



इरकॉन इंटरनेशनल लिमिटेड

(भारत सरकार का उपक्रम)

छत्तीसगढ़ रेल परियोजना

IRCON INTERNATIONAL LIMITED

(A Govt. of India Undertaking)

An Integrated Engineering and Construction Company

CHHATTISGARH RAIL PROJECT



No. IRCON/2059C/CGRP.EC.EXECU/S&T/PKG-VII/ 15104

Date: 16.11.2023

M/s SS Rail Works Pvt. Ltd.
H.No. 8-3-833/272/272/1,
Kamlapuri Colony Phase-2,
YellareddyGuda, Hyderabad - 500073
PH No: 040 – 2375 2378/2375 2379
Email Id: ssrailworks@gmail.com

(Letter of Acceptance)

Sub: "Design, Supply, Installation, Testing & Commissioning of Electronic Interlocking based Signaling System & Telecommunication system at New Crossing Station, Garepelma Station and modification of Gharghoda station as junction i.e., for spur line section of CERL Project Chhattisgarh – Package-VII" - **Letter of Acceptance**

Ref: i) NIT No: IRCON/2059C/CGRP.EC.EXECU/S&T/SPUR/01 dated 29.05.2023
ii) Technical Bid Opened on 20.06.2023 and financial bid opened on 22.07.2023
iii) M/s SS Rail revised offer Letter No.: SSRWPL/IRCON/Tender/2023-24/376A dated: 16.09.2023

With reference to the above, this is to inform you that your revised offer for the subject work has been accepted by Competent Authority for and on behalf of IRCON International Limited at a total cost of **Rs.17,34,04,449/- (Rupees Seventeen Crores Thirty-Four Lakhs Four Thousand four hundred Forty-Nine only) including GST**. The summary of BOQ accepted by the Competent Authority is enclosed herewith as **Annexure-A**.

The important terms and conditions of the above tender is mentioned in brief below, however the clauses as mentioned in the tender document shall be final and binding.

1.0 Performance Security:

1.1 In term of SCC clause no. 16.0, you are requested to submit performance security within 21 (twenty-one) days from the date of issue of letter of acceptance (LOA) in the form of irrevocable bank guarantee on the Performa annexed as **Annexure-B** for an amount of Rs. 86,70,222/- (Eighty-Six Lakhs Seventy Thousand Two Hundred Twenty-Two Rupees only) @ 5% (Five percent) of the contract value from any scheduled bank having validity initially up to 60 days beyond the stipulated date of completion i.e., 14.11.2024 (15.09.2024 + 60 days).

2.0 Completion Period and Programme Submission:

2.1 In term of SCC clause no. 11, completion period of the work is **10 (Ten) months** from the date of issue of letter of acceptance including monsoon period i.e., **up to 15.09.2024**. The work has to be executed in co-ordination with other agencies working on or near the project.

2.2 In term of SCC Clause no. 11, you are requested to submit within 7 (seven) days of issue of letter of acceptance and before the work is commenced; **a detailed programme for each major element of the work, using the modern networking techniques for project monitoring, for approval of the Engineer**. The construction programme will show the general methods, arrangements, order and timing for all significant activities in the works **identifying the critical path** for the work clearly, along with monthly cash flow. The programme shall clearly provide for and indicate the time required for the preliminaries before starting the work and shall indicate the dates of commencement and completion of the various sections of the work.

प्रथम तल, नार्थ एवेन्यू, तखतपुर रोड, उसलापुर
बिलासपुर (छ.ग.) 495001
1st Floor, North Avenue, Takhatpur Road
Uslapur, Bilaspur- 495001 Ph : 07752-443719

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CIN-L45203DL1976GOI008171

3.0 Accepted Rates and Price Variation:

- 3.1 The quoted rates shall be deemed to include all the cost towards the scope of work of contractor as detailed in the tender documents including cost of all materials, labour, plant and machinery, supervision, overhead, profit, insurances including transit insurance, replacement/ correction of defective works, incidentals etc. and all the taxes and duties etc complete. Nothing extra over the accepted rates will be payable unless noted expressly otherwise in the tender documents. However, the contract price adjustment/price variation shall be dealt as per clause No.10 of SCC.

4.0 Variation in Quantity:

- 4.1 In terms of SCC Clause no. 45, variation in quantities shall be dealt as per Clause 58 and 59 of general condition of contract.

5.0 Maintenance period & Defect Liability Period:

- 5.1 The Contractor shall maintain, rectify and make good at his own cost any defect/deficiencies, which may develop in the work or as notified by the Engineer during Defect Liability Period for 12 months from the date of completion of the work. Defect liability and Maintenance period shall be dealt as per clause No 12 & 33 of SCC.

6.0 Insurance:

- 6.1 In terms of SCC clause no. 13.0, before commencement of works, you are requested to obtain insurance cover as per the details provided in the clause.

7.0 Contract Agreement:

- 7.1 In terms of SCC clause no. 18.0, you have to attend the office of CGM/S&T (PH), IRCON Project Office, Bilaspur, Chhattisgarh for signing of contract agreement within 28 days of the issue of LOA. Format of contract agreement is enclosed as Annexure-C. The stamp papers of the requisite value as per the prevailing laws shall be provided by the contractor at his own cost. Original agreement shall be retained by the Employer/ Engineer and a certified copy shall be made available to the contractor.

8.0 Security Deposit/ Retention Money/EMD:

- 8.1 Retention money will be recovered from on account/final bills as per clause no. 16 of Special Condition of contract and 8.2 of GCC.

9.0 Inspection Vehicles and site office:

- 9.1 The special requirements as per the special contract conditions clause No. 08 shall be provided.

- 10.0 You are advised to mobilize the resources to commence the work immediately. Please contact the project office, address-IRCON INTERNATIONAL LIMITED, 1st Floor, North Avenue, Takhatpur Road, Uslapur, Bilaspur, Chhattisgarh-495001 or the undersigned for further instructions.

- 11.0 Conditions mentioned above in this LOA are a brief reference of the terms of tender document. Detailed terms & conditions shall be as per NIT, Tender document & corrigendum, which shall be an integral part of this contract and shall be binding on you.

- 12.0 Priority of document shall be as per clause No. 1.0 of SCC.

- 13.0 As per clause No 07 of integrity pact (enclosed as Annexure VI to ITT), the legal jurisdiction for this contract shall be New Delhi.

- 14.0 This letter of acceptance, along with your submitted offer, shall constitute a binding contract between **M/s SS Rail Works Pvt Ltd** and **Ircon international limited**, till a formal agreement is drawn and executed.



15.0 This letter being issued in duplicate. You are requested to return one copy of this letter of acceptance duly accepted, signed & stamped on each page by your authorized representative.

16.0 You are requested to commence the work immediately. The entire work shall be completed within a period of 10 months including monsoon period from the date of issue of this LOA i.e., 08.09.2024.

17.0 You will be fully responsible for all manpower and machines deployed by you. IRCON will not be responsible for any violation (or) mishap on any ground. Further you will strictly comply with all relevant laws (viz. PF, ESI etc.,) by laws, labour licence, IR shramik kalyan rules, regulations etc., as applicable as per laws of land.

18.0 The payments are subject to deduction of necessary tax as applicable by laws and shall be made through NEFT/RTGS.

19.0 You will strictly comply & pay GST on or before due date for availing input tax credit by IRCON.

Enclosures:

1. Annexure-A: BOQ
2. Annexure-B: PBG format
3. Annexure-C: Format of contract Agreement

Yours faithfully,

For & on behalf of
IRCON International Ltd.


(Shyam Sunder) 16.11.2023.
CGM/S&T (PH)

Copy for information and necessary action please:

- CEO/CERL, CFO/CERL, GM/Fin, AGM/P&C.

BOQ

Scope of Work: Design, Supply, Installation, Testing & Commissioning of Electronic Interlocking based Signaling System & Telecommunication System at New Crossing Station, Gare Pelma Station & modification of Gharghoda station as junction i.e., for SPUR Line section of CERL Project, Chhattisgarh

Note:

- (1) The Materials which are to be inspected by RDSO should be supplied from RDSO Listed Firms/Suppliers (RDSO approved vendors and RDSO vendors for Developmental Order). If RDSO Listed Firms/Suppliers are not available then from any other reputed manufacturer/firm as approved by IRCON/Railways/Client.
- (2) All critical items as per RDSO guidelines will continue to be inspected by RDSO as per instruction contained in Board's letter No. 74/RS(G)/379/2Pt.dated;4/3/91 and 18/6/91
- (3) The materials, which are procured from RDSO Listed Firms/Suppliers (RDSO approved vendors and RDSO vendors for Developmental Order) with RDSO specification and if the cost of the material is over Rs. 5 Lakh, the inspection shall be carried out by RDSO.
- (4) Inspection in respect of order below Rs.5 lakh may be got done by RITES, subject to supplies being from sources listed by RDSO.
- (5) Items which are not inspected by RDSO/RITES shall be inspected by Consignee.
- (6) Current RDSO/TEC specifications are mentioned here. However, while procuring only the LATEST RDSO/TEC SPECIFICATION will

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
EI Related Supply					
1	Supply of portable workstation to run alongwith 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	2	75213.00	1,50,426
2	Supply of powder coated Main Cable Termination Rack complete with scaffolding,fixtures & accessories including square bars for mounting terminals, ladder,string rods, frame, base assembly, insulators, J bolt, nut/bolts & fasteners, bakelite sheet, etc..	Nos.	3	35899.00	1,07,697
3	Supply of all types of necessary maintainers tool kit and measuring instruments for technicians / junior engineers for testing, maintenance and repair at site as specified by original equipment manufacturer of proposed Electronic interlocking system as per annexure No.1 attached.	Set	1	149417.00	1,49,417
4	Supply of All different types of interfacing relays such as QSPA1, QNN1, QNNA1, QNA1, QBCA1. LED ECR, QNA1K etc. including 10% spares as per the approved interface circuits for succesful commissioning of the New Crossing Station & Gare Pelma Station. This aslo includes supply of all petty materials such as relay bases, relay clips, fixing nuts & bilts, contact pins etc.	Lot	2	1531584.00	30,63,168
5	Supply of all wiring materials required for succesfull installation of kyosan make EI at New Crossing station. This includes but not limited to supply of all 16/0.2mm multi strand wire coils of all colors, 40 core x 1sq.mm or as per OEM required indoor cables, multi strand copper cables of i.e., red & black color of 4 sq.mm, 10 sq.mm & 16 sq.mm as per requirement EI rakes to relay racks, all types of terminals such as glass fuse terminals, 4 way terminals, bus bars, otta terminals, etc. of wago/phoenix make suitable for termination of varoius types of wires, glass fuses of different specifications, sleeves, numbered sleeved, troughs with covers, lugs of different sizes for terminations in EI rack, relay racks & CTR, ARA terminals of specified sizes, connectors, analog input boards, HRC fuses, laddering arrangements, fuses, hylum boards, insulators, earthing arrangements, flexible pipes & any other materials that is required for commissioning of the New Crossing Station.	Ls	1	348206.00	3,48,206

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
6	Necessary arrangement for manufacture, transportation & installation of station masters console for fixing telephones & other equipments as per instruction of Engineer incharge. This includes : All materials like 25mm thick hylum sheet etc. required for the above including sundry items like bolts & nuts, screws, MS angle / flat shall be supplied by the contractor. The table shall be as per the existing design of Gharghoda station SM table	Nos	2	150000.00	3,00,000
7	Supply of Push button desk type Magneto Telephone as per RDSO specification no. IRS: TC 79/2000 (amdt -3) with latest amendments.	Nos.	8	4399.00	35,192
Datalogger Related Supply					
8	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 SECR 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 Leased line MODEM for networking of Datalogger, power supply of adequate capacity, 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, Printer and one no. Operator Chair (Godrej make) as per Technical Specification.	Nos.	1	498212.00	4,98,212
9	Supply of Door Proximity switches along with 2 way rigid connector for wire termination between proximity switches and Datalogger Tag blocks as per specs.	Set	4	689.00	2,756
10	Supply of all wiring materials suitable for succesfull installation of M/s Efftronics make data logger at New Crossing station. This includes but not limited to supply of all wire coils, terminals, connectors, analog input boards, insulators, earthing arrangements, suitable lugs, tag blocks, flexible pipes & any other materials that is required for commissioning of the data logger.	Lot	1	63314.00	63,314
Power Supply related supply					
11	Supply of SMPS Based Integrated Power Supply System as per RDSO Specification No. RDSO/SPN/165/2012 (Ver. 3.0) excluding supply of battery but including remote indication panel, and spares with tool kit as per RDSO list. Tentative drawing of IPS (for Consolidated EI) is attached with this tender document but current/voltage ratings of different modules may change as per actual load requirement. Supply of 02 sets of 110V/200AH Valve Regulated Lead Acid (VRLA) Stationary Battery for S&T installations as per IRS: S-93/96(A) (Amd. 1) & Railway Board's letter No. 2010/SIG/SGF/2/ VRLA Battery Dt. 20.12.10 (with latest amendments) with battery rack and 05 no of spare batteries	Set	1	1502893.00	15,02,893
12	Supply of all wiring materials suitable for succesfull installation of M/s Statcon make IPS at New Crossing station. This includes but not limited to supply of all multi strand copper wire i.e., red & black color of 10 sq.mm & 16 sq.mm or any other specification as per requirement from IPS room to relay room & SM room, ARA terminals of specified sizes, terminal of other specs, connectors, analog input boards, HRC fuses, laddering arrangements, fuses, insulators, earthing arrangements, flexible pipes & any other materials that is required for commissioning of the New Crossing Station.	Lot	1	170976.00	1,70,976

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
13	Supply of Single Phase Air Cooled, Silent DG set (CPCB approved acoustic enclosure) with alternator of 15 KVA, 0.8 pf and engine of minimum 25 BHP (multi cylinder) floor mounting type for installation in open complete with electrical control panel containing ammeter, voltmeter indicators, MCB/MCCB and key start/stop assembly, low maintenance battery of 12V-80AH as per IRS S-88/2004 of Standard/ Exide/Amco type, battery charger for charging the battery, AMF Panel etc. It also includes provision of diesel tank of suitable capacity to run minimum 10 hours fitted with a cock, supply pipe arrangement & its fixtures, clamps etc. for supplying Diesel Oil to Diesel Engine from this tank. The engine ratings are as per IS 10001, BS 5514, DIN 6271, ISO 3046 standards. The DG set ratings are as per ISO 8528 standards and are continuous ratings at STP conditions with 10% overloaded for 1 hour during 12 hours continuous running.	Nos.	1	438963.00	4,38,963
14	Supply and installation of automatic changeover unit for changeover between incoming three phase power supply sources of 63A/230Volts single phase with provision of manual by pass arrangement. Drawing shall be got approved from engineer before supply of this item.	Nos.	1	132959.00	1,32,959
Block Working related Supply					
15	Supply of Block Proving with Axle Counter System as per RDSO Specn. IRS:S-105/2012 (Ver.0) or latest using UFSBI & Block Panel for Single Line operation complete with Relays, timers consisting of following but not limited to:	Pair	1	1411846.00	14,11,846
a)	Electronic Signaling Equipment: Universal Fail- Safe Block Interface (2nos) complete with all accessories as per RDSO Specn. No. IRS:S- 104/2012 (Ver.0) or latest.				
b)	Relay Rack with locking and sealing arrangement including Relays duly wired along with Relay bases (as per RDSO/S/32020 – Latest Amendment).				
c)	SM's Panel/Block Panel (2nos) with accessories as per RDSO Drg. No. RDSO/S/32019 (Latest Amendment).				
d)	Block Telephone with accessories (2nos) as per RDSO's Specification No. RDSO/SPN/191/2006.				
	NOTE: UFSBI shall be capable of Single Line operation upgradable to Double Line operation. There shall be Modification of Block Proving System from Single Line Block system to Double Line in future.				
16	Supply of Automatic Media changeover System of modern working on redundant channels for data transmission on OFC/ Quad for seamless operation of UFSBI over multiple media as per RDSO specification no. RDSO/SPN/147/2005 with Amendment 1 or latest.	Pair	1	28735.00	28,735
17	Supply of Modem compatible with existing UFSBI System to work on backup media. The backup media can either be on unframed 2 Mbps E1 Channel from STM or on VF-channel from P-Mux or direct dark Single mode optic Fiber Cable upto 30 Km.	Pair	1	46484.00	46,484
18	Supply of all wiring materials suitable for Deltron make UFSBI required for successful installation of UFSBI at New Crossing station. This includes but not limited to supply of all multi strand copper wire i.e., red & black color of 10 sq.mm, 60 core & 40 core of 1sq.mm indoor cable for laying between UFSBI to SM panel and to CTR, wires coils, terminals of specified sizes, connectors, HRC fuses, laddering arrangements, insulators, earthing arrangements, flexible pipes & any other materials that is required for commissioning of the New Crossing Station.	Lot	1	155590.00	1,55,590
19	Supply of Multi-section Digital Axle counter for block sections complete with 4 Counting Heads / Detection Points (each block section shall be proved with two Detection points with full redundancy), two Evaluators, one at each station, vital relays and with Reset arrangement (LV Box, Reset Box etc.) provided at the SM room along with necessary fitting arrangements required for fixing of Counting Heads / Detection Points as per RDSO/SPN/176/2013 (Ver. 3) with latest amendments. Make: GG Tronics make equipment shall be supplied. This also includes submission & approval of design & drawings.	Detecti o n Points	4	509413.00	20,37,652

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
20	Supply of MSDAC Tool Kit. Each Set will consist of:	Nos.	1	245627.00	2,45,627
	a) Portable Data Analyzer (Downloading Event Logger Data for analysis and report generation) - 1 No.				
	b) Pure Sine Wave Digital Multimeter Fluke Make (Model-1871) or Rishab Make (Model- 28S)- 1No.				
	c) Train Simulator Mode 11TS267P)- 1 No.				
	d) Extender Card- 1 No.				
	e) Dummy Wheel- 1 No.				
	f) Ring Spanner- 1 No. each				
	g) Open End Spanner- 1 No. each				
	h) Socket Spanner with handle- 1 No.				
	i) Torque Wrench(Jaicom JPR 65 or equivalent 88NM)- 1 No.				
	j) Screw Driver no.902- 1 No.				
	k) Screw Driver no.935- 1 No.				
	l) Marking Jig for drilling as applicable				
	m) Dummy Load to check power supply (Resistive)- 1 No.				
	Signals related supply				
21	Supply of FRP CLS Unit 2 Aspect (without lenses and lamps) as per RDSO Spec. no. RDSO/SPN/194/2006 Ver 2.0 or latest. This includes supply of Hand cuff Locks & signal number plate.	Nos.	7	27650.00	1,93,550
22	Supply of FRP CLS Unit 3 Aspect (without lenses and lamps) as per RDSO Spec. no. RDSO/SPN/194/2006 Ver 2.0 or latest. This includes supply of Hand cuff Locks & signal number plate.	Nos.	9	30221.00	2,71,989
23	Supply of Colour Light Signal post 4.6m length and 140 mm outer diameter as per RDSO spec no. IRS-S-6/81 or latest alongwith surface base with Anchor bolts, ladder complete (4.5m) with platform.	Nos.	6	18036.00	1,08,216
24	Supply of Colour Light Signal post 3.6m length and 140 mm outer diameter as per RDSO spec no. IRS-S-6/81 or latest alongwith surface base with Anchor bolts, ladder complete (3.5m) with platform.	Nos.	6	19349.00	1,16,094
25	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.	2	47349.00	94,698
26	Supply of FRP Route Indicator 3 way (without lenses and lamps) as per RDSO Spec.no. RDSO/SPN/194/2006 Ver 2.0 with latest amendments.	Nos.	1	49650.00	49,650
27	Supply of offset bracket for 140 mm dia Signal Post as per RDSO Specifications, Drg No SA- 23080 Adv Alt-1	Nos.	3	3824.00	11,472
28	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.	3	11001.00	33,003
29	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.	2	12931.00	25,862
30	supply of QNA1K relay and plug board for signal lighting circuit of Distant and inner distant signal as per latest RDSO specs.	Nos.	11	5867.00	64,537
31	supply of QNA1 relays and plug board for signal lighting circuit as per latest RDSO specs.	Nos.	57	5867.00	3,34,419
32	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.	12	11924.00	1,43,088
33	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.	14	12152.00	1,70,128
34	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.	5	15926.00	79,630
35	Supply of LED Signal Lighting Unit for Calling On Signals as per RDSO Specification No. RDSO/SPN/153/2011 (Rev 4.1)	Nos.	4	8810.00	35,240
36	Supply of LED Signal Lighting Unit for Shunt Signals as per RDSO Specification No. RDSO/SPN/153/2011 (Rev 4.1).	Nos.	12	7224.00	86,688

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
37	Supply and installation of Calling ON Board/ Goods Warning Board/ Caution Board/ Stop Board/ Block Section Limit Board(BSLB)/ Shunting Limit Board/ change of Signalling territory board etc as per Drg no. SA2380 and erection of the same. 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 atleast 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.	4	4545.00	18,180
38	Supply and fixing of 'P', 'C' etc marker disk on signals conforming to RDSO Drg no. SA-23456 as per standard practice with contractor's complete material including fixing of clamps.	Nos.	12	677.00	8,124
Track Detection using MSDAC related supply					
39	Supply of M/s Frauscher make Multi-section Digital Axle counter for 20 Track sections complete with 26 Counting Heads / Detection Points, Central Evaluators (or group of evaluators), one each at the South Cabin/Goomty and North Cabin/Goomty, vital relays and with Reset arrangement (LV Box, Reset Box etc.) provided at the SM room along with necessary fitting arrangements required for fixing of Counting Heads / Detection Points as per RDSO/SPN/176/2013 (Ver. 3) with latest amendments. - Gare-Pelma Station This also includes supply of all design & drawings as per the requirement of the site incharge & SECR.	Detecti o n Points	13	509413.00	66,22,369
NOTE: Offered MSDAC equipment shall cater for 10% increase in field as well as Central Evaluator equipment for future requirement and 10% spare cards for Central Evaluator and field equipment. The Equipment must also include but not limited to: (i) Micro Controller/Event Logger Card with Required Software. (ii) Surge protection Device (iii) Installation material - Reduction Plates, Deflectors, Mounting Frames for Evaluation computers, Counting head housing, Lighting protection module with accessories, earthing bolt for counting Head. (iv) Mushroom housing for track side electronic equipment with complete assembly and fixing arrangement for each detection point will be supplied					
40	Supply of MSDAC Tool Kit. Each Set will consist of:	No.	1	245627.00	2,45,627
	a) Portable Data Analyzer (Downloading Event Logger Data for analysis and report generation) - 1 No.				
	b) Pure Sine Wave Digital Multimeter Fluke Make(Model-1871)or Rishab Make (Model- 28S)- 1No.				
	c) Train Simulator Mode 11TS267P)- 1 No.				
	d) Extender Card- 1 No.				
	e) Dummy Wheel- 1 No.				
	f) Ring Spanner- 1 No. each				
	g) Open End Spanner- 1 No. each				
	h) Socket Spanner with handle- 1 No.				
	i) Torque Wrench(Jaicom JPR 65 or equivalent 88NM)- 1 No.				
	j) Screw Driver no.902- 1 No.				
	k) Screw Driver no.935- 1 No				
	l) Marking Jig for drilling as applicable				
	m) Dummy Load to check Power Supply(Resistive)- 1 No.				
CABLES					
41	Supply of PVC Insulated armoured, Unscreened, underground, Railway Signalling cable 19 Core x 1.5 sq.mm. (Copper Conductor) as per RDSO Spec No; IRS:S-63/2014 (Rev4.0) including latest amendments.	km	41	381461.00	1,56,39,901
42	Supply of Underground Railway Jelly filled 6 Quad Cable of size 0.9 mm dia for Signalling and Telecom Installation as per RDSO Spec.No.IRS:TC-30/2005 (Ver-1 with amend. No. 4)	Km	52	418090.00	2,17,40,680

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
43	Supply of 24 Fibre Armoured Optic Fibre Cable as per latest RDSO Guideline & Technical Advisory Note (TAN) for Distributed EI.	Km	4	81875.00	3,27,500
	Point Machine related supply		0		
44	Supply of Electric Point Machine 143 mm stroke, IRS type to operate on 110 V DC and 400 V immunity as per RDSO spec. no. IRS:S 24/2002 (amd. 1) including supply of FRP type Cable Termination Box, GI Pipe B class 50 mm dia. and Tool Box as per RDSO specification.	Nos.	4	87327.00	3,49,308
45	Supply of Ground Connection along with insulation suitable for 143mm stroke IRS Point machine as per RDSO Drg. S/3361/62/63 with latest amendments.	Nos.	4	22971.00	91,884
46	Supply of Electric Point Machine 220mm stroke working on 110 V DC confirming to RDSO spec. IRS:S-24/2002 with latest amendments, with external clamp point lock as per Drg. No. RDSO/S/3376 for 52 Kg clamp lock and ground connections to Drg No. RDSO/S/3455.	Nos.	18	140219.00	25,23,942
47	Supply of Insulation Set for 220mm IRS point machine ground connections, using for 52 Kg rail, as per RDSO drawings.	Set	18	3648.00	65,664
48	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	9494.00	94,940
	Location Boxes related supply				
49	Supply of Apparatus Case Half as per RDSO Drg. No. WS-8842/A with latest alteration along with miniature 'E' type locks with keys (1 key per 5 location boxes and handle) of ward no. 41 (E type lock & key as per spec. Nos IRS S 30 & RDSO Drg. No. SA3376/M & 3377/M resp. with latest amendment) on both the doors duly painted with red oxide.	Nos.	10	17090.00	1,70,900
50	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)).	Nos.	150	208.00	31,200
51	Supply of Hylem Sheet, resin bonded 10 mm thick, grade P3 in standard size of 1.22 x 1.22 Mtr as per spec. No IS 2036 of 1974.	Nos.	20	6992.00	1,39,840
52	Supply of FRP Track lead Junction Box as per standard SECR rdso drawing no. Sa 20101/m and rdso specification no. Rdso/spn/151/1997 with pbt terminals.	Nos.	90	1392.00	1,25,280
	Supply of cables protection material				
53	Supply of Double Walled Corrugated (DWC) pipes as per RDSO spec. no.RDSO/SPN/204/2011, of length 6 meter and 120 mm outer dia. & 103.5mm inner dia. with one snap fit coupler with rubber ring, spacers, band, endcap, one V end and one T coupler for underground Power / Signal/ Telecom cable protection.	Mtr	2	274.00	548
54	Fixing of concrete cable route marker at 50 meter(approx) and at diversion point including supply & transportation of cable route marker at site. Detail size & fixing of cable route marker should be followed as per drawing of SECR. Marker should be written as "RLY SIG CABLE/ TELE CABLE" (both sides).	Nos.	1000	661.00	6,61,000
	Furniture		0		
55	Supply of Office Chair model no CH-7	Nos.	12	5319.00	63,828
56	Supply of Table Godrej model no. T-101	Nos.	8	21439.00	1,71,512
57	Supply of Steel Almirah Full size (61/2') Godrej model Storewel plain	Nos.	8	34975.00	2,79,800
58	Supply of Steel Almirah Half size (41/2') Godrej model Storewel minor plain	Nos.	2	30270.00	60,540
59	Supply of Airy Revolving and tilting Chair model no. CH-1014	Nos.	2	5991.00	11,982
60	Supply of Godrej Steel slotted rack (2mm thick) with six adjustable shelves, minimum size height 1800mm x width 900mm x depth 450 mm	Nos.	4	13254.00	53,016
61	Supply of Godrej stool model no. ST-2	Nos.	16	2187.00	34,992
62	Supply & installation of air conditioners (Capacity:1.5 Ton, Split type, 5 Star) with stabilizer of at least 4KVA, 10 Amps capacity for relay room.	Nos.	8	72477.00	5,79,816
	Fire protection system		0		

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
63	Supply, Installation, Testing and commissioning of Automatic Fire Detection & Alarm System (AFDAS) for Signalling installations as per RDSO specification no. RDSO/SPN/217/2016 Version No. 1.0 or latest consisting of probe type bimetallic heat detector with base, UV & IR flame detectors with base, heat & smoke multisensor with base, aspirating type smoke detectors with base, linear heat sensing (LHS) cables, LHS interface module, LHS cable end of line box with modular junction box, monitor module for LHS cable alarm input to fire panel, addressable hooter, fire alarm control panel with sufficient input ports for connecting various sensors/detectors along with their interfaces, if any, and shall have sufficient output ports for controlling fire extinguishing system, operating/switching off electrical units and having provision for remote monitoring network along with software, intelligent addressable Manual call points, audio visual alarm, fire survival circuit integrity cables etc. The AFDAS shall also consist of fire suppression system as per RDSO specification. The fire alarm panel should also consist of switched mode power supply system, battery backup and charger, display board which will have character display with touch key pad, RS-232/485 Networking Circuit, USB 2.0 Port, Programmable inputs, NAC's and Programmable relays, and loop card circuits, necessary software for display of fire alarm, necessary interconnecting cables etc. Power supply Board will have SMPS fully protected board, battery backup with built in charger as per RDSO specification.	Nos	1	1242125.00	12,42,125
64	Supply of CO2 Based Fire Extinguisher (Squeeze Grip Type) - 4.5 Kg (Make: Ceasefire)	Nos	6	21401.00	1,28,406
65	Supply and installation of Fibre distribution management system including accessories complete as per RDSO specification No. RDSO/SPN/TC/037-2000(Rev 2) suitable for termination of two nos 24 fibre OFC at repeater station/ cable hut (wall mountable) and splicing of fibre with pig tail cable as per specification. This includes end to end testing of all fibres of OFC cable(All items required for execution of work shall be supplied by the contractor.)	Nos	1	42924.00	42,924
66	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	1000	115.00	1,15,000
67	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.	No	12	38777.00	4,65,324
	Quad Cable Communication		0		
68	Supply of cable termination panel fitted with two nos of 32 way U link feed panel along U links complete and mounting arrangements.	No	1	50530.00	50,530
69	Supply of Emergency Socket box made of FRP material as per Spec. No. RDSO/SPN/TC/44/2002 Ver.2 (with latest amendment).	No	6	7477.00	44,862
70	Supply of 6 pin Emergency Socket	No	6	433.00	2,598
71	Supply of 4/2 wire emergency light weight portable control telephone as per RDSO Spec. no. IRS-TC:78-2000 with amendment No. 2 or latest with 6 pin flat plug to specn no. IRS-TC- 42/87.	No	5	2423.00	12,115
72	Supply and installation of Universal thermoshrink jointing kit for derivation/ transformer joint for Jelly filled 6 quad cable conforming to RDSO Spec. no: IRS-TC- 77/2006(Rev.1)(with latest amendment). VF Transformer shall be procured against separate item of Schedule A and issued to contractor for execution of work. This also includes excavation of cable joint pit of size 1.2m x 1.2m x 1.0m in all types of soil for jointing of copper cables, backfilling and ramming after jointing.	Nos	40	6560.00	2,62,400
73	Supply of VF Tapping Transformer 1120:470 (rack mountable) as per specification no. IRS-TC-22/76 (with latest Amendment).	Nos	4	1633.00	6,532
74	Supply of one quad VF transformer assembly 2T for quad cable (470:1120) for derivation joints to specification No. IRS-TC-76/2000 (with latest amendments).	Nos	30	1633.00	48,990

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
	Cables and Cable Termination Box				
75	Supply and fixing of 20 pair CT box(of Thermoplastic material complying with standards IEC 60670-1 & IEC 60670-22) and termination of cable.	Nos	10	6149.00	61,490
	Weigh Bridge		0		
76	Supply and installation of In-motion weigh bridge at Garepelma Loading Line NOTE: The contractor shall successfully install, test, calibrate, stamp & commission the EIMWB procured under this contract at the said locations by IRCON/CERL/SECR representatives. The contractor shall supply the materials & do the works as mentioned below: (i) Supply & installation of EIMWB as per RDSO specification no. WD-29-Misc-19 (Rev.1) or latest. This shall consist of: a. Weighment Rails with load cells b. Track Switches/sensors for speed and wagon type detection c. Control console with electronic cards for reading track switch logic and receiving signals from load cells for further processing d. A personal computer & printer directly linked to control console for operation, viewing and printing output. e. A computer table with 2 chairs of Godrej make or superior for commercial staff operators f. Air Conditioner of 1.5ton capacity, split type, 5 star with stabilizer of at least 4KVA, 10Amps capacity. g. An Inverter with battery bank of 2KVA capacity. h. All Earthing arrangements shall be made at contractor's own cost as per the RDSO specifications & instructions of the engineer at site. i. Class-A protection with earthing arrangements shall be provided at contractor's own cost. j. A signal post & hooter for over speed detections. The foundation for the signal post shall be casted according to the OEM requirement & instructions of engineer at site. (ii) The contractor shall coordinate and bear all the charges to call authorized representative from Weights & measurement Department of Legal Metrology of the C.G. state Govt. for stamping. (iii) The contractor shall arrange all the facilities & coordinate with SECR officials, Legal Metrology officials at the time calibration and stamping. (iv) Any other required work as per the instruction of engineer at site shall be carried out at contractors own cost.	Nos.	1	2264024.00	22,64,024
77	Supply of SDH Add/Drop Mux (STM-1) as per TEC Specification No GR/SDH-04/04 January 2011 or latest amendment with L1.1 Optical Interface and as per technical requirement for OFC system equipped with 21 E1s (including engineering Order wire), expandable upto 63 E1s capacity, simply by addition of E1 cards, fully wired, cross connect granularity at VC-12, VC-3 & VC-4 levels, aggregate interface, with one Ethernet Interface card supporting minimum four 10/100 Base T Ethernet port, power unit, sub-racks, installation materials with all other accessories and technical manuals etc. The SDH equipment shall be TEC (TSEC)RDSO approved.	Nos	2	180304.00	3,60,608
78	Supply of programmable Primary Digital Drop Insert Multiplexers with Digital conference facility as per technical specifications IRS:TC-68/2012 with latest amendments with other stipulations of tender document, fully wired for 30 channels complete with power supply unit, remote control supervision facility & all other accessories, technical manuals etc., The MUX shall be equipped with following Interface Cards: i) 4W-E&M Interface card (4 circuits per card) : 04 Nos. ii) Subscriber Interface Card (4 circuits per card) : 01 No iii) Exchange Loop Interface Card (4 circuits per card) : 01 No iv) G.703 64 kbps data I/f card (4 circuits per card) : 01 No v) Hot Line Interface card (4 circuits per card) : 01 Nos	Nos	2	195883.00	3,91,766

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
79	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	90355.00	90,355
80	Supply of Surge Suppressor for all the 30 circuits derived from primary MUX's (Z protection) complete as per latest RDSO specifications. Make OBO/Phoenix/Finder/Webfil (or) similar	Nos	2	40480.00	80,960
81	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 1 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	2	84574.00	1,69,148
82	Supply of 19" 32 U covered Vero President / Rittel make or similar complete with all fitting for housing SDH equipment, Primary Digital Multiplexer, Digital Distribution Frame, Main distribution Frame using krone Module, Cooling Fan and other equipment like runaway ladder etc. completely wired and equipped with integration protection module for all channel with locking arrangement.	No	2	50978.00	1,01,956
83	Supply of SMF-VRLA Battery set of rating 48V/200 AH recharged complete with intercell connectors consisting of 24 cells of 2V 200AH each as per RDSO SPEC No IRS:S93/96(A) Amdt 1 or latest if any. This includes supply of all necessary interconnecting cables & connectors	Nos	2	110474.00	2,20,948
84	Supply of push button telephone pulse/tone switchable Telephone set with Redial, Mute, Pause, Flash Tone / Pulse Facility as per TEC Spec No GR/TEL-02/04 Sept 02 with Amendment 2 including latest amendment.	Nos	10	668.00	6,680
85	Supply of way station control equipment as per RDSO 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.	No	10	7729.00	77,290
86	Supply of Power Supply unit (2 Amps) with 12V/7AH MF Battery as per RDSO Spec No IRS:72/97	No	10	4921.00	49,210
87	Supply of Surge and Lightening Protection arrangement	No	2	19671.00	39,342
88	Supply of S.B. Cable 0.5 mm dia	mtr	500	99.00	49,500
89	Drawing & Design work of the telecom installations	ls	2	15612.00	31,224
90	Supply of Digital TDMA (2 slots) based Fixed/Mobile Radio, synthesized transceiver with display operating in 136-174 MHz frequency Band, 25 watt with F1st mic, Power cable, 160 channels comprising of Rugged 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/ICOM.	Nos.	2	33946.00	67,892
91	Supply & Installation of Maintenance Free Lead Acid battery (VRLA) of 12 Volt DC, 100 AH (06 nos. cell of 2 Volt each) complete with fitting as RDSO specification no IRS/93/96.	Nos.	2	6704.00	13,408

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
92	Supply of VHF handheld synthesized Transreceiver, handheld Radio operating in 136-174 frequency band, emergency feature, Internal VOX, Switchable RF power output 5W, DTMF keypad, name & tone tagging, 14 character display, clock and reminder alarm, receive signal strength and battery indicator, 128 programmable channel, 12.5/25 KHz channel spacing, heliflex antenna, Alpha numeric display, 1450 mAH Ni - mH Battery and single Unit Rapid rate Trichemestry battery charger with adapter for hand held Mobile radio.	Nos.	10	72665.00	7,26,650
93	Supply of Spare Battery for above (handheld radio) Ni - mH battery with 1600 mAH capacity for VHF set above or similar.	Nos.	10	1383.00	13,830
94	Supply of frequency Programming kit with all accessories and necessary software and hardware required for programming.	Nos.	2	4016.00	8,032
95	Wiring Material for VHF	L.S	2	115730.00	2,31,460
96	Provision of Vehicle for movement - 02 (Two) Dedicated 7 seater passenger SUV for movement of IRCON S&T Engineers on project site. The above shall include cost of driver, fuel, mobile etc with availability as per Ircon Engineer's Requirement.	km	80000	27.67	22,13,600
97	Signal expert, having relevant experience of 06 years in S&T construction to be deputed by contractor. The person will be deployed at site with prior approval of Engineer on submission of detailed CV and certifications. One personnel is required at each station for a duration 10 months.	Man Month	30	90942.00	27,28,260
98	Supervisor Signal and telecom, having relevant experience of 03 years in S&T construction to be deputed by contractor. The person will be deployed at site with prior approval of Engineer on submission of detailed CV and certifications. One signalling & one telecoms supervisor is required at each station for a duration 10 months.	Man Month	60	69164.00	41,49,840
Total of Schedule 'A'					₹ 7,93,90,029

SCHEDULE-B					
BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
Drawing & Documentation					
1	Submission of 'as planned' and 'as built' documents for EI for New Crossing station & Gare Pelma Station. It includes but not limited to: 1. Equivalent Circuit Application logic 2. Interface circuits upto location box. 3. Selection table/Route Control Chart. 4. Video Display Diagram. The documents shall be supplied as per technical specification of tender document. The circuits shall be designed by the contractor to suit 25KV RE.	Set	2	225319.00	4,50,638
2	Submission of 'as planned' and 'as built' of following documents : 1. Cable route plan, 2. Cable core chart, 3. Power supply arrangement, 4. Circuit route termination chart, 5. Cable termination chart in relay room and Apparatus cases, 6. Apparatus Cases wiring plan, 7. Cable Insulation chart, 8. Earth resistant chart, 9. Track circuit Test Card, 10. Signal Lamp/LED Register, 11. Battery History Card, 12. Fuse Analysis chart, 13. Equipment disposition plan, 14. Polarity Chart (track insulation plan), 15. Terminal & contact analysis plans, 16. Track Bonding Plan, 17. Station Working Rule, 18. Station Working Rule Diagram (SWRD) with board and obtaining approval of Competent Authority as per Technical Specification of tender document. The circuits shall be designed by the contractor to suit 25KV RE.	Station	2	130900.00	2,61,800
NOTE : It should be done as per extent practice of SEC Railway.					
Electronic Interlocking System					
3	Successfully completion of Factory Acceptance Test for EI (FAT) of New Crossing station according to approved SIP following all latest RDSO guidelines.	Station	1	508380.00	5,08,380
4	Successfully completion of Factory Acceptance Test for EI (FAT) of Gare Pelma station according to approved SIP following all latest RDSO guidelines	Station	1	472067.00	4,72,067
5	Design of EI system for New Crossing station & Gare Pelma Station as per SECR guidelines. This includes submission of floor plans, TSAA documents, logic circuits, complete requirement of materials and their details etc., and any other detail as per instruction site incharge. The design should clearly show the interfacing with other equipment such as data logger, UFSBI, MSDAC, IPS, BPAC etc.	Station	2	450053.00	9,00,106
6	Installation, wiring, testing & commissioning of complete indoor Electronic Interlocking system in Signal Equipment Room (SER), South Cabin/Goomty and North Cabin/Goomty, and all other associated equipment .It shall consists of the following but not limited to: Note: The materials such as EI cards, EI racks, relay racks, DC DC convertors shall be provided by IRCON.	Station	2	1429579.00	28,59,158
a)	Writing of application logic for Single Line Working as per attached Tentative SIP of New Crossing station, Gera Palema				
b)	Grouting, cutting of floors, walls etc. refilling of same, re plastering, required CC/ masonry works.				
c)	Termination of indoor cables on disconnecting terminals on Din rail, painting/lettering on Equipment Rack, Relay Rack/Termination Rack				
d)	Fixing of racks PBT terminals Disconnect Type/Wago terminals, ND Fuses, Bus Bars, Eyelets, hylam strips of required thickness (12mm, ISI mark) as per length required at site etc.				
e)	Fixing of VDU, all types of Relays, Wiring and testing as per wiring diagram.				
f)	Installation, wiring & testing of Relay Rack/Equipment Rack/CT Rack.				
g)	Testing of earthing arrangement as per latest RDSO guideline/Technical advisory Note.				
h)	Testing and commissioning of EI system at a station as a whole includes outdoor gears. All Engineers, Artisan Staff and labours required for testing and commissioning of EI with MACLS work shall be provided by contractor for indoor and outdoor work. Testing equipment such as simulation panel, signal and point operation simulation arrangement, multimeter etc. shall be provided by contractor at his own cost. Testing shall be carried out by contractor in presence of engineer-in-charge up to his satisfaction and necessary alterations shall be done. Testing & commissioning of overall circuits & ground gears, signals & commissioning of approved interlocking arrangements.				
i)	All installation & wiring material shall be supplied by contractor & shall be procured from RDSO approved sources, wherever applicable.				
j)	Pre-commissioning check list for installation of EI at SER, North Cabin / Goomty and South Cabin / Goomty shall be signed jointly by OEM representative and IRCON's representative and have to be submitted alongwith OEM Certificate as per RDSO guidelines.				

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
7	Termination of cable cores on terminals at cable termination rack. This includes all associated works of pulling out the cable from under ground, peeling off insulation, dressing of cable core supported on sling rod with contractors own material. The work shall be done as per instructions of engineer at site.	Nos.	3000	18.00	54,000
8	Installation, testing and commissioning of 8-12 Channel Earth Leakage Detector.	Nos.	2	21638.00	43,276
Datalogger					
9	Installation, wiring, testing and commissioning of Data Logger as per spec. IRS: S- 99/2006 with Amendment-2 or latest in SER. This also includes but not limited to the following: Note: The Data Logger equipment for New Crossing station shall be provided by IRCON	Job	2	80903.00	1,61,806
	1. Supply and loading of diagnostic software for failure analysis at SER.				
	2. Interface wiring between Relay Rack to Datalogger / RTUs for all the Digital & Analog inputs as per standard Railway practice				
	3. Relay Room Door locking checking arrangement, commercial power supply monitoring arrangement & DG Sets, IPS				
	4. Interlinking & Networking of Datalogger and RTUs.				
	5. Modification in Software & Hardware if required and networking with other Data Loggers along with fault logic design at Control Centre.				
	6. Software programming to enable Preventive maintenance of all S&T assets,				
	7. Failure analysis, GUI of Yard Layout, extract of report in common language, accident analysis as per RDSO Guideline.				
	8. 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.				
	NOTE: Data Logger will be installed, wired, tested and commissioned by OEM's engineer as per guidelines issued by RDSO. The Pre- commissioning checklist issued by RDSO for Data Logger System will be prepared by OEM's engineer and signed jointly with Employer's Site Engineer. Before commissioning of Data Logger, OEM will submit Site Installation Certificate to Employer by mentioning that Data Logger has been installed, wired, tested and commissioned by approved vendor of RDSO (i.e., by OEM). Modification in Programming of Datalogger to be done by Contactor.				
Power Supply					
10	Installation, Wiring, Testing & commissioning of SMPS Based Integrated Power Supply System as per RDSO Specification No. RDSO/SPN/165/2012 (Ver. 3.0) and as per Distributed Structure indicated in Block Diagram enclosed in Tender Document. Any masonry work, if required, will be carried out by contractor's own material. The contractor will provide fitting of 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 in IPS's pre commissioning checklist. This includes extending various power supplies (by connecting power cables 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 guidelines/Railway practice. Part of the IPS systems for Distributed EI shall be installed in North and South Goomties, and Central Signal Equipment Room. Note:- IPS will be installed, wired, tested and commissioned by OEM's engineer as per guidelines issued by RDSO. The pre commissioning checklist issued by 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 by mentioning that IPS has been installed, wired, tested and commissioned by approved vendor of RDSO, i.e by OEM. Note: The IPS equipment for New Crossing station shall be provided by IRCON.	Nos.	2	227879.00	4,55,758
11	Installation, Wiring, Testing & commissioning of Single phase DG Set including Metal Clad Changeover unit, laying of Power Cable from DG Room to ASM Room for remote operation & wiring of AMF panel. Laying of cables/wires should be carried out in PVC conduit pipe. All material required for installation i.e. cables, pipes etc shall be supplied by contractor at his own cost.	Nos.	2	75612.00	1,51,224
Block Working					
12	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. Note: Installation, testing & commissioning of UFSBI shall be done by RDSO approved equipment manufacturer and Pre- commissioning check list should be signed jointly by representative of OEM's & Engineer at site as per guidelines issued by RDSO. Note: The UFSBI equipment for New Crossing station shall be provided by IRCON.	Pair	2	124911.00	2,49,822

20001

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
13	Installation, wiring, testing and commissioning of Multi Section Digital Axle Counter - Central Evaluator Units for block section including its associated indoor equipments and wiring of same to integrate with existing EI. This includes laying and termination of any cable required for interfacing inside DWC pipe as per instructions of Railway representatives at side. Note:- Installation to be done by OEM/Authorized Representative of OEM & pre commissioning check list should be duly signed by OEM / Representative of OEM & Ircon's representative. Note: The BPAC equipment for new Crossing station - GGDA section shall be provided by IRCON.	No.	4	35187.00	1,40,748
14	Installation of track device including crossing of axle counter in foundation track crossing, laying of ant rodent, antioxidant and nonflammable propagating type DWC pipe as per IS-14930 part-I or II or latest and all other accessories as per site requirements for installations and commissioning of Transmitter, Receiver and track side Electronics including foundation and earthing as per OEM's guidelines and specifications (All material required for installation of equipment to be supplied by firm). Note: The BPAC equipment for new Crossing station - GGDA section shall be provided by IRCON.	No.	8	24837.00	1,98,696
Track Detection Equipment					
15	Installation, wiring, testing and commissioning of Multi Section Digital Axle Counter - Central Evaluator Units for stations including its associated indoor equipments and wiring of same to integrate with existing EI. Note:- Installation to be done by OEM/Authorized Representative of OEM & pre commissioning check list should be duly signed by OEM / Representative of OEM & Ircon's representative. Note: The MSDAC equipment for new Crossing station & few for Gare Plema Station shall be provided by IRCON.	No.	4	35187.00	1,40,748
16	Installation of track device including crossing of axle counter in foundation track crossing, laying of antirodent, antioxidant and nonflammable propagating type DWC pipe as per IS-14930 part-I or II or latest and all other accessories as per site requirements for installations and commissioning of Transmitter, Receiver and track side Electronics including foundation and earthing as per OEM's guidelines and specifications (All material required for installation of equipment to be supplied by firm). Note: The MSDAC equipment for new Crossing station & few for Gare Plema Station shall be provided by IRCON.	No.	50	24837.00	12,41,850
17	Installation of DC track circuits covering points zones also. The item includes provision of doubled continuity GI wire bonds on rail joints after drilling bond-hole of 7.0/7.2 mm dia., skimming of fish plate, insertion of insulated block joint if required, fixing of FRP type TLJB with angle iron for track feed/jumper/track relays ends of track circuits and also for fixing jumper cables as per approved Track circuit plan, making rail connections through suitable insulated sleeves from TLJB at TF, jumper & TR end with GI wire, rail clips for fixing bond wire on the TLJB as per standard practice, termination of tail cables on TLJB terminals/fuse block/HRC fuse, fixing & wiring of track feed charger, resistance, track relay, battery etc in Apparatus case as per standard practice. TF/TR wiring shall be fixed on the suitable arrangement on PRC sleepers with the help of Hooks. Hooks shall be provided on PRC sleepers with the help of suitable steel bracket. This item also includes fixing & supply of channel pins, Hooks etc. The item includes supply of terminals, angle iron, GI wire and rail clips, bracket, insulation material, insulated track lead wire etc. (To be provided as redundant vacancy detection on main line as per instructions of engineer) Note: The track circuit equipment such as chokes, chargers & Batteries shall be provided by IRCON	Nos.	30	11183.00	3,35,490
Point Equipment					
18	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 SECR & the instruction of Engineer.	Nos.	24	29679.00	7,12,296
Location Boxes					
19	Casting, concreting & curing of foundation & erection for :-				
a)	Full Location Box as per Drg No. IRCON/2050/BGL.JBB/S&T/JAY/ACFS/08	Nos.	35	11479.00	4,01,765
b)	Half Location Box as per Drg No. IRCON/2050/BGL.JBB/S&T/JAY/ACFH/09	Nos.	50	9766.00	4,88,300
	Note: The above item includes supply and installation of petty materials for fixing, clamping, furma for casting & mounting arrangement.				

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
	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 materials. The work shall be done as per Drg. and arrangement similar to SK783-1/2 with latest alterations and as per instructions of Engineer Incharge for full location box.				
20	Full Location Box	Nos.	35	3677.00	1,28,695
21	Half Location Box	Nos	50	3319.00	1,65,950
22	Fixing of Wago/phoneix screwless 4 conductor disconnecting terminal suitable for copper wire of 0.5 sqmm to 4 sqmm as per RDSO 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. Also installation of fuse blocks.	Nos.	5000	20.00	1,00,000
23	Termination, Meggering & Testing of cable cores on Disconnected Type Terminals/ARA/Fuse Blocks in the Apparatus cases. This includes all associated works of pulling out the cable from underground. The work shall be done as per Instruction of Engineer.	Nos.	5000	24.00	1,20,000
	Note: The above item includes supply and installation of petty materials for fixing, clamping & mounting arrangement including wiring material (different sorts of wires etc).				
Trenching & Cable Laying					
24	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 in autocad of latest version.	km	30	1974.00	59,220
25	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	500	740.00	3,70,000
26	Cutting of all types of Roads/Platforms/Concrete preparatory to trenching and excavation to depth of 1m & 300mm wide approx. and refilling after laying of DWC pipe & to restore them to original condition. The work shall be done as per existent practice of SECR & Instruction of Engineer.	Mtr	800	578.00	4,62,400
27	Execution of trenchless horizontal boring(HDD) work using machine (boring size upto 125mm) upto a depth of minimum 1 m from the ground level at location, as per direction of engineer in charge. This includes supply & laying of DWC HDPE pipe as per specification no. IS 14930 part II or latest of 120mm Outer dia/103.5mm Inner dia). This includes all accessories and tools required to do the trenchless horizontal boring.	Mtr	600	2929.00	17,57,400
28	Excavation of trench 1m deep and 300 mm wide across the track for Track crossing & refilling. The work shall be done as per existent practice of SECR & Instruction of Engineer.	Mtr	600	187.00	1,12,200
29	Trenching in all type of soil (normal soil, hard soil and black cotton soil) and refilling of trenches for 1 meter depth and 300mm width.	Km	20	117794.00	23,55,880
30	Trenching upto depth of 1200mm with 300 mm wide base at bottom of trench including clearing of roots bushes etc in all types of soil (Normal, hard, black cotton, morrum, soft rock, hard soil mixed with boulders) and backfilling after laying of HDPE pipe/OFC cable and 6 quad/PIJF cable etc. at 1200 mm & 1000 mm depth respectively as per approved Drg. Ramming and consolidation of soil in trenches as well as disposal of extra soil if any.	km	30	143701.00	43,11,030

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
	Supply and fixing of perforated GI pipes of diameter given below for entry of cable on girder bridges, RCC bridges, drains, culverts, rocky places, tunnels/ deep cuttings or at places as advised by the engineer in charge of the work. This includes trenching upto the required depth as decided by the engineer at site and making holes of 5mm dia (approx) at 20 cm intervals on the GI pipe. The pipes are to be fixed on the girder bridge by suitable bridge fixtures at an interval of 1.0 mts(min) or directives of Engineer at site. On RCC/ masonry bridges or in rocky places, if required the entire length of the pipe to be concreted upto a height of 100 mm above the pipe.				
31	100 mm dia	Mtr	1500	1855.00	27,82,500
32	Laying of HDPE duct in the trenches and in the protective works already provided including in HDD portion and supply pulling of Nylon rope through it at different places as per direction of engineer in charge or site engineer.	km	30	13004.00	3,90,120
33	Laying of Signalling/Power/Telecom Cables of various cores in trench and meggering of main and tail cables.	km	200	8407.00	16,81,400
34	Laying of 6 quad cable / derivation cable/ PIJF cable in the trenches and in the protective works already provided at different places, as per direction of engineer in charge or site engineer.	km	60	8407.00	5,04,420
35	Transportation, installation of optical fibre joint enclosure and splicing of Optical fibre cable (2 x 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 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 Drg. and instructions of site in charge of IRCON.	Nos	14	25275.00	3,53,850
36	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. Empty cable drums to be returned by the contractor. The cable drums with unused cable at site to be returned by the contractor from site to stores depot. This also includes Duct Integrity Test to be done before blowing of OFC cable.	km	30	12005.00	3,60,150
37	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	30	11687.00	3,50,610
38	Supply and placing of second class bricks in excavated trenches within station limit/ station area. The contractor shall arrange to place the bricks flat and position them breadthwise so that an average eight to nine bricks shall be laid.	Nos.	200000	20.00	40,00,000
39	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.	4	18175.00	72,700
40	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	6	845.00	5,070
41	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	200	301.00	60,200
42	Supply and laying of NP2 RCC pipe of 150 mm dia to spec. no. IS-458, 2 meter in length, at places under track and road, Level crossing gate, platforms near FP for protection of OFC & Quad or OFC or 6 Quad cable/PIJF cable to be laid.	Mtr	1200	825.00	9,90,000
	Painting				
	Cleaning, scraping. Painting & lettering of all newly installed and existing gears by the contractor. including supply of all materials for the work by contractor.				
43	Medium Station- 4 Lines	LS	2	49789.00	99,578
44	Filling earth around location boxes/signal posts	Per cum	400	146.00	58,400
	Emergency Communication Equipment				

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
45	Fabrication of EC socket box assembly and erection of fabricated assembly at the location indicated in the route chart and as per direction of engineer in charge. This includes cutting of rails, to required size, supply and welding of GI pipe and base plate, fixing of EC socket box, transportation of material to site, digging of pit and erection of whole assembly at site. The work also includes the fixing of EC socket in the EC socket box and termination of 6 Quad/PIJF derivation cable on the strips of 6 pin EC socket inside emergency socket box. The Emergency socket box made of FRP material as per Spec. no. RDSO/SPN/TC/44/2002 Ver.2(with latest amendment) and its wiring alongside the Railway track at locations to be indicated by the engineer (Rail post shall be supplied by IRCON and issued to the contractor for execution. Emergency Socket and Emergency socket box will be procured through separate schedule of this contract and issued to the contractor for execution.). All other items shall be supplied/arranged by the contractor.	Nos	30	6868.00	2,06,040
Earthing					
46	Supply, Installation, testing & commissioning of Ring Earth for EI system which includes supply of all components of earthing & bonding system like earth electrode, earth enhancement material, earth pit, equipotential earth bus bar, connecting cables and tape/strips and other associated accessories in accordance with RDSO Specification No. RDSO/SPN/197/2008 or latest consisting minimum 08 Nos. of earth pits connected in a ring to achieve less than 1 Ohms earth resistance for connecting EI equipment, relay racks, panel, power equipment as per Signal Engineering Practice. Diagram of ring earth should be supplied to IRCON for approval before execution. All related materials as recommended by RDSO in Specn. No. RDSO/197/2008 or latest, will be supplied by contractor. All connecting wires (like power cables etc) shall be supplied by the contractor. NOTE: 1- Earthing arrangement for EI must be as per latest RDSO guidelines issued by Rly bd. vide letter No. 2008/Sig/G/2 RDSO dt 21.06.2011 & technical advisory note(TAN) & OEM's requirement. 2- One Set of Ring Earth shall consist of minimum 08 Earth Rods along with all associated materials, such as materials for Equipment bonding, Main Equipment Bus Bar, Sub Equipment Bus Bar, interconnection of these Bus Bars to various equipment, welding materials etc. This also includes supply of copper cable/strip required for interconnections & connecting of equipment for equipotential bonding. This includes shielding of Relay Room with copper strip.	Set	2	206262.00	4,12,524
	Supply and installation of Maintenance free earth as per RDSO specification no. RDSO/SPN/197/2008 consisting of single earth pit which includes supply of 35 mm ² multistrand single core PVC insulated copper cable as per IS 694 for connecting main earth electrode to MEEB in the equipment room in duplicate as per manufacturer's recommendations and as per RDSO specifications as follows: a) Copper bonded steel electrode of 3 meters long, 17mm diameter with copper bonding thickness of minimum 250 microns and UL listed and marked : 1 Nos.b) Earth enhancement compound of RDSO approved brand supplied in sealed bag of minimum 10 KG : 3 Nos.c) Copper strip of 150mm x 25mm x 6mm to terminate earth rod: 1 Nos.d) Copper strip of 300mm x 25mm x 6mm (MEEB): 1 No.e) Copper strip of 150mm x 25mm x 6mm (SEEB): 1 No.f) Digging/Auguring/Boring of Single earth pit of 100 mm to 125 mm dia to the depth of approximate 2.8 Meter.g) Insertion of 3 Meter Electrode & penetrating it at least 0.2 Mtr. by pushing gently with sledge hammer where the neutral soil is assumed.h) All connecting wires (like power cables etc) shall be supplied by the contractor.				
47	For Signaling Equipment (for Block Equipment)	Set	12	64932.00	7,79,184
48	For Telecom Equipment and 6 Quad cable	Set	6	64932.00	3,89,592
49	Supply of Normal Earth Electrode for earthing of S&T installations with all the associated assembly/ materials as per standard railway practice conforming to drawing no. TCA 565 as mentioned in the technical specifications.	Nos.	162	5599.00	9,07,038
50	Installation, Wiring & Testing of Conventional Earth Electrode assembly including earth wire connected through GI wire 8 SWG supported on M.S. flat of size 40mm X 6mm to earth electrode for outdoor signaling equipment. The earth value should not be more than 10 Ohm including the lead wire. The value should be measured in presence of Engineer. It should be documented & painted on earth enclosure made of concrete. All connecting wires (like power cables etc) shall be supplied by the contractor.	Nos.	162	657.00	1,06,434
SIGNALS					
51	Casting of Main Signal foundation as per Drg No IRCON/S&T/SF/01 with contractor's own materials including cement and anchor bolts of standard size. The required scaffolding Ferra etc for casting of foundation will have to be brought by the contractor at his own cost.	Nos.	32	20936.00	6,69,952

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
52	Erection, wiring, testing & commissioning of 2 Aspect Color Light Signal complete including Post, Surface base, Signal unit, OFF Set bracket, front and back staging, Ladder and Guards etc. This work also includes termination of tail cable, fixing of LED, Signal Unit, Signal wiring, supply & fixing of Signal No plates	Nos.	17	15130.00	2,57,210
53	Erection, wiring, testing & commissioning of 3 Aspect Color Light Signal complete including Post, Surface base, Signal unit, OFF Set bracket, front and back staging, Ladder and Guards etc. This work also includes termination of tail cable, fixing of LED, Signal Unit, Signal wiring, supply & fixing of Signal No plates	Nos.	20	15350.00	3,07,000
54	Casting of Shunt Signal foundation as per Drg No IRCON/S&T/SSF/03 with contractor's own materials including cement and anchor bolts of standard size. The required scaffolding Fenna etc for casting of foundation will have to be brought by the contractor at his own cost.	Nos.	8	10100.00	80,800
55	Erection, wiring, testing & commissioning of Position Light Shunt Signal complete (Independent type) including Post, Surface base, Signal unit, and supply & fixing of No plates. This work also includes termination of tail cable on Shunt Signal Units and wiring with Contractor's own material, fixing of LED, Signal Unit etc. the work shall be done as per instruction of Site Engineers.	Nos.	8	9418.00	75,344
56	Erection, wiring, testing & commissioning of Position Light Shunt Signal complete (Dependent type) including Post, Surface base, Signal unit, and supply & fixing of No plates. This work also includes termination of tail cable on Shunt Signal Units and wiring with Contractor's own material, fixing of LED, Signal Unit etc. the work shall be done as per instruction of Site Engineers.	Nos.	6	8317.00	49,902
57	Installation, wiring, testing and commissioning of Calling On Signal Complete.	Nos.	7	8317.00	58,219
58	Installation, wiring, testing and commissioning of Junction Type Route Indicator.	Nos.	8	9719.00	77,752
59	Provision of signal screen when they fall within two meter from live conductor by expanding metal size 20mm x 60mm (strand 3.25 mm wide and 1.6 mm wide thick) as per instruction at site by engineer incharge. This includes supply of all material including earth electrode and earthing arrangement	Nos.	20	15827.00	3,16,540
Insatallation of Telecom items					
60	Installation of DTMF/way side Telephone in all stations, SP,SSP, and TSS. This includes suply 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, wiring & masnory works except control room HQ equipment which will be procured through item in supply schedule)	No	2	1445.00	2,890
61	Installation, wiring, testing and commissioning of wayside equipments and power supply unit on rack st station. (This included supply of all materials of execution of work such as PVC casing & capping, fixing materials for 10/20 pair indoor PVC cable, wiring & masnory works except control room HQ equipment which will be procured through item in supply schedule)	No	2	3511.00	7,022
62	Installation, wiring, testing and commissioning of Battery charger in TER. This also inculds grouting on the floor.	No	2	1722.00	3,444
63	Installation, wiring, testing and commissioning of VHF System.	lot	2	212528.00	4,25,056
64	Installation, Testing and commissioning of Automatic Fire Detection & Alarm System (AFDAS) for Signalling installations as per RDSO specification no. RDSO/SPN/217/2016 Version No. 1.0 or latest consisting of probe type bimetallic heat detector with base, UV & IR flame detectors with base, heat & smoke multisensor with base, aspirating type smoke detectors with base, linear heat sensing (LHS) cables, LHS interface module, LHS cable end of line box with modular junction box, monitor module for LHS cable alarm input to fire panel, addressable hooter, fire alarm control panel with sufficient input ports for connecting various sensors/detectors along with their interfaces, if any, and shall have sufficient output ports for controlling fire extinguishing system, operating/switching off electrical units and having provision for remote monitoring network along with software, intelligent addressable Manual call points, audio visual alarm, fire survival circuit integrity cables etc. The AFDAS shall also consist of fire suppression system as per RDSO specification. The fire alarm panel should also consist of switched mode power supply system, battery backup and charger, display board which will have character display with touch key pad, RS-232/485 Networking Circuit, USB 2.0 Port, Programmable inputs, NAC's and Programmable relays, and loop card circuits, necessary software for display of fire alarm, necessary interconnecting cables etc. Power supply Board will have SMPS fully protected board, battery backup with built in charger as per RDSO specification. Note: The equipment for New Crossing station shall be provided by IRCON.	Station	1	186319.00	1,86,319
Maintenance of installed Telecom items					

BOQ S.N.	Description of Item	Unit	Qty	Rate (Excl. GST)	Amount
a	b	c	d	e	f = d x e
65	The maintenance period shall commence from the date of opening of traffic.the contractor shall depoly 2 Technicians alongwith one vehicle round the clock for 24 hrs Per station during entire maintenance periode for maintenance of all telecom gears in station/ section. the contracotr shall provide Enginners as per Tender requirments.	Per Month	6	61088.00	3,66,528
Maintenance of installed signalling items					
66	The maintenance period shall commence from the date of opening of traffic. The contractor shall deploy atleast 1 engineer, 2 technicians and 2 helpers along with one vehicle round the clock for 24 hours per station during the entire maintenance period for maintenance of all S&T gears in the station/section. The contractor shall also keep sufficient provision of additional engineers (at least 2 nos as Rest Giver/Leave reserve) as per tender requirements.[For entire Ghargoda - Garepelma Section]	per month	6	477165.00	28,62,990
	Total of Schedule-B				₹ 4,04,27,481



SCHEDULE-C (Gharghoda Modification works)

BOQ S.N.	Description of Item	Unit	Qty	Base rate	Amount
a	b	c	d		
1	Submission of 'as planned' and 'as built' documents for EI for Gharghoda station as per approved SIP. It includes but not limited to: 1. Equivalent Circuit Application logic 2. Interface circuits upto location box. 3. Selection table/Route Control Chart. 4. Video Display Diagram. The documents shall be supplied as per technical specification of tender document. The circuits shall be designed by the contractor to suit 25KV RE.	Set	1	225319.00	2,25,319
2	Writing of application logic and FAT as per Revised SIP (No additional Hardware is envisaged) for Gharghoda station. This includes design of EI system to suit the approved SIP, submission of TSAA & all other documents as per the instruction of site incharge & SECR.	Station	1	2505585.00	25,05,585
3	Successful completion of SAT (Site Acceptance test) for EI of Gharghoda station according to approved SIP following all latest RDSO guidelines. This includes preparation of Simulation board at site with contractors own materials such as switches, cables, fuses, bulbs, sockets, plywood as per standards of SECR/instructions of site engineer. This also includes preparation of free home circuit & its implementation during NI of gharghoda if required.	Station	1	562849.00	5,62,849
4	Supply of All different types of interfacing relays such as QSPA1, QNN1, QNNA1, QNA1, QBCA1. LED ECR, QNA1K etc. including 10% spares as per the approved interface circuits for successful commissioning of the Gharghoda Station. This also includes supply of all petty materials such as relay bases, relay clips, fixing nuts & bolts, contact pins etc.	Lot	1	231852.00	2,31,852
5	Submission of 'as planned' and 'as built' of following documents : 1. Cable route plan, 2. Cable core chart, 3. Power supply arrangement, 4. Circuit route termination chart. 5. Cable termination chart in relay room and Apparatus cases, 6. Apparatus Cases wiring plan, 7. Cable Insulation chart. 8. Earth resistant chart, 9. Track circuit Test Card, 10. Signal Lamp/LED Register, 11. Battery History Card, 12. Fuse Analysis chart, 13. Equipment disposition plan, 14. Polarity Chart (track insulation plan), 15. Terminal & contact analysis plans, 16. Track Bonding Plan, 17. Station Working Rule, 18. Station Working Rule Diagram (SWRD) with board and obtaining approval of Competent Authority as per Technical Specification of tender document. The circuits shall be designed by the contractor to suit 25KV RE.	Station	1	130900.00	1,30,900
6	Alterations to wiring of Electronic Interlocking system as per modifications done for the approved SIP of Gharghoda station. Note: Testing and commissioning of EI system at a station as a whole includes outdoor gears. All Engineers, Artisan Staff and labours required for testing and commissioning of EI with MACLS work shall be provided by contractor for indoor and outdoor work. Testing equipment such as simulation panel, signal and point operation simulation arrangement, multimeter etc. shall be provided by contractor at his own cost. Testing shall be carried out by contractor in presence of engineer-in-charge up to his satisfaction and necessary alterations shall be done. Testing & commissioning of overall circuits & ground gears, signals & commissioning of approved interlocking arrangements.	Job	1	451005.00	4,51,005

BOQ S.N.	Description of Item	Unit	Qty	Base rate	Amount
a	b	c	d		
7	Re-configuration of Datalogger system to suit the given approved SIP. This includes modification in software and alteration in wiring. Note: Data Logger will be installed, wired, tested and commissioned by OEM's engineer as per guidelines issued by RDSO. The Pre-commissioning checklist issued by RDSO for Data Logger System will be prepared by OEM's engineer and signed jointly with Employer's Site Engineer. Before commissioning of Data Logger, OEM will submit Site Installation Certificate to Employer by mentioning that Data Logger has been installed, wired, tested and commissioned by approved vendor of RDSO (i.e., by OEM). Modification in Programming of Datalogger to be done by Contactor.	Station	1	207552.00	2,07,552
8	Re-configuration of existing IPS system to suit the given approved SIP for new S&T gears. This includes supply of all required modules, multi strand copper cables of different sizes i.e., 10sq.mm/16sq.mm/ 4sq.mm of black & red color with all petty materials such as connectors, terminals, fuses, fuse blocks, copper strips etc. Note: IPS will be installed, wired, tested and commissioned by OEM's engineer as per guidelines issued by RDSO. The Pre-commissioning checklist issued by RDSO for IPS System will be prepared by OEM's engineer and signed jointly with Employer's Site Engineer. Before commissioning, OEM will submit Site Installation Certificate to Employer by mentioning that IPS has been installed, wired, tested and commissioned by approved vendor of RDSO (i.e., by OEM).	Station	1	82059.00	82,059
9	Provision of services during NI (Non Interlocking) of Gharghoda modification works. This includes provision of 4 vehicles round the clock, food packets for working staff for each shift, staying arrangements for all the officers, refreshments etc. These services shall be provided during the whole NI period of Gharghoda Station.	Station	1	142800.00	1,42,800
10	Modification of the already erected signals for by fixing extra LEDs, dependent shunts as per requirement, wiring, testing & commissioning of Signal complete including supply & fixing of No plates. This work also includes insertion of cables into the post & termination of tail cable on Signal Units and wiring with Contractor's own material, fixing of LED, Signal Unit etc. the work shall be done as per instruction of Site Engineers.	Nos	6	2782.00	16,692
11	Safe removal and Re - Installation of track device of axle counter in foundation on track after installation of glued joints/rails at required places as per decision of site incharge including crossing of axle counter in foundation track crossing, laying of antioxidant, antioxidant and non flammable propagating type DWC pipe as per IS-14930 part-I or II or latest and all other accessories as per site requirements for installations and commissioning of Transmitter, Receiver and track side Electronics including foundation and earthing as per OEM's guidelines and specifications (All material required for installation of equipment to be supplied by firm).	Nos	4	23529.00	94,116
12	Dismantling of Existing signals by cutting the foundation till the ground level and safely returning the materials such as signal post, FRP units and its associated parts, ladders, LED's, padlocks, anchor bolts, terminals etc. to IRCON/contractor stores or any other place as decided by engineer at site without any damage. This also includes cleaning of the ground after dismantling the signals.	Nos	4	14744.00	58,976
13	Dismantling of Existing shunt signals by cutting the foundation till the ground level and safely returning the materials such as signal post, FRP units and its associated parts, ladders, LED's, padlocks, anchor bolts, terminals etc. to IRCON/contractor stores or any other place as decided by engineer at site without any damage. This also includes cleaning of the ground after dismantling the signals.	Nos	2	6955.00	13,910
14	Modification of Existing DC track circuits as per site requirements. The item includes provision of doubled continuity GI wire bonds on rail joints after drilling bond-hole of 7.0/7.2 mm dia., skimming of fish plate, insertion of insulated block joint if required, fixing of FRP type TLJB with angle iron for track feed/jumper/track relays ends of track circuits and also for fixing jumper cables as per approved Track circuit plan, making rail connections through suitable insulated sleeves from TLJB at TF, jumper & TR end with GI wire, rail clips for fixing bond wire on the TLJB as per standard practice, termination of tail cables on TLJB terminals/fuse block/HRC fuse	Nos	5	8624.00	43,120

BOQ S.N.	Description of Item	Unit	Qty	Base rate	Amount
a	b	c	d		
15	Insertion of tail cables into existing location boxes, earthing of the armour and wiring & modification of wiring as per the requirement, The above item includes supply and installation of petty materials for fixing, relay wiring if any, clamping & mounting arrangement including wiring material (different sorts of wires etc) and filling of the removed sand, construction of slab etc. with proper finishing as per the standards of SECR/ instruction of site engineer.	Nos	10	2957.00	29,570
16	Dismantling of Existing point machines and ground connections along with insulation set and safely returning all the materials to IRCON/contractor stores or any other place as decided by engineer at site without any damage. This also includes cleaning of the ground after dismantling.	Nos	2	8809.00	17,618
	Total of Schedule C				₹ 48,13,923
	Total of Schedule A				₹ 7,93,90,029
	Total of Schedule B				₹ 4,04,27,481
	Total of Schedule C				₹ 48,13,923
	Total of Schedule (A+B+C) (Excl. GST)				₹ 12,46,31,433
	Contract addition @ 17.91%				₹ 2,23,21,490
	Total of Schedule (A+B+C) including contract addition (Excl. GST)				₹ 14,69,52,923
	GST on the above @ 18%				₹ 2,64,51,526
	Total of Schedule (A+B+C) (Incl. GST @ 18%)				₹ 17,34,04,449

ANNEXURE-II

(to be executed on a non-judicial stamp paper of ₹100/- only)

PERFORMANCE BANK GUARANTEE (UNCONDITIONAL)

To
IRCON INTERNATIONAL LIMITED,

[Acting through _____ (Project
Incharge) & Address of the Project]

WHEREAS _____ [name and address of Contractor]
(hereinafter called "the Contractor") has undertaken, in
pursuance of Contract No. _____ dated _____
to execute the work of "_____
_____. " (hereinafter called "the Contract.");

AND WHEREAS it has been stipulated by you in the said Contract
that the Contractor shall furnish you with a Bank Guarantee by
a scheduled bank for the sum specified therein as performance
security for compliance with his obligations in accordance
with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank
Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and
responsible to you, on behalf of the Contractor, up to a total
of _____ [amount of Guarantee],
_____ [amount in
words], such sum being payable in the types and proportions of
currencies in which the Contract Price is payable, and we
unconditionally agree and undertake to pay you, without any
demur or protest, at once, upon your first written demand and
without cavil or argument, any sum or sums within the limits
of _____ [amount of Guarantee] as mentioned in
demand letter, without requiring you to prove or to show
grounds or reasons for your such demand for the sum specified
therein, in the first letter of invocation.

We hereby waive the necessity of your demanding the said
amount under bank guarantee from the Contractor before
presenting us with the demand.



GENERAL CONDITIONS OF CONTRACT

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid upto _____ (a date 60 days from the date of completion of the work).

We, the _____ Bank further agree that this guarantee shall be invokable at our place of business at New Delhi/NCR/Project HQ (Indicate detail address of branch with Code No.)*. The branch at New Delhi/NCR/Project HQ is being advised accordingly.

This Bank Guarantee shall be operative only if it is accompanied by a separate advice sent by _____ (Name of Issuing Bank, with address) on _____ (Name of Employer's Bank, with address) IFS Code _____ through Structured Financial Messaging System (SFMS) and authenticated by the Employer's Bank.

SIGNATURE AND SEAL OF THE GUARANTOR

Name of Bank: _____

Address: _____

Date: _____

*The Bank should indicate detailed address of New Delhi/NCR/Project HQ branch along with its Code No.



ANNEXURE-I

(Ref. Sub-clause no.: 12.5 of General Conditions of Contract)

FORM OF AGREEMENT

(To be executed on requisite value of stamp Papers)

AGREEMENT

THIS AGREEMENT made on _____ day of _____
(Month/year) between IRCON INTERNATIONAL LIMITED, acting
through _____ (Project Head and name/address of the
Project _____) (hereinafter called "the
Employer/Engineer") of the one part and
_____ (name and
address of the Contractor) (hereinafter called "the
Contractor") of the other part.

WHEREAS the Employer is desirous that work of
"_____
_____" should be executed by the
Contractor viz. Contract No. _____
(hereinafter called "the Works", and has accepted a Bid by the
Contractor for the execution and completion of such Works and
the remedying of any defects therein.

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expressions shall have the same meaning as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement:
 - a) Letter of Acceptance of Tender
 - b) Notice Inviting Tender
 - c) Instructions to the Tenderers
 - d) Appendix to Tender
 - e) Form of Bid
 - f) Special Conditions of the Contract
 - g) General Conditions of Contract
 - h) Particular Technical Specifications
 - i) General Technical Specifications
 - j) Relevant codes and Standards
 - k) Drawings
 - l) Bill of Quantities



GENERAL CONDITIONS OF CONTRACT

3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the works and the remedying of defects therein the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement executed the day and year first before written.

(Name, Designation and address of the authorised signatory)

Signed for and on behalf of the Contractor in the presence of:

Witness:

1.

2.

(Name, Designation and address of the authorised signatory)

Signed for and on behalf of the Employer in the presence of:

Witness:

1.

2.

Name and address of the witnesses to be indicated.



Signature Not Verified

Digitally signed by RAKESH BANDARU
Date: 2025.09.11 16:32:16 IST
Location: eProcurement System for
Central PSUs