

**MORMUGAO PORT TRUST
ENGINEERING CIVIL DEPARTMENT**

TENDER No.: CE/55/2016

Name of Work: Providing Signalling and Telecommunication System to Railway Network at Mormugao Port, Goa.

PART – I – A - SUPPLY OF SIGNALLING MATERIALS

SCHEDULE OF QUANTITIES AND RATES

| Sl. No. | Description of work | Units | Approx. Qty. | Rate Rs. | Total Amount Rs. |
|---------|---|-------|--------------|------------|------------------|
| | ELETRONIC INTERLOCKING (EI) RELATED | | | | |
| 1 | Supply of Electronic Interlocking (EI) hardware suitable to the SIP attached, generally conforming to RDSO Spec. RDSO/SPN/192/2005 with latest amendments as on the date of tender opening. The material to be supplied shall include (i) Hardware of EI in the Main Panel Room and the EI [I/O] hut towards Vasco Yard. (ii) EI shall be in hot standby. (iii) All interface relays for signals, points, crank handles, MSDAC (input & Reset), LC gate, slots etc. (iv) All points control, operation and detection relays also to be supplied as they are proposed to be installed in the respective EI Rooms. (v) All types of Indoor Cables suites for EI wiring. Space for these relays shall be catered in the racks provided in EI Room. (v) All Racks, wiring material, fuses, terminals [wiring Cable between CT Rack and EI]. (vi) 110 V DC to 24 V DC converters required to power the EI equipment – with 100% standby provision (vi) Rign earth suitable to both EI (vii) All types of surge protection suitable to EI power supply. | SET | 1 | 41,000,000 | 41,000,000 |
| | (vii) Supply of essential spares for EI at 10% of each Card/Module/PCBs. (viii) Supply of 10% quantity of relays as spares. (ix) Supply of recommended tools. (x) Supply of portable work station. (xi) Earthing material for reliable working of the EI. (xii) Surge protection devices for reliable working of the EI. (xiii) Two PCs with operating VDU of 40 inch for VDU operation. (xiv) One PC of 32 inch for maintenance and diagnostics. (xv) Media converters required for networking both the EIs. (xvi) Panel processor. | | | | |
| 2 | Designing of application logic suitable to the approved SIP & TOC. | SET | 1 | 360,000 | 360,000 |
| 3 | Supply of domino type panel suitable to the SIP attached. | Nos | 1 | 285,000 | 285,000 |
| 4 | Supply of 1024 digital inputs, 32 analogue inputs, data loggers as per the latest RDSO's specification. | Nos | 1 | 450,000 | 450,000 |
| 5 | Supply of 512 digital inputs, 16 Analogue inputs, Data Logger as per the latest RDSO specification. | Nos | 1 | 313,929 | 313,929 |
| 6 | Supply of Front End Processor with one dual modem to connect both the data Loggers. | Nos | 1 | 270,000 | 270,000 |
| 7 | Supply of Fault Analysis System along with software to work with Data Logger. | Nos | 1 | 379,445 | 379,445 |

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|----|---|-------|-----|-----------|------------|
| 8 | Protocol converters to down load EI data to Data Logger – on-line. | Nos | 2 | 72,000 | 144,000 |
| 9 | Carrying out Computerised System Integrity Test as per TOC independently with data logger data as evidence. | LS | 1 | 990,000 | 990,000 |
| 10 | Integrated Power Supply at Main EI with required sub-systems powered by 300 AH battery (low maintenance type) as per the latest RDSO spec. It shall include surge protection as per RDSO. Overall rating of the IPs system and each sub-system shall be submitted by the tenderer. Design shall be approved by the Engineer including maintenance free single eathing for IPS. | Nos | 1 | 1,560,771 | 1,560,771 |
| 11 | Integrated Power Supply at Main EI with required sub-systems powered by 120 AH battery (low maintenance type) as per the latest RDSO spec. It shall include surge protection as per RDSO. Overall rating of the IPs system and each sub-system shall be submitted by the tenderer. Design shall be approved by the Engineer including maintenance free single eathing for IPS. | Nos | 1 | 742,468 | 742,468 |
| 12 | Supply of maintenance spares for IPS in main EI room. | LS | 2 | 259,864 | 519,728 |
| 13 | Single phase diesel generator set of 15 KVA capacity of reputed make (Kirloskar/ Mahindra etc.) | Nos | 2 | 450,000 | 900,000 |
| 14 | Automatic power changeover unit between state supply and diesel generator supply 15 KVA. | Nos | 1 | 72,000 | 72,000 |
| 15 | Supply of MSDAC as per latest RDSO spec. from RDSO approved Vendor. Evaluator units and 80 wheel detectors along with cable termination boxes at wheel detectors of track sections pertaining to main EI and Hut jurisdiction. | Nos | 1 | 32500000 | 32,500,000 |
| 16 | RCC/GI Pipes, for track crossing, cable laying on bridges, culverts etc. | METRE | 200 | 534 | 106800 |
| 17 | Double Walled Corrugated pipes (ISI mark) confirming to Spec no. IS-14930, part-II of length 6 meter and 120mm outer dia. 103.5mm inner dia. With one snap fit connector, one V end and one T coupler for underground power/ signal/ telecom cable protection. One 6m pipe with all accessories shall be counted as unit for the purpose of payment. | Nos. | 80 | 2331 | 186480 |
| 18 | Supply of Earth Leakage detector AC/DC, 8 Channel as per RDSO Spec. No. RDSO/SPN/256/2002 complete with connector for supply monitoring. | Nos | 2 | 119887 | 239,774 |
| | Cables | | | | |
| 19 | Underground signalling cable 8 core | Km | 25 | 152135 | 3,803,375 |
| 20 | Underground signalling cable 12 core | Km | 15 | 190344 | 2,855,160 |
| 21 | Supply of Power cable PVC U/G 2 /70 sq. mm core Aluminum for 230V Ac supply to EI Hut. | Km | 3 | 450,000 | 1,350,000 |
| 22 | Supply of Railway U/G 6 Quad Jelly Filled Telecommunication Cable 0.9mm dia specification no. TC/30/2005. Amendment 2 or Latest. | Km | 15 | 267,516 | 4,012,734 |

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|----|---|--------|-----|--------|-----------|
| 23 | OFC 24 fiber (including all accessories) | Km | 3.5 | 99,687 | 348,905 |
| 24 | Supply of Cable Route Markers RCC as per drawing for Telecom Cables. | Nos | 100 | 850 | 85,000 |
| | Points | | | | |
| 25 | Supply of Electrical Point Machine, IRS Type, 143 mm throw (AC Immunity 160V AC) Non-trailable to operate on 110V DC with lock & detector slides, confirming to IRS-S-24/2002 & for Motor IRS: S37/82, assembly Drg. No. RDSO: S10800 & S10910 including Key Lock Relay with different ward plates. (One extra set of ward plate for point machine to be supplied with each KLR) | Nos | 44 | 76,370 | 3,360,280 |
| 26 | Supply of Point Ground connections for 143 mm throw IRS type point machine complete (Five Rods) as per Drg No. I) SA8805, II) RDSO/S/3273, III) RDSO/S/3271, IV) RDSO/S/3267 & V) RDSO/S/3269, switch extension bracket RDSO/S/3264 & drive lug S: 8806. | SET | 42 | 12,331 | 517,902 |
| 27 | Fabrication and supply of MS Termination Box for Point Machines of Size 450mmX225mmX125mm. The Terminal Box to be provided with 2 Nos of MS Angle of Size 50X50X6mm of Length 1000mm each and GI Pipe of 40mm dia. and length of 450mm. The termination Box also provided with Teak wood Plank of Size 25mm thickness for fixing of Terminals. Necessary terminals, Bolts, nuts and screws are to be provided for fabrication of Termination Box. The termination Box is to be painted double coat with approved quality of paint black enamel, on to the outside and to be painted with white enamel inside of the Box (All the Material to be Supplied / procured by the Contractor). | Nos | 50 | 2,345 | 117,250 |
| 28 | Supply of Keys for miniature E-Type lock with keys of approved wards as per RDSO Drg. No. SA 33/6 with latest amendment . | NUMBER | 42 | 948 | 39,816 |
| 29 | Supply of Emergency Crank Handle as per latest amendment of RDSO DRG. | NUMBER | 18 | 9,521 | 171,378 |
| 30 | Tool kit for point machines supplied as above. Detail list of items to be given by the tenderer to be approved by Rly. Engineer/ Site engineer. | Nos | 2 | 18,701 | 37,402 |
| 31 | Supply of Location Box made of 10 SWG (3.2mm) sheet complete with 'E' type lock & Keys, 1 Key for every five apparatus cases to be supplied. (Full Location Box) as per Drg. with additional (i) Fixed Handle on the door (ii) Provision of external padlock arrangement and (iii) Suitable arrangement for holding the door at 90° in its open condition including Helum Sheet of 240x1200mm, Wego terminals & PBT ARA terminals of one way for power supply termination as required. | Nos | 10 | 24,000 | 240,000 |

| | | | | | |
|----|---|-----|-----|---------|---------|
| 32 | Supply of Location Box made of 10 SWG (3.2mm) sheet complete with 'E' type lock & Keys, 1 Key for every five apparatus cases to be supplied. (Half Location Box) as per Drg. with additional (i) Fixed Handel on the door (ii) Provision of external padlock arrangement and (iii) Suitable arrangement for holding the door at 90° in its open condition including Helum Sheet of 240x1200mm, Wego terminals &PBT ARA terminals of one way for power supply termination as required. | Nos | 12 | 18,000 | 216,000 |
| 33 | Supply of Shunt signal unit position light type for LED aspect complete with all fittings to suit RDSO Drg. no. S-23840 Adv. and Spec-S-23/88 or latest. Independent type along with base and post. | Nos | 36 | 9,332 | 335,952 |
| 34 | Supply of SPI unit. | Nos | 3 | 11,250 | 33,750 |
| 35 | Supply of LED type Shunt signal lamp (in place of one bulb – one shunt signal requires 3 such lamps) complete with current regulator as per spec no. RDSO/SPN/153/2002 or latest. | Nos | 110 | 5,132 | 564,520 |
| 36 | Documentation | | | | |
| 37 | Drawing, Design & development of Panel Diagram, TOC, EI interface circuit and SWR diagram with digitized documents. This also includes obtaining approval from railway, which are mandatory. | LS | 1 | 55,000 | 55,000 |
| 38 | Preparation of Draft SWR in Hindi & English. | LS | 1 | 15,000 | 15,000 |
| 39 | Preparation of Contact analysis, Relay Rack Disposition Location dispositions, Cable Core Plans, Cable Path diagrams, power supply wiring diagrams etc. | LS | 1 | 495,000 | 495,000 |
| 40 | Miscellaneous arrangements for Non Interlocked (NI) period / at the time of Commissioning. Period with commissioning of the station. | LS | 1 | 126,000 | 126,000 |
| 41 | Preparation of as made documents after completion of the work . | LS | 1 | 275,000 | 275,000 |
| 42 | Modifications in VASCO Station Singalling systems as per interlocking requirement. | LS | 1 | 250,000 | 250,000 |
| | Training by OEM. | | | | |
| 43 | Training by OEM | LS | 1 | 172,800 | 172,800 |
| 44 | Training on MSDAC. | LS | 1 | 126,000 | 126,000 |
| 45 | Training on IPS | LS | 1 | 89,100 | 89,100 |
| 46 | Training on Data logger | LS | 1 | 72,900 | 72,900 |
| | Safety Equipments Related: | | | | |
| 47 | Supply of Smoke Detectors (Optical) Apple make or similar for fire alarm system. | Nos | 10 | 4,550 | 45,500 |
| 48 | Supply of Fire alarm control-cum-indication panel equipped with four zone cards together with electronic hooter and all other accessories. | Nos | 2 | 42,149 | 84,297 |
| 49 | Fire Extinguisher/ Fire fighting equipment. CO2 Type (capacity 5 Kg). | Nos | 8 | 3,340 | 26,720 |
| | MISC (Markers & Warning Boards etc): | | | | |
| 50 | Supply of STOP BOARD (30 cm & 150 cm thick 3mm thick M.S. Sheet) as per G&R Para No 3.31 | Nos | 10 | 6,680 | 66,803 |

| | | | | | |
|---|--|-----|-----|---------|-----------------------|
| 51 | Supply of Maintenance Registers as per Railway practice. Each set should consist of 18 Registers as per standard practice on Railways. The registers should be in prescribed format of minimum 100 pages. (List of essential Maintenance Registers is enclosed in Annexure-'A') | LS | 1 | 5,500 | 5,500 |
| 52 | Supply of Signal number plates as per drawing no. RITES/SIG/GEN46-08 3mm. thick white laminated MS sheet shall be used. Letter shall be written in black on white background. | Nos | 36 | 459 | 16,515 |
| 53 | All types of necessary Maintainers tool kit and measuring instruments for technicians / junior engineers for testing, maintenance and repair at site as specified by original equipment manufacturer of proposed interlocking system. (The tool kit should contain the tools as listed in Tender Schedule) | Set | 1 | 87,129 | 87,129 |
| 54 | Digital Insulation tester 500 V DC | Nos | 1 | 9,676 | 9,676 |
| 55 | Supply of GI Padlock 150mm with double locking arrangement | Nos | 6 | 550 | 3,300 |
| 56 | Supply of Godrej / Navtal Lock 50mm | Nos | 12 | 385 | 4,620 |
| 57 | Universal Locks for Signal Aspect with keys for every 10Nos of locks. | Nos | 110 | 153 | 16,819 |
| 58 | Hand operated Track Drill Machine with socket 9/32 mm Dia. | Nos | 1 | 5,500 | 5,500 |
| 59 | Paints and Consumables required to paint all the S&T installation works before commissioning. | LS | 1 | 82,500 | 82,500 |
| 60 | Supply of AC (1.5 Ton) at Central EI, EI Hut Also places Exhaust Fan in IPS & Battery Room at suitable location. | LS | 1 | 200,000 | 200,000 |
| Total "A" | | | | | 101,441,496.92 |
| Rs. | | | | | |
| (Rupees Ten Crores Forteen Lakhs forty one thousand and four hundred ninty seven only) | | | | | |

TOTAL AMOUNT OF TENDER = " A" = Rs. 101441497.00

B. ADD _____ % (In Figures)
 In words _____ R _____
 Amount (In Figures) _____
 In words _____

Rupees _____
 OR

C. DEDUCT _____ % (In Figures)
 In words _____
 Amount (In Figures) _____
 In words _____

Rupees _____

SCORE OUT EITHER "ADD" OR "DEDUCT" AS THE CASE MAY BE"

TOTAL TENDER AMOUNT
 Rs. (in figures) _____
 Rupees (in words) _____

It is certified that I/ we have written the unit rates in figures and words
 Name and Address of the Tenderer

PART – I – B - SUPPLY OF TELECOM MATERIALS

MORMUGAO PORT TRUST
ENGINEERING CIVIL DEPARTMENT

TENDER No.: CE/55/2016

Name of Work: Providing Signalling and Telecommunication System to Railway Network at Mormugao Port, Goa.

PART – I – B - SUPPLY OF TELECOM MATERIALS

SCHEDULE OF QUANTITIES AND RATES

| Sl. No. | Description of work | Units | Approx. Qty. | Rate Rs. | Total Amount Rs. |
|----------|--|-------|--------------|----------|------------------|
| 1 | Telecom Cables & Jointing Materials Related: | | | | |
| 1a | Supply of Railway U/G 6 Quad Jelly Filled Telecommunication Cable 0.9mm dia specification no. TC/30/2005. Amendment 2 or Latest jointing kits with all accessories. | KM | 4 | 267,516 | 1,070,064 |
| 2 | Jelly Filled Cables Related: | | | | |
| 2a | Supply of PIJF-Polythene insulated filled telephone cable with poly-AL moisture barrier with armoured of size 10 PAIRx0.63mm. As per spec IRS:TC-41/97 Amendment No.1 or Latest. | KM | 0.5 | 72,813 | 36,407 |
| 2b | Supply of PIJF-Polythene insulated filled telephone cable with poly-AL moisture barrier with armoured of size 20 PAIRx0.63mm. As per spec IRS:TC-41/97 Amendment No.1 or Latest. | KM | 0.5 | 128,327 | 64,164 |
| 3 | Supply of Maintenance free single earth. | Nos. | 1 | 38,800 | 38,800 |
| 4 | Switch board cables Related: | | | | |
| 4a | Supply of Switch board cable 5 pair. | KM | 0.5 | 20,592 | 10,296 |
| 4b | Supply of Switch board cable 10 pairs. | KM | 0.5 | 34,386 | 17,193 |
| 4c | Supply of Switch board cable 20 pairs. spec IRS:TC-24/97. | KM | 0.5 | 57,673 | 28,837 |
| 4d | Supply of Switch board cable 50 pairs. | KM | 0.5 | 165,000 | 82,500 |
| 5 | VHF Communications Related: | | | | |
| 5a | VHF 25watt transceiver Sets along with RF cables, accessories, connectors. Motorola or similar make, supply, casting foundation & erection of lattice type tripod towers of 15 meters height as per specification. | Nos | 1 | 15,261 | 15,261 |
| 5b | 5W VHF Sets for field staff with suitable chargers | LS | 6 | 8,131 | 48,786 |
| 5c | License fee for VHF Per Five Years is @ 71,500 per Station | LS | 1 | 71,500 | 71,500 |
| 6 | Measuring Instruments Related: | | | | |
| 6a | Supply of Insulation tester 100 V DC | Nos | 1 | 9,673 | 9,673 |
| 6b | Supply of Earth Tester 0.01 to 9990 ohms in Multi range capacity | Nos | 1 | 16195 | 16,195 |
| | Other Equipments: | | | | |
| 7 | VF transformer (1Q-2T) (Rack mountable) square type (470:1120).spec IRS:TC-22/76. | Nos | 12 | 1,547 | 18,564 |
| 8 | VF transformer (1Q-2T) (Cylindrical type) for derivation joint. spec IRS:TC-22/76. | Nos | 5 | 814 | 4,070 |
| 9 | Supply of Selective calling telephone with power supply (DTMF). | Nos | 10 | 7,500 | 75,000 |
| 10 | Supply of Control Phone with frequency Selector & power supply. | Nos | 2 | 15,000 | 30,000 |

| | | | | | |
|--|--|------------|-----|-------|---------------------|
| 11 | Supply of CT Box 20 Pair from DOT/BSNL approved firm. spec IRS:TC-GR/WIR-06/03(2002)..spec IRS:TC-36/97. | Nos | 6 | 1,302 | 7,812 |
| 12 | Supply of Cable Route Markers RCC as per drawing for Telecom Cables. | Nos | 80 | 850 | 68,000 |
| 13 | RCC/GI Pipes, for track crossing, cable laying on bridges, culverts etc. | Mtr | 100 | 534 | 53,350 |
| 14 | Double Walled Corrugated pipes (ISI mark) confirming to Spec no. IS-14930, part-II of length 6 meter and 120mm outer dia. 103.5mm inner dia. With one snap fit connector, one V end and one T coupler for under ground power / signal/ telecom cable protection. One 6m pipe with all accessories shall be counted as unit for the purpose of payment. | Nos | 30 | 2,331 | 69,927 |
| Total 'B' | | Rs. | | | 1,836,397.90 |
| (Rupees Eighteen lakhs thirty six thousand and three hundred ninety eight only) | | | | | |

TOTAL AMOUNT OF TENDER = " B " = Rs. 1836398.00

E. ADD _____ % (In Figures)

In words _____

Amount (In Figures) _____

In words _____

Rupees _____

OR

F. DEDUCT _____ % (In Figures)

In words _____

Amount (In Figures) _____

In words _____

Rupees _____

SCORE OUT EITHER "ADD" OR "DEDUCT" AS THE CASE MAY BE"

TOTAL TENDER AMOUNT

Rs. (in figures) _____

Rupees (in words) _____

It is certified that I/ we have written the unit rates in figures and words

Name and Address of the Tenderer

**MORMUGAO PORT TRUST
ENGINEERING CIVIL DEPARTMENT**

TENDER No.: CE/55/2016

Name of Work: Providing Signalling and Telecommunication System to Railway Network at Mormugao Port, Goa.

PART – I – C - EXECUTION OF SIGNALLING WORKS

SCHEDULE OF QUANTITIES AND RATES

| Sl. No. | Description of work | Units | Approx. Qty. | Rate Rs. | Total Amount Rs. |
|---------|--|-------|--------------|-----------|------------------|
| | Panel Room Related: | | | | |
| 1 | Installation, Wiring, testing and commissioning of EI, panel processor and two VDUs and stand by Operation-Cum-Indication Panel. Contractor has to supply all wiring material required for commissioning. | Set | 1 | 7,700,000 | 7,700,000 |
| | Data Logger Related: | | | | |
| 2 | Installation, wiring, testing & Commissioning of Data Logger of 1024 Digital Inputs & 32 analog inputs in main EI room and 512 Digital Inputs & 16 analog inputs in EI [I/O] hut along with protocol converters. Networking them through FEP and commissioning of failure analysis system. This includes programming of Data Logger for fault diagnostic in suitable structure language in consultation with Railways. All wiring materials are to be supplied by the contractor. | Set | 2 | 152,786 | 305,572 |
| | Power Supply Related: | | | | |
| 3 | Installation, testing and commissioning of Integrated Power supply (IPS) systems at main EI and EI[I/O] Hut. The work includes Initial charging of lead acid low maintenance batteries for IPS. Charging & Discharging of batteries shall be for 2 1/2cycles. Wiring from Auto Change Over Panel to IPS. Installation testing and commissioning shall be done by manufacturer as per engineer's guidelines. All the prescribed protective equipment shall be installed. Connection to Earth shall be as per standard practices adopted in Railways. Contractor has to supply all wiring material required for commissioning. | Nos | 2 | 61,000 | 122,000 |
| 4 | Installation, wiring, testing and Commissioning of Auto Change over Unit of 15 KVA capacity. Contractor has to supply all wiring material required for commissioning. | Nos | 1 | 8,839 | 8,839 |
| 5 | Installation and commissioning of Single Phase Diesel Generator Set. This Includes transportation of DG set to site, including supply of HSD oil for testing. Contractor has to supply all wiring material required for commissioning. | Nos | 2 | 35,488 | 70,976 |
| | Relay Room Related: | | | | |

| | | | | | |
|----|---|-------|-----|-----------|-----------|
| 6 | Transportation Installation, wiring, testing and Commissioning of EI equipment, interface relays, power supply equipment, relay racks, cable termination racks, equipment racks, ELD, maintenance PC of EI at main EI and EI [I/O] Hut. Contractor shall supply all wiring materials, foundation bolts etc. required for carrying out of this work. Contractor shall supply all wires & wiring materials purchased from RDSO approved sources. Contractor has to supply all wiring material required for commissioning. | LS | 1 | 1,000,000 | 1,000,000 |
| | MSDAC Related: | | | | |
| 7 | Installation, wiring, testing and Commissioning of MSDAC equipment consisting of wheel detecting equipment and evaluator equipment in the main EI room and EI [I/O] Hut. Contractor has to supply all wiring material required for commissioning. | Nos | 1 | 6,222,750 | 6,222,750 |
| | Earthing Related: | | | | |
| 8 | Installation, wiring & commissioning of Earth Leakage Detector- 8 Channel. | JOB | 2 | 25,000 | 50,000 |
| | Signalling Cables Related: | | | | |
| 9 | Excavation of trenches including clearing of roots, bushes and trees etc. in rocky areas up to a depth to be decided by Port Engineers/PMC at site as per the site condition (min 0.3m) and width 0.3 m at the bottom. This work includes concreting (1:3:6) /plastering after laying of cables as per instructions of site engineer and back filling the balance trench. All materials including cement to be supplied by the contractor. | KM | 1 | 141,218 | 141,218 |
| 10 | Excavation of 1 meter depth and 0.3 meters width at the bottom of trench including cleaning of roots, bushes etc. | KM | 5 | 53,963 | 269,815 |
| 11 | Laying of Signalling/power cable/6 quad/of all sizes in excavated trench, through GI/RCC/DWC pipes etc. wherever laid. The length of the cable laid includes length of cable coil for termination purpose. NOTE: The cables are to be carefully handled during loading, unloading and transportation to work site. Any damage found in the cable after final testing, in view of mishandling of cables, shall be made good by tenderer. | KM | 61 | 5,500 | 335,500 |
| 12 | Placing & securing of Cable Route Markers in trenches at a specified intervals & at diversions, joints etc. along the cable route. The work shall be done as per extant practice of concerned railway & instructions by railway engineer at site. | Nos | 100 | 13 | 1,300 |
| 13 | Transportation of GI pipes 50/75/100/150m dia. from stores and fixing & laying the same at culverts, drains or at places as per instructions of Port Engineer/PMC with clamps at 1.5m interval on steel girder bridges or at places advised by Port Engineer/PMC. | Meter | 200 | 50 | 10,000 |

| | | | | | |
|---------------------------------|--|------|----|--------|---------|
| 14 | Transportation of DWC pipes Split and Non-Split from stores and laying the same under track crossings, at places as per instructions of Railway Engineer/Site Engineer. All materials shall be supplied by the contractor. | Nos. | 80 | 20 | 1,600 |
| Points Related: | | | | | |
| 15 | Installation of Electric Point Machine on MS plate fixed on wooden/ PSC/ Steel sleepers complete with fixing of Anti-theft arrangement, grouting of junction boxes, smithy works involved for ground connection, termination of cables, preliminary adjustment for operation of point by Crank Handle, oiling, greasing painting & lettering as required. This work includes the following as detailed below: | Nos | 42 | 11,204 | 470,568 |
| | NOTE: (i) Fixing of switch extension bracket ('D' bracket) and ground-connections. (ii) Adjusting opening of the switches to 115mm. (iii) Erection of junction box on M.S. angle of 50 x 50 x 5mm & 1 m length and fixing of M6 terminals on 10mm thick hylum sheet for cable termination. (iv) Fixing of HDPE pipes for taking cable into point machine and junction box (Gland pipe) for points. (v) All black smithy & fitting works required at site for complete installation. (vi) Material for installation like 10mm hylam sheet, HDPE pipes, wiring materials, various fixing nuts & bolts including castle nuts, spring washers will be supplied by the contractor. | | | | |
| 16 | Wiring and testing commissioning of Electric Point Machine as per approved wiring diagrams. This also includes termination of tail cable in point machine and junction boxes, Wiring of Point Contactor unit its controlling relays and fixing of Crank Handle ward plate and interlocking of Crank Handle. | Nos | 42 | 2,000 | 84,000 |
| 17 | Installation and wiring testing commissioning of Key Lock Relay/HKT/RKT on 20mm pre-laminated, BWP terminate proof borer proof plywood (or on a 12mm teak wood board) of size 300mm x 400mm x 12mm per RKT, including termination of cable/indoor wire, Led, push buttons etc. and coupling of crank handles with suitable chain locking arrangements of point keys etc. | Nos | 18 | 2,000 | 36,000 |
| Apparatus Cases Related: | | | | | |

| | | | | | |
|-----|--|-----|----|-------|---------|
| 18 | Excavation of Pit, casting of Foundation, Plastering & Erection of Steel Apparatus Case with fixing of 'E' type lock, wiring, anti-theft arrangement & Cable entry. This includes: (i) Supply of 4 nos. anchor bolts as per RDSO drawing no. SA-112A with nuts and washers. (ii) Supply of cement, sand, stone chip & mixing in the ratio of 1:3:6. (iii) Fixing of hylum sheet, resin bonded 6 mm thick grade P3 for fixing terminal, fuse blocks etc. (iv) Bunching of cables with PVC tape including supply of ferrules, tape, cable fixing clamps etc. Filling up pit inside the location box by sand and plastering on the top of the sand. (v) Fixing of terminals, fuse blocks, N.D. fuses, etc. as per approved wiring diagrams of Concerned Railway Practices. This includes transportation of all the required materials to the site. | | | | |
| 18a | Full Location box | Nos | 10 | 8,500 | 85,000 |
| 18b | Half Location box. | Nos | 12 | 6,500 | 78,000 |
| | Signal Related: | | | | |
| 19 | Excavation of pit, casting & plastering of concrete foundation for independent type shunt signal. As per Drg. No. RITES/SIG/GEN/002-98 and TS. This includes: Supply of cement, sand, stone chip & mixing in the ratio 1:3:6. And foundation bolts. | Nos | 36 | 6,500 | 234,000 |
| 20 | Erection & wiring commissioning of independent shunt signal. This includes: (a).Erection of surface base, shunt signal post, shunt signal unit and number plate. (b).Fixing of hoods and LED lamps. (c).Termination of the tail cable in the signal unit, wiring & testing of shunt signal. | Nos | 36 | 800 | 28,800 |
| | Safety Equipments Related: | | | | |
| 21 | Installation and testing of addressable of Smoke Detector below False Ceilling with Built-in Fault Isolator, Mounting Base,protection cap during installation etc. | Nos | 10 | 6,500 | 65,000 |
| 22 | Supply, Installation, testing and commissioning 2 loop addressable Fire alarm panel with required accessories. | Nos | 2 | 9,000 | 18,000 |
| 23 | Supply, Installation, testing and commissioning of Response Indicator. | Nos | 4 | 8,000 | 32,000 |
| | MISC (Markers & Warning Boards etc): | | | | |
| 24 | Supply, Erection and fixing of Markers/Legend boards/ warning boards/ BSLB Board/Stop Board/ Sighting boards/goods warning board with contractor's own materials as per Concerned Railway Practices. | Nos | 10 | 1,789 | 17,890 |
| | Painting Works Related: | | | | |
| 25 | Painting of two coats of enamel paint black Asian and Aluminum white as approved by Site engineer over one coat of primer on Shunt signal unit , base and post. Work has to be done as TS. | Nos | 44 | 1,796 | 79,024 |

| | | | | | |
|--|---|-----------|----|---------|----------------------|
| 26 | Painting of two coats of enamel paint black Asian and red oxide as approved by Site engineer over one coat of primer on point machine and ground connection respectively. work has to be done as TS. | Nos | 36 | 1,462 | 52,632 |
| 27 | Painting, numbering and lettering of all outdoor and indoor signaling equipments as per site requirement. This includes Location Box lettering and painting. | LS | 1 | 75,000 | 75,000 |
| During NI Related: | | | | | |
| 28 | Miscellaneous arrangements for Non Interlocked (NI) period / at the time of Commissioning. For the provision of temporary telephone sets, shelter, lighting, amplifier communication system, position lights & emergency lights arrangements for train movements during NI & Pre-NI Period with commissioning of the station. | LS | 1 | 132,000 | 132,000 |
| 29 | Provision of End Goomty 25 Sq Metre each | Sq. Meter | 2 | 8,000 | 16,000 |
| 30 | Transportation charges towards vehicle on hire basis for S&T & operating dept. officials of railway for inspection during work period. | LS | 1 | 82,500 | 82,500 |
| Total 'C' Rs. | | | | | 17,825,984.00 |
| (Rupees One Crore seventy eight lakhs twenty five thousand and nine hundred eighty four only) | | | | | |

TOTAL AMOUNT OF TENDER = " C " = Rs. 17825984.00

H. **ADD** _____ % (In Figures)

In words _____

Amount (In Figures) _____

In words _____

Rupees _____

OR

I. **DEDUCT** _____ % (In Figures)

In words _____

Amount (In Figures) _____

In words _____

Rupees _____

SCORE OUT EITHER "ADD" OR "DEDUCT" AS THE CASE MAY BE"

TOTAL TENDER AMOUNT

Rs. (in figures) _____

Rupees (in words) _____

It is certified that I/ we have written the unit rates in figures and words

Name and Address of the Tenderer

PART – I – D - EXECUTION OF TELECOMMUNICATION WORKS
MORMUGAO PORT TRUST
ENGINEERING CIVIL DEPARTMENT
TENDER No.: CE/55/2016

Name of Work: Providing Signalling and Telecommunication System to Railway Network at Mormugao Port, Goa.

PART – I – D - EXECUTION OF TELECOMMUNICATION WORKS
SCHEDULE OF QUANTITIES AND RATES

| Sl. No. | Description of work | Units | Approx. Qty. | Rate Rs. | Total Amount Rs. |
|---------|---|-------|--------------|----------|------------------|
| | Telecom Cables Related: | | | | |
| 1 | Excavation of 1.0 meter depth and 0.3 meters width at the bottom of trench including cleaning of roots, bushes etc. from Vasco Stn to Central Interlocking Building for communication and FOIS working | Km | 4 | 53,963 | 215,852 |
| 2 | Laying of 6 quad Telecom cables in excavated trench, This includes transportation of cables from stores. The length of the cable laid includes length of cable coil for termination purpose. NOTE: The cables are to be carefully handled during loading, unloading and transportation to work site. Any damage found in the cable after final testing, in view of mishandling of cables, shall be made good by tenderer. | Km | 4 | 10,642 | 42,568 |
| | Other Equipments Related: | | | | |
| 3 | Transportation Installation of 2T Derivation joint for jointing of 6 Quad jelly filled cable using Thermo shrinkable jointing kit and construction of brick chamber for protection of joints with all contractors materials as per drawing No. WCR/Tele/2008/2 Amendment 1. This includes the taping of nominated quad at a specified location and directives of the Railway Engineer using 2T transformer joint assembly joint assembly already covered under schedule 'A' of supply. The other end of the transformer should be connected to 10 pair PJF jelly filled U/G telephone cable, which is already laid in the trench for this jointing purpose. This jelly filled cable to be taken out of the joint using branch off clip. While jointing, the necessary precautions to be taken against the moisture etc. The cable ends to be taken out and cleaned before jointing. | Nos | 5 | 2,500 | 12,500 |
| | NOTE: All the materials required for the work are to be arranged by the contractor himself at his own cost except Thermo shrinkable jointing kit and 2-T transformer joint assembly, which already covered in supply portion of the schedules. After jointing the cable through test should the performed such as installation test, etc. If any defect or any damage observed during jointing the contractor should redo the joint. | | | | |

| | | | | | |
|---|---|-----|-----|--------|-------------------|
| 4 | Transportation installation of 20 pair the following termination boxes & fixing of Cable termination boxes & termination of PIJF/SB cable inside the box in offices/residential quarters/LC gates/Stations or at places advised by railway representative at site. All materials like fixing clamps, nuts, bolts etc and tools/equipment required for the work shall be supplied by the contractor. | Nos | 4 | 97 | 388 |
| 5 | Transportation installation & wiring of selective calling Telephones and Control Phons in ASM office & other locations as suggested by Site Engineer. | Nos | 12 | 1,841 | 22,092 |
| 6 | Transportation of GI pipes 50/75/100/150m dia. from stores and fixing & laying the same at Girder bridges, bridges, culverts, drains or at places as per instructions of site Engineer with clamps at 1.5m interval on steel girder bridges or at places advised by site engineer | LS | 25% | 53,350 | 13,338 |
| 7 | Transportation of DWC pipes Split and Non-Split from stores and laying the same under track crossings, at places as per instructions of Site Engineer. All materials shall be supplied by the contractor. | LS | 25% | 48,668 | 12,167 |
| 8 | Transportation Installations of "Earthing System for Telecom" as per specification No. RDSO/ SPN/ TC/75/2008 with latest amendments. | Nos | 1 | 25,000 | 25,000 |
| 9 | Execution of carrying out modifications to the existing FOIS connectivity. | LS | 1 | 80,000 | 80,000 |
| Total D | | | | | 423,904.50 |
| | | | | | Rs. |
| (Rupees Four lakhs twenty three thousand and nine hundred five only) | | | | | |

TOTAL AMOUNT OF TENDER = " D" = Rs. 423905.00

K. ADD _____ % (In Figures)
In words _____
Amount (In Figures) _____
In words _____

Rupees _____
OR

L. DEDUCT _____ % (In Figures)
In words _____
Amount (In Figures) _____
In words _____

Rupees _____

SCORE OUT EITHER "ADD" OR "DEDUCT" AS THE CASE MAY BE"

TOTAL TENDER AMOUNT
Rs. (in figures) _____
Rupees (in words) _____

It is certified that I/ we have written the unit rates in figures and words
Name and Address of the Tenderer

**PART – I – E - SUPPLY OF OFFICE FURNITURE FOR S&T BUILDING
MORMUGAO PORT TRUST
ENGINEERING CIVIL DEPARTMENT
TENDER No.: CE/55/2016**

Name of Work: Providing Signalling and Telecommunication System to Railway Network at Mormugao Port, Goa.

**PART – I – E - SUPPLY OF OFFICE FURNITURE FOR S&T BUILDING
SCHEDULE OF QUANTITIES AND RATES**

| Sl. No. | Description of work | Units | Approx. Qty. | Rate | Total Amount |
|---|---|-------|--------------|------------|-------------------|
| | | | | Rs | In Rs. |
| Supply of Office Furniture Requirement | | | | | |
| 1 | Office Chair of continuous arms having plastic cane cover, T.W arm rest size 36"*21"*22" approx, steel tubular frame gauge of pipes 2.5mm dia * 18 gauge with olive green colours, green stove annealed "Indian Make". Godrej / Allwin / Chandan / Khira make. | Nos | 1 | 22,000 | 22,000 |
| 2 | Table Godrej model no. T-101 | Nos | 2 | 16,500 | 33,000 |
| 3 | Chair Godrej model no. 1018 | Nos | 4 | 14,300 | 57,200 |
| 4 | Airy Revolving and tilting working cushioned adjustable height chair with arm rests, polished black. The chair has plastic caned seat and back on 25 mm round tubular frame. The base is of pressed sheet metal. Godrej make. Width 700 mm, Depth 700 mm, Height 870 mm, Adjustable seat height 410mm to 520mm, Color Grey. | Nos | 2 | 15,400 | 30,800 |
| 5 | Steel Almirah Full size (61/2') Godrej model Storewel plain | Nos | 2 | 44,000 | 88,000 |
| 6 | Steel Almirah Half size (41/2') Godrej model Storewel minor plain | Nos | 2 | 27,500 | 55,000 |
| 7 | Godrej Steel sloted rack (2mm. thick) with six adjustable shelves, min. size height 1800mm. X width 900mm. X depth 450mm. | Nos | 2 | 13,200 | 26,400 |
| 8 | Godrej Stool model no. ST-2 | Nos | 2 | 2,200 | 4,400 |
| Total E | | | | Rs. | 316,800.00 |
| (Rupees Three lakhs sixteen thousand eight hundred only) | | | | | |

TOTAL AMOUNT OF TENDER = " E" = Rs. 3,16,800.00

N. ADD _____ % (In Figures)
In words _____
Amount (In Figures) _____
In words _____

Rupees _____
OR

O. DEDUCT _____ % (In Figures)
In words _____
Amount (In Figures) _____
In words _____

Rupees _____

SCORE OUT EITHER "ADD" OR "DEDUCT" AS THE CASE MAY BE"

TOTAL TENDER AMOUNT
Rs. (in figures) _____
Rupees (in words) _____

It is certified that I/ we have written the unit rates in figures and words

Name and Address of the Tenderer
