



इरकॉन इंटरनेशनल लिमिटेड
नवरत्न कंपनी
(भारत सरकार का उपक्रम)
IRCON INTERNATIONAL LIMITED
NAVRATNA COMPANY
(A Govt. of India Undertaking)
An integrated Engineering and Construction Company



सोन भवन (प्रथम तल), दारोगा प्रसाद राय पथ, पटना - 800 001, फोन : 0612-2506446, 2506543
Sone Bhawan (First Floor), Daroga Prasad Rai Path. Patna - 800 001, Phone : 0612-2506446, 2506543

LETTER OF ACCEPTANCE

No: IRCON/2071/JCRL/SnT/ PKG-XC/TRANSWIND/ 996

Date: 27/08/2024

M/s Transwind Infrastructures Ltd.

74, New York Tower-A,
Opp. Jain Derasar,
S.G. Highway, Thaltej,
Ahemdabad-380054
E-mail: info@transwind.in

Kind Attn: Shri Pankaj Kumar Dubey

Sub: Design, supply, Installation, Testing & Commissioning of OFC and 6- Quad cable based Communication system in Kathautia-Duari section and Shivpur-Kharika section in connection with Shivpur-Kathutia New BG track with electrification in Dhanbad division of East Central Railways in the state of Jharkhand, India.

Ref: 1. Tender No. IRCON/2071/JCRL/SnT/PKG-XC dated 17.05.2024.
2. Your Technical Bid Opened on 11.06.2024
3. Your Financial Bid Opened on 08.08.2024.

Dear Sir,

1. In reference to the above, your offer for above referred tender has been accepted by the Competent Authority at a total cost of **Rs. 5,41,44,795.27(Rupees Five Crore Forty-One Lakh Forty-Four Thousand Seven Hundred and Ninety-Five and Twenty-Seven Paise only)** including GST @18% and all taxes & duties.
2. **Scope of Work:**
Design, supply, Installation, Testing & Commissioning of OFC and 6- Quad cable based Communication system in Kathautia-Duari section and Shivpur-Kharika section in connection with Shivpur-Kathutia New BG track with electrification in Dhanbad division of East Central Railways in the state of Jharkhand, India. For detailed scope of work refer clause 2.0 of SCC.
3. Bill of Quantities (BOQ), indicating the quantities and rates of the items is enclosed as Annexure - A.



महिला कार्यलय : सी-4, डिस्ट्रिक्ट सेंटर, साकेत, नई दिल्ली . 110017, भारत
Registered Office : C-4 District Centre, Saket, New Delhi - 110017 (INDIA)
Tel : +91-11-29565566 Fax : +91-11-26854000 : E-mail : info@ircon.org : Web. : www.ircon.org
CIN : L45203DL1976GOI008171



4. **Taxes and Duties:** For compliance refer clause no 7.0 of SCC.
5. **Price Adjustment:** As per clause no 9.0 of SCC.
6. **Completion Period:**
The entire work shall be completed within Nine (09) months from the date of issue of Letter of acceptance (LOA). You have to submit detailed program for each major element of the work using modern network technique for project monitoring for approval of the engineer. For compliance refer clause 10.0 of SCC.
7. **Defect Liability Period:**
Defect Liability Period will be 12 months from the date of issue of completion certificate by the Engineer. For compliance refer clause 11.0 of SCC
8. **Insurance:** As per clause 12.0 of SCC.
9. **Performance Guarantee & Security Deposit/Retention Money:** (As per Clause 13 of SCC & Clause 8.0 of GCC)
 - i. Performance Guarantee in the form of irrevocable Bank Guarantee (BG) on the Proforma annexed as Annexure-II from any Scheduled Bank for an amount of 5% (Five percent) of the contract value i.e. **Rs. 27,07,240.00** (Rupees Twenty-Seven Lakhs Seven Thousand Two Hundred Forty only) to be submitted within 21 (Twenty-One) days from the date of issue of Letter of Acceptance (LOA) before signing of Contract Agreement and shall be valid upto 60 days beyond completion period.
 - ii. Additional Performance Guarantee in the form of irrevocable Bank Guarantee (BG) on the Proforma annexed as Annexure-II from any Scheduled Bank for an amount of **Rs. 3,38,062.00** (Rupees Three Lakhs Thirty-Eight Thousand Sixty-Two only) to be submitted within 21 (Twenty-One) days from the date of issue of Letter of Acceptance (LOA) before signing of Contract Agreement and shall be valid upto 60 days beyond completion period.
 - iii. Retention money for all contracts shall be recovered from on account/ final bills of the Contractor @ 10% of gross value of each bill after adjusting EMD amount till the amount so recovered including EMD amount adds upto 5% of the contract value of the work.
10. Contract Agreement shall be signed between you and IRCON INTERNATIONAL LIMITED within 28 days from the date of issue of LOA. You have to submit a non-judicial Stamp Paper of **Rs. 1000** and attend the office of CGM/S&T/Patna, IRCON INTERNATIONAL LIMITED, 6thFloor, Sone Bhawan, Daroga Prasad Rai Path, Patna – 800001 for Signing of Contract Agreement as per clause 16 of SCC.



11. You have to sign the Integrity Pact at the time of signing Contract Agreement and submit a non-judicial Stamp Paper of ₹1000 for signing the Integrity Pact as per para 10 of Instructions to tenderers.

12. **Terms of Payment:** (As per Clause 26 of SCC):

12.1. **Payment for Supply of material:**

- i) Payment @ 80% of BOQ rates shall be made on delivery of material at specified location on Project, acceptance by Engineer and submission of following documents:
 - a) Original Inspection certificate issued by Inspecting Officer.
 - b) 100% Tax Invoice with detailed packing List in duplicate.
 - c) A certificate that the materials supplied are as per the contract and the amount claimed in the invoice is correct as per terms of the contract.
- ii) 10% payment at the accepted rate for the quantity shall be made after installation of the material on complete station/section.
- iii) Balance 10% payment at the accepted rate for the quantity shall be paid on successful commissioning and issue of Completion Certificate.
- iv) Also 10% payment against supply of material supplied for installation but not installed due to non-requirement of employer, due to change in design, drawing, scope of work etc. subsequent to the award of work, shall be paid after issue of Completion Certificate for the work and handing over the materials to the client.

12.2. **Payment for Installation:**

- i) Payment @90% of BOQ rates for the quantity shall be made after installation of the items, duly verified by IRCON's Engineer for individual item.
- ii) Payment @10% of BOQ rates for the quantity shall be paid on successful testing and commissioning of the work by contractor for the station including opening of traffic and issue of completion certificate, and submission of all as-built documents as per the Contract.

12.3. **Payment of Composite items involving both supply and installation:**

On certification by IRCON's Engineer, such items shall be paid as under (only on production of documents as per clause 12.1 (i) above)

- i) Payment @ 70% BOQ rates of the item shall be made on delivery, submission of documents mentioned at clause 12.1 (i), and acceptance of material by Engineer.
- ii) Payment @ 30% BOQ rates of the item shall be made on successful installation of the materials/equipment duly certified by IRCON's Engineer.
- iii) For items which could not be installed because of valid reasons, balance payment @ 30% of BOQ rates shall be made on issue of completion certificate for the work.



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13. The Accounting unit for this project shall be Project office of IRCON at Ranchi, Jharkhand.
14. The contractor shall not claim any undue benefit arising due to any calculation/ printing error in the LOA. In case any calculation/printing error is detected in the LOA, the same shall be corrected at the time of Signing the Contract Agreement.
15. Until a formal agreement is executed, acceptance of this LOA by you shall constitute to be a binding of contract.
16. All other terms & conditions shall be as per the Tender Documents accepted by you, which shall form an integral part of this contract and shall be binding on you.
17. Two copies of this LOA are being sent herewith. Kindly acknowledge receipt as a token of unconditional acceptance and return one copy of the LOA, duly signed, and stamped by your authorized representative on each page, to this office within one week of issue of this LOA.

Thanking you,

DA:- Annexure A- BOQ

for and on behalf of
Ircon International Ltd.

(Manish Sharma)
CGM/S&T/Patna.



Accepted

31/08/2024



Bill Of Quantity

S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	Supply				
1	Supply of maintenance portable terminals including associated software (for STM) as per technical specifications complete with all accessories. It should be possible to plug in the maintenance portable terminal at any of the stations to be programmed for any network element from any location of network and read the full status of any element in the network from maintenance portable terminal.	Nos	1.00	1,11,179.89	1,11,179.89
2	Supply of Wago/phoneix screwless 4 conductor disconnecting terminal suitable for copper wire of 0.5 sqmm to 4 sqmm as per spec no. RDSO/SPN/189/2004 ver 1.2. This also includes end stopper, End plate, Carriage Rail, Marker Strip etc. for the fixing of terminals.	Nos.	2000.00	78.42	1,56,830.00
	Location Boxes				
3	Supply of Apparatus Case Half Case as per Drg Nos WS-8842/A with latest alteration along with miniature 'E' type locks with keys (1 key per 5 location boxes and handle) of ward Nos. 412(E type lock & key as per spec. Nos IRS S 30 & RDSO Drg. Nos. SA 3376/M & 3377/M respectively with latest Amendment) on both the doors, duly painted with red oxide. This item also includes i) Supply of Hylam sheet (Bakelite industrial laminated paper based sheet), resin bonded 10 mm thick, grade P3 in standard size of 1.22 x 1.22 mtrs. as per specn. No. IS 2036 of 1974. -as per requirement for termination of cables and for shelf for fixing equipments.	Nos.	39.00	16,912.88	6,59,602.32
	Earthing				
4	Supply and installation of Normal Earth Electrode for earthing of S&T installations with all the associated assembly/materials including GI	Per Earth	39.00	4,980.27	1,94,230.53



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	wire 8 SWG and MS flat as per EC railway practice and IRSEM.				
5	Supply and installation of MAINTENANCE FREE EARTHING AND BONDING SYSTEM (Two Earth Pit) as per specification no: RDSO/SPN/197/2008 or latest RDSO specification consisting of (a) Earth electrodes made of high tensile low carbon steel circular rods, molecular bonded with copper on outer surface as per RDSO spn - 2 no. (b) RDSO approved Earth Enhancing compound (c) (MEEB) Main equipotential earth busbar of Copper of 300x25x6 mm(Min) and (SEEB) Sub equipotential earth busbar of copper 150x25x6 mm(Min) (d) Multistrand single core PVC insulated copper cable as per IS:694 -(i) of size 10 sqmm to connect individual equipment to SEEB using copper lugs with stainless steel nuts and bolts,(ii) of size 16 sqmm to connect SEEB to MEEB using copper lugs with stainless steel nut and bolts (iii) of size 16sqmm to connect Surge protection devices(SPD) to MEEB using copper lugs with stainless steel nut and bolts (iv) of size 35 sqmm (duplicated) to connect MEEB to main earth electrode (e) Copper tape of size 25x2mm to connect the two earth pits, (f) Earth pits x 150 mm to terminate on earth electrode, (g) Construction of earth pit and making of earth as per RDSO specification no. RDSO/SPN/197/2008 or latest RDSO specification.	Set	9.00	39,374.39	3,54,369.51
	Supply of cables protection material				
6	Supply of DWC pipe with one snap fit coupler and 'O' ring conforming to RDSO/SPN/204/2011 Ver. 1.1or latest RDSO specification , Non metallic, corrugated, multiwalled, normal duty, pliable, without protection against chemical attack and Non flame propagating in 6 meter length of size 120 mm outer	Mtr	550.00	268.89	1,47,891.33



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	dia & 102 mm inner dia.(Permitted tolerance in dia = +/- 2 mm).				
7	Supply of SPLIT DWC pipe conforming to RDSO/SPN/204/2011 Ver. 1.1 or latest RDSO specification, Non metallic, corrugated, multiwalled, normal duty, pliable, without protection against chemical attack and Non flame propagating in 2 meter length of size 200 mm outer dia & 175 mm inner dia.(Permitted tolerance in dia = +/-2 mm) (TWO half round pipe constitute one split pipe)	Mtr	2700.00	300.22	8,10,594.00
8	Supply of Galvanized Iron pipe 100 mm dia medium grade with screw end both side and fitted with sockets as per specn. No.IS-1239, part 1 / 1990 or latest in length of approx 6 meters	Mtr	500.00	1,040.89	5,20,442.50
9	Supply of RCC pipes 150mm dia, 2 Mtr long along with collars as per Specn. No. IS/458/1971or latest for use near OHE Substation for cable protection.	Mtr	100.00	150.74	15,074.00
10	Supply and Installation of RFID Electronic marker with capability of saving the user specific data inside the marker memory chip later readable by locator during locating (10 cm diameter with floating coil to keep detection of circuit always horizontal for better detection) which can be buried upto a depth of 5 ft for Signalling & telecom cables as per the technical specification no TEC/GR/TX/TIE-07/02 march 2014 or as per the approval of Engineer incharge Make-3M/Stanley or similar	Nos.	700.00	3,123.45	21,86,411.50
	Signalling & Telecom Cables				
11	Supply of Underground Railway Jelly filled 6 Quad Cable of size 0.9 mm dia for Signalling and Telecom Installations as per Spec. No.IRS:TC-30/2005 (Ver-1) with Amdt.5. including latest amendments.	KM.	38.00	3,19,187.54	1,21,29,126.52
12	Supply of polythene insulated sheathed jelly filled telecom cable 20 pair 0.63 mm with poly-Al	KM.	3.00	1,20,456.84	3,61,370.51



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	moisture burried dia as per IRS:TC 41/97				
13	Supply of polythene insulated sheathed jelly filled telecom cable 10 pair 0.63 mm with poly-Al moisture burried dia as per IRS:TC 41/97	KM.	5.00	86,473.57	4,32,367.85
14	Supply of 24 fibre Armoured Optic fibre Cable as per spec. IRS:TC:55/2006 Rev-1 Amd. 2 or with latest amendment.	Km	36.00	83,742.87	30,14,743.32
15	Supply of loose tube pigtail with FC-PC connector at one end each of minimum 10 mtrs. Length as per TEC Specification No. G/OFJ-01/03 JUN 99(with latest amendment) compatible with STM given above.	Nos	36.00	1,937.19	69,738.84
16	Supply of HDPE duct 40/33 mm permanently lubricated in lengths of 500 mtrs and accessories including end caps for every drum length as per RDSO Spec. no. RDSO/SPN/TC/45/2013.Rev.2.0 Amendment 1.0, including latest amendment. This includes the loading, unloading and transportation at the site of work. This also includes supply of HDPE Duct Accessories like 2(two) END PLUG, 1 (one) Cable sealing plug and 1 (one)Plastic coupler-slip fit push type for every 500m of HDPE supplied.	Mtr	36000.00	87.83	31,61,760.00
17	Supply of HDPE duct 50/42 mm permanently lubricated and accessories including end caps as per TEC Spec No. G/CDS-08/02, NOV-04 including latest amendment. This includes the loading, unloading and transportation at the site of work. This also includes supply of HDPE Duct Accessories like 2(two) END PLUG, 1 (one) Cable sealing plug and 1 (one) Plastic coupler-slip fit push type for every 50 Mts of HDPE supplied.	Mtr	5000.00	108.98	5,44,900.00



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
18	Supply of managed SDH (STM4) ADMs L.4.2 equipped with VC-12 granularity cross connect of 1008X1008, 3 STM-4 Optical interfaces, 3 STM-1 Optical interfaces, minimum 8 ports of 10/100 base T Ethernet interface order wire, power unit, sub-racks installation material and all other accessories, manual etc. fully wired for its ultimate capacity and fully equipped with 63 E1s. To be supplied as per latest TEC specification No. GR/SDH-010/03 Jan 2011 with latest amendments. The SDH equipment shall be TEC(TSEC)/RDSO approved.	Nos.	5.00	3,96,055.66	19,80,278.30
19	Supply installation testing & commissioning including earthing of 42 u 19" covered racks for housing SDH and P- MUX equipments, DDF, FMS, MDF, using krone module etc. Complete with all fittings, wired and equipped with integrated protection modules for all channels and adequate numbers of cooling fans ,AC/DC power supply distribution panels , U Link panels and other hardware like runway , ladders etc. It should be possible to lock all the equipments with only order wire telephone remaining outside the rack .The rack should be of APW President/Rittal make or similar . The components of the rack are specified below. Broad description of rack is detailed below .Rack size 2200(mm) H X 600(mm) W xX 600(mm) D .Fixed side panels 42 U X 600 (mm) D front glass door plain 42 U X 600 (mm) D rear MS door plain 42 U X 600 (mm) D leveling screws - 4 numbers .Fan directly mounted on top 48 V DC 90 CFM - 2 Nos. earth connectivity kit - 1 No. Cable manager with cable loops-2nos.	Nos.	5.00	54,757.05	2,73,785.25
20	Supply and installation of rack mounted 24 fibre Fibre Distribution Management System part no FMS - 1U 24 FS 24 FP Raychem make or similar including 24 Nos 0.2 db SC/PC adaptors and 24 Numbers.	Nos.	4.00	34,669.66	1,38,678.65



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	900 micron 1.5 meter SCPC Pigtails RDSO Specification no. : RDSO/SPN/TC/037-2000(Rev.3) or latest.				
21	Supply, installation, Wiring, testing and commissioning of 2 Mb programmable primary digital drop insert multiplexer with conference facility as per specifications IRS: TC/68/2012 Rev. 0 Amendment 1 or latest RDSO specification. fully wired for 30 channels complete with power supply unit, remote control supervision facility and all other accessories installation materials, manuals etc. It should have facility to accommodate data interface cards in multi drop mode and should be able to support card needed for video conference. Installation, wiring of SDH add/Drop-Multiplexers (main stream) with all accessories and power supply connection, surge and lightning protection arrangement, racks including indoor Krone box. ladder etc. including wiring of all the equipments upto Krone/WBax of outdoor quad/ derivation cables. The installation shall be done as per instructions of engineer. Installation of managed expandable rack and krone type MDF are covered in the scope of the work. The MUX shall be equipped with following interface Cards. a) 4 wire , E & M, VF interface cards (4 Circuits per cards): Qty-4 b) Subscriber loop interface cards (4 Circuits per cards): Qty-1 c) Exchange loop interface cards (4 Circuits per cards): Qty-2 d) G 703, 64 kbps data interface cards (4 Circuits per cards): Qty-1 e) Hot Line interface cards (4 Circuits per cards): Qty-1	Nos.	5.00	1,98,564.57	9,92,822.87



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	Power Supply				
22	Supply of SMPS based battery charger for telecom use of 230 V AC/48 V DC 25 Amps capacity. This shall be consisting of 3 modules of 12.5 Amp each in 2+1 configuration with automatic switching between the modules as per RDSO spec no RDSO/SPN/TL/23/99 (Ver-4) with latest amendment suitable for VRLA Batteries. This includes 10 sq mm copper wire in Red & Black colour for interconnecting charger to battery and equipment. This also includes surge lightening Class B, Class C & Class D protection arrangement along with other features including Annexure 1,2,3,4,5 given in RDSO spec no RDSO/SPN/TL/23/99 (Ver-4) with latest amendment.	Nos	5.00	81,607.29	4,08,036.45
23	Supply of SMF-VRLA Battery set of rating 48V/200 AH precharged complete with intercell connectors consisting of 24 cells of 2V 200AH each as per RDSO SPEC No IRS:S-93/96(A) Amdt 1 or latest if any. This includes supply of all necessary interconnecting cables & connectors.	Set	5.00	87,120.69	4,35,603.45
	Control Communication				
24	Supply of way station control equipment as per spec No IRS:TC:60/2007 with latest amendment with 4 wire Control Telephone as per Spec No IRS:TC:38/97 with Amendment No 1 including latest amendment with necessary mounting arrangement as decided by site engineer.	Nos	7.00	7,249.35	50,745.42
25	Supply of Power Supply unit (2 Amps) with 12V/7AH MF Battery as per RDSO Spec No IRS:72/97.	Nos	7.00	5,008.50	35,059.50
26	Supply and installation of Class 'B' & 'C' class SPD prewired in IP 65 Polystyrene enclosure of Hensel make or better consisting of (i) MCD 50-B 320 OS (Lightning Impulse- Limp- 50 KA) Line to neutral-1 No- Indication mandatory. (i) Supply of MCB 32 AMP. (ii) MCD 125-B / NPE (Lightning	Nos	7.00	16,327.72	1,14,294.04



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	Impulse Current- Limp-125 KA)-neutral to protective earth.- 1 No. (iii) V20-C/1 320V FS (Maximum discharge current - I _{max} -40KA)-Line to neutral- 1 No.- Indication & Potential free contact Mandatory.				
27	Supply and installation of Class 'B' & 'C' class SPD prewired in IP 65 Polystyrene enclosure of Hensel make or better consisting of (i) MCD 50-B 320 OS (Lightning Impulse- Limp- 50 KA) Line to neutral-1 No- Indication mandatory. (i) Supply of MCB 32 AMP. (ii) MCD 125-B / NPE (Lightning Impulse Current- Limp-125 KA)-neutral to protective earth.- 1 No. (iii) V20-C/1 320V FS (Maximum discharge current - I _{max} -40KA)-Line to neutral- 1 No.- Indication & Potential free contact Mandatory.	Nos	7.00	15,467.41	1,08,271.87
28	Supply of Digital TDMA (2 slots) based Fixed/Mobile Radio, synthesized transceiver with display, operating in 136-174 MHz frequency Band, 25 Watt with Fist Mic, Power Cable, 160 channels comprising of Ruggedised body meeting IP 54 standard with Channel Announcement Features. This shall include 0 dB Ground Plane VHF Antenna with UHF female connector, 30 mtr RG-213 RF cable with connectors, 12 V DC Power Supply Unit 10 Amp with battery revert & BNC Male to UHF female Connector. MAKE of VHF sets shall be: Motorola / Kenwood	Nos	5.00	29,518.54	1,47,592.70
29	Supply and Installation of Maintenance free Lead Acid battery (VRLA) of 12 volt DC, 100AH (06 nos cells of 2V each) complete with fittings as RDSO specification no. IRS/93/96	Nos	5.00	8,092.34	40,461.70
30	Supply of Digital TDMA (2 slots) based digital handheld Radio, synthesized transceiver, operating in 136-174 MHz frequency Band, comprising of switchable RF power output upto 5 W with helical Antenna, Ruggedised body meeting IP 54 standard, 16	Nos	31.00	15,100.06	4,68,101.86



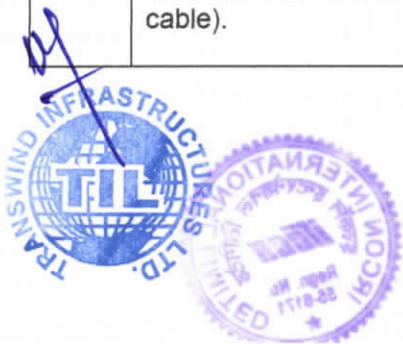
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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	programmable channels, 2150 mAH Li-ion battery with battery charger, Channel Announcement & canned messaging features, backward compatible with conventional VHF radios. Also 1(one) set of additional battery as spare shall be supplied along with the handheld sets. Make of VHF sets shall be MOTOROLA/KENWOOD or similar				
	Ducts and Accessories for OFC				
31	Supply of OFC Joint Enclosure for straight through joint with modification for 24 fibre OFC as per TEC specification no. GR/OJC-02/02 SEP 2003 (with latest amendment) or latest. It includes splicing of optical fibre cables (24 Fibre) and testing.	Nos	36.00	23,634.49	8,50,841.64
32	Supply of Thermoshrink jointing kit for Jely filled Six quad cable conforming to RDSO Spec. IRS:TC-77/2006(Rev 1) with latest amendment.	Nos	38.00	5,165.37	1,96,284.06
33	Supply and fixing of VF Tapping Transformers (1120:470) as per the Spec. IRS TC 22-76 or latest RDSO specification.	Nos	38.00	1,149.88	43,695.44
34	Excavation for Jointing pit and provision of joint chamber of 1.2 mtr dia of 60 cm height with 2 piece cover on top and bottom cover with holes for drainage. This includes water cooling of chamber, backfilling and ramming of trench after laying and consolidated of soil as well as disposal of soil as per plan as advised by site engineer.	Nos	30.00	5,055.58	1,51,667.25
35	Supply and fixing of 20 pair CT Box and fixing on Hylam board on wall and termination of quad/ telecom cable at station/ SP/ SSP/ TSS/ LC gate/ Relay room/ office/ residences as per requirement and details given by engineer at site. The CT box after termination shall be sealed by pouring paraffin wax.	Nos	15.00	5,337.48	80,062.15



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
36	Supply of Switch Board Cable 5 pair for indoor wiring	Km	9.00	15,766.21	1,41,895.89
37	Supply of UPT CAT-6 Cable (4 pair) as per TIA/EIA 568.2-1 Cat-6 specification length of box not less than 1000 feet (305 mtr) make - Finolex/systimax/D-Link/Tyco or similar. Standard IRS condition with latest amendment will be applicable.	Box	4.00	4,489.66	17,958.64
Emergency communication					
38	Supply and installation of 6 pin Emergency Socket as per RDSO Spec. No. IRS:TC:42/87 Amdt No. 3 including latest amendments.	Nos	44.00	384.73	16,928.12
39	Supply of 4/2 wire emergency light weight portable control telephone as per Spec. no. IRS-TC:78-2000 with amendment No. 3 including latest amendments with 6 pin flat plug to specn no. IRS-TC-42/87.	Nos	38.00	2,135.37	81,144.06
40	Supply of 50 pair Krone terminal complete with mounting arrangement.	Nos	8.00	1,941.03	15,528.24
GPS Clock					
41	Supply of digital clock with GPS Synchronisation in stand alone mode suitable for offices as per RDSO Specification NO. RDSO/SPN/TC/62/2008 Rev. 3 Amenment -1 (It is inclusive of GPS receiver and connecting RF cable).	No.	8.00	9,691.72	77,533.76
42	Supply of Double Side GPS digital clock suitable for platform with GPS Synchronisation in stand alone mode as per RDSO Specification NO. RDSO/SPN/TC/62/2008 Rev. 3 Amendment -1 or latest (It is inclusive of GPS receiver and connecting RF cable).	No.	8.00	42,830.64	3,42,645.12
43	Supply of Single Side GPS digital clock suitable for platform with GPS Synchronisation in stand alone mode as per RDSO Specification NO. RDSO/SPN/TC/62/2008 Rev. 3 Amenment -1 (It is inclusive of GPS receiver and connecting RF cable).	No.	8.00	9,691.72	77,533.76



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
Execution of Telecom Works					
44	Drawing & Design work of the telecom installations	LS	1.00	18,408.11	18,408.11
45	Location survey of cable route plan (Quad/OFC cable) and preparation of tentative and final cable route plan, termination plan, jointing schedule, taping chart etc as per approved format to be submitted for approval of Railway/Employer. Contractor will submit two copies of prints with soft copy to checking by Railway/Employer. If alterations are suggested by Railways/Employer, then again two copies of prints will be provided for advance approval after carrying out all the alterations as suggested/proposed by Railways/Employer. Tracing will be provided to approval by Railway/Employer. All drawings will be prepared in AutoCAD. It also includes preparation and submission of final cable route plan on 75 microne standard polyester film which includes details of entire station in which quad/OFC cables are laid indicating clearly the exact position of the cables, joints and other critical items with reference to fixed structures, etc. It will be as per RDSO code of practice for installation and commissioning of OFC & 6 quad cable system. Once Railway/Employer has approved and signed tracings for cable route plan then contractor will submit 06(Six) sets of hard bound copies on white bond paper of maximum A-3 size(well documented and bound with plastic covers) for cable route plan in proper binding form along with 2 CDs/Pendrive in autocad of latest version.	Km	30.00	2,142.40	64,271.85
Location Boxes					
46	Excavation, casting, concreting, curing and plastering (above ground level) of Apparatus case foundation as per practice of ECR & erection with contractors own				



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	Metal Sheet frame, cement, anchor bolts with nuts & washers and other materials. The items also include additional earth work if required as per instruction of Rly. Engineer at site for :-				
a	Half Location Box as per ECR Drg	Nos.	38.00	9,134.04	3,47,093.65
	Note: The above item includes supply and installation of petty material for fixing, clamping & mounting arrangement, fabrication and fixing of Hylam sheet in location box, by providing all fixtures as per railway drawing including fixing of PVC coated string rods at the back side for cable support with contractor's own material, cutout for fixing of Emergrncy socket, fixing of VF transformer, ARA/Wago terminals and wiring of all equipments. The work shall be done as per as per instructions of Engineer Incharge.				
	Cable Laying				
47	Digging of cable pit (minimum inside size of 2m x 2m x 1m) and construction of brick wall in the pit, width of the wall shall not be less than 200mm as per instructions given by engineer in charge. It includes supply and filling of sand before and after coiling of cables, covering top of the cable pit by stones and brick masonry work for sides and thereafter plastering.	Nos.	5.00	18,449.35	92,246.73
48	Excavation of trench as per cable route plan, 1.2 mtr deep, 300mm wide at the bottom along main line in normal soil, This work includes covering of cable laid in trenches by loose soil for a layer of 50 mm thickness approximately before covering by shahabad stone/bricks, clearing of route, bushes etc and refilling of the trench by excavated soil and ramming after laying of the required quantity of cables as per instructions of Engineer at site. If it is not possible to reach the required depth at any location, then the contractor shall obtain prior approval of Engineer-in-	Km	22.00	1,01,895.12	22,41,692.71



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	charge before commencement of cable laying process and only then shall the proportionate payment be made to the contractor.				
49	Excavation of cable trench of 1 m. depth & 300 mm. wide across the track crossing, road crossing, level crossing, platform & refilling after laying DWC pipe with collars .This does not include provision of Tiles etc in case of Platform.. The work shall be done as per existant practice of East Central Railway & Instruction of Engineer.	mtr	1000.00	118.54	1,18,540.00
50	Execution of trenchless horizontal boring work (Boring Size upto 110 mm) under Railway Track/Road/Culvert at depth of 1.4 mtr to 3 Mtr from Formation Level (Level of earth below Ballast) and minimum 3 mtr below the river bed, as per direction of engineer in charge excluding the cost of HDPE Pipe. This includes laying of 2 Nos. HDPE pipe (1 no. 50mm & 1 No. 40mm) and all required accessories and pulling of cable through duct.	Mtr	5000.00	951.69	47,58,450.00
a	The cost shall include horizontal boring through any intermediate obstructions, either natural or manmade or any boudary etc.				
b	The rate is inclusive of all the materials, equipments and labour required for doing trenchless horizontal boring under the Railway track except HDPE Pipe, Nothing extra shall be admissible on any amount then the rate quoted above.				
c	The pipes are to be laid under Railway Track/ Road/Culvert. All necessary arrangement are to be providing and all precautions are to be taken, so that bore coming out at other end is not deviated from the horizontal level line by more than 250mm in horizontal or vertical direction				



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
d	The rate shall be inclusive of detection and protection of underground utilities encountered during boring.				
e	The payment for boring shall be made only when HDPE pipes are laid in the bore.				
51	Preparation of cable Duct 150mm wideX300mm deep for laying of cable in rocky area and refilling the duct(after cable laying) with concrete mixture of proportion 1:3:6 and grouting the ends at either side of the rocky portion using concrete mixture with contractor's own materials and excavated earth to its original condition.	Mtr	5000.00	704.78	35,23,916.67
52	Cutting of all types of Road/platforms/Concrete preparatory to trenching and excavation to depth of 1m & 300m wide approx, and refilling after laying of DWC pipe & restore them to original condition. The work shall be done as per extant practice of ECR & instruction of Engineer.	Mtr	1000.00	681.52	6,81,520.00
53	Laying & Installation of 100 mm B Class perforated GI pipe for Cable Protection at culverts/Bridges/Station including cutting, suitably concreting at both ends, GI clamps, flats etc. All material to be supplied by Contractor.The work shall be done as per instruction of Engineer.	Mtr	500.00	48.38	24,187.50
54	Laying of Signalling/Power/Telecom Cables of various cores in trench and meggering of main and tail cables. This includes loading/unloading & transportation of cables to site. Whenever several cables are to be laid separation of cables should be as advised by site engineer. This also includes unwinding of cable drum using proper jigs without causing damage to cable.	km	40.00	5,424.17	2,16,966.80
55	Transportation & Laying of DWC/RCC pipes along with collars in trenches at required locations as	mtr	565.00	39.57	22,354.23



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	per the instruction of engineer at site.				
56	Placing of half round (Split DWC) pipe over the laid cable in open trenches in yards between Home signal to Home signal and tying pipe with cable with loose armouring	km	7.50	3,518.83	26,391.23
57	Laying HDPE duct in already made trenches and through DWC/GI/RCC pipes wherever necessary	km	38.00	9,754.73	3,70,679.74
58	Cutting the masonry wall to the depth of 0.25m to 0.75m at the entry of room placing of flexible HDPE Pipe or GI Pipe (including supply) of suitable size as per instructions of site in charge and repairing of masonry wall and cement plastering after the cable is taken inside the flexible HDPE pipe/GI Pipe with clamps as per drawing no. RE/S&T/ALD/SK/161/81.	Nos	12.00	996.34	11,956.08
59	Masonry chase cutting 3/2" x 3/2" at the work site, transport of 5/10/20/50 pair indoor, PVC switch board cable from the stores to the work site and drawl of same in HDPE/ flexible HDPE pipe of suitable dia placed on the chase and covering/replastering the chase with cement after drawl of cable. HDPE/flexible HDPE pipe of suitable dia to be supplied by the contractor.	Mtrs	500.00	354.91	1,77,455.00
60	Filling earth around location Boxes/Signal posts	per cum	80.00	122.42	9,793.60
61	Blowing/drawing of OFC cable in the HDPE pipe duct and in protective works already provided. This includes transportation, loading/unloading of OFC from the stores to the work site with care, sealing of the duct by sealing/caps plugs. This also includes testing of cable drums in the store premises before transportation and submissions of results thereof. The cable drums with unused cable at site to be returned by the contractor from site to stores depot.	Km	36.00	12,739.13	4,58,608.68



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
62	Transportation, installation of optical fibre joint enclosure and splicing of Optical fibre cable (24 fibres) and testing, Optical fibre cable splicing shall be done in the presence of IRCON's representative. Only joint closure shall be issued by IRCON. All other tools/ test equipments required shall be arranged by the contractor. This also includes excavation of earth for construction of masonry pit of bricks (inside complete plastered), the inner size of pit 1.2m x 1.2m (depth 0.75 m) in all types of soils for keeping cable coils at the location of OFC joints, filling the pit with sand after jointing of cables, ramming and covering with RCC slab as per instructions of site incharge of IRCON.	Nos	36.00	18,533.79	6,67,216.26
63	Supply and placing of warning tape Orange colour of 100 mm wide printed in black as "CAUTION RLY OFC CABLE" at every 1 meter interval (minimum) and to be laid in the trench in station area and as directed by the site engineer.	Km	36.00	13,780.14	4,96,085.04
64	Installation of DTMF/way side Telephone in all stations, SP, SSP, and TSS. This includes supply and fixing of DP, PVC Channel, Telephone bracket and laying/termination of switch board cable.(This included supply of all materials of execution of work such as PVC casing & capping, fixing materials for 10/20 pair indoor PVC cable/6 Quad cable, wiring & masonry works except control room HQ equipment which will be procured through item in supply schedule)	Nos	2.00	1,703.80	3,407.60
65	Installation, wiring, testing and commissioning of wayside equipments and power supply unit on rack at station including termination of cables at SM room etc. (This included supply of all materials of execution of work such as PVC casing & capping, fixing materials for 10/20 pair	Nos	5.00	4,139.82	20,699.10



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	indoor PVC cable/6 quad cable, wiring & masnory works except control room HQ equipment which will be procured through item in supply schedule)				
66	Installation, wiring, testing and commissioning of battery and battery chargers. This also includes grouting on the floor.	Nos	4.00	1,916.99	7,667.96
67	Installation, wiring, testing & commissioning of VHF System including supply and fixing of Antenna Tower (6m long 100mm Dia B class GI pipe as per specn no, IS 1239 Pt. 1/2004 with sockets and fittings along with support & clamps) on top of roof of station building	stn	4.00	11,349.14	45,396.56
68	Loading, unloading and transportation of additional/balance Signal and telecom materials after completion of work or during execution of work, to and from Railway/Ircon other stores depot to and from the site of work. Note: This does not include transportation of material from nominated depot to site and back or from site to site, which is to be done by contractor free of cost.	Per 100 Ton Km	120.00	529.38	63,525.00
	GPS Based Clock				
69	Installation, wiring, testing & commissioning of digital clock with GPS synchronization	No.	24.00	5,838.89	1,40,133.36
	Supply and installation of public addressing system at stations.				
70	Supply & installation of amplifier tza 250 watts model no. ssa.250 ahuja make or similar along with control panel.	Nos	4.00	18,126.55	72,506.20
71	Supply & installation of microphone model no shm-1000 xlr with 40 m cable & stand of ahuja make or similar.	Nos	4.00	6,096.87	24,387.48
72	Supply & installation of loud speaker (horn) 30 watts model no. uhc-30 x 7 with driver unit of ahuja make or similar along with ms clamp .	Nos	20.00	4,198.01	83,960.20
73	Supply and drawing of pvc insulated screened, tinned copper conductor 2 core, 1.5 sq mm cable.	Mtr	1000.00	55.52	55,520.00



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
74	Supply of pvc cable channel of different sizes				
a)	15 mm x 15 mm	Mtr	500.00	47.22	23,610.00
b)	25 mm x 25 mm	Mtr	500.00	113.66	56,830.00
75	Supply of 1 kva ups (apc make model br1000g, in with 1kva battery and 6 hr. backup) make-apc or similar	Nos	5.00	12,108.39	60,541.95
76	Supply and installation of one wooden frame cabinet with rack for keeping amplifier and battery covered with melamine board of 18mm glass door with locking facility and size 4' x 3'x1.5'.	Nos	5.00	8,724.76	43,623.80
	TESTING EQUIPMENT & TOOLS				
77	Supply of Digital Multi meter fluke make model 289 or Philips or similar	Nos	8.00	29,216.95	2,33,735.60
78	Supply of Digital Insulation Tester, Voltage-Multi range (100/250/500/1000VDC), Insulation Resistance: 10KOhms to 999MOhms of reputed make	Nos	1.00	5,533.90	5,533.90
79	Supply of Digital Earth Tester of reputed make	Nos	2.00	5,416.95	10,833.90
80	Supply of Digital Cable Fault Locator for signalling and telecommunication cable of dia 0.5, 0.6, 0.9 and 1.5mm consisting of TDR, LIFD, Insulation Resistance, foreign potential and distance of fault in meters, working on rechargeable batteries supplied with charger, two test leads and one manual. Make Stanley or Similar	Nos	2.00	90,677.97	1,81,355.94
81	Supply of Krone tool	Nos	4.00	243.98	975.92
82	Supply of Mini-Optical Time Domain Reflectometer (Type-II) as per latest TEC specification no. G/OTD/02-02 April 2005 (with latest amendment).	Nos	2.00	2,12,365.25	4,24,730.50
83	Supply of Optical Power meter (wave length, 1310 nm & 1550 nm user selectable, measuring range +3dbm to -60dbm, as per technical spec. no. GR/OPM 01/03. Jan 5	Nos	4.00	19,479.66	77,918.64



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S.No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
84	Supply of Optical Fiber Fusion Splicer IFS-10 with all standard accessories Battery Pack (LBI-20) lpcs, Battery Charger (JS-126300-X) lpcs, Power Cable (ACO-25) lpcs, Spare Electrodes (E-27) lpcs, Carrying case (NBX-35) lpcs, Cooling tray (CG-22) lpcs, Cigarette lighter Cable (CJ-11) lpcs, High Precision Cleaver (VF-78) lpcs, Fiber Optic Stripper 3 in 1	Nos	1.00	5,32,442.37	5,32,442.37
85	Supply of integrated Electronics Cable route tracer/locator with high power transmitter for effecting long distance locating 04 active frequencies (512 Khz, 33 Khz, 133 Khz) depth range upto .9mtr passive power frequency, current and resistance measurement in both transmitter and receiver. Super induction mode, with capability of electronics marker locating (both passive and RFID) and sheath fault locating in a single equipment, weight lesss than 2.5Kgs for transmitter as well as receiver. Signal current measurement in cable as per technical specification No. TEC/GR/TX/TIE-07/02, March 2014 or as per the approval of Engineer-in-charge. Make-3M/Stanley or similar	Nos.	2.00	5,00,340.43	10,00,680.85
86	TEC approved E-1 tester/BER tester/ 2 MB level Digital Transmission Analyzer.	No.	4.00	258141.07	10,32,564.28
87	Fiber Optic Tool Kit	No.	4.00	12481.25	49,925.00
88	Transmission Measuring Set	No.	4.00	197883.93	7,91,535.72
89	Wrapping Wire Gun	PAIR	7.00	12567.86	87,975.02
90	Unwrapping Wire Gun	No.	7.00	359.82	2,518.74
Total Amount without GST (in Rs.)					5,16,20,452.28
GST @18% (in Rs.)					92,91,681.00
Grand Total (Inclusive of GST in Rs.)					6,09,12,133.28
Offered rate @11.11% below (in Rs.)					5,41,44,795.27
(Total Amount – Rupees Five Crore Forty One Lakh Forty Four Thousand Seven Hundred and Ninety Five and Twenty Seven Paise only)					



31/08/2024

Signature Not Verified

Digitally signed by PRASHANT KUMAR
Date: 2025.01.09 10:42:27 IST
Location: eProcurement System for
Central PSUs