



इरकॉन इंटरनेशनल लिमिटेड
(भारत सरकार का उपक्रम)
IRCON INTERNATIONAL LIMITED
(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, फैक्स : 0612-2506888
Sone Bhawan (First Floor), Daroga Prasad Rai Path, Patna - 800 001, Phone : 0612-2506446, Fax : 0612-2506888

LETTER OF ACCEPTANCE

No: IRCON/SNT/2067/E9022/

Date: 11/04/2023

M/s Baba Projects Pvt. Ltd.
Qrt. No.2K/74,
Bariatu Housing Colony,
Bariatu Road,
Ranchi-834009, Jharkhand

Kind Attn: Mr. Ram Lakhan

Sub: Supply, design, installation, testing & commissioning of balance Electronic Interlocking based signaling system at Tilaiya, Warisaliganj and Nawada station of East central Railway.

Ref: 1. Tender No. IRCON/SNT/2067/E9022 Dated: 31.01.2023
2. Your Technical bid opened on 21.02.2023
3. Your Financial bid opened on 27.03.2023
4. This office letter no. IRCON/SNT/2067/E9022 dated 28.03.2023
5. Your negotiated offer letter no:06 dated 01.04.2023

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 ₹ **24,43,66,387.00** (₹ Twenty Four Crore Forty Three Lakh Sixty Six Thousand Three Hundred Eighty Seven only) including all taxes and duties.
2. Scope of work: 'Supply, design, installation, testing & commissioning of balance Electronic Interlocking based signaling system at Tilaiya, Warisaliganj and Nawada station of East central Railway'. For detailed scope of work refer clause 2.0 of **Special Conditions of Contract**.
3. Bill of Quantities (BOQ), indicating the quantities and rates of the items is enclosed as **Annexure - A. Rates shall be res tricted for future reference as LAR.**
4. **As per Clause 9.0** of Special Conditions of Contract, the entire work shall be completed in 18 (Eighteen months) from the date of issue of LOA.

Sanjay Kumar
05-8171

पंजिकृत कार्यालय : सी-4, डिस्ट्रीक्ट सेंटर, साकेत, नई दिल्ली . 110017, भारत

Registered Office : C-4 District Centre, Saket, New Delhi - 110017 (INDIA)

Tel.: +91-11-29565666 Fax : +91-11-26854000 ; E-mail : info@ircon.org ; Web. : www.ircon.org

CIN : L45203DL1976GO1008171



5. **As per Clause 14.0** of Special Condition of Contract, Performance Security in the form of Performance Bank Guarantee from any Scheduled Bank for an amount equal to 3%(Three percent) i.e., ₹ 73,30,992.00 (₹ Seventy Three Lakh Thirty Thousand Nine Hundred Ninety Two) shall be submitted in favour of IRCON INTERNATIONAL LIMITED within 21 days from issue of Letter of Acceptance (LOA), but before signing of Contract Agreement. The PBG shall be initially valid up to the stipulated date of completion plus 60 days.

6. You are required to submit two non-judicial Stamp Paper of ₹1000.00 each and attend the office of Chief General Manager/Electrical/IRCON, 1st Floor, Sone Bhawan, Patna-800001, for Signing of Contract Agreement and Integrity Pact within 28 Days from the date of issue of LOA.

7. **Terms of Payment (As per Para 20.0 of SCC)**

7.1 **Payment for Supply Items**

- i) 80% payment at the accepted rate for the quantity inspected, passed and supplied shall be made on submission of following documents:
 - a) On receipt of materials at contractor's store duly accepted by Engineer.
 - b) Original Inspection certificate issued by Inspecting Officer.
 - c) 100% Tax Invoice in duplicate.
 - d) 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.
 - e) Warrantee Certificate.
- ii) Balance 10% payment at the accepted rate for the quantity shall be paid after installation and testing duly verified by IRCON's Engineer.
- iii) Balance 10% payment at the accepted rate shall be paid on successful completion of the Work and issue of Completion Certificate.

7.2 **Payment for Installation**

- i) 90% payment at the accepted rate for the quantity shall be made after completion of installation & testing duly verified by IRCON's Engineer for individual item.
- ii) Balance 10% payment at the accepted rate for the quantity shall be paid on successful completion of the work & issue of Completion Certificate.



7.3 Payment for Vehicle/services to IRCON

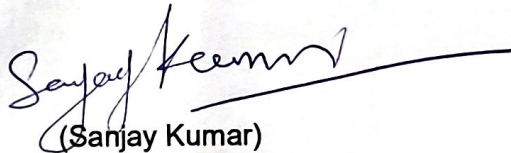
100% payment at the accepted rate for the quantity shall be made after satisfactory performance of service duly verified by IRCON's Engineer.

8. 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.
9. 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.
10. Until a formal agreement is executed, acceptance of this LOA by you shall constitute to be a binding of contract.
11. 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 and every 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.


(Sanjay Kumar)

Chief General Manager/Elect.



Bill of Quantity					
Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
1	Supply of Electronic Interlocking System (hot standby configuration) confirming to RDSO's specification No. RDSO/SPN/192/2019 Ver.2.0 and directive issued by Railway Board and RDSO as applicable at the date of supply for Tilaiya station. The detailed scope of work shall be as per technical specifications.	Nos.	1	3,75,79,893	3,75,79,893
	Notes				
	(a) Block working shall be integral Part of EI, No UFSBI/Block Panel/Block instrument for TIA-NWD section shall be provided. (b) Contractor has to supply the complete EI material for the commissioning of Electronic Interlocking. System shall be fit for working in RE Area. No Extra payment shall be paid to contractor for any additional items/Cards/Modules of EI.				
1.1	Installation, wiring, testing & commissioning of complete indoor EI system and other associated equipment at Tilaiya station as per technical specifications.	Stn.	1	7,05,456	7,05,456
2	Design, FAT, SAT and submission of as planned and as built Interface Drawing, Application Logic & Equivalent Circuits	Nos.	6	20,42,119	1,22,52,714



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	showing correction in red and green for the stations as mentioned in technical specifications.				
	Note- Block working shall be integral Part of EI Design, No UFSBI/Block Panel/Block instrument for NWD-WRS section shall be provided.				
2.1	Installation, wiring, testing & commissioning of complete indoor Kyosan make EI system and other associated equipment as per technical specifications.				
(a)	Warisaliganj Phase-1 (Distributed EI Having one central cabin and two end goomties)	Stn.	1	7,05,456	7,05,456
(b)	Warisaliganj Phase-2 (Distributed EI Having one central cabin and two end goomties)	Stn.	1	5,64,365	5,64,365
(c)	Warisaliganj- Phase3 (Distributed EI Having one central cabin and two end goomties)	Stn.	1	5,64,365	5,64,365
(d)	Nawada- Phase-1	Stn.	1	7,05,456	7,05,456
(e)	Nawada- Phase-2	Stn.	1	5,64,365	5,64,365
(f)	Nawada- Phase-3	Stn.	1	5,64,365	5,64,365
3	Preparation & Submission of 'as planned' and 'as made' of all outdoor drawings for outdoor signalling work. It should be done as per extent practice of EC Railway. The documents shall be supplied as per technical specification of tender document.	Per Station	7	1,44,264	10,09,848



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
4	Supply of Following Cards of Kyosan make EI.				
(a)	CPU card, F486-4I	Nos.	8	5,49,869	43,98,952
(b)	Power card, IPU6C	Nos.	8	74,777	5,98,216
(c)	E-P5 Sub rack with mother board	Nos.	2	8,58,464	17,16,928
(d)	IF card, Line2B	Nos.	8	2,56,742	20,53,936
(e)	I/O card, ET-PIO2	Nos.	8	5,81,694	46,53,552
(f)	SM480 relay	Nos.	8	31,119	2,48,952
(g)	DC -DC converter	Nos.	8	66,909	5,35,272
5	One week Factory Training of EI system. This also includes supply of Hard and soft copies of course materials.	Man	10	24,653	2,46,530
6	Supply of portable workstation to run along with EI configuration tools, data inputs, simulation and functional testing, diagnostic, troubleshooting & commissioning of EI System as per Technical Specification of the tender document. NOTE: Workstation should be capable of reconfiguring the system in case of any alterations in the yard or interlocking in future. Hardware configuration to be approved by IRCON before supply.	Nos.	1	1,35,960	1,35,960
6.1	Supply of Auto cad software license suitable for e-das for three years validity	Nos.	1	2,67,900	2,67,900
6.2	Supply of Adobe DC Pro license for three years validity	Nos.	1	48,708	48,708



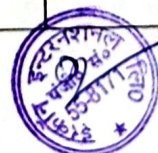
Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
6.3	Supply of MS office 365 business premium license for three years validity.	Nos.	1	57,060	57,060
7	Supply of powder coated Main Cable Termination Rack complete with scaffolding, fixtures & accessories including square bars for mounting wago terminals, ladder, string rods, frame, base assembly, insulators, J bolt, nut/bolts & fasteners, bakelite sheet, etc. The height of Rack shall be 1850 mm and width should be 915 mm. it should be fabricated with 75X75X6 mm Angle as per extent practice of EC Railway.	Nos.	4	51,165	2,04,660
8	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	87	1,74,000
9	Supply of Universal Earth Leakage Detector 12 Channel AC/DC as per RDSO/SPN/256/2002 or latest amendment.	Nos.	2	1,18,080	2,36,160
9.1	Installation of Universal Earth Leakage Detector 12 Channel AC/DC as per RDSO/SPN/256/2002 or latest amendment.	Nos.	2	50,606	1,01,212
10	Testing of point-to-point insulation / continuity test for all laid out cables, Measuring Parameters and preparing the records	Per Station	1	56,906	56,906



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
11	Patching of new CT Rack with existing CT Rack. This includes patching of cable cores from existing CT Rack from Relay Room to CT Rack of new Relay Room which includes Termination of cable cores on terminals at cable termination rack. This includes all associated works of pulling out the cable from underground, peeling off insulation, dressing of cable core supported on sting rod with contractor's own material. The work shall be done as per instructions of engineer at site.	Nos.	1000	11.00	11,000
12	Supply of Microprocessor based data logger with 512 Digital & 32 Analog Inputs as per RDSO specification No. IRS:S 99/2006 (amdt.3) with latest amendments and shall be suitable to work with electronic interlocking system. It includes all interfacing equipment like protocol converter unit etc. It also includes design, supply and installation of all software required as standard practice of ECR and as per RDSO specification no. IRS:S 99/2006 or latest. Digital input to be taken from EI through protocol converter and in addition one digital input card to be provided for digital input of important interface relays. This also includes supply of E1 MODEM for networking of Data logger, power supply of adequate capacity,	Nos.	1	4,41,252	4,41,252



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	battery and fault diagnostic software for failure analysis. Complete Data Logger & Processor Module shall be placed in President/Rittel rack of suitable size to be supplied. This also includes supply of one no. of Computer, Computer Table (Godrej make), UPS (APC make), Printer and one no. Operator Chair (Godrej make) as per Technical Specification It is also includes-Supply of Door Proximity switches along with 2-way rigid connector for wire termination between proximity switches and Data logger Tag blocks as per specification.				
12.1	Supply of Dual card E1 converter.	Nos.	10	35,411	3,54,110
12.2	Supply of 48 V DC/ 230 V AC E1 extender at stations along with suitable connector	Pair	4	22,430	89,720
12.3	Installation, wiring, testing and commissioning of Data Logger with 512 Digital & 32 Analog Inputs as per spec. IRS: S-99/2006 with Amendment-2 or latest. This also includes but not limited to the following: 1. Supply and loading of diagnostic software for failure analysis. 2. Interface wiring between Relay Rack to Data logger for all the digital & Analog inputs as per standard Railway practice. 3. Relay Room Door locking checking arrangement, commercial power supply monitoring	Nos.	6	26,523	1,59,138



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	arrangement & DG Sets, 4. Interlinking & Networking of Data logger. 5. Modification in Software & Hardware if required and networking with other Data Loggers along with fault logic design at Control Centre. 6. Training as per Railway Practice. 7. Software programming of Data logger to enable Preventive maintenance of all S&T assets, 8. Failure analysis, GUI of Yard Layout, extract of report in common language, accident analysis as per RDSO Guideline. 9. All installation & wiring material including supply of Relay Room Door locking checking arrangement shall be supplied by contractor & shall be procured from RDSO approved sources, wherever applicable.				
12.4	Modification in wiring of Data logger in connection with the commissioning of Alteration in EI/phase working	Nos.	8	44,643	3,57,142.86
13	Supply of SMPS based Integrated power supply system including supply of 110 v DC /200 AH valve regulated (sealed) lead acid stationary battery for S&T installations as per IRS: S-93 /96A (Amd.1) & with SMPS charger as per RDSO spec no. RDSO/SPN/165/2012.	Set	3	11,43,054	34,29,162



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
13.1	Supply of Inverter, QUINT INVERTER, DIN rail mounting, input- 24 V DC, output: 1AC/600 VA, Pure sine wave, having input voltage 24 V DC, input voltage range 20V DC-30 VDC with maximum current consumption of 28 A, and output voltage 120V AC $\pm$ 2 % (100 V AC/6 A....130V AC/4,6 A)/ 230VAC $\pm$ 2% (200 V AC/3 A--240 V/2,5 A), manual selection of AC output voltage, make - Phoenix contact or similar.	Nos.	8	97,500	7,80,000.00
13.2	Installation, Wiring, Testing & commissioning of SMPS based Integrated Power Supply system conforming to Specn. No. RDSO/SPN/165/2012 (Ver. 3.0) or latest and to suit pre- commissioning Check List issued by RDSO. This includes installation & commissioning of 55 Nos. Battery for S&T installations as per IRS: S-88/2004 along with installation of Remote Indication Panel in SM/ASM's room. Any masonry work, if required, will be carried out by contractor's own material. The contractor will fix exhaust fan in IPS room & Battery Room including hole on wall (if not available), wire mesh and flap cover to protect the room against dust. All wiring will be done by using flexible multi strand copper wires of suitable size as recommended by RDSO. This includes extending various power supplies (by connecting power cables	Nos.	8	2,32,228	18,57,824



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	etc) up to bus bars in relay room and up to battery room. IPS should be connected to Ring earth of EI. This also includes supply of all types of wires / distribution Board required for interconnection from IPS to Relay rack, CT Rack etc. as per RDSO/ECR guidelines Note: - IPS will be installed, wired, tested and commissioned by OEM's engineer as per RDSO guidelines. Pre commissioning checklist of RDSO for IPS will be prepared by OEM's engineer and signed jointly with Site engineer. Before commissioning of IPS, OEM will submit Site installation Certificate that IPS has been provided by approved vendor of RDSO				
14	Supply of High Availability Single Section Digital Axle Counter (HASSDAC) System (CEL make) with DUAL track sensor devices (relays, surge protection devices, clamping & mounting arrangement, cables & other accessories) conforming to RDSO spec no. RDSO/SPN/177/2012 (ver.3) or latest guideline by RDSO letter no. TE/E/AC/Digital/Genl. dated 27.07.2011 Dual redundant should be done as per Dual track sensor inputs fed to different channels of HASSDAC as per latest guideline issued by RDSO for the same.	Pair	8	9,70,383	77,63,064



Tender No. IRCON/SNT/2067/E9022 date: 31.01.2023

Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
14.1	Installation of High Availability Single Section Digital Axle Counter (HASSDAC) System	Pair	19	1,28,727	24,45,813
14.2	Supply of Block Proving with Digital Axle Counter using UFSBI & Block Panel as per RDSO Specification No. IRS:S-105/2012 (Ver.0) with latest amendment for Double Line operation	Set	2	13,39,825	26,79,650
14.3	Supply of UFSBI (2 nos. as per RDSO/SPN/147/2005 or latest RDSO specification), SM's Panel for single line (2 nos. as per RDSO/S/32019 or latest RDSO specification), block telephone & Relay Rack with due locking & sealing arrangement completely wired fully with all relays required for Block working with Axle Counter & suitable for RE area as per RDSO Specn. No. RDSO/SPN/188/2004 or latest RDSO specification.	Set	4	8,51,448	34,05,792
14.4	Installation, wiring & testing of axle counter-based block panel for one complete block section	Set	13	61,512	7,99,656
14.5	Replacement of single line UFSBI with Double line UFSBI. It includes Installation, wiring, testing and commissioning of UFSBI (Universal Fail-Safe Block Interface). This item also includes installation, wiring, testing and commissioning of suitable Media change Over System with Modem for UFSBI.	Set	4	81,973	3,27,892
15	Supply of VF transformer (1120/470) as per IRS Spec. No. TC-22-1976 or latest with suitable fixtures and wiring. Supply of all	No.	12	593	7,116



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	the fixtures and wiring materials will be done by contractor				
15.1	Installation of VF transformer (1120/470) as per IRS Spec. No. TC-22-1976 or latest with suitable fixtures and wiring. Supply of all the fixtures and wiring materials will be done by contractor	No.	12	254	3,048
16	Supply of FRP CLS Unit (without lenses and lamps) as per spec. no. RDSO/SPN/194/2006 Ver 2.0 or latest. This includes: (a) Signal post 140 mm dia 4.6 / 3.6 mtrs. Long to IRS-S-6-81. =1 no. (b) Signal Base C I 140 mm dia. to drg. No. S-2011.= 1 no. (c) CLS ladder complete with platform and Signal front staging as per Drg,Base 4.5 / 3.5 mtrs. Long to drg.No.SA-23153 (Adv.) Alt 1.= 1no. (d) FRP CLS unit complete to drg. No SA – 23003 A/M to C/M (Adv.), without Lamps, transformer, Lamp holder & lenses =1no. (e) 4 nos. of Anchor bolt complete with nut washer etc. as per Drg.no 116 A/H (f) Supply of Universal lock with key (hand cuff) & signal number plate.				
16.1	2 Aspect	Nos.	5	41,397	2,06,985
16.2	3 Aspect	Nos.	2	49,108	98,216
16.3	4 Aspect	Nos.	2	49,108	98,216
17	Supply of FRP Route Indicator 3 way (without lenses and lamps) as per RDSO Spec. no.	Nos.	3	41,123	1,23,369



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	RDSO/SPN/194/2006 Ver 2.0 with latest amendments.				
18	Supply of FRP Route Indicator 2 way (without lenses and lamps) as per RDSO Spec. no. RDSO/SPN/194/2006 Ver 2.0 with latest amendments.	Nos.	1	35,982	35,982
19	Supply of FRP Route Indicator 1 way (without lenses and lamps) as per RDSO Spec. no. RDSO/SPN/194/2006 Ver 2.0 with latest amendments.	Nos.	1	30,843	30,843
20	Supply of FRP Calling on signal (without lenses and lamps) as per RDSO Spec. no. RDSO/SPN/194/2006 Ver 2.0 with latest amendments.	Nos.	4	4,078	16,312
21	Supply of FRP Shunt signal Dependent type complete along with offset bracket (without lenses and lamps) as per RDSO Spec. no. RDSO/SPN/194/2006 Ver 2.0 or latest.	Nos.	24	7,868	1,88,832
22	Supply of FRP Shunt signal independent type complete as per RDSO Spec. no. RDSO/SPN/194/2006 Ver 2.0 or latest with steel post & CI base along with anchor bolts as per RDSO drawing (without lenses and lamps). This includes supply of Hand cuff Locks & signal number plate.	Nos.	7	13,130	91,910
23	Supply of LED Signal Lighting Unit (Red) for Main Signals as per RDSO Specification No. RDSO/SPN/199/2010 (Rev 1.0) dated 11.04.14.	Nos.	9	11,088	99,792



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
24	Supply of LED Signal Lighting Unit (Yellow) for Main Signals as per RDSO Specification No. RDSO/SPN/199/2010 (Rev 1.0) dated 11.04.14.	Nos.	16	11,088	1,77,408
25	Supply of LED Signal Lighting Unit (Green) for Main Signals as per RDSO Specification No. RDSO/SPN/199/2010 (Rev 1.0) dated 11.04.14.	Nos.	15	11,088	1,66,320
26	Supply of LED Signal Lighting Unit for Route Indicator as per RDSO Specification No. RDSO/SPN/153/2011 (Rev 4.1).	Nos.	53	7,223	3,82,819
27	Supply of LED Signal Lighting Unit for Calling on Signals as per RDSO Specification No. RDSO/SPN/153/2011 (Rev 4.1)	Nos.	4	7,223	28,892
28	Supply of LED Signal Lighting Unit for Shunt Signals as per RDSO Specification No. RDSO/SPN/153/2011 (Rev 4.1).	Nos.	45	7,223	3,25,035
28.1	a) Excavation of pit, fixing of foundation scaffolding, casting & plastering of concrete foundation, removal of scaffolding, water curing and earth filling for Colour Light Main Signal and Casting of cement concrete foundation for signal ladder as per ECR practice. This includes: Supply of cement, sand, stone chip & mixing in the ratio 1:3:6. b) Erection of Multi aspect colour light signals . This includes: Erection of surface base, signal post, signal unit, junction type	Signal	32	16,375	5,24,000



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	route indicator, and shunt signal on OFF set bracket, calling on signal, ladder with guard & platform, fixing of P/C/G marker, supply & fixing of Heat enamelled signal number plate & blanking-off signals as per the requirement. Making of holes in CLS post, supply of other minor material like clamps, nuts & bolts, wiring material etc. Fixing of signal lamps/LED's with accessories on 2/3/4 aspect signal unit, shunt, route, calling on unit as per the requirement. Termination of the tail cable in the signal units, wiring of signal and testing, focusing of signal etc.				
28.2	a) Excavation of pit, fixing of foundation scaffolding, casting & plastering of concrete foundation, removal of scaffolding, water curing and earth filling for Independent Shunt Signal as per ECR practice. This includes Supply of cement, sand, stone chip & mixing in the ratio 1:3:6. b) Erection & wiring of shunt signal . This includes Erection of surface base, shunt signal post, shunt signal unit. Supply & fixing of Heat enamelled signal number plate, fixing of lenses, signal/LED lamp, supply and fixing of antitheft protection etc., where ever required. Termination of the tail cable, supply of wire & wiring of signal unit. Focusing and testing of shunt signal.	Signal	29	5,060	1,46,740



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
28.3	Supply of Goods Warning Board/Caution Board/Stop Board/Block Section Limit Board (BSLB)/Shunting Limit Board/Calling on Board/Change of Signalling territory board etc as per ECR practice. All the above said boards will be supplied, in sizes and dimensions as mentioned in Signal Engineering Manual & GR with luminous strips yellow as well as black. This includes burying of post at least 1.2 mtrs and concreting of size 0.5 mtr x 0.5 mtr x 0.5 mtr with cement concrete in the ratio 1:3:6. All material will be supplied by the contractor.	Nos.	12	13,544	1,62,528
28.4	Installation of Goods Warning Board/Caution Board/Stop Board/Block Section Limit Board (BSLB)/Shunting Limit Board/Calling on Board/Change of Signalling territory board etc. as per ECR practice.	Nos.	12	5,804	69,648
28.5	Supply of 'P', 'C', 'A', 'G', 'AG' etc. marker conforming to RDSO Drg. no. SA 23476 ADV as per standard practice (as per ECR drg.) with contractor's complete material including fixing of clamps. The work shall be done as per instructions of Rly engineer at site. Wooden white cross-arms (1000x100 mm) to be provided by the contractor till the signals are commissioned with contractor's own material.	Nos.	11	540	5,940



Tender No. IRCON/SNT/2067/E9022 date: 31.01.2023

Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
28.6	Fixing of 'P', 'C', 'A', 'G', 'AG' etc. marker as per standard ECR Practice.	Nos.	11	231	2,541
	Point Machine				
29	Supply of Electrical point operating machine - IRS Type, 143 mm throw (AC immunity 160 V AC), non-trailable to operate on 110 V DC with lock & detector slides, Cable terminal box confirming to IRS:S-24/2002 or latest RDSO specification & for Motor IRS: S37/82, Assy Drg RDSO-S:10800 & S:10910 with complete Ground connection for 143 mm throw IRS type machine with latest amendments.	Nos.	35	85,833	30,04,155
29.1	Installation, Wiring, Testing & Commissioning of Point Machines including wiring of point JB, fixing of GI Pipe, Ground Connections and other work related to functioning of Point Machine. The work shall be done as per existing practice of ECR & the instruction of Engineer.	Nos.	35	17,573	6,15,055
29.2	Supply of Key Lock Relay with different ward combinations (one extra set of ward plates for Point Machine to be supplied with each relay) as per Railway Practice.	Nos.	10	6,243	62,430
29.3	Supply of KLCR Box. It includes supply of any minor bracket, nut, bolt etc. as per the directions of site Engineer. It also includes supply of push buttons along with LEDs for KLCR circuit.	Nos.	5	880	4,400



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
29.4	Fixing of KLCR Box and wiring of KLCR Relays. .it also includes wiring of push buttons along with LEDs for KLCR circuit.	Nos.	48	377	18,096
	DC Track circuit				
30	Supply of 110V/2-6V DC, 10A track feed battery chargers for charging of lead acid cells of 80AH used in track circuit as per RDSO spec no. S-89/2013 Ver. 1.0 or latest.	Nos.	20	4,161	83,220
30.1	Supply of Adjustable Track feed Resistance disc type 30 ohm as per RDSO Drg. no. SA-20166 /M (adv.) with latest amendments (with Phenolic moulded base).	Nos.	20	770	15,400
30.2	Supply of Low Maintenance Lead Acid Stationary Secondary Cells 2V, 80AH for S&T Installations as per RDSO spec no. IRS: S-88/2004 or latest with micro porous vent plugs cum sealed floats, with inter cell connectors, nuts, bolts and washers for signalling purpose.	Nos.	60	3,259	1,95,540
30.3	Supply of B type choke to spec. Nos. IRS.S.65/83 with latest amendments.	Nos.	198	5,599	11,08,602
30.4	Installation, Bonding of track circuits on track, track connections, jumpering, charging of batteries, testing & commissioning of DC track circuits including supply of Fibre glass track lead Junction boxes, etc.	Nos.	198	14,458	28,62,684
	Location Boxes				



Tender No. IRCON/SNT/2067/E9022 date: 31.01.2023

Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
31	Supply of Apparatus Case full Case with latest alteration along with miniature 'E' type locks with keys (1 key per 5 location boxes and handle) of ward Nos. 42 (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, as per requirement for termination of cables and for shelf for fixing equipment.	Nos.	50	21,054	10,52,700
31.1	Supply of Apparatus case (full) made of FRP as per RDSO specification no. RDSO/SPN/151/1997 & RDSO/SPN/194/2006 or latest with all necessary fittings, locks etc.	Nos.	10	28,000	2,80,000
31.2	Excavation of pit, casting of concrete foundations for Full Case , erection of location box, supply of universal lock with key, Lamp holder 2 pin with switch, wiring material, fixing of hylam sheet, wiring, testing and commissioning.	Nos.	50	10,883	5,44,150
32	Supply of Apparatus Case Half Case 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	Nos.	30	16,984	5,09,520



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	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, as per requirement for termination of cables and for shelf for fixing equipment.				
32.1	Excavation of pit, casting of concrete foundations for Half Case , erection of location box, supply of universal lock with key, Lamp holder 2 pin with switch, wiring material, fixing of hylam sheet, wiring, testing and commissioning.	Nos.	81	6,321	5,12,001
33	Supply of HRC Fuses 2A / 4A / 6A (RDSO Spec. No. IRS: S-78/92) with Fuse Block (RDSO Spec. No. IRS:S-75/2006 (Rev.2) and drg. no. SA- 23748 (Alt.4)). 1. 2A- 50 2. 4A- 50 3. 6A- 50	Nos.	150	214	32,100
33.1	Supply of M6 type ARA terminals Block made of PBT as per IRS Drg. No. SA 23741/A Alteration 4 or latest & spec. No. IRS:S-75/2006 (Rev 2) (latest) with latest amendments with disconnecting links.	Nos.	1000	274	2,74,000
	Earthing				
34	Supply of Normal Earth Electrode for earthing of S&T installations with all the associated assembly/materials as per EC railway practice conforming to drawing no. TCA 565 as mentioned in	Per Earth	145	2,271	3,29,295



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	the technical specifications. This includes supply of MS flat as per standard practice of EC Railway.				
34.1	Installation of Normal Earth Electrode for earthing of S&T installations with all the associated assembly/materials as per EC railway practice conforming to drawing no. TCA 565 as mentioned in the technical specifications.	Per Earth	145	973	1,41,085
35	Supply 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 bus bar of Copper of 300x25x6 mm(Min) and (SEEB) Sub equipotential earth bus-bar of copper 150x25x6 mm(Min) (d) Multi-strand 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	Set	34	34,601	11,76,434



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	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)				
35.1	Installation of Maintenance free earthing including construction of earth pit and making of earth as per RDSO specification no. RDSO/SPN/197/2008 or latest RDSO specification.	Set	34	14,829	5,04,186
	LC Gate				
36	Supply of electrically operated lifting barrier set as per spec. no. RDSO/SPN/208/2012 ver. 2.0 or latest each consisting of 2 nos. of lifting barrier pedestals, each with min.6 contact circuit controller with top roller type limit switches, hand crank, 2 electric motors, 110vac of capacity suitable to operate barriers up to 32' long booms, 2 nos. of steel octagonal booms of 32' length with 2 nos. stop boards, boom light boxes, ms counter weights and 2 nos. of boom support with suitable boom locking but without fringes along with control panel with buttons and indicating lamps, motor connectors and mcb to operate 2 barriers of 1 set. This includes supply of gate hooter - 1 no. and horn 8 watt) 1 no. with all fixing	Nos	6	5,00,318	30,01,908



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	arrangement. all of the above items including supply of cement, civil work materials etc. shall be done by the contractor for commissioning				
36.1	Installation, Wiring, Testing & commissioning of Electrically Operated Lifting Barrier. The installation will include fixing and wiring of all material as mentioned under LC Gate Supply and as per extant practice of ECR, control Panel, power supply connection & complete outdoor work including bell warning system and supply of foundation material and wiring material. This includes excavation and casting of foundations of pedestal and boom rest post and masonry work required. This also includes protection arrangement to avoid damage of pedestal and boom locking arrangement during road vehicle accidents by burying sufficient no. of rail posts and concreting up to a depth of 0.2 meters with cement concrete ratio in 1:3:6.	Nos.	6	85,215	5,11,290
36.2	Supply of sliding boom gate as per E. rly signal workshop/hwhs dwg workshop no. BSA/29/730. BSA/29/731 & BSA/29/737. This includes supply of 8 nos. 'e' type lock with key as per 60 irs spec. irs:s-30/64 with latest amendment. key lock e type as per drawing no. sa-3376/m with latest	Set	6	1,45,037	8,70,222



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	amendment, key for e type lock as per drawing no. 3377/m with latest amendment. this includes levelling fixing of sliding boom with fixing of e type lock etc				
36.3	Casting, Concreting & Curing of foundation (1:3:6) for sliding gate as per dwg. No. SGW-SDAH / SLIDING GATE FOUNDATION /2012 including supply & fixing of holding down bolts with washers and nuts, ms plates of size 350 mm x 350 mm x 8 mm, cement etc, 10 foundations required in each set of gates.	Set	6	46,572	2,79,432
36.4	Installation & Commissioning of sliding boom gate as per E. Rly signal workshop/HWHs dwg workshop no. BSA/29/730. BSA/29/731 & BSA/29/737. This includes supply of 8 nos. 'e' type lock with key as per 60 irs spec. irs:s-30/64 with latest amendment. key lock e-type as per drawing no. sa-3376/m with latest amendment, key for e type lock as per drawing no. 3377/m with latest amendment. this includes levelling fixing of sliding boom with fixing of e-type lock etc.	Set	6	36,259	2,17,554
36.5	Complete indoor work of installation, wiring and commissioning for LC gate. This also includes wiring of relay base plate to other base plate to IDF to tag block, wiring of circuits as per approved diagram, jumpering and soldering after testing. Wiring of IPS,	Per LC Gate	3	2,44,229	7,32,687



Tender No. IRCON/SNT/2067/E9022 date: 31.01.2023

Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	data logger and all other units required for complete testing and commissioning. This includes supply of all related consumable materials like wiring material, rosin core, lacing thread, PVC bunching tape and buttons eyelets of sizes, Resistances, condensers, diodes, LEDs etc. as per the requirement of wiring diagram. This includes installation and testing of data logger/RTU, IPS and other required indoor equipment.				
36.6	Supply of Remote Terminal Units (RTUs) in 64 digital and 16 analog inputs.	Nos.	3	2,39,048	7,17,144
36.7	Supply of LED (10 mm) & Domino type table mounting Gate control-cum-indication Panel of required size as per site Engineer and as per Signalling Plan including supply of wooden Table (Hard wood) of standing height for mounting of panel.	Set	3	14,590	43,770
36.8	Installation and commissioning of LED (10 mm) & Domino type table mounting Gate control-cum-indication Panel of required size as per site Engineer and as per Signalling Plan including supply of wooden Table (Hard wood) of standing height for mounting of panel.	Nos.	3	3,647	10,941
37	Design and drawing for complete indoor signalling work for Midsection Interlocked LC Gate	Per LC Gate	3	72,665	2,17,995

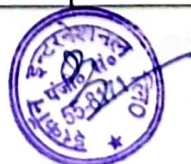


Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
37.1	Design and development of outdoor drawings for outdoor signalling work for LC gate.	Per LC Gate	3	40,153	1,20,459
37.2	Painting, letter writing, numbering of termination particulars, over all indoor and outdoor gears at LC gate	Per LC Gate	3	12,782	38,346
	Cable laying				
38	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	1000	1,156	11,56,000
39	Installation of 100 mm B Class perforated GI pipe for Cable Protection at culverts/Bridges 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	1000	54	54,000
40	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	150	6,024	9,03,600
41	Supply of DWC pipe with one snap fit coupler and 'O' ring conforming to RDSO/SPN/204/2011 Ver.	Mtr	2000	268	5,36,000



Tender No. IRCON/SNT/2067/E9022 date: 31.01.2023

Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	1.1or latest RDSO specification, non-metallic, corrugated, multi-walled, normal duty, pliable, without protection against chemical attack and Non flame propagating in 6-meter length of size 120 mm outer dia & 102 mm inner dia. (Permitted tolerance in dia = +/- 2 mm).				
42	Transportation & Laying of DWC/RCC pipes along with collars in trenches at required locations as per the instruction of engineer at site.	Mtr	2000	44	88,000
43	Supply of SPLIT DWC pipe conforming to RDSO/SPN/204/2011 Ver. 1.1 or latest RDSO specification, non-metallic, corrugated, multi walled, 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	2000	333	6,66,000
44	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.	Mtr	2000	3.9	7,800.0
45	Supply and fixing of RCC cable route marker engraving of Signal/Telecom cable one side and Zonal Rly on other side as per ECR Railway Practice and painting on both sides of marker with numbering with black paint.	No	200	1,160	2,32,000



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	The markers should be fixed for a maximum of 30 mtrs to locate the Signaling/Telecom cable path and the marker should be visible about one foot above the ground for the clear visibility, the remaining portion of marker should be buried in the ground. Wherever track crossing is available, RCC markers are to be provided on both sides of the track for easy identification. All required materials (Supply, painting, transportation to site and fixing) are to be arranged by the Contractor.				
46	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.	7	11,619	81,333
47	Excavation of trenches at the depth of 1.0 Mtr. deep and 300 mm wide at the bottom of the trench including clearing of roots, bushes, or other obstruction etc. for all types of soils including Murrum, soft rock, hard soil mixed with boulders etc. as per cable route plan. This also includes complete back filling the trench after laying required quantity of cable protection pipes/bricks,	Km	5	73,041	3,65,205



Tender No. IRCON/SNT/2067/E9022 date: 31.01.2023

Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	route marker etc. ramming and consolidation of soil as well as disposal of extra soil.				
48	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 existing practice of East Central Railway & Instruction of Engineer.	Km	2.0	75,032	1,50,064
49	All work pertaining to Horizontal Directional Drilling (HDD)/Boring using machine and trenchless cabling. It includes supply, transportation and insertion of self-lubricated HDPE Pipe (inner dia 110 mm and outer dia 125 mm) and laying of cables in boring under the track/road by using HDPE pipes. The depth of horizontal boring should be min. 1m from rail flange/road level.	Mtr	10000	1,788	1,78,80,000
50	Laying HDPE duct in already made trenches and through DWC/GI/RCC pipes wherever necessary	km	5	10,833	54,165
51	Supply of RCC pipes 150mm dia, 2 Mtr long along with collars as per Specn. No. IS/458/1971 or latest for use near OHE Substation for cable protection.	Mtr	500	167	83,500



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
52	Supply of RFID Electronics Marker with capability of saving the user specific data inside the marker memory chip later readable by locator during locating (10cm diameter with floating coil to keep detection of circuits always horizontal for better detection) which can be buried up to a depth of 5' for signalling & telecom cable as per technical specification No. TEC/GR/TX/TIE) 07/02 March 2014.	Nos.	200	2,376	4,75,200
	Relays				
53	Supply of Relay AC immune miniature plug in neutral line tractive armature 24 V DC, Contacts front & back contacts metal to carbon complete with plug board retaining clip & connectors confirming to BRS -931 A and as per RDSO Specn. No. IRS-S-34, IRS-S-23 IRS-S-60/78 or latest RDSO Specification - QNA1 (Contact configuration 8F/8B)	Nos	95	4,031	3,82,945
53.1	Supply of Electronic Flasher Relay, 60 flashes per minute as per RDSO spn no: RDSO/SPN /173/2002 or latest RDSO specification	Nos.	20	3,083	61,660
53.2	Supply of Track Relay QBAT, 9 ohms ACI.to BRS;938 A,939A, 966 7(Appendix F2) & RDSO/SPN/84 ver 2.0 or latest.	Nos.	30	6,867	2,06,010



Tender No. IRCON/SNT/2067/E9022 date: 31.01.2023

Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
53.3	Supply of RELAY PLUG-IN TYPE, Style- QECX , AC LAMP PROVING RELAY (Metal-to-Carbon Contact), slow release, 4F-4B contact, suitable for working in series with 110V AC LED SIGNAL LAMP for ON/OFF /Route /Shunt / Calling ON aspect complete with plug board, retaining clip and connectors. Confirming to BRS: 941A, IRS: S34&S23 & STS/E/RELAYS/AC LIT LED SIGNAL/09-2002.	Nos.	15	5,373	80,595
53.4	Supply of QSPA1 relay ,24 v DC ,8F/4B along with plug in board, retaining clip and connectors confirming to BRS:931A, IRS: S34 & IRS:S23	Nos.	105	5,514	5,78,970
53.5	Supply of QN1 relay ,50 V DC ,8F/8B along with plug in board, retaining clip and connectors confirming to BRS:931A, IRS: S34 & IRS:S23	Nos.	10	4,559	45,590
53.6	Supply of QBCA1 relay ,24 v DC ,2HF/2B along with plug in board, retaining clip and connectors confirming to BRS:931A,IRS:S34 & IRS:S23	Nos.	32	5,514	1,76,448
M	Fire Alarm system				
54	Supply of Automatic fire detection and alarm system (AFDAS) for signalling installations at station as per RDSO spec no. RDSO/SPN/21702016 version no.1 or latest as per technical specifications	Job	1	7,95,643	7,95,643
54.1	Installation, Testing and commissioning of automatic fire detection and alarm system (AFDAS) for signalling installations.	Job	1	2,68,218	2,68,218



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
55	Supply of polythene insulated sheathed jelly filled telecom cable 20 pair 0.63 mm with poly-Al moisture buried dia as per IRS:TC 41/97	KM.	1	1,33,771	1,33,771
56	Supply of 24 fibre Armoured Optic fibre Cable as per spec. IRS:TC:55/2006 Rev-1 Amd. 2 or with latest amendment.	Km	12	85,894	10,30,728
57	Supply of underground jelly filled 6 Quad cable of size 0.9 mm Dia for signalling and telecom installations as per RDSO specification no. IRS: TC-30/2005 (ver-1) with amendment no.5 or latest	Km	40	3,26,936	1,30,77,440
58	Supply of PVC insulated armoured unscreened underground Railway signalling cable 12 Core x 1.5 Sq mm (Copper conductor) as per RDSO specification no. IRS: S-63/2014 (Rev-4) or latest.	Km	100	2,19,669	2,19,66,900
59	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	12	12,555	1,50,660



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
60	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).	Nos.	20	2,151	43,020
61	Supply of 19" 32 U Telecom Covered racks. President/Ritttel or similar make with glass front door complete with all fittings and accessories for housing SDH equipment, primary Mux, DDF, MDF, using krone module and other equipment like-runway ladders etc. completely wired and equipped for all channels as per technical specifications and other stipulations of tender document. It should be possible to lock all the equipment with only order wire telephone remaining outside the rack	No.	4	51,044	2,04,176
62	Supply of HDPE duct 40/33 mm permanently lubricated in lengths of 1000 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.	Km	12	71,009	8,52,108



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
63	Supply of rack mounted 24 fibre Fibre Distribution Management System part no FMS - 1U 24 FS 24 FP Raychem make including 24 Nos 0.2 db SC/PC adaptors and 24 Numbers. 900-micron 1.5-meter SCPC Pigtaills RDSO Specification no.: RDSO/SPN/TC/037-2000(Rev.3) or latest.	Nos.	4	20,755	83,020
64	Installation of rack mounted 24 fibre Distribution Management System part no FMS - 1U 24 FS 24 FP Raychem make including 24 Nos 0.2 db SC/PC adaptors and 24 Numbers. 900-micron 1.5-meter SCPC Pigtaills RDSO Specification no.: RDSO/SPN/TC/037-2000(Rev.3) or latest.	Nos.	4	8,895	35,580
65	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.	8	13,982	1,11,856
66	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 equipment required shall be arranged by the contractor. This also includes excavation of earth	Nos.	8	23,359	1,86,872



Tender No. IRCON/SNT/2067/E9022 date: 31.01.2023

Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	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 in charge of IRCON.				
67	Supply of Thermo Shrink Jointing Kit for Jointing Underground 6 Quad Cable (derivation joint) as per spec. no. IRS: TC 77/2012(Rev.3.0) with latest amendment.	Nos.	25	5,736	1,43,400
68	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.	8	5,614	44,912
69	Execution of jointing on Quad cable/PIJF cable using thermo shrink jointing kit. This also includes excavation of cable joint pit of 1.2 mx 1.2mx 1 m in all types of soil for jointing of cable.	Nos.	25	1,393	34,825
70	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/	Nos.	10	4,865	48,650



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	residences as per requirement and details given by engineer at site. The CT box after termination shall be sealed by pouring paraffin wax.				
71	Shifting of S&T Location boxes/Battery Boxes (Horizontal Re-Location) by excavating the earth around the location boxes without damaging the cables to the required depth and slewing the boxes along with foundation block by JCB/Hydra to get required clearance without interfacing the movements in trains and also without disturbing the train operation system and closing the pit after getting required clearance from central line of the track with all contractors materials, labour, tools, plant with all lead and lift etc. and as per directed by the engineer in charge at site.	No.	20	17,780	3,55,600
72	Cleaning, scraping. Painting & lettering of all newly installed and existing gears by the contractor. Including supply of all materials for the work by contractor.	Nos.	3	44,778	1,34,334
73	Filling earth around location Boxes/Signal posts	Per cum	100	106	10,600
74	Exposing of cables as per site requirement	Mtr	1500	73.7	1,10,550
75	Deployment of wiremen for cable rectification/ wiring etc.	Man month	18	20,370	3,66,660



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
76	Provision of one auto cad operator having experience of Railway signalling drawings with computer/laptop	per month	18	29,111	5,23,997
	CCTV				
77	Supply and configuration of Network Video recorder (NVR) 16 channel, Make- Adiva / Hikvision/Dahua	Nos.	11	16,696	1,83,656
(a)	Supply of 2 MP IP POE bullet cameras. Make- Adiva / Hikvision/Dahua	Nos.	33	4,554	1,50,282
(b)	Supply of 32" LED Display. Make- LG/Samsung/Sony/Sansui	Nos.	11	24,286	2,67,146
(c)	Supply & Wiring of Power Cable (multicore 2+1)1Sq mm	mtr	500	89	44,500
(d)	4 Port POE switch. Make- Hikvision/D-link/CP-Plus	Nos.	11	4,732	52,052
(e)	4 Pair UTP (CAT-6) Cable (per box length 305 m)	Box	5	10,446	52,230
(f)	Supply and installation of Hard Disc Drive (HDD) for Surveillance system -2 TB. Make - Seagate/WD	Nos.	11	6,518	71,698
(g)	Supply of 2 U rack	Nos.	11	2,589	28,479
(h)	Supply of HDMI Cable (10 Mtrs)	Nos.	11	1,161	12,771
(i)	Installation of Camera including whole system	Nos.	33	1,071	35,343
(j)	Supply & fixing of 1.5-inch Flexible Pipe	mtr	50	89	4,450



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
(k)	Supply and fixing of 1 inch PVC Conduit Pipe (Length - 10feet)	Nos.	100	137	13,700
(l)	Supply of RJ-45 Connector	Box	1	759	759
(m)	Supply of 5 Amp. Power Plug socket with base	Nos.	11	369	4,059
(n)	Supply of Bluetooth Mouse (Interface:2.4GHz Wireless)	Nos.	11	714	7,854
78	Provision of two dedicated SUV Vehicle for movement of IRCON S&T Engineers on project site. Registration of vehicle shall not be earlier than Jan 2021. All cost such as fuel, maintenance, Driver's salary, Insurance (except toll) etc. shall be borne by the contractor. Vehicle must be available 24x7 along with driver. Per month limit of vehicle for Running of Vehicle is 3000Kms.For extra km, ₹18 per km will be paid extra. (One Innova + one Scorpio/Bolero).Note-Driver accommodation (one at Patna and one at site) shall be arranged by contractor.	Per monthPer vehicle	36	68,333	24,59,988
	NI arrangements				
79	Provision of temporary Goomtis for NI working, made up of water proof tent with provision of table, chairs, and two incandescent lamps (Electrical connection for lamps to be arranged separately) and establishing communication on magneto phone and spare conductors. Provision	Goomty days	50	3,791	1,89,550



Item No.	Description of Item	Unit	Qty	Rate without GST (Rs.)	Amount (Without GST) (Rs.)
	of Public Address system complete with Microphones, speaker etc. in the cabin/station/yard during non-Interlock working on hire basis.				
80	Provision of vehicles for NI/PNI/Commissioning	Vehicle/ day	50	5,084	2,54,200
81	Fooding arrangement during Pre-NI/NI	Per Plate	500	190.00	95,000
82	Preparation & Submission of CRS Documents such as TSAA, PCSTE Checklist, CRS application.	Per station per CRS sanction	7	1,00,000.00	7,00,000
	Total excluding GST				18,85,38,018.00
	Negotiated offered rate@ 9.84% above				1,85,52,141.00
	Total Accepted Rate excluding GST				20,70,90,159.00
	Total Accepted rate including GST (@18%)				24,43,66,387.00
In words: ₹ Twenty Four Crore Forty Three Lakh Sixty Six Thousand Three Hundred Eighty Seven only					



Signature Not Verified

Digitally signed by AVNISH MISHRA
Date: 2023.04.13 18:04:15 IST
Location: eProcurement System for Central PSUs