earth lead with electrode shall be of GI. No earth electrode shall have resistance greater than 3 ohms.

ii. The following information shall be displayed with white or yellow paint on the RCC cover.

a. Earth Pit No…….
b. Earth resistance…….ohms.
c. Date of testing……..

5. OTHER TERMS AND CONDITIONS

I. The firm is advised to visit the site and get acquainted regarding the nature of the work involved at site conditions before quoting the offer.

II. The Technical Specification “Annexure-I” and Schedule of Prices & Quantities “Annexure-II” to be read in conjunction to ensure the actual works involved.

III. The firm should engage skilled service personal with the relevant required tools and instruments for commissioning the same.

IV. The Contractor personnel engaged in the work shall follow all safety, security and General Rules enforced by Mormugao Port Authority (MPA) and the firm will only be responsible for the same.

V. MPA will not be responsible for any loss or damage of the men / materials / tools / plants engaged by the firm during the work at site / transportation.

VI. The firm should indicate the GST No.

VII. No advance payment will be made.

VIII. Final payment will be made only after handing over the entire system with good working condition.

IX. Power Supply will be provided free of cost by the Port. However, the firm should make his own arrangements to take power supply from the nearest source of supply.

X. For any clarifications, the firm may contact the ‘Executive Engineer at 2nd floor of the Administrative Office, Ph.0832-2594207

आईएसओ 9001-2015 पत्तन
AN ISO 9001-2015 PORT

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ANNEXURE-II

PRICE SCHEDULE (BILL OF QUANTITIES)

Sr. No.	Description of work	Qty	Unit	Rate Per Unit (Rs)	Amount (Rs)
1	Supply of 4C x 240 sq. mm LT XLPE Aluminium armoured Cable. (as per technical specifications).	900	m		
2	Excavation of cable trench in hard rock/ cement flooring/ Bituminous road for laying of 4C x 240 sq. mm LT cable 0.8 meter deep and 0.4 meter wide and backfilling the trench (as per technical specifications).	870	Running Meter		
3	Providing end terminations to cable with suitable aluminium lugs and connecting the cable in panels. (as per technical specifications).	6	No		
4	Laying of 4C x 240 sq. mm LT XLPE Aluminium armoured Cable in trench (as per technical specifications).	870	m		
5	Supply and providing kadappa tiles of size 12X30 inches for protection of cable. (as per technical specification).	1150	No		
5	Supply, Installation, testing and commissioning of LT distribution junction box (IP66, Single door SS316). (as per technical specifications).	1	No		
6	Providing GI pipe Earthing (as per technical specifications).	40	No		
7	Supply and installation of GI Flats of size 25x5mm using GI bolts and nuts for Earthing connection along with insulating Sleeve. (as per technical specifications).	550	Running Meter		
8	Supply and installation of GI wire of size 8 swg along with PVC pipes and GI clamps for dressing. (as per technical specifications).	300	m		
9	Supply and installations of RCC Hume pipes of size 200 mm dia. and length 2 meters. (as per technical specifications).	05	No		
10	Supply and Installation of LT cable route markers along the route of the cable at an interval of 30 meters. (as per technical specifications).	30	No		
TOTAL (Rs)					

(In Words Rupees_____only).

Note:

1. **The rates quoted shall be inclusive of transportation, lodging and boarding, but exclusive of GST. GST shall be paid extra as applicable.**