

**CORPORATE OFFICE-DNM/RAILTEL CORPORATE OFFICE
TENDER DOCUMENT**

Tender No: RCIL-Sig-LNK-PHR-OT-1-02

Closing Date/Time: 05/09/2022 15:00

GGM/Sig acting for and on behalf of The President of India invites E-Tenders against Tender No **RCIL-Sig-LNK-PHR-OT-1-02** Closing Date/Time 05/09/2022 15:00 Hrs. Bidders will be able to submit their original/revised bids upto closing date and time only. Manual offers are not allowed against this tender, and any such manual offer received shall be ignored.

Contractors are allowed to make payments against this tender towards tender document cost and earnest money only through only payment modes available on IREPS portal like net banking, debit card, credit card etc. Manual payments through Demand draft, Banker cheque, Deposit receipts, FDR etc. are not allowed.

1. NIT HEADER

Name of Work	Provision of supply, installation, testing and commissioning in connection with Electronic interlocking for Upgradation & replacement of lever frames with Electronic Interlocking at Four stations viz. Malsian Shakhkot, Nakodar, Nurmahal and Bilga in LNK-PHR section of Firozpur Division on Northern Railway		
Bidding type	Normal Tender		
Tender Type	Open	Bidding System	Two Packet System
Tender Closing Date Time	05/09/2022 15:00	Date Time Of Uploading Tender	04/08/2022 18:33
Pre-Bid Conference Required	No	Pre-Bid Conference Date Time	Not Applicable
Advertised Value	195960821.68	Tendering Section	SIGNALLING
Bidding Style	Single Rate for Tender	Bidding Unit	Above/Below/Par
Earnest Money (Rs.)	2000000.00	Validity of Offer (Days)	90
Tender Doc. Cost (Rs.)	0.00	Period of Completion	9 Months
Contract Type	Works	Contract Category	Expenditure
Bidding Start Date	22/08/2022	Are Joint Venture (JV) firms allowed to bid	No
Ranking Order For Bids	Lowest to Highest	Expenditure Type	Deposit Work

2. SCHEDULE

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule A-EI Work							112769346.57	
1	1	4.00	Station	16611226.05	66444904.20	AT Par	66444904.20	
	Description:- "Design, Manufacture & Supply of Electronic Interlocking (EI) system (with Centralised arrangement) for way side stations as per approved Signal Interlocking Plan in ""Hot Standby Architecture"". EI system shall be provided to operate Dual VDU (55 inches LED) Control Terminal as per RDSO Specification No. RDSO/SPN/192/2019 Ver2.0 with latest amendment, as per special condition of contract and technical specifications including all relevant and latest RDSO Technical Advisory Note etc. and from RDSO approved source only for the stations mentioned in the scope of work. It mainly consist of Microprocessor Equipment's, Interface Equipment's, EI Vendor specific interfacing Relays, In-built event logger, In-built power supply Equipment's. Racks (EI rack). Indoor cables, Wires, Fuses, Fixtures, Mounting arrangement along with all accessories required to make complete EI system functional. Design of indoor EI system should be compatible as per outdoor interlocking requirement based on Signal Interlocking Plan(SIP) and selection table of Station/Yard. This item also includes supply of following :- (a) Supply of documents/manuals for EI system as per RDSO/SPN/192/2019 Ver 2.0 with latest amendment. (b) Supply and provision of protective devices like surge and lightening protection devices compatible to RE standard as recommended by OEM/RDSO.(Inspection by RDSO). Note: It includes supply of all the material which is required to make complete EI system to be functional and as recommended by RDSO in RDSO Specification no. RDSO/SPN/192/2019 Ver 2.0 with latest amendments. The technical requirements are attached in technical specification. Supply of RDSO approved type of Relays are covered separately. In case of requirement of vendor specific relays for EI system being supplied, the same shall be supplied by tenderer and cost required for such relays shall be included in the cost of the EI system under this item and number and type of such relays shall be indicated separately. The EI system shall be normally suitable for 3/4 line expandable up to 20% of no. of signalling gears without any added cost and further +ve variation above 20% in signalling gears from the given tentative SIP, it will be compensated above 20%, the cost of peripherals thus increased shall be paid as per break up submitted by tenderer at the time bidding. No extra cost for such variance in design & drawing if any shall be acceptable till PAC. System must be compatible with working in RE area."							
2	2	4.00	Lot	1714930.22	6859720.88	AT Par	6859720.88	

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	Description:- Supply of the following essential spares to the extent of 10% of the quantities installed (Subject to minimum 1 No., Standard procedure of rounding off will be followed for assessing the actual quantity) as per RDSO specification and Technical Advisory Note(latest): (Inspection by RDSO). (i) Each type of Input/output cards, (ii) Each type of vendor specific relays, (iii) DC-DC converter of all voltages, (iv) Switches, connectors, fuses, couplers. Breakup of spares along with unit cost to be submitted by the renderer in financial bid. Break up of spare without unit cost to be submitted in technical bid also.						
3	3	323.00	Numbers	7175.76	2317770.48	AT Par	2317770.48
	Description:- Supply and transportation of Q-Series Neutral Line Relay QN1(8F/8B), 50 V for EI interface and confirming to BRS-931A or latest(Inspection by RDSO).						
4	4	4.00	Station	1071000.00	4284000.00	AT Par	4284000.00
	Description:- "Installation, testing and commissioning of EI System with ""Hot Standby Architecture as supplied under item no. 1 above stations mentioned in the scope of work. It includes transportation of material from store depot to the site, erection and grouting of EI Relay Racks, fixing and wiring of all the interfacing relays (vital & non-vital), installation and wiring of Microprocessors equipment, interfaced equipment, power supply equipment and all other associated accessories to make complete EI system to be functional as per RDSO specification and Technical Advisory Note(latest). This include (i).simulation arrangement, (ii)all installation and wiring material with RDSO source if applicable. (iii). Arrangement of both side goomty with all arrangement required for NI period. It shall also consists of the following but not limited to: 1. Grouting, cutting of floors . walls etc. refilling of same, re plastering , required CC/masonry works, this includes digging of cable pit (minimum inside size of 3 mtr x 2 mtr x 1 mtr) and width of 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 there after plastering. . 2. Termination of indoor cables on disconnecting terminals on Din rail, painting I lettering on Equipment Rack, Relay Rack/Termination Rack 3. 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. 4. Fixing of VDU , all types of Relays, Wiring and testing as per wiring diagram . 5. Installation, wiring & testing of Relay Rack/Equipment Rack/CT Rack. 6. Testing of earthing arrangement as per latest ROSO guidelines I Technical Advisory Note. Note: (i) For Technical requirements refer technical specification, RDSO technical notes and Northern Railway Circulars. (ii) Contractor has to arrange simulator / Simulation testing panel for testing and commissioning by selection table and square sheet for each Signalling function. (iii) Installation, wiring, testing and commissioning of EI system will be done by OEM. All the guidelines/ directives issued by RDSO and Northern Railway from time to time shall be followed.						
5	5	10.00	Numbers	825000.00	8250000.00	AT Par	8250000.00
	Description:- Supply, installation, testing and commissioning of embedded fanless PC based VDU Control Terminal as per RDSO Specification no. RDSO/SPN/192/2019 Ver 2.0 with latest amendment & latest RDSO TAN . The display size of VDU shall be 55 inch LED. Suitable furniture like table etc required for mounting the VDU shall be provided by the contractor with prior approval of Railtel Engineer site incharge. This also includes the necessary furniture for keeping the VDU, Counterbox, BPAC panel, HASSDAC reset Box, Magneto telephones, gate telephone, VHF set 25 watt, control telepnes, PA System, ASM's registeres any other item required & all accesories like power supply, VDU PC, communication switches, OFC and other cables termination accessories. (As per drawing of VDU cum Block Instrument and other equipment shown in Tender Document) (Inspection by Consignee). Furniture for VDU & other equipment shall be as per Drg. No. RCIL/VDU Table/1/22.						
6	6	5.00	Numbers	770000.00	3850000.00	AT Par	3850000.00
	Description:- Supply, installation, testing and commissioning of embedded fanless PC based Maintenance Terminal as per RDSO Specification no. RDSO/SPN/192/2019 Ver 2.0 with latest amendment & latest RDSO TAN. The display size of VDU shall be 42 inch LED. Suitable furniture like table etc required for mounting the VDU shall be provided by the contractor. Drawing of table required prior approval of Railtel Engineer site incharge. One laser printer along with power backup ups not less than 20 minutes shall also be supplied and installed by contractor.with A-4 size color laser printer, UPS & with all necessary communication arrangement. This also include furniture i.e. table & chair for keeping MT with all accessories.(Inspection by Consignee).						
7	7	8.00	Numbers	36480.26	291842.08	AT Par	291842.08
	Description:- Supply, installation, testing & commissioning of off line domestic sine wave type inverter of 1000VA or above with suitable rating tubular batteries and UPS make of Su-kam, Luminious, Microtech or other reputed brand for the backup of VDUs of EI as per latest TAN.(Inspection by Consignee).						
8	8	4.00	Station	92575.80	370303.20	AT Par	370303.20
	Description:- Supply of work station note book. It also includes supply of Laser Printer. The work station should be capable of reconfiguring the system in case of any alteration in yard interlocking in future.(Inspection by Consignee).						
9	9	80.00	Man-Days	772.91	61832.80	AT Par	61832.80
	Description:- Training for Railway Tech./JE/SE/SSE by OEM in design installation testing and commissioning, maintenanceand trouble shooting of EI system complete including supply of hard/soft copies of course module for each trainees. Competency certificate to trainee to be issued by OEM.All arrangement including classroom, lab, equipment measuring instrument for the trainee should be satisfactorily arranged by the contractor at their own cost. (Job=Training of one Tech/JE/SE/SSE for one day) Inspection site incharge.						

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10	10	4.00	Station	162684.39	650737.56	AT Par	650737.56	
	Description:- Provision of Ring Earth for EI system which includes supply of all components of earthing & bonding system like earth electrode, earth enhancement material, earth pit, equi-potential earth busbar, connecting cables and tape/strips and other associated accessories in accordance with RDSO Spec.No. RDSO/SPN /197/2016 or latest consisting minimum 10 Nos. of earth pits connected in a ring to achieve less than 1 Ohms earth resistance for connecting EI equipments, relay racks, panel, power equipments as per Signal Engineering Practice. Diagram of ring earth should be supplied to RCIL for Approval before execution. All related material as recommended by RDSO in Specn. No. RDSO/SPN/197/2016 or latest, will be supplied by the contractor as per Latest TAN. (Inspection by RDSO).							
11	11	8.00	Set	59710.89	477687.12	AT Par	477687.12	
	Description:- Supply of active lightening arrestor of class 'A' for building protection as per standard NFC-17-102. It shall work on early streamer emission principle and shall be made of stainless steel with a T of 60 micro seconds. A non resettable type counter should also be supplied to count the number of lighting occurrences. It also includes supply of electrolytic copper tape of 25mm X 2mm of better to connecting class A devices to the earth pit. This includes installation, testing and commissioning of Class A device on top of the building. This device should be installed at suitable height on top of the building using a GI mask as per the instruction of RCIL engineer at site. The device should be connected to earth pit using a copper tape of 25mm X 2mm or better. This copper tape should be run firmly only the side of mask with the help of spacers. It shall also be ensured that the down conductor shall not touch the building throughout. The down conductor shall be connected to the earth electrode using exothermic welding. A counter shall be installed at appropriate space to count the number of occurrences. All the accessories like spares, welding material etc. required for installation shall be arranged by the contractor.(Inspection by RDSO).							
12	12	4.00	Each	577072.65	2308290.60	AT Par	2308290.60	
	Description:- Supply of Microprocessor based data logger with 512 Digital & 32 Analog Inputs as per 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 equipments like protocol converter unit etc . It also includes design, supply and installation of all software required as standard practice of NR and as per 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 ir-interface relays. This also includes supply of E-1 (RS-232 to E-1 Converter) for networking of Datalogger, power supply of adequate capacity, battery and fault diagnostic software for failure analysis, Door Proximity switches (4-no.) with 2 way rigid connector for wire termination between proximity switches and Datalogger Tag blocks as per specs .. Complete Data Logger & Processor Module shall be placed in President I Rittel rack of suitable size to be supplied. This also includes supply of one no. of Computer, one no. Computer Table(Godrej make), , UPS, Printer and one no. Operator Chair (Godrej make)- as per technical specification(Inspection by RDSO). Note: Data Logger will be installed, wired, tested and commissioned by OEMs engineer as per guidelines issued by RDSO. The Pre-commissioning check list issued by RDSO for Data Logger System will be prepared by OEMs engineer and signed jointly with Rly Site Engineer. Before commissioning of Data Logger, OEM will submit Site Installation Certificate to Railway mentioning that Data Logger has been installed, wired, tested and commissioned by approved vendor of RDSO i.e by OEM.							
13	13	4.00	Job	27077.26	108309.04	AT Par	108309.04	
	Description:- "Installation, wiring, testing and commissioning of Data Logger as per spec . IRS: S-99/2006 with Amdt-3 or latest, including but not limited to the following : 1. Supply and loading of diagnostic software for failure analysis. 2. Interface wiring between Relay Rack to Datalogger for all the digital & Analog inputs as per standard Railway practice. 3. Relay Room Door locking checking arrangement , commercial power supply monitoring arrangement & D G Sets, 4. Interlinking & Networking of Datalogger with adjoining stations and IBSSs. 5. Modification to Software & Hardware, if required, and networking with other Data Loggers along with fault logic design at Control Centre.. 6. Training as per Railway Practice. 7. Software programming of Datalogger to enable Preventive maintenance of S&T assets, 8. Failure analysis, GUI of Yard Layout, extract of report in common language, accident analysis as per RDSO Guideline. 9. All installation & wiring material including supply of Relay Room Door locking checking arrangement shall be supplied by contractor & shall be procured from ROSO approved sources, wherever applicable.							
14	14	4.00	Station	77350.00	309400.00	AT Par	309400.00	
	Description:- Preparation of Design & Drawings documents: Designing SIP, ST, VDU diagram, SWR,Application logic, Interface circuits, SWRD of EI to suit proposed Yard Layout. Note SWR should be in 10 copies English/Hindi DIGLOT form as per Railway practice.							
15	15	300.00	Numbers	186.91	56073.00	AT Par	56073.00	
	Description:- Supply, installation, testing and commissioning of NDT type fuses of different ratings as per specifications IRS-S-78/92 or latest on relay rack or any other place and wiring the same as per standard practice and as per instruction of site engineer.(Inspection by RDSO).							
	16	24.00	Numbers	40179.46	964307.04	AT Par	964307.04	

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16	Description:- Supply fixing and wiring of Fuse Auto Changeover System (FACS main system) as per RDSO/SPN/209/ 2012 Rev. 2.0 with latest amendments. One automatic changeover unit comprise 32 nos of external Non Deteriorating Type or 'G' type fuses of various Ampere Rating, working voltage- 24 VDC which are in signalling circuits. System shall have 8 cards with monitoring arrangement of 4 fuses in one card. Installation , wiring, Testing and ommissioning of Fuse Alarm System,it consists of fixing of modules of fuse alarm system on existing relay rack, wiring from existing fuses to modules, soldering, lacing etc. working to be executedwithout affecting the functioning of the existing Circuits/Gears and the work shall be supplied by the contractor. Inspection by- RDSO for supply portion.(Inspection by RDSO). 1 Number = 1 per Module						
17	17	4.00	Numbers	1070470.60	4281882.40	AT Par	4281882.40
	Description:- Design & supply of Relay racks, wire coils and relay wiring accessories. This includes indoor wiring of vital I/Os from EI system upto CT rack alongwith design of circuits & preparation of wiring Diagrams.(Inspection by Consignee). 1 Number = 1 rh/rr						
18	18	4.00	Numbers	1313212.60	5252850.40	AT Par	5252850.40
	Description:- Supply, Installation, Testing and commissioning of Automatic Fire Detection & Alarm System (AFDAS) for Signalling installations as per specn no. RDSO/SPN/217/2016 Ver 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(Inspection by RDSO).						
19	19	8.00	Set	87280.75	698246.00	AT Par	698246.00
	Description:- Supply, installation, wiring, testing and commissioning of L.C.Gate telephone with inbuilt recorder in 1+6 configuration with central supply as per RDSO specification no. RDSO/SPN/TC/51/2011 or latest. (Inspection by RDSO).						
20	20	13.00	Numbers	45416.35	590412.55	AT Par	590412.55
	Description:- Supply of powder coated Main Cable Termination rack complete with scaffolding , fixtures & accessories including square bars for mounting 8-way terminal/modular terminal & blocks, ladders, string rods, frame, base assembly, insulators, J bolt, Ubolts & fasteners (Bakelite strips) , Rack arrangement etc. as per extant practice on n Rly for EI. Rack should be made of first class steel powder coated painting and rack manufacturer's certificate should be submitted. All runway for cables I wires shall be provided with PVC sleeve of proper size. All above material including modular terminals shall be supplied by Contractor(Inspection by Consignee).						
21	21	2.00	Numbers	18659.79	37319.58	AT Par	37319.58
	Description:- "Fabrication, supply and fixingof relay racks of size2200mmx690mm (as perapproved Drg. No. NR/S&T/CON/4.3/97A) madeof angle iron size45mmx45mmx6mm alongwithouter frame made of angle ironsize 65mmx65mmx8mm, fittedwith M.S. squares bars dulygalvanized, descriptions strips to accommodate Plug-in-typerelays/groups/Point contractor/ECR . All fixing material like antilting device,hyllam sheets if required, bolts & nuts, washers, insulators,shoe, angle irons, flats, L-bolts,Catenary wires and cementconcrete etc. will be suppliedby the contractor. This includescleaning, priming by red oxide,painting & description etc. withISI mark paints. Inspection by-Consignee for supply portion.(Inspection by Consignee).						
22	22	59.00	Man-Days	986.40	58197.60	AT Par	58197.60
	Description:- Training of Railway personal with supply of hard/soft copies of course material.						
23	23	72.00	Numbers	3694.11	265975.92	AT Par	265975.92
	Description:- Supply and transportation of Q-Series Neutral Line Relay (QNA1 Type), 8F/8B along with plug board(base plate), connectors, retaining clips etc and confirming to BRS-931A or latest.(Inspection by RDSO).						
24	24	142.00	Numbers	3694.11	524563.62	AT Par	524563.62
	Description:- Supply and transportation of Q-Series Neutral Line Relay (QNA1 Type), 12F/4B along with plug board(base plate), connectors, retaining clips etc and confirming to BRS-931A or latest.(Inspection by RDSO).						
25	25	35.00	Numbers	4848.03	169681.05	AT Par	169681.05
	Description:- Supply and transportation of Q-Series Neutral Line Relay (QNNA1 Type), 4F/4B along with plug board(base plate), connectors, retaining clips etc and confirming to BRS-931A or latest.(Inspection by RDSO).						
26	26	25.00	Numbers	6600.00	165000.00	AT Par	165000.00
	Description:- Supply and transportation of Q-Series Neutral Line Relay QN1(8F/8B), along with plug board(base plate), connectors, retaining clips etc and confirming to BRS-931A or latest(Inspection by RDSO).						

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27	27	20.00	Numbers	4616.98	92339.60	AT Par	92339.60	
	Description:- Supply and transportation of Q-Series Neutral Line Relay (QNN1 Type), 6F/2B along with plug board(base plate), connectors, retaining clips etc and confirming to BRS-931 or latest.(Inspection by RDSO).							
28	28	120.00	Numbers	5161.03	619323.60	AT Par	619323.60	
	Description:- Supply and transportation of Q-Series Neutral Line Relay (QSPA1 Type), 8F/4B along with plug board (base plate), connectors, retaining clips etc and confirming to BRS: 930, 931A, 932A, 933A, 934A, 935A, 937A, 943, 960 & RDSO/SPN/84 ver.2.0. (Inspection by RDSO).							
29	29	130.00	Numbers	8300.00	1079000.00	AT Par	1079000.00	
	Description:- Supply and transportation of Contactor Unit (QBCA1 Type), 24 V DC, 2F(HD).2F/4B complete with plug board (base plate), connectors, retaining clips etc and confirming to BRS-943 and RDSO Spec no. IRS S-34 & S-23 or latest.(Inspection by RDSO)							
30	30	86.00	Numbers	8300.00	713800.00	AT Par	713800.00	
	Description:- Supply and transportation of Q-Series Neutral Line Relay (QL1 Type), 11F/4B along with plug board(base plate), connectors, retaining clips etc and confirming to BRS-931A or latest.(Inspection by RDSO).							
31	31	125.00	Numbers	4924.61	615576.25	AT Par	615576.25	
	Description:- Supply and transportation of Q-Series Neutral Line Relay (QECX1 Type), along with plug board(base plate), connectors, retaining clips etc and confirming to BRS-931A or latest.Relay plug in type style AC LED all aspects.(Inspection by RDSO).							

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule B-Block Working							16043280.38	
32	32	6.00	Set	1386227.74	8317366.44	AT Par	8317366.44	
	Description:- Supply, installation & commissioning of block proving with axle counter (BPAC) using UFSBI for single line suitable for 25KV electrified area as per RDSO specification No. IRS:S-105/2012 with latest amendment. (a) ELECTRONIC SIGNALLING EQUIPMENTS : Universal Fail Safe Block Interface for single line suitable for 25KV electrified area, complete with all accessories as per RDSO's specification RDSO/ SPN/ 147-2005 & IRS Specification No. IRS:S-105/2012 Ver.0 (or latest). (2 (two) numbers per block section). It comprises of Auto Changeover facility for 1 Quad & OFC working. Necessary MODEM for Quad and OFC should be supplied along with Auto-Changeover arrangement. (b)Relay rack with due locking & sealing arrangement including necessary relays (QN1, QNA1, QL1, Timer etc.) to suit single line UFSBI and wiring as per wiring diagram RDSO's drawing No. RDSO/S/32020 (latest amendment). (c)Block panel complete with accessories as RDSO Drg. No. RDSO/S/32019 (latest amendment)- 02 Nos. (d)Block telephone with accessories as per RDSO's specification No. RDSO/SPN/ 191/2006.- 02 Nos. The Block Phone should Work without any interruption after Auto changeover.(Inspection by RDSO).							
33	33	6.00	Set	249861.00	1499166.00	AT Par	1499166.00	
	Description:- Supply, installation of OFC integrated access device 1U height or 1.5 U height /19" rack mountable for LVCD /Digital axle counter purpose;optical module integrated in the unit supporting dual core OFC and one 100Mbps Ethernet port for surveillance/ smoke detector; optical distance support to be 20 kms; unit to support one E&M module supporting four 2W/4W (each port configurable) to support axle counter / UFSBI/Control phone/ EC/RTU/ and one TELNET/SNMP port; unit to support DC/AC power supply ; unit to support change over mechanism between quad and optical fiber for E&M option;one number cable to be provided along with unit for E&M ; FABIO/2CX/OFC/DC & Module 2W/4W four port : Make :TEAM ENGG/FABIO/WAVES or similar /TANSY. One Set for one block section, (Inspection by- Consignee).							
34	34	6.00	Set	852561.97	5115371.82	AT Par	5115371.82	
	Description:- Supply of Digital Axle Counter Single Track section High availability (HASSDAC) with two detection point with dual track sensor, complete set as per RDSO Spec. No. RDSO/SPN/177/2012 Version 3 or latest amendment or specification, complete set each consisting of :(a) Start Fed (SF) System-1 no. (b) End Fed (EF) System - 1 no. (c) Rest Box -2 no. (d) Reset Filter -2 no. (e) Display unit -2 no. (f) Relay Box 1VR 1PR (each box consisting of Q relay series 1000 Ohm 6F/8B-2 no.) - 4no. (g) Transmitter (Tx) coil/sensor - 4 no. & Receiver (Rx) coil/sensor -4 no., with mounting arrangement for rail contact & double rail contact with 15 mtr. Integral cable. (h) Deflectors to safe guard rail contact - 8 nos. (i) Tool Kit 1 no. or with 100% redundancy on cross approval of all equipment SSDAC as per RDSO specification RDSO/SPN/177/2012 (Ver.3)(Inspection by RDSO). Note: The supply and provision of unit maintenance free earth has been covered separately.							
	35	6.00	Set	22833.64	137001.84	AT Par	137001.84	

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35	Description:- Installation , wiring testing & commissioning of central unit of Digital Axle Counter Single Track section High Availability (HASSDAC) with two detection points set as per RDSO Spec. no. RDSO/SPN/177/2012 Ver. 3 or latest amendment or specification or with 100% redundancy on cross approval of all equipment SSDAC as per RDSO spec. no. RDSO/SPN/177/2012 (Ver.3) of RDSO/SPN/177/2003 (Ver.1) Amdt. 2 including its associated all indoor equipment, indication panel and wiring the same to integrate with the relay circuits as per the instructions of RCIL Engineer at site and as per latest TAN. This includes laying & termination of cable, if any from panel room to axle counter room/relay room in existing ladder. Installation /programming/ configuration/ commissioning of Axle counter equipment to be carried out in accordance with latest guide line issued by Railway/RDSO preferably by authorized representative of OEM.						
36	36	36.00	Lot	25404.53	914563.08	AT Par	914563.08
	Description:- Supply, installation & commissioning of maintenance free earth suitable kit as per RDSO specification RDSO/SPN/197/2008 and Drg No. SDO/RDSO/E&B/002 dated 19.09.2008 or latest with latest amendments. Earthing kit consist of: 1. Earthing electrode of 17mm dia and 3 meter long-01 no. 2. MEEB (300mmX25mmX6MM) -01 no. 3. SEEB (150mmX25mmX6mm)-01 no. 4. Earth enhancing compound- 30 Kg (minimum). This include provision of earth connection from MEEB to S&T equipment i.e. cable sheath, apparatus case, IPS, data logger, MSDAC, SSDAC etc. with PVC earth wire of size 16/25Sq.mm through copper lugs of suitable size. PVC wire shall be supplied by contractor. Note: At certain locations it may not be possible to achieve earth resistance of less than 1.0 ohm with one earth electrode/pit due to soil resistivity. In such case provision of loop earth consisting of more than one earth pit shall be done. For inter-connection of two earth pits copper tape of size 25x2 sq. mm shall be provided by contractor. The number of pits required shall be decided based upon the resistance achieved for the earth pit already installed. The procedure mentioned above for one earth pit shall be repeated for other earth pits. The other earth so installed for the purpose of loop earthing arrangement shall be counted as separate earth. Inspection by- RDSO for supply portion.(Inspection by RDSO).						
37	37	160.00	Numbers	373.82	59811.20	AT Par	59811.20
	Description:- Wiring of relays in relay room/relay huts as per appd wiring diagrams. All wiring material including resistances and condensers etc. except cables/wires to be supplied by contractor (Supply of cables & wires covered separately). It also includes dressing, bunching, lacing and fixing of relay bases. 1 Number = 1 Nos(Per Relay)						

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule C-Power Supply							9814897.04	
38	38	4.00	Numbers	1836823.31	7347293.24	AT Par	7347293.24	
	Description:- a)Supply of SMPS based Integrated Power Supply (IPS) system suitable up to 3/4 line station with 'Q' Series Relay confirming to RDSO/SPN/165/2012 with latest amendment along with battery bank (55+5) 110V DC/300 AH along with remote indication panel. Total no. of modules and their ratings/capacity of each type of supply shall be as per Drg No. RCIL/IPS/4-Line/RE/2/22. It covers supply of Tool Kit containing all type of tools required for maintenance of IPS set as per RDSO specification no. RDSO/SPN/165/2012 with latest amendmen. The length of cables required from IPS to Battery bank 25 Sqmm flexible Copper Wire Red & black as per RDSO specification will be supplied by OEM .The vendor shall submit IPS configuration with load calculation sheet and shall obtain RCIL engineer approval before supply.(Inspection by RDSO). b) Installation,Wiring,Testing & commissioning of Integrated Power supply system conforming to specn. RDSO/SPN//165/2012 (Ver.3) or latest as per RDSO pre-commissioning checklist. This includes Installation and commissioning of 55 no. LMLA Batteries of IRS: S-88/2004 as per extant practice of NRLY along with installation of Remote indication panel in SM/ASM's room. Any masonry work,if required, will be carried out by contractor's own material. The 25 sq mm wire shall be used for connecting Batteries from IPS, 16 sq.mm Power cable is to be used for wiring of 110V DC & 110V AC and for 10 sq.mm power cable for rest of the supplies. All connectors,wiring material, ladders, DWC pipes etc as per site requirement are to be arranged by contractor as per instructions of RCIL engineer at site. The contractor will provide Supply & fitting of exhaust fan in IPS room with wire mesh and flap cover to protect the room against dust. The item includes transportation ,loading and unloading of complete IPS system with Batteries from store to site of installation. 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 up to bus bars in Relay room and upto Battery room. IPS should be connected to ring of earth of EI. This also includes supply of all types of wires/Distribution board required for interconnection form IPS to Relay rack, CT rack etc as per RDSO guidelines/Railway practice NOTE:- IPS will be installed ,wired ,tested and commissioned by OEMS'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.							
39	40	4.00	Numbers	169588.45	678353.80	AT Par	678353.80	
	Description:- Supply, wiring, installation, testing and commissioning of Earth Leakage Detector (ELD) 16 Channels as per RDSO Specn. RDSO/SPN/256/2002 or latest including on job training at site will be given by OEM engineer for installation and maintenance of ELD.(Inspection by RDSO).							
	41	4.00	Numbers	447312.50	1789250.00	AT Par	1789250.00	

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40	Description:- Supply, installation, wiring, testing and commissioning of Diesel Generator Set 20 KVA, Single Phase, 230 V, 1500RPM, 50Hz, 30BHP (minimum) mounted with air cooled double cylinder diesel engine with acoustic enclosure complete silent type DG sets confirming to RDSO Specn. No. IRS(S) 69/86 with latest amendment. (CPCB Noise and Emission Complaint) Kirloskar make engine/alternator. This also include supply of standard AMF control panel, supply of 12V/120 AH battery set along with battery charger of suitable rating for charging the batteries to ensure self starting arrangement of DG Sets. This include Supply and installation of Change over switch 200 Amp. 3 Phase, 415VAC, 50Hz (Side Handle) four pole, Make Havel's IHCFE 200 or superior. It also includes supply of start/stop buttons, Volt/Ampere/Frequency meters and 63 AMP MCB(minimum). (Inspection by Consignee). Note: DG set will be procured from OEM or authorised dealer of OEM's with the warranty certificate of minimum 1 year .ALL masonry work required for installation of DG set will be done by contractor under supervision/instructions issued by site engineer in charge of RCIL.
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S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule D-Cabling							16441352.69	
41	42	25600.00	cum	80.23	2053888.00	AT Par	2053888.00	
	Description:- Digging of 1 mtr deep and 0.3mtr wide trenches in all type of soils, including soft rock as per approved cable route plan and back filling the trench after laying of cables. It includes clearing of roots of trees and bushes and temporary obstructions on the selected cable route, ramming of soil and planting of cable marker at every 50 mtrs and at every locations where direction of trench changes. The item includes covering of laid cables by sieved soil up to 5 cm before covering by bricks. Where digging of 1 mtr depth is not possible or depth is reduced/increased as per instructions given by engineer in charge then payment will be decreased/increased proportionately to the depth of trench. Note: Cable trenching between Station Limit (i.e. from Distant to Distant Signals) should be done as per approved Cable Route plan. If above mentioned minimum distances are not available at site then trenching will be done by contractor as per instructions issued by site engineer.							
42	43	750.00	Metre	104.28	78210.00	AT Par	78210.00	
	Description:- Excavating and refilling of trench 0.3 Mtr. Wide & 1 Mtr. Deep from bottom of rail flange across the track or 0.5Mtr. from ground level which ever is more as per approved Drg no. NR/S&T/CON /1-2/97. Earth should be rammed so as not form a drain. This includes removal and refilling of ballast and restoration of surface under normal traffic conditions.							
43	44	750.00	Metre	115.99	86992.50	AT Par	86992.50	
	Description:- Excavation and refilling of trench 0.3 mtrs wide and 0.8 mtrs deep on pitched/stone/bricks paved surface, road/crossing/platform etc and restoring the surface to its original condition.							
44	45	300.00	Metre	1589.84	476952.00	AT Par	476952.00	
	Description:- Supply,Laying & installation of 100 mm B class perforated GI pipe for cable protection at culverts/Bridges including Cutting,suitably concreting at both ends,GI clamps,flats etc. All material to be supplied by contractor. The work shall be done as per instruction of Engineer.							
45	46	147000.00	Numbers	8.47	1245090.00	AT Par	1245090.00	
	Description:- Supply and laying of 2nd class bricks in the trench and laying as per Drg. No. (NR/S&T/Con./1.1/97A) and as per instruction of the site Engineer.							
46	47	1600.00	Metre	2045.40	3272640.00	AT Par	3272640.00	
	Description:- All work of horizontal boring and trenchless cabling along with supply,transpotation and insertion of double wall corrugated pipe -(ISI marked) conforming to RDSO Spec no. RDSO/SPN/204/2011 or latest, and the laying of cable in the boring under the track / road etc as per instruction of site engg. by using pipe of size 120 mm outer dia, 103.5 mm inner dia in which required number of cables to be crossed. The depth of horizontal boring should be minimum 1.0 mtr. from rail flange/road level. Inspection by- RITES for supply portion.(Inspection by Consignee).							
47	48	1300.00	Metre	3454.12	4490356.00	AT Par	4490356.00	
	Description:- All work pertaining to Horizontal Directional Drilling (HDD)/Boring and trenchless cabling. It includes supply, transportation and insertion of self lubricated HDPE Pipe and laying of cables in boring under the track/road by using different sizes of pipes depending on total number of cables will be crossed. The depth of horizontal boring should be minimum 1 mtr from rail flange/road level. This item will be used for track crossing of running lines - By using self lubricated HDPE Pipe of 200/175 mm outer/inner dia).(Inspection by Consignee).							
48	49	1100.00	Metre	410.44	451484.00	AT Par	451484.00	
	Description:- Supply, transportation and laying of Double Wall Corrugated (DWC)-HDPE pipe/duct in the cable trench as decided by site engineer in charge. It includes supply and insertion/laying of Double Wall Corrugated - HDPE pipe/duct as per RDSO Specn. No. RDSO/SPN/204/2011 or latest and conforming to ISI Spec. No.IS-14930, Part-II. The DWC-HDPE pipe/duct will be ANTI RODENT type and shall include supply and installation of accessories of DWC-HDPE duct/pipe like plastic coupler (push fit type with O-ring), end caps, T-Joints etc. The DWC-HDPE pipe/duct will be inspected by RDSO. The contractor will submit the test reports of DWC pipe- Size 200 mm outer dia. and 175 mm inner dia. (Inspection by Consignee).							

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49	50	480.00	Kilometre	7390.78	3547574.40	AT Par	3547574.40	
	Description:- Laying of S&T cables of various cores/pairs/quads in trenches/ GI Pipes/ RCC Pipes/ DWC Pipes/ Trunking etc including laying of cables in track crossings and road crossings. It includes provision of labels on each cable of coloured plastic adhesive tapes or any other identifiable marker to give the cable number at each termination point G.P. The contractor will do meggering of all the cables(main & tail) before laying as well as after laying under the supervision of engineer in charge. Meggering test report of each cable will be signed jointly by authorized site representative of contractor and RCIL site engineer in charge. Contractor will arrange to transport the material from RCIL Store Note: The length of the cables laid will includes length of the cables which have been coiled for termination purposes.							
50	51	10520.40	Per Conductor	14.84	156122.74	AT Par	156122.74	
	Description:- Testing & meggering of all types of outdoor cables after its laying and termination on both ends under supervision of RCIL Engineer in presence of Railway representative. This also includes preparation of test report for core to core and core to earth on prescribed proforma for each core of the cable separately after termination of cable. This also includes dressing & lacing of cable on both ends. Performa for testing & material for lacing to be supplied by the contractor.							
51	52	435.00	Numbers	1338.03	582043.05	AT Par	582043.05	
	Description:- Fabrication, supply & fixing of cable marker of 1:3:6 concrete(Inspection by Consignee).							

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule E-Apparatus Cases							11779342.52	
52	53	160.00	Numbers	6319.15	1011064.00	AT Par	1011064.00	
	Description:- Casting,Concreting and curing of foundation and erection of App.Cases (single) of size (1160mmx760mm) at surface and 650mm deep as per drg.No. NR/S&T/CON/2.7/97. A layer of 3mm of bitumen compound has to be provided between foundation and location box to prevent ingress of water in the base of location box. All material such as cement,sand,aggregate and anchor,App.case (single) will be supplied by railways. Contractor is required to execute all type of repair worksof foundations if required during inserting the cable for termination.(Inspection:Site Incharge)							
53	54	120.00	Numbers	5539.53	664743.60	AT Par	664743.60	
	Description:- Casting,concreting and curing of foundation and erection of half App.Cases of size (670mmx670mm) and 650mm deep as per drg.No. NR/S&T/CON/2.8/97. A layer of 3mm of bitumen compound has to be provided between foundation and location box to prevent ingress of water in the base of location box. All material such as cement,sand,aggregate and anchor bolt shall be supplied by contractor. App.case half will be supplied by railway. Contractor is required to execute all type of repair works of foundations if required during inserting the cable for termination.(Inspection:Site Incharge)							
54	Please see Item Breakup for details.				4632566.40	AT Par	4632566.40	
	Description:- Supply and installation of Apparatus Case Single (Full) as per Northern Railway Drg. along with two E Type locks and each fitted on both doors for locking arrangement.(Inspection by RITES). Note: E type lock will be as per RDSO Drg. No. SA-3376, 3377 & RDSO Specn. No. IRS:-S-30/64 or latest (Ward number of E Type locks will be given by Engineer in Charge). It includes installation of Apparatus cases on CC foundation with grouted bolts, fitting of E type locks, fabrication of slotted angle frame and fixing in the location box. This also includes filling space below location box with sand and earth work, if required. It cover supply & fixing of telephone sockets, location lamp holder, switch and lamp etc.							
55	Please see Item Breakup for details.				2683610.40	AT Par	2683610.40	
	Description:- Supply and installation of Apparatus Case Half as per As per Northern Railway Drg. along with two E Type locks and each fitted on both doors for locking arrangement. Note: E type lock will be as per RDSO Drg. No. SA-3376, 3377 & RDSO Specn. No. IRS:-S-30/64 (Ward number of E Type locks will be given by Engineer in Charge). It includes installation of Apparatus cases on CC foundation with grouted bolts, fitting of E type locks, fabrication of slotted angle frame and fixing in the location box. This also includes filling space below location box with sand and earth work, if required. It cover supply & fixing of telephone sockets, location lamp holder, switch and lamp etc.(Inspection by RITES).							
56	57	280.00	Numbers	6000.00	1680000.00	AT Par	1680000.00	
	Description:- Supply, fixing and wiring of SPD D class(Inspection by RDSO).							
57	58	100.00	cum	143.77	14377.00	AT Par	14377.00	
	Description:- Earth work around the location boxes, signals etc.							
58	59	12.00	cum	3370.91	40450.92	AT Par	40450.92	
	Description:- General concrete work in cement,coarse sand and aggregate ratio 1:3:6,work scattered at different places for items not covered in above schedule and fine plastering of top will be done with cemnt sand ratio 1:4. volume of foundation also includes volume of C.I base,anchor bolts etc. coarse sand, aggregate 25mm and cement to be supplied by contractor.(Inspection: Site Incharge)							

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59	60	20.00	cum	3275.25	65505.00	AT Par	65505.00	
	Description:- Providing brick masonry in ratio 1:6 cement and mortar including plastering with 1:4 cement and sand mixture both sides of bricks with thickness 20mm each end with contractors own B class bricks. It also includes excavation, curing, grouting, bolting etc. wherever required. B class bricks, sand and cement (ISI mark) will be supplied by the contractor. Providing brick masonry in ratio 1:6 cement and mortar including plastering with 1:4 cement and sand mixture both sides of bricks with thickness 20 mm each end with contractors own B class bricks. It also includes excavation, curing, grouting, bolting etc. wherever required. B class bricks, sand and cement (ISI mark) will be supplied by the contractor.							
60	61	280.00	Numbers	3525.09	987025.20	AT Par	987025.20	
	Description:- Supply and installation of earth electrodes as per std. practice. The item includes digging of pit in earth, 3 Mtrs. deep and fixing earth electrode pipe. Casting of cement concrete enclosures as per drg. No. (NR/S&T/CON/6.4/97). The soil treatment shall be done as per std. practice. The item includes provn. of mild steel flat of size 35mm x 6mm (as per IRSEM) and nut bolted connection of MS flat with earth electrode. The other end of mild steel flat to be connected to block instrument, cable sheath of power equipment, signal base, apparatus case, CT rack / relay racks, other equipments as per the instruction of Engr. at site & IRSEM. Earthing connection location to location shall be done through cable which shall be provided by Contractor. Complete materials such as earth electrodes as per drg. No. (NR/S&T/CON/6.3/97), cement, wiring material, nut bolt for connection & mild steel flat of size 35mm x 6mm or 210 sqm as per SEM etc. to be supplied by the contractor. Inspection by- RITES for supply portion.							

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Schedule F-Signals							5751305.37	
61	62	50.00	Numbers	10163.34	508167.00	AT Par	508167.00	
	Description:- Supply of LED Signals Lighting Unit - RED Aspect as per RDSO /SPN/199/2010/REV-1 or latest. (Inspection by RDSO).							
62	63	55.00	Numbers	10163.34	558983.70	AT Par	558983.70	
	Description:- Supply of LED Signals Lighting Unit - YELLOW Aspect as per RDSO /SPN/199/2010/REV-1 or latest. (Inspection by RDSO).							
63	64	40.00	Numbers	10163.34	406533.60	AT Par	406533.60	
	Description:- Supply of LED Signals Lighting Unit - GREEN Aspect as per RDSO /SPN/199/2010/REV-1 or latest. (Inspection by RDSO).							
64	65	100.00	Numbers	6619.80	661980.00	AT Par	661980.00	
	Description:- Supply of LED Signal Lighting unit for subsidiary Signals (Supply of LED for Route Aspects per RDSO /SPN/153/2011/REV 4.1 or latest). (Inspection by RDSO).							
65	66	95.00	Numbers	6619.80	628881.00	AT Par	628881.00	
	Description:- Supply of LED Signal Lighting unit for subsidiary Signals (Supply of LED for Shunt Signal as per RDSO /SPN/153/2011/REV 4.1 or latest). (Inspection by RDSO).							
66	67	15.00	Numbers	6619.80	99297.00	AT Par	99297.00	
	Description:- Supply of LED Signal Lighting unit for subsidiary Signals (Supply of LED for Calling ON Signal as per RDSO /SPN/153/2011/REV 4.1 or latest). (Inspection by RDSO).							
67	68	17.00	Numbers	53888.72	916108.24	AT Par	916108.24	
	Description:- Supply & installation of LED base Colour Light Signal Unit complete as per RDSO Specification No.IRS: S-26/64 or latest. The item includes supply & erection of colour light signal post tubular 140 mm dia in required length complete with CI base, CLS unit, ladder with its base, blanking off , ladder guards, maintenance platform and MS supporting bracket in the middle of the ladder, hoods & long hoods. It also includes supply & fixing of pinnacles, offset brackets, Junction Type route indicators, if any. The item also includes wiring inside the signal unit with 2.5 sqmm multi strand wire of different colour according to signal aspect with copper lug as per standard practice. The wiring material required to be supplied by contractor. Item includes supply of number plates with photo luminescent paint /strips. cross-arms (wooden) to be provided by the contractor till the signals are introduced. Item includes padlock for signal units. Height of the post: 3.5mtrs for loop line starters, advance starters & distant signals, 4.5 mtrs for main line Starters & Home and 5.5 Mtrs. for Home signal on curves. (2/3-Aspect CLS Unit with 1/2/3 Way Route Indicator). (Inspection by RITES).							
	69	33.00	Numbers	30667.35	1012022.55	AT Par	1012022.55	

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68	Description:- Supply & installation of LED base Colour Light Signal Unit complete as per RDSO Specification No.IRS: S-26/64 or latest. The item includes supply & erection of colour light signal post tubular 140 mm dia in required length complete with CI base, CLS unit, ladder with its base, blanking off, ladder guards, maintenance platform and MS supporting bracket in the middle of the ladder, hoods & long hoods. It also includes supply & fixing of pinnacles, offset brackets, Junction Type route indicators, if any. The item also includes wiring inside the signal unit with 2.5 sqmm multi strand wire of different colour according to signal aspect with copper lug as per standard practice. The wiring material required to be supplied by contractor. Item includes supply of number plates with photo luminescent paint /strips. cross-arms (wooden) to be provided by the contractor till the signals are introduced. Item includes padlock for signal units. Height of the post: 3.5mtrs for loop line starters, advance starters & distant signals, 4.5 mtrs for main line Starters & Home and 5.5 Mtrs. for Home signal on curves. (2/3-Aspect CLS Unit Mounted Directly on Signal Post). (Inspection by RITES). Note: Supply of LED signal lamps for main signals covered Separately.						
69	70	9.00	Numbers	6548.52	58936.68	AT Par	58936.68
	Description:- Supply and fixing of Calling-On signal unit on signal post. The item includes fixing of Calling On signal unit on signal post with bracket, hood etc. Calling-On unit, bracket etc. to be supplied by Contractor. The item also includes termination of cable and wiring inside the Calling On signal unit as per standard practice. Calling ON boards of suitable size as decided by site engineer in charge will also be provided by the Contractor. Calling -on signal shall conform to RDSO Drg. No. SA-24351 with latest Alt.(Inspection by RITES).						
70	71	14.00	Numbers	9368.83	131163.62	AT Par	131163.62
	Description:- Supply of shunt signal position light complete with unit post and surface base mounting socket 90mm Dia, with U type locks but without folders and bulbs etc. to Drg no. SA 23840 specs. No. IRS-S-23/88 are latest independent post type (Inspection RITES)						
71	72	23.00	Numbers	9565.55	220007.65	AT Par	220007.65
	Description:- Supply of shunt signal position light complete with unit offset bracket 3.5" dia as per drg.no SA 23840(adv) to SA 23848 (adv), specs.no.IRS-S-23/88 (Dependent type). (Inspection by- RITES).						
72	73	14.00	Numbers	1243.64	17410.96	AT Par	17410.96
	Description:- Installation, erection & wiring of independent position light shunt signal/F marker, this includes fixing of shunt signal, surface base signal post, LED unit, hood and all wiring & fixing material such as U' bolt, nuts, washer, wire, wire mesh etc. will be supplied by contractor.						
73	74	23.00	Numbers	1014.05	23323.15	AT Par	23323.15
	Description:- Installation, erection & wiring of LED lit C/ON signal /dependent shunt signal /illuminated 'A' marker/ 'AG' marker/ 'F' markers on the same post below the main signal on offset bracket. The wiring material to be supplied by contractor. It includes fixing of LED signal unit and hoods, wiring and focussing of the signal. Supply of offset bracket, calling-on signal/Shunt signal complete is covered as separate item of schedule. 'U' bolt for offset bracket wire and wiring material will be supplied by contractor. Note: Supply of LED signal lamps for auxiliary signals covered Separately.						
74	75	42.00	Numbers	8016.00	336672.00	AT Par	336672.00
	Description:- Casting of CC Foundation for Signal Post in the ratio of 1:3:6 as per Northern Railway Drg. using standard size of foundation/galvanized holding down bolts required for erection of colour light signal post. Item includes excavation, ramming of CC using vibrator, curing and plastering with 1:4 cement-sand mixture (aggregate will not exceed 3.8 cm). Aggregate, cement, sand and holding down bolts will be supplied by contractor. Any machines & tools, if required for execution of this item, will be arranged/provided by contractor. Note: As per available site conditions, if sizes of foundations are required to be decreased/ increased and same has been approved/agreed by engineer incharge then variation in CC work will be calculated on volumetric basis as per rates of these items.						
75	76	14.00	Numbers	3945.83	55241.62	AT Par	55241.62
	Description:- Casting, concreting and curing of foundations for shunt signal of size (855mmx711mm) at top and 750mm deep as per approved Drg. No. NR/S&T/CON/2.1/97A, All material such as cement, coarse sand, aggregate & foundation bolts will be supplied by contractor. (Inspection:site incharge) Note: As per available site conditions, if sizes of foundations are required to be decreased/ increased and same has been approved/agreed by engineer in charge then variation in CC work will be calculated on volumetric basis as per rates of these items.						
76	77	10.00	Numbers	9877.09	98770.90	AT Par	98770.90
	Description:- Supply and installation of Goods Warning Board/ Caution Board/Stop Board/Block Section Limit Board (BSLB)/Shunting Limit Board/change of Signalling territory board etc 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 at least 1.2 mtrs and concreting of size 0.5 mtr x 0.5 mtr x 0.5 mtr with cement concrete in the ratio 1:3:6. All material will be supplied by contractor. (Inspection by Consignee).						
77	78	22.00	Numbers	809.35	17805.70	AT Par	17805.70

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''	Description:- Fixing and supply of 'P','C','A','G','AG' etc board as per standard practice with contractor's complete material including fixing of clamps. The work shall be done as per instruction of Rly engineer at site. Wooden white cross-arms (1000x100mm) to be provided by the contractor till the signals are commissioned with contractor's own material NOTE:- The above signal items includes supply and installation of Petty materials for fixing ,clmping and mounting arrangement including wiring material (different sort of wire etc)
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S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule G-Point Machines							4808860.89	
78	79	41.00	Numbers	64478.76	2643629.16	AT Par	2643629.16	
	Description:- Supply of 110V DC point machine IRS type AC immunity 160V AC non traileble to operate on 110V DC , 143mm throw with interlocking complete with lock ,detector, cable termination box and slides for lock and detector. Rotary locking as per specn. No. IRS-S-24/2002 with amendment-1 or latest. (Inspection: RDSO)							
79	80	41.00	Numbers	23621.00	968461.00	AT Par	968461.00	
	Description:- Fixing,wiring,testing & adjustments of point machines as per standard practice. It also includes :- i) fixing of switch extension 'P' bracket, providing insulation for switch extension bracket, fixing ground connections, adjusting the correct opening of switches and adjusting the point machines with crank handle ii) wiring inside the point machine, erection and wiring of JB with lock and key as per NRLY Practice, provided with terminal strips. iii) Supply and fixing of GI pipes with flange for taking cable into point machine and junction box through gland/GI pipe. iv) Complete material for installation viz point insulation mterial, junction box, GI pipe , gland pipe ,wiring material, Nut&bolts of various sizes ,angle iron of size 75mmx75mmx10mm, channels for fixing the machine, lugs for point rodding and insulation material for stretcher bar 90R/52kg/60kg as per drg. no. SA-23172(ADV) Alt.1 will be supplied by the contractor v) Smithy and fitting work required at site for complete installation of gauge tie plate and insulation of GTP as per approved drg. no. NR/S&T/CON/7.6/97 and william stretcher bar (If required) will be done by the contractor. machine shall be overhauled by contractor if required. vi) This includes removal existing gears and fixing the machine at raised level on channel as per standard practice to avoid flooding wherever required. vi) Supply of ground connections of electric point machine, Non insulated GTP & CTP extension plate, junction box and stretcher bar shall be made available by the contractor. (Inspection: Consignee)							
80	81	41.00	Set	10219.62	419004.42	AT Par	419004.42	
	Description:- Fabrication and supply of complete set of point rodding for point machines of IRS type or its equivalent type as per RDSO Drg. No. SA-8800-01 or with latest amendments and along with "p" & "L" brackets with each sets (Coal bengal for smithy work , all type of nuts and bolts , ferrule , insulation plate, washers and lugs as required also to be supplied by contractor with each set) (Inspection:RDSO)							
81	82	41.00	Job	18969.91	777766.31	AT Par	777766.31	
	Description:- a) Supply, installation and wiring complete KLCR and its box in location boxes, supply, installation, wiring of heavy duty push button, LED indicator on MS sheet as per N.R. practice for crank handle locking. This work includes fixing & wiring of magneto telephones as per instructions of the site Engr. This includes all materials such as heavy duty push button, LED indicator (10mm), MS sheet of 4.5mm thick, nuts and bolts, fixing materials for the magneto telephone, and wiring materials to be supplied by contractor. (Inspection of KLCR by- RDSO) b) Supply & fixing of Crank Handle Box & SMs key box of size 450 mm x 250 mm x150 mm and made of 12 mm thick hard wood with a glass front, lock and sealing arrangement. All material like lock, hard wood, handles, hinges, glass sheet of 3mm thick will be supplied by the contractor. Box will be polished and description will be written as per instructions of Engineer in charge (4 Nos.) c) Supply & fixing of KLCR boxes & fixing of KLCR Relays in ASM office. It includes supply of any minor bracket, nuts, bolts, hard wood, sun mica, lock, drilling hole etc as directed by engineer at site. It also includes supply and wiring for KLCR circuit. It includes supply of all the related wiring material (4 Nos.)							

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule H-Track Circuits							5525191.70	
82	83	120.00	Numbers	5462.11	655453.20	AT Par	655453.20	
	Description:- Supply of QTA2 relays AC immunissed plug in type DC 9 Ohm neutrak track relay miniature tractive armature with 2F/1B contacts as per BRS : 939A or latest amendments if any,BRS :966-F2,IRS-s-34 & IRS-S-23 (as applicable) (Inspection:RDSO)							
	84	110.00	Numbers	29416.54	3235819.40	AT Par	3235819.40	

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83	Description:- a) Supply, fixing and wiring of DC track circuit equipments i.e. track feed battery charger, resistance, fuses etc in Apparatus Case and wiring of battery box as per std. practice. Complete wiring and all other material required for wiring and fixing of equipments will be supplied by contractor. This item includes supply of Self-Mounting Type track feed battery charger, 110V AC/2V to 8V DC, 10 Amps as per RDSO Specn.No.IRS:S-89/2013 (Amnd.2) or latest and supply of adjustable track feed resistance of 30 ohms (Disc Type) as per RDSO Drg.No.SA-20161-66/M or latest. It also includes wiring of track relays in location boxes. (TF CHARGER INSPECTION BY RDSO). b) Supply of choke type 'B' to suit RDSO spec. no. IRS-s-65/83 (Amndt.1) or latest (Inspection: RDSO) - 225 Nos. c) Supply & installation PPTC resettable fuse through hole poly switch RXEF series 650MA - 440 Nos. d) Installation of DC track circuits including points zones also. The item includes provision of doubled continuity GI wire bonds on rail joints after drilling bond-hole of 7.0/7.2mm dia, skimming of fish plate, insertion of insulated block joint if required, fixing of TLJB (separate for positive & negative rails) with angle iron for track feed/jumper/track relay 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, B-Type Choke, complete charging and placing cells etc. 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 TLJB as per RDSO Drg.No.SA-20101/M or latest with terminals, angle iron, GI wire and rail clips, bracket, insulation material etc. - 110 Nos.							
84	85	330.00	Numbers	4951.27	1633919.10	AT Par	1633919.10	Description:- Supply of Low maintenance Lead Acid secondary cell 2V-80 AH with tubular positive and pasted negative plates, assembled in transparent container (polypropylene)/hard rubber container with one micron porous vent-cum sealed float guide with inter cell connectors, bolts, Nuts and washers, in dry and uncharged condition as per specification IRS-S-88-2004 or latest. one tool kit is to be supplied with 12Nos each battery as per clause 8 of the spec. IRS-S-88/2004. (Inspection:RDSO)

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule I-LC Gates							3958171.08	
85	86	4.00	Numbers	590729.64	2362918.56	AT Par	2362918.56	Description:- Supply, Installation, testing and commissioning of Electrically Operated lifting barrier assembly as per RDSO Spec. No. RDSO/SPN/208/2012 (version 2.0) or latest consisting of 2 nos. of electrically operated lifting barriers, 2 pedestals, 8 band circuit controller with limit switches of Siemens, hand cranks, 2 electric motors, 110V AC, without centrifugal switch, 2 GI Boom in 4 sections of 8 feet each with 2 retroreflective stop boards, boom light boxes, MS counter weight, 2 nos. of boom support for resting boom etc. The item also consists of following items: a) Supply of motorized boom locking /unlocking assembly with electrical coil complete (1 no. each) b) Supply of level crossing gate control panel floor mounting type with switches and buttons sheet metal fabricated, (1 No) c) Supply of push button for operating the gate with 2 NO/NC contact, green colour- close & Amber-open, Siemens or Kaypee or similar make (1 no.) d) Supply of solid state electronic flasher 24V DC operated (1 no. each). e) Supply of dual tone warning bell with 20W horn & 15W amplifier (2 no. each). (ELB Set Inspection by- RDSO).
86	87	4.00	Set	262478.11	1049912.44	AT Par	1049912.44	Description:- Supply and installation of sliding boom gate for interlocking as per Northern Railway design. (Inspection by Consignee).
87	88	48.00	Numbers	5066.55	243194.40	AT Par	243194.40	Description:- Supply & installation of magneto telephone with all accessories IRS TC:36-97(Amndt.1) or latest with latest amendments. (Inspection:RDSO)
88	89	8.00	Set	37768.21	302145.68	AT Par	302145.68	Description:- "Supply of (02) nos. electrical lifting barrier booms fabricated from 3 mm (1st section), 2.5 mm (2nd section) & 1.9 mm (3rd and 4th section) aluminum sheets dia pressed to form tapering channels with special stiffening bends in the channels. Two such channels then joined batten plates by riveting to form a tapering box section. Total boom 32 Ft. long in 4 sections of 8 Ft. each. Sections joined by nuts and bolts for easy replacement make Heidz India (New improved Design of Higher Strength) or any supplier as approved by RDSO. The material will be as per RDSO Specn.No.RDSO/SPN/ 180/2005 Amnd.1 or latest. (Inspection by RDSO).

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule J-Drawings							511141.44	
89	90	4.00	Job	45890.59	183562.36	AT Par	183562.36	Description:- Preparation of out door plans i.e cable core plans, cable route plan, Track jumper plan, Power supply diagrams, location description chart etc.
	91	4.00	Set	81894.77	327579.08	AT Par	327579.08	

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90	Description:- Supply of "As made" Documents.(i) Completion Documents as per condition of Contract.(6 Sets for each EI) (ii) Supply of documents as per Technical specification Para -10.2 of RDSO Specification no RDSO/SPN/192/2019. (6 Sets for each EI). Inspection by- Consignee.							
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S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule K-Telecom							4647845.13	
91	92	18000.00	Numbers	106.64	1919520.00	AT Par	1919520.00	
	Description:- Supply of terminal block 25mm center M-6 (ARA terminals) as per IRS spec. No.IRS-S- 75/2006 (Rev.2) & IRS drawing No. SA-23741A(Alt.4), SA- 23745(Alt.5), SA-23746 & SA- 23756(Alt.3). (Inspection by-RDSO).							
92	93	2.00	Numbers	207679.93	415359.86	AT Par	415359.86	
	Description:- Supply and installation of Multiport Front End processor as per RDSO spec no. IRS-S:99/2006 Amdt-3 Or latest .(Inspection by RDSO).							
93	94	10.00	Numbers	3531.92	35319.20	AT Par	35319.20	
	Description:- Supply of Thermoshrink jointing kit for jely filled six quad cable conforming to spec. IRS:TC-77/2006 (Rev 1) with latest amendment(Inspection by Consignee).							
94	95	20.00	Numbers	4623.15	92463.00	AT Par	92463.00	
	Description:- "Supply of thermo-shrink splice filling jelly joining kit as per RDSO Specn.No.IRS: TC- 77-2010(Rev.2) or latest for emergency/derivation /Termination joints with VF transformers for 6-Quad Cable. This also includes supply of 3T VF transformers as per RDSO Specn.No. IRS: TC-76/2000 with Amnd 1 or latest. (Inspection by Consignee)."							
95	96	40.00	Numbers	2160.10	86404.00	AT Par	86404.00	
	Description:- "Supply of VF Transformers (2T/3T), 1120/470 Ohms as per RDSO Specn.No. IRS: TC-76/2000 with Amnd 1 or latest for emergency joints in 6-Quad Cable. (Inspection by RDSO)."							
96	97	12.00	Numbers	38260.40	459124.80	AT Par	459124.80	
	Description:- Supply and installation of Fibre Distribution Management system (24 F) complete with all accessories as per spec. RDSO/SPN/TC/37/2000 Rev. 3 (with latest amdt) suitable for termination of two numbers of 24 fiber OFC at Repeater station/ cable hut and splicing of fiber with pigtail as per specn. This includes testing of OFC cable. (All items required for execution of work shall be supplied by the contractor)							
97	98	4.00	Numbers	9527.41	38109.64	AT Par	38109.64	
	Description:- Supply & installation of Annunciator (Multiway telephone exchange) 10 lines as per RDSO Drg no. TCA-3352 (Adv.) or latest. Inspection by- Consignee for supply portion.							
98	99	3.00	Kilometre	94872.00	284616.00	AT Par	284616.00	
	Description:- Supply of 24 Fiber cable as per RDSO Specification no. IRS TC 55/2006 with latest ammendment.							
99	100	4.00	Numbers	17585.75	70343.00	AT Par	70343.00	
	Description:- Supply and installation of optical fibre cable joint enclosure as per TEC spec no. GR/OJC-02/01/ March 99 with latest amendment and splicing of optical fibre cables (24 fibres & testing). This includes provision of jointing kit (RCC/Prefabricated) as adviced by engineer at site. Inspection by- Consignee for supply portion.							
100	101	300.00	Metre	883.79	265137.00	AT Par	265137.00	
	Description:- Supply & fixing of G.I. pipe, 75mm DIA.							
101	102	4.00	Numbers	1634.86	6539.44	AT Par	6539.44	
	Description:- Supply & installation of 10 pair DP boxes & termination ocf cable							
102	103	3.00	Kilometre	53708.67	161126.01	AT Par	161126.01	
	Description:- Laying of HDPE duct in the trenches, including in HDD/Manual Boring and supply pulling of Nylon rope through is at different places as per direction of Engineer incharge/ site Engineer. It includes Supply of HDPE duct outer dia 40mm & inner dia 33mm as per TEC Gr No. G/CDS-08/02 Nov /2004 with latest amendment with end cap to be provided along with the drum at both ends. (RDSO specs No. RDSO/SPN/TC/45/2013 Rev.2.0). Inspection by- RITES for supply portion.							
103	104	6.00	Numbers	31.12	186.72	AT Par	186.72	
	Description:- Supply of End plug for 40 mm HDPE duct. (Inspection : Consignee).							
104	105	6.00	Numbers	39.32	235.92	AT Par	235.92	
	Description:- Supply of Cable sealing plug for HDPE duct (Inspection : Consignee).							
105	106	6.00	Numbers	80.20	481.20	AT Par	481.20	
	Description:- Supply of Plastic coupler -split fit/push fit type for HDPE duct (Inspection : Consignee).							
	107	8.00	Numbers	13526.63	108213.04	AT Par	108213.04	

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106	Description:- Supply, installation, testing and commissioning of 4-wire way DTMF base way station equipment as per spec. no. IRS-TC 60/207 or latest with power supply equipment as per spec. no. IRS-TC 72/97 with latest amendment with 12V/7AH battery and 4-wire control telephone as per spec. IRS:TC 38/97 with latest amendment. Inspection by- Consignee.						
107	108	4.00	Numbers	1634.86	6539.44	AT Par	6539.44
	Description:- Supply & installation of 20 pair DP complete with boxes & termination of cable as per specifications, drawing and stipulations of tender documents. This includes fixing of same on 1" thick board of size as per direction of the site Engineer with grouted nuts & bolts of suitable size and pipe fixed with clamps on pole/wall. All material required for fixing and termination including salwood /hylum board and hardware required for fixing will be supplied by contractor (Inspection : (Inspection : Consignee).						
108	109	3.00	Kilometre	10624.86	31874.58	AT Par	31874.58
	Description:- Blowing/drawing of OFC cable in the HDPE pipe duct and in protective works already provided. This includes transportation, loading/unloading of OFC from the stores to the work site with care, sealing of the duct by sealing/caps plugs. This also includes testing of cable drums in the store premises before transportation and submissions of results thereof. The cable drums with unused cable at site to be returned by the contractor from site to stores depot.						
109	110	4.00	Set	35251.07	141004.28	AT Par	141004.28
	Description:- Supply and installation of VHF set, 25W with power supply SMPS charger, RG-213 coaxial cable (30 mtrs) with connectors, 3dB gain antenna and maintenance free VRLA battery 12V/100AH with connecting cable and accessories. This includes masonry work also. Inspection by RDSO).						
110	111	20.00	Set	26262.40	525248.00	AT Par	525248.00
	Description:- Supply of VHF walkie-talkie set, 1W/5W with Rapid battery charger and 7.2 V Ni-MH battery of capacity 3000 mAh.(Inspection by RDSO).						

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule L-Misc Tools, Furnitures etc.							3910086.87	
111	112	40.00	Sqm	1342.58	53703.20	AT Par	53703.20	
	Description:- Supply & laying of anti-static PVC flooring with adhesive (PVC flooring in 2.00mm thickness) for Relay room/IPS room/battery room etc. Inspection by- Consignee for supply portion.							
112	113	4.00	Numbers	3349.49	13397.96	AT Par	13397.96	
	Description:- Supply of megger 500 AC with earth tester.							
113	114	8.00	Numbers	18613.98	148911.84	AT Par	148911.84	
	Description:- Supply of steel almira of Godrej for keeping relays & other safety equipment							
114	115	6.00	Numbers	23028.88	138173.28	AT Par	138173.28	
	Description:- Supply of Godrej chair model PCH - 7002 or better							
115	116	12.00	Numbers	5409.74	64916.88	AT Par	64916.88	
	Description:- Supply of office chair similar with arms size 830x600x550mm with PU moulded cushion and round CRP pipe complete in all respect. Make:- Godrej or similar.							
116	117	6.00	Numbers	14710.78	88264.68	AT Par	88264.68	
	Description:- Supply of Godrej Office table size WDXH 180cmx90 cmx72.5 cm or better							
117	118	36.00	Numbers	7395.48	266237.28	AT Par	266237.28	
	Description:- Supply & installation of Carbon dioxide type fire extinguishers confirming to IS-2878 or latest, complete with hose, horn, bed pipe, bracket and trolley mounted with ISI mark. (Inspection: Consignee)							
118	119	4.00	Numbers	34048.37	136193.48	AT Par	136193.48	
	Description:- Supply, Installation, Testing and commissioning of Demineraliser plant of capacity 65 liters per hour (Approx.). It includes all the pipe connecting from water source unit to collection unit. This also includes supply and fittings of two 500 liters plastic (reputed make only) water tank for this purpose including pipe fittings. It includes supply of all the minor items/material required to execute the work.(Inspection by Consignee).							
119	120	1200.00	Numbers	262.84	315408.00	AT Par	315408.00	
	Description:- Supply of electric fuse complete with fuse block(base) for Railway signalling non- deteriorating type low voltage fuse assembly 2Amp/4Amp/16Amp. to suit . Specn. No.IRS: S-78/2006 and fuse block made of PBT/Polycarbonate as per IRS: S-75/2006 (Rev.2 & Amd.2) and drg no. 23748 (IRS), Alt-4 or latest. Fuse block shall be suitable for round head type fuses. (Inspection by RDSO).							
120	121	4.00	Set	114295.14	457180.56	AT Par	457180.56	
	Description:- Supply of tool kits with details given in Technical Specification required for EI's maintenance. This item includes supply of suitable cabinet for storing tools and documents of EI for its long life as per recommendation of OEM and to be approved by RCIL engineer as per Annexure-I.							

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121	122	2.00	Kilometre	409734.60	819469.20	AT Par	819469.20	
	Description:- Supply of Indoor cable 60x1mm indoor copper conductor 60 core plain annealed high conductivity PVC insulated unarmoured as per Spec. no. IRS-S/76/89 (Amd 3) or latest amendment. (From RDSO Approved Source only).(Inspection by RDSO).							
122	123	1.00	Kilometre	59148.70	59148.70	AT Par	59148.70	
	Description:- Supply of power wires 1x6sq.mm. (Red & black), IS 694/2010 or latest. Inspection by- Consignee.							
123	124	1.00	Kilometre	162819.60	162819.60	AT Par	162819.60	
	Description:- Supply of power wires 16sq.mm. (Red & black), IS 694/2010 or latest. Inspection by- Consignee.							
124	125	1.00	Kilometre	250044.73	250044.73	AT Par	250044.73	
	Description:- Supply of power wires 1x25sq.mm. (Red & black), IS 694/2010 or latest. Inspection by- Consignee. Note: Wires Colors will be specified/decided by site Engineer in charge(for fuse alarm system).							
125	126	2.00	Numbers	111343.54	222687.08	AT Par	222687.08	
	Description:- Maintainer Tool Kit as per Tool Kit, as per Annexure-II.							
126	127	70.00	Hour	943.66	66056.20	AT Par	66056.20	
	Description:- Engaging mechanical excavators like JCB or other machineries for regrading & leveling the formation, dismantling any infringing structures, cleaning & removing debris etc. with all lead & lift etc complete as per instructions of RCIL representative at site.							
127	128	2.00	Lumpsum	100000.00	200000.00	AT Par	200000.00	
	Description:- Misc. sundry leftover petty items as per site requirement, contingency, emergencies and as per instruction of site REL Engineers, the cost of each items to be supported with proper bills to be reimbursed item wise under this).							
128	129	4.00	Station	20816.91	83267.64	AT Par	83267.64	
	Description:- Cleaning,scrapping,painting and lettering of newly installed gears such as signals point equipment, track circuit equipment with TC no. on rail app. Cases JB. TLJBs point rodding etc. including gate equipment if existing in station section as per the provision of IRSEM. All painting material to be supplied by the contractor .All paints (ISI marked) shall be approved by Railway engineer prior to painting and certificate to the effect submitted to railway. This item also include Writing and painting requirement of all indoor and outdoor gears along with making of all circuit numbers near terminam and terminal board/track in App. cases,junction boxes ,relay room,Sm's room,writing of relay nomenclature fuse nos and equipment nomenclature as the approved plans and as per provision of IRSEM at way side station. (INspection: Site Incharge)							
129	130	8.00	Numbers	22500.00	180000.00	AT Par	180000.00	
	Description:- Provision of temporary tents/Goomtees at both end of station with light, water, MT, Table, Chairs etc. during NI work.							
130	131	4.00	Station	46051.64	184206.56	AT Par	184206.56	
	Description:- Dismantling of existing lever frames/signal fittings/point fittings/lifting barriers (within station limit)/ indoor and outdoor equipment and all other released material of S&T at way side station (3/4 Line). All the released material will be transported to the place/location as decided by site engineer. The item includes i). Mechanical Signalling gears like levers, down rods, locking trough, Rodding, wire transmission, signal posts and hoods etc. ii). Electrical Signalling gears like relays, batteries, indicators, SM slide control and all released wire transmission for slot, telephone, selector control and their related items etc.							

3. ITEM BREAKUP

Schedule	Schedule E-Apparatus Cases					
Item- 54	Supply and installation of Apparatus Case Single (Full) as per Northern Railway Drg. along with two E Type locks and each fitted on both doors for locking arrangement.(Inspection by RITES). Note: E type lock will be as per RDSO Drg. No. SA-3376, 3377 & RDSO Specn. No. IRS:-S-30/64 or latest (Ward number of E Type locks will be given by Engineer in Charge). It includes installation of Apparatus cases on CC foundation with grouted bolts, fitting of E type locks, fabrication of slotted angle frame and fixing in the location box. This also includes filling space below location box with sand and earth work, if required. It cover supply & fixing of telephone sockets, location lamp holder, switch and lamp etc.					
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount

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1	1	Preparation of App. Case single involving wiring of relays. it includes - (i) Preparation & fixing of bakelite hylum sheet 910x800x6mm and teak wooden shelf 900x450x25mm duly fixed by angle iron piece of different size inside all the app. Cases. Hylum board shall be fixed on an angle iron frame of 25mmx25mmx3mm. Angle iron frame will be fixed in location boxes secured by nuts & bolts. (ii) Fixing of fuses, ARA terminal shelf type Q series relays and other type relays on square bars fixing and jamming of cables with 2 inch thick salwood plank provided at the bottom. This will include opening, pasting and jamming armour of each cable in the hole drilled separately for each cable through the salwood plank & all cable entry points on location boxes, location huts, JB's relay room/battery room to be closed with suitable masonry works covered with sand and plastering. (iii) Description for terminal drawing of circuits, inside app. Case. Painting from out side as well inside with red oxide and aluminum paint is covered separately. Size of lettering will be 100mm or as per instructions of Engineer at site. (iv) All materials including hard wood shelf, hylum board, salwood plank, angle iron square bar, wire and wiring material as per the IRS specn., non deteriorating type HRC fuses, bases, nuts and bolts and other items shall be supplied by the contractor. Relays, ARA terminals only shall be supplied by the RailTel. (Inspection :Engg representative.)	Numbers	30.00	28953.54	868606.20
2	2	Preparation of App. Case single not involving wiring of relays. it includes - (i) Preparation & fixing of bakelite hylum sheet 910x800x6mm and teak wooden shelf 900x450x25mm duly fixed by angle iron piece of different size inside all the app. Cases. Hylum board shall be fixed on an angle iron frame of 25mmx25mmx3mm. Angle iron frame will be fixed in location boxes secured by nuts & bolts. (ii) Fixing of fuses, ARA terminal shelf type Q series relays and other type relays on square bars fixing and jamming of cables with 2 inch thick salwood plank provided at the bottom. This will include opening, pasting and jamming armour of each cable in the hole drilled separately for each cable through the salwood plank & all cable entry points on location boxes, location huts, JB's relay room/battery room to be closed with suitable masonry works covered with sand and plastering. (iii) Description for terminal drawing of circuits, inside app. Case. Painting from out side as well inside with red oxide and aluminum paint is covered separately. Size of lettering will be 100mm or as per instructions of Engineer at site. (iv) All materials including hard wood shelf, hylum board, salwood plank, angle iron square bar, wire and wiring material as per the IRS specn., non deteriorating type HRC fuses, bases, nuts and bolts and other items shall be supplied by the contractor. Relays, ARA terminals only shall be supplied by the RailTel. (Inspection :Engg representative.)	Numbers	95.00	28953.54	2750586.30
3	3	Preparation of App. Case to be used as battery box (not requiring shelf and hylum of size 910x150x6mm only is reqd.): This includes fixing of fuses, ARA terminal and jamming of cables with 2 inch thick salwood plank provided at the bottom. This will include opening, pasting and jamming armour of each cable in the hole drilled separately for each cable through the salwood plank and all cable entry points on location boxes, location huts, JB's relay room/battery room to be closed with suitable masonry Works covered with sand and plastering. Wiring description for terminal drawing of circuits, inside app. Case. Painting from out side as well inside with red oxide and aluminum paint is covered separately. Size of lettering will be 100mm or as per instructions of Engineer at site. All materials including hylum board, salwood plank, wire and wiring material, catenary wires, nuts and bolts and other items shall be supplied by the contractor and shall be as per the RDSO specn.(as applicable).	Numbers	35.00	28953.54	1013373.90

**CORPORATE OFFICE-DNM/RAILTEL CORPORATE OFFICE
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						Total	4632566.40
Item- 55	Supply and installation of Apparatus Case Half as per As per Northern Railway Drg. along with two E Type locks and each fitted on both doors for locking arrangement. Note: E type lock will be as per RDSO Drg. No. SA-3376, 3377 & RDSO Specn. No. IRS:-S-30/64 (Ward number of E Type locks will be given by Engineer in Charge). It includes installation of Apparatus cases on CC foundation with grouted bolts, fitting of E type locks, fabrication of slotted angle frame and fixing in the location box. This also includes filling space below location box with sand and earth work, if required. It cover supply & fixing of telephone sockets, location lamp holder, switch and lamp etc.(Inspection by RITES).						
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount	
1	1	Preparation of App. Case half involving wiring of relays: Preparation & fixing of bakelite hylum sheet 450x800x6mm and bakelite shelf 450x450x25mm duly fixed by angle iron piece of different size inside all the app. Cases. Hylum board shall be fixed on an angle iron frame of 25mmx25mmx3mm. Angle iron frame will be fixed in location boxes secured by nuts and bolts.This includes fixing of fuses, ARA terminal, Q series relays and other type relays on square bars fixing and jamming of cables with 2 inch thick salwood plank provided at the bottom. This will include opening, pasting and jamming armour of each cable in the hole drilled separately for each cable through the salwood plank and all cable entry points on location boxes, location huts, JBs relay room/battery room to be closed with suitable masonry Works covered with sand and plastering.Wiring description for terminal drawing of circuits, inside app. Case. Painting from out side as well inside with red oxide and aluminum paint is covered separately. Size of lettering will be 100mm or as per instructions of Engineer at site. All materials including Bakelite shelf, hylum board, salwood plank, wire and wiring material, non deteriorating type HRC fuses with bases, catenary wires , nuts and bolts and other items shall be supplied by the contractor and shall be as per the RDSO specn.(as applicable).	Numbers	35.00	22363.42	782719.70	
2	2	Supply of apparatus case steel RE half with 'E' type locks and key ward No 42 & handle as per Drg No. RE/S&T/ALD/SK/220/82 & 221/82 with Alt.B .Inspection by-RITES.	Numbers	65.00	22363.42	1453622.30	
3	3	Preparation of App. Case half not involving wiring of relays: Preparation & fixing of bakelite hylum sheet 910x800x6mm and Bachelite shelf 900x450x25mm duly fixed by angle iron piece of different size inside all the app. Cases. Hylum board shall be fixed on an angle iron frame of 25mmx25mmx3mm. Angle iron frame will be fixed in location boxes secured by nuts and bolts.This includes fixing of fuses, ARA terminal, fixing and jamming of cables with 2 inch thick salwood plank provided at the bottom. This will include opening, pasting and jamming armour of each cable in the hole drilled separately for each cable through the salwood plank and all cable entry points on location boxes, location huts, JBs relay room/battery room to be closed with suitable masonry Works covered with sand and plastering.Wiring description for terminal drawing of circuits, inside app. Case. Painting from out side as well inside with red oxide and aluminum paint is covered separately. Size of lettering will be 100mm or as per instructions of Engineer at site. All materials including Bachelite shelf, hylum board, salwood plank, wire and wiring material, non deteriorating type HRC fuses with bases, catenary wires, nuts and bolts and other items shall be supplied by the contractor and shall be as per the RDSO specn.(as applicable).	Numbers	20.00	22363.42	447268.40	
						Total	2683610.40

4. ELIGIBILITY CONDITIONS

Important : All documents uploaded and remarks / confirmation entered by the bidders against any eligibility condition shall be opened as part of technical bid only

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Special Financial Criteria

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	As per Tender Document	No	No	Allowed (Mandatory)

Special Technical Criteria

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	As per Tender Document	No	No	Allowed (Mandatory)

5. COMPLIANCE

Important : All documents uploaded and remarks / confirmation entered by the bidders against any compliance condition shall be opened as part of technical bid only.

Check Lst

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	As per Tender Document	No	No	Not Allowed

Commercial-Compliance

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	As per Tender Document	No	No	Allowed (Mandatory)
2	Please enter the percentage of local content in the material being offered. Please enter 0 for fully imported items, and 100 for fully indigenous items. The definition and calculation of local content shall be in accordance with the Make in India policy as incorporated in the tender conditions.	No	Yes	Allowed (Optional)

General Instructions

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	As per Tender Document	No	No	Not Allowed

Special Conditions

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	As per Tender Document	No	No	Not Allowed

Technical-Compliances

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	As per Tender Document	No	No	Allowed (Mandatory)

Undertakings

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	As per Tender Document	No	No	Not Allowed

Custom

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading

**CORPORATE OFFICE-DNM/RAILTEL CORPORATE OFFICE
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1	Please submit a certificate in the prescribed format (please download the format from the link given below) for verification / confirmation of the documents submitted for compliance of eligibility / qualifying criteria. Non submission of the certificate, or submission of certificate either not properly filled in, or in a format other than the prescribed format shall lead to summary rejection of your offer.	Yes	Yes	Allowed (Mandatory)
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6. Documents attached with tender

S.No.	Document Name	Document Description
1	1MALSHIANSHAHKOT7235_1.pdf	1 SIP Malsian Shahkot
2	2NAKODER7245.pdf	2 SIP Nakoder
3	3NURMAHAL_7205.pdf	3 SIP Nur Mahal
4	4BILGA7236_1.pdf	4 SIP Bilga
5	LNK-PHRSTTenderDoc.pdf	Tender Document

This tender complies with Public Procurement Policy (Make in India) Order 2017, dated 15/06/2017, issued by Department of Industrial Promotion and Policy, Ministry of Commerce, circulated vide Railway Board letter no. 2015/RS(G)/779/5 dated 03/08/2017 and 27/12/2017 and amendments/ revisions thereof.

As a Tender Inviting Authority, the undersigned has ensured that the issue of this tender does not violate provisions of GFR regarding procurement through GeM.

Signed By: RICHA RANI

Designation : Manager/Tech