**Tender No:** SnT\_e\_Tender\_ADA\_22\_23\_41 **Closing Date/Time:** 31/10/2022 11:00

**DRM/S and T** acting for and on behalf of The President of India invites E-Tenders against Tender No **SnT\_e\_Tender\_ADA\_22\_23\_41** Closing Date/Time 31/10/2022 11:00 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.

#### 1. NIT HEADER

Name of Work		nterlocking system, Indoor & Outdoor onal loop line at Rainagar(RNGR) and	0 0
Bidding type	Normal Tender		
Tender Type	Open	Bidding System	Single Packet System
Tender Closing Date Time	31/10/2022 11:00	Date Time Of Uploading Tender	09/10/2022 10:05
Pre-Bid Conference Required	No	Pre-Bid Conference Date Time	Not Applicable
Advertised Value	48509956.27	Tendering Section	GENERAL
Bidding Style	Single Rate for Each Schedule	Bidding Unit	
Earnest Money (Rs.)	392600.00	Validity of Offer ( Days)	60
Tender Doc. Cost (Rs.)	0.00	Period of Completion	18 Months
Contract Type	Works	Contract Category	Expenditure
Bidding Start Date	17/10/2022	Are Joint Venture (JV) firms allowed to bid	No
Ranking Order For Bids	Lowest to Highest	Expenditure Type	Capital (Works)

#### 2. SCHEDULE

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	<b>Bidding Unit</b>
Schedule	• A1-Executi	5063946.03	Above/ Below/Par					
01	Please see Item Breakup for details. 1272700.00 297.89							
Description:- Execution of SOR-Signal Items								

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule	A2-Execution	347463.84	Above/ Below/Par					
0.1	Please see	347463.84						
01	Description	1:- Execution						

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	<b>Bidding Unit</b>
Schedule	• A3-Executi	6747248.72	Above/ Below/Par					
0.1	Please see Item Breakup for details. 6747248.72 AT Par							
Description:- Execution of Signalling-Non SOR items.								

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	<b>Bidding Unit</b>
Schedule	• A4-Executi		3817800.00	Above/ Below/Par				
01	Please see Item Breakup for details. 3817800.00 AT Pa						3817800.00	
UT	Description	n:- Executio	n of Micro T	unnelling.				

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule	B1-Supply	7732418.80	Above/ Below/Par					
0.1	Please see	Item Breakı	AT Par	7732418.80				
01	Description	n:- Supply o						

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	<b>Bidding Unit</b>
Schedul	B2-Supply	of Telecom	items				1825116.88	Above/ Below/Par

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01	Please see Item Breakup for details.	1825116.88	AT Par	1825116.88	
01	Description: - Supply of Telecom items				

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit		
Schedule	G1-Executi		1008396.00	Rs.						
0.1	Please see	Item Breaku	AT Par	1008396.00						
01	Description	escription:- Execution of Electronic Interlocking System.								

S.No.	Item Code	Item Code Item Qty					Amount	Bidding Unit		
Schedule	Schedule G2-Supply Electronic Interlocking System							Rs.		
00	Please see	Item Breakı	AT Par	21967566.00						
02	Description	Pescription:- Supply Electronic Interlocking System								

#### 3. ITEM BREAKUP

Schedule	Sched	ule A1-Execution of SOR-Signal Items.				
Item- 01	Execut	ion of SOR-Signal Items				
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	01	Excavation of trench in all kinds of soils including soft rocky area and clearing of roots of trees, rocks etc., including bailing out water and disposal of extra soil including back filling with excavated earth and ramming of trenches after cable laying for the following depths and widths as specified in Tech Circular no 2 of 1988 & 01/2010 issued by CSTE/S.E.Rly. Depth 1.2 mtr.Width 0.5mt.		5.00	14000.00	70000.00
2	02	Excavation of trench in all kinds of soils including soft rocky area and clearing of roots of trees, rocks etc., including bailing out water and disposal of extra soil including back filling with excavated earth and ramming of trenches after cable laying for the following depths and widths as specified in Tech Circular no 2 of 1988 & 01/2010 issued by CSTE/S.E.Rly. Depth 1.0 mtr.,Width 0.3mt.		5.40	12500.00	67500.00
3	03	Excavation of trench in all kinds of soils including soft rocky area and clearing of roots of trees, rocks etc. to a depth of 1 metre and width 0.3 mtr. For Track/ pucca road/platform crossing/ level crossing including supply, transportation and laying of RCC pipes with collar(for jointing pipes) 100mm/150mm nominal dia, to Specn. No. IS-458 in trench and drawing of cable through RCC pipe including back filling and ramming after cable laying as specified in Tech. Circular No. 2 of 1988 & 01/2010 issued by CSTE/S.E.Rly. for following: Signalling/Power/Quad Cables. This includes repairing and plastering of platform/pucca road after cable laying. Supplied RCC pipe shall be inspected by Representative of Sr.DSTE/ADRA.		300.00	260.00	78000.00

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4	04	Cutting and smoothening of inside surface of sizes 80	80.00	55.00	4400.00
		mm deep and 70 mm width chase in concrete or hard rocks or platfrom or cemented floor. This work includes laying and covering of cable laid in the chase with standard sizes, second class bricks placed and embedded longitudinally and plastered on the top of the bricks and curing 72 hrs as per Drg no Con/SK/T/1 for the following. (i) Single cable/Multiple cable(upto3) (see Note 4 of Drg no. Con/SK/T/1) Note: Bricks, sand and cement shall be supplied by the contractor at site and to be inspected by representative of SrDSTE/Adra before placing in the chase.			
5	05	Supply and fixing of Galvanised Iron Pipe with threaded colars(for jointing pipe) of 80 mm nominal bore specn.No.IS-1239,medium grade on bridges, culverts including supply and transportation of materials required for fixing the pipe to Drg. No. CON/SK/T/2 including drawing of cables inside the pipe with masonry work at bridge entry and exit for the following: Signalling/Power/Quad cables.	240.00	270.00	64800.00
6	06	Laying of Signalling/Quad/Power Cable in the excavated trench as under item 1, 2 above to Drg. No. CON/SK/T/5. Transportation and supply of 'U' clamps, anchoring of cable at every 10 mtrs interval with 'U' clamp on trench to drg no CSTE/CON /CABLES/81. Transportation, supply and placing of cable demarcating lead belt to Drg no CON/SK/T/6 punched at an interval of 30 Mtrs. and wrapped round each cable through out the cable route and also at every track/Road/ platform crossing as above specified in Tech circular No. 2/1988 & 01/2010 issued by CSTE/S.E.Rly. and guarding the cables collecting empty drums with left over cable and return to the stores of stock holder.	134.00	4900.00	656600.00
7	07	Transportation of cables in rolls with or without wooden drums from the store of SSE/Signal/Store/Adra or SSE/T/Store/Adra to the site of works.	134.00	500.00	67000.00
8	08	Excavation of pit, casting of concrete foundation including surrounding earth work along the foundation, modification of steel apparatus case if required and erection, installation & wiring of Steel Apparatus Case to Drg. No. CON/SK/T/8 with 4 nos of foundation bolts 20 mm x 460 mm to Drg. No. SA-112 A/M with one nut and one washer fixing of hylum sheet of size 625 mm x 37 mm x 3 mm for writing terminal description, terminal, fuse blocks, track battery charger, adjustable resistances, choke coils, fuses, relay etc.as required including fixing and termination of cable with number embossed ferrules, bunching of cables with PVC tape, earthing of cable armour, paintings, lettering, etc. as required. Painting of the apparatus case inside and outside after clearing the surface throughly and first coating of anticorrosive paint and subsequent two coats of Aluminium paint outside and Red oxide inside, painting of sal wood planks and SW strips and lettering etc. This includes transportations of materials. The standard ratio of cement concrete (cement, sand and 1" stone chips) shall be 1:3:6 respectively. The contractor shall supply hylum sheet and 4 Nos foundation bolts, nuts and washers for each sets and bolts & nuts & screws of sizes for fixing equipment and MS Clamps for fixing cable. This also includes supply of sand and filling up of cable pit inside the apparatus case by sand and fixing of anti-tilting arrangement for shelf type relays if required as advised by Railway representative. Full size	60.00	2000.00	120000.00

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S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
		T	11!*	O4	Data	A ma a
Item- 01	1	ion of SOR-Telecom Items.				
Schedulo	Schad	ule A2-Execution of SOR-Telecom Items			ı Ulal	1212100.00
		works, insulation of M.S. plate on which the point machines to be fixed from the gauge tie plate involving riveting/welding of angle cleats, termination of cables, preliminary adjustment of operation of points by crank handle, wiring, painting and lettering as required. Drilling of holes for fixing of switch extended bracket and leading stretcher bar.			Total	1272700.00
16	16	Transportation and installation (including over hauling) of Electric point machine on M.S. plate fixed on wooden/concrete sleepers complete with fixing of anti theft cover, Junction boxes, ground connections including smithy		8.00	5000.00	40000.00
15	15	Transportation and fixing of Calling ON Signals/ Dependent Shunt Signals / Illuminated 'A' / 'AG' marker for multiple aspect colour light signals on the erected signal post complete with marker including termination of cables, painting and lettering as required.		4.00	1800.00	7200.00
14	14	Transportation and fixing of Route Indicator (Junction Directed Type /Stencil Type) on the erected signal post including termination of cables, painting, lettering as required.		4.00	1200.00	4800.00
13	13	Transportation of Position light shunt signal complete with units, bases and other fittings, excavation of pit, casting of cement concrete foundation thereof as per note given below, fixing in complete fittings of signal including termination of cables, painting and lettering as required.		4.00	1500.00	6000.00
12	12	Transportation, installation of signal post for MACLS complete with signal units, bases, ladder and other fittings, erection of posts, casting multiple concrete foundation thereof as specified in the note given below, fixing of complete fittings of the signals/ signal posts with necessary earth screen protection arrangement including termination of cables, painting and lettering as required for the following:3/4-aspect		12.00	2100.00	25200.00
11	11	Transportation, installation of signal post for MACLS complete with signal units, bases, ladder and other fittings, erection of posts, casting multiple concrete foundation thereof as specified in the note given below, fixing of complete fittings of the signals/ signal posts with necessary earth screen protection arrangement including termination of cables, painting and lettering as required for the following: 2-aspect		12.00	1800.00	21600.00
10	10	Transportation and installation of Rotary Key Transmitter on Hylum sheet including termination of cables, painting and lettering and wiring as per circuit diagram.		8.00	550.00	4400.00
		CON/SK/T/9 and CON/SK/T/9A and drawal of 6 SWG GI wire from earth electrode to goomties, relay room, apparatus case, cabin, station, etc. and for signal post MS flat 35mmx 6mm shall be used. as the case may be, including fixing and soldering of copper lugs at both ends of the wire. This includes transportation of materials. NOTE: Materials such as charcoals, salt, salmoniac, GI wire, copper lugs with bolts & nuts etc. shall be supplied by the contractor.				
9	09	Excavation of earth pit, placing & fixing of earth electrode with construction of cement enclosure to drg. No.		80.00	440.00	35200.00

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1					
1	01	Excavation of trench in all kinds of soils including soft rocky area and clearing of roots of trees, rocks etc., including bailing out water and disposal of extra soil including back filling with excavated earth and ramming of trenches after cable laying for the following depths and widths as specified in Tech Circular no 2 of 1988 & 01/2010 issued by CSTE/S.E.Rly. Depth 0.8 mtr.Width 0.3mt.	1.60	10000.00	16000.00
2	02	Transportation including loading/ unloading of Optic Fibre Cable along with HDPE pipe from the stores of SSE(Signal/Tele)/Store/Adra or from any store of S. E. Railway to the site with care and laying of OFC as per procedure and returning empty cable drums with or without left over cable to the stores of SSE/Store/Adra or any other store in S. E. Railway.	0.60	6000.00	3600.00
3	03	Supply and placing of warning & Detection tape orange colour of 100 mm. Wide printed in black as "CAUTION OFC CABLE" at every 1 mtr interval (Minimum) and laid in the trench in station sec and as directed by the representative of Railway. Inspection of supply item by Representative of Sr. DSTE/ADRA.	0.60	6000.00	3600.00
4	04	Jointing of RTSF -4 Thermoishrink jointing kit as per RDSO Specn. No. IRS: TC-77/2012 or latest spec. With latest modification for derivation /termination joints with VF transformers on 6 Quad/ Telecom cable . This includes provision of jointing pit.	16.00	1200.00	19200.00
5	05	Fixing of 20 pair C.T Box Krone type / Wago type with disconnection and reconnection facility similar to U - Link panel and Termination of cable as per details of jointing schedule approved by the Engineer. i. Fixing 20 pair C.T.Box Krone/ Wago type-Termination as above. (Execution only)	20.00	400.00	8000.00
6	06	Supply, installation, testing and commissioning of 4 - wire way station control equipment DTMF type as per specification IRS60/2007 with all accessories like control telephone (IRSTC45&47a41@ etc . This includes termination of battery wire, switch board cable, electric wire etc. The way station equipment shall be fixed on board 3/4 " thick pasted with sunmica as per specification IRS-K2-66 or on high quality Novopan board as will be determined by Rly. Engineer at site. All materials for fixing also to be supplied by the contractor. Inspection of supply item by Representative of Sr. DSTE/ADRA.	8.00	4500.00	36000.00
7	07	Supply & installation of 12V power supply unit for telecom installations way side stations in 25KV electrified area for 6 equipments of DTMF/Solid state type as per RDSO specification IRS-TC-72-97 with 12 V, 7 AH MF battery and installation of the same on a wall mounting TW stand of size 12"/18"/1/2" with touch wood polished as per specification IRS/K-2-66. Inspection of supply item by Representative of Sr. DSTE/ADRA.	8.00	3000.00	24000.00

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8	08	Supply, transportation, fixing, wiring, termination of cable, erection of rail post of size 2.8 meter including foundation of post in cement concrete (1:2:4) as per the direction of the section engineer in charge, testing and commissioning of Emergency Socket Box cast iron make as per Drawing No.SE/T/50/76 (6 pin Emergency Plug and Socket as per TC-42/20 Version- 1.0 or latest and other accessories). This includes transportation of rail posts (provided by the Railway) from any place/Station to work site; fixing of GI pipe and emergency socket box, GI pipe 40 mm diameter,1.8 meter long as per IS 1239 grade medium, cast iron emergency socket with complete fittings. Supply of materials required for masonry work, U-bolt for fixing emergency socket etc., cutting of Rails to the size and welding of GI pipe on the rail post will be done by the contractor. Inspection of supply item by Representative of Sr. DSTE/ADRA.		4.00	5000.00	20000.00
					Total	130400.00
Schedule	Sched	ule A3-Execution of Signalling-Non SOR ITEM.				
Item- 01	Execut	tion of Signalling-Non SOR items.				
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	01	Excavation of trenches including clearing of roots of treese etc.in hard/rocky soil by chiselling up to a depth of 0.5M to 0.8M and width 0.3mt at the bottom, supply & placing RCC on sieved soil of 30mm over cable and concreting throughout the length upto a layer of 75mm approximately. (1:2:3) as advised by the site engineer. Then back filling the trentch by digging and carrying earth from a lead of maximum 30 meters. and then ramming of soil after cable laying. This includes supply of RCC hume pipe sections and all the materials for concreting. Note:-RCC pipe section of 150mm nominal dia to be supplied by the contractor.		500.00	693.82	346910.00
2	02	Excavation of trench in all kinds of soils including soft rocky area and clearing of roots of trees, bushes, rocks, ballast etc., to a deapth of 1 mtr.& width 0.3m for track/pucca road/platform crossing/level crossing and anyother place as advised by the Engineer-in-charge including supply,transportation and laying of Double wall corrugaed pipe for under ground cable protection with collars of 10mm inner diameter and 120mm outer diameter in length of 6 meters with couplers and sockets as per RDSO specification no. RDSO/SPN/204/2011/Ver.1.1 Supply of one coupler for 6 meter of DWC pipe and two couplers for 30 meter of length free of cost. Insp.: Representative of Sr. DSTE/Adra.		2000.00	834.40	1668800.00
3	03	Supply, transportation and fixing of RCC Cable Route Marker as per Drawing SEM drawing No. 15-D1. Insp.: Representative of Sr. DSTE/Adra.	Numbers	140.00	415.00	58100.00
4	04	Supply, transportation and installation and testing of joint enclosure for armoured optical fibre cable as per Specification No. RDSO/SPN/TC/68/2014 Rev 1.0 or latest for splicing of Optical Fibre cable (24 fibres) with termination.		4.00	4998.00	19992.00
5	05	Supply, transportation and installation of RCC joint chamber with two piece top cover and bottom cover with holes for drainage and cable entry, as per Drawing No. RDSO/TCDO/COP-21(a). This includes trenching for jointing pit, back filling and ramming of the pit after placing the joint closure and cable loop in the chamber without causing any damage to same and consolidation of soil as well as disposal of excess soil. Inspection: Representative of Sr.DSTE/ADA.		4.00	3722.00	14888.00

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6	06	Providing dry sand including supply in RCC joint chamber up to 600 mm height as per Drawing No. RDSO/TCDO/COP-21(a). All materials will be inspected by Railway.	4.00	810.20	3240.80
7	07	Transportation, Installation, Testing & Commissioning of LED Signals Lamps for Main signals Lighting Unit (i.e. Red, Yellow, Green) consisting of LED signal aspect with ECR as per RDSO specification and instruction manual of OEM.	66.00	1368.90	90347.40
8	08	Transportation, Installation, Testing & Commissioning of LED Signals Lamps for Subsidiary signals lighting unit (i.e. Route aspect, Shunt Signal, Calling on aspect, A marker etc.) consisting of LED signal aspect with ECR as per RDSO specification and instruction manual of OEM.	30.00	1075.58	32267.40
9	09	Fixing of P/G/C/A/AG/IB Marker/Arrow Marker/Signal Number plates with complete fittings as per site requirement.	8.00	216.83	1734.64
10	10	Transportation, installation and painting of Sighting Boards SLB/BSLB/Legend/Stop Board as per SEM Drawing No. 19-D4. This includes i) Excavation of pit of depth 900 mm, width 600 mm. ii) Supply of sighting board as per SEM Drawing No. 12-D1 or specified by Railway.	8.00	11530.95	92247.60
11	11	Alteration / modification in existing location boxes, fixing of equipments, cable insertion, termination, wiring, testing & commissioning, two coat painting, lettering to suit the circuits as per approved wiring diagram. This includes filling with sand and plastering the same. NOTE: All the sundry materials except that included in supply schedule shall be supplied by the contractor.	4.00	2196.18	8784.72
12	12	Transportation, Installation, interconnection & commissioning of Double line block instrument/Single line BPAC with filter units and block bell equipment in the station. All materials (except block instruments, block bell equipment & filter unit) to be supplied along with the cupboard consist of laminated plyboard suitable for all weather with stainless steel frame for keeping the instrument by the contractor.	4.00	29889.42	119557.68
13	13		2.00	27999.20	55998.40
14	14		2.00	14711.87	29423.74

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15	15	Transportation, grouting/erection, wiring as per approved wiring diagram of 19" relay rack/Composite/Q-Series Relay Rack with subsequent alteration (with 3/4 X 9" anchor bolts with one nut and one washer per bolt & D-bracket & 60mm insulator), fixing of M.S. ladder as per requirement for rack to rack connection, CTR and control panel, fixing of plug boards, relays, terminal blocks, terminals, filter units, tag blocks, fuses, bus bars, shelves, strips, 6mm hylum sheet of required length for writing terminal description etc, fixing and termination of cables on the relay racks with number embossed ferrules, bunching of cables with PVC tape, earthing of cable armour including painting and lettering. Wiring and testing of complete relay rack accommodating all relays as per wiring diagram. All materials, if required for modification of rack shall be supplied by the contractor and to be carried out at site within the cost.	28.00	40424.53	1131886.84
16	16		8.00	44164.25	353314.00
17	17	Transportation, installation,testing and commissioning of Magneto Telephone (desk type) as per specification IRS/TC/79/2000 including supply of requisite wiring materials all the materials needed for installation will be supplied by the contractor. This includes supply of batteries.	8.00	246.40	1971.20
18	18	Transportation, grouting and laddering of Integrated Power Supply System including termination of power & signalling cables duly fixed with galvanized MS clamp, painting & lettering, NOTE: Transportation of batteries, electrolyte, bolts & nuts, screws etc. and other sundry materials required for the above work shall be supplied by the contractor as required. The IPS are to be commissioned by the ORIGINAL EQUIPMENT MANUFACTURER.	2.00	46092.09	92184.18

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19	19	Single Earth installation: Installation of Single Maintenance Free Earth pit as per RDSO Drawing No. SDO / RDSO/ E&B/001 which includes the following:-a) Digging/Auguring/Boring of single earth pit of 100mm to 125mm dia to the depth of approx. 3 meter.b) Insertion of 3.0 meter electrode and penetrating it minimum 150 mm by pushing gently with sledge hammer where the natural soil is assumed. (c) Filling of earth pit with Earth Enhancement Compound (EEC) in slurry form and backfilling. (d) Carrying out exothermic weld connection on single earth electrode to a copper tape of 200 x 25 x 6 mm. (e) Carrying out exothermic weld connection on the copper tape of 200 x 25 x 6 mm on Earth Electrode for connecting two 35 Sq. mm cables for redundancy.(f) The exothermic welding material for bonding the earth system shall be procured from RDSO approved firms, which includes graphite modules, clamps, weld metal powders. (g) The dimension of the chamber will be of 300 x 300 x 300 mm (inside dimension) of RCC with 50mm thick and fine finish, Inspection chamber should be as per IEC 62561-5 or latest.The top RCC cover size to be 400mmX400mmX50mm. The date of testing and earth resistance value shall be written on the cover with black base with yellow paint.		34.00	5882.00	199988.00
20	20	Digging a trench to a depth of at least 0.5m and run the two 35 sq mm earth conductor (procured against supply item) from Earth pit to MEEB. Routing and termination of two 35 sqmm earth conductors in trench from earth pit to 300 x 25 x 6mm MEEB, which is to be fixed inside the equipment room with two insulation studs.		340.00	76.87	26135.80
21	21	Digging a trench to a depth of at least 0.5m and run the two 35 sq mm earth conductor (procured against supply item) from Earth pit to MEEB. Routing and termination of two 35 sqmm earth conductors in trench from earth pit to $300 \times 25 \times 6$ mm MEEB, which is to be fixed inside the equipment room with two insulation studs.		200.00	48.88	9776.00
22	22	Routing and connecting all the equipment in the equipment/relay room to MEEB/SEEB with 10 sqmm copper cable using copper lugs with stainless steel nut and bolts and fixutres. The work includes laying and routing the copper cable in PVC / conduits and fixing them on wall.		200.00	48.88	9776.00
23	23	Ring Earth Installation: Installation of Single Maintenance Free Earth pit as per RDSO Drawing No. SDO / RDSO/E&B/001 which includes the following:-a) Digging/Auguring/Boring of single earth pit of 100mm to 125mm dia to the depth of approx. 3 meter.b) Insertion of 3.0 meter electrode and penetrating it minimum 150 mm by pushing gently with sledge hammer where the natural soil is assumed. (c) Filling of earth pit with Earth Enhancement Compound (EEC) in slurry form and backfilling. (d) Carrying out exothermic weld connection on single earth electrode to a copper tape of 200 x 25 x 6 mm. (e) Carrying out exothermic weld connection on the copper tape of 200 x 25 x 6 mm on Earth Electrode for connecting two 35 Sq. mm cables for redundancy.(f) The exothermic welding material for bonding the earth system shall be procured from RDSO approved firms, which includes graphite modules, clamps, weld metal powders. (g) The dimension of the chamber will be of 300 x 300 x 300 mm (inside dimension) of RCC with 50mm thick and fine finish, Inspection chamber should be as per IEC 62561-5 or latest.The top RCC cover size to be 400mmX400mmX50mm. The date of testing and earth resistance value shall be written on the cover with black base with yellow paint.		16.00	5882.00	94112.00

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24	24	"(a) Digging a trench to a minimum depth of 0.5 mtr and	Metre	80.00	144.27	11541.60
		laying 50x6 mm bare Galvanized steel tape connecting all the eight earth pits. (b) Routing and laying 50x6 mm Galvanized steel tape connecting all the earth pits in Ring. (c) Carrying out exothermic weld connections on all the earth electrodes to Galvanized steel tape of size 50x6 mm for interconnecting the earth pits. (d) It shall be ensured that the distance between any two earth electrodes shall be minimum 3 m and max up to twice the length of the earth electrode to avoid mutual resistance effects."				
25	25	Routing and termination of 25x3 mm Copper strips which is to be fixed inside the equipment room with insulation studs.		80.00	274.59	21967.20
26	26	Digging a trench to a depth of at least 0.5m and run the two 35 sq mm earth conductor (procured against supply item) from Earth pit to MEEB. Routing and termination of two 35 sqmm earth conductors in trench from earth pit to 300 x 25 x 6mm MEEB, which is to be fixed inside the equipment room with two insulation studs.		240.00	76.87	18448.80
27	27	Routing and connecting of all the SPDs in the equipment room to MEEB with 16 sqmm copper cable using copper lugs with stainless steel nut and bolts.		240.00	48.88	11731.20
28	28	Routing and connecting all the equipment in the equipment/relay room to MEEB/SEEB with 10 sqmm copper cable using copper lugs with stainless steel nut and bolts and fixutres. The work includes laying and routing the copper cable in PVC / conduits and fixing them on wall.		240.00	48.88	11731.20
29	29	Transportation, laying including supply of Split RCC hume pipe (As per SEM Drawing No.15-D3) having plain ends with their jointing loose split collar half round of size 200 mm (inner diameter)/25mm thickness at site over the single/multiple cable laid in the trench.		1760.00	515.09	906558.40
30	30	Adjustment, testing and commissioning of complete Interlocking at proposed stations with Simulation as per approved circuit diagram with the satisfaction of Railway representative including all signal equipment erected in location, goomties, relay room and other related work not covered under schedule but required for the commissioning and post commissoing of works of stations. i) Filling the data in the maintenance register which contractor is to be supplied.ii) Shifting of TLBI/DLBI /BPAC etc. instrument and fixing and wiring. Painting & Lettering of leftover S&T gear and Lettering on Buildings as required for each station as per requirement. iii) Adjustment of Track circuit/Axle counter. iv) Changing of signal number during NI. v) Cross mark on unused signals.		2.00	51794.74	103589.48

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31	31	"Miscellaneous arrangements for NI period comprising of concerned Yard: a) Temporary goomty/Tent of dimension atleast 12'x12' at both side of the station yard and at central panel building, furnished with one table, six chairs, emergency light and mosquito repellant. b) Sufficient temporary lighting arrangement through out the yard from Sunset to sunrise one day prior, during and post NI work. This includes provision of two DG set of minimum 7.5 KVA capacity and halogen flood lights. The DG sets and Diesel etc has to be arranged by the contractor at his own cost. c) Provision of PA System at both the end of the yard. d) Resting arrangement for atleast 16 staff at night. e) Vehicle for transportation for to and fro movement of S&T staff during NI period. f) Manning of adjacent station to be done by contractor.g) Provision of printing/xerox copies of drawings, wiring diagram, CTR/ Location box terminal chart, point wiring, MSDAC/track circuit wiring, NI program, Signal wiring, track bonding plan, etc in a plastic folder. No. of copies depends upon the number of team formed for NI and as per instruction of officer incharge of NI."	2.00	131964.53	263929.06
32	32	Design and supply of the following drawings to office records as per requirement of the Railways. This includes alteration at different stages and finally supply of all the drawings incuding tracings within 30 days from the date of commissioning of the work. This includes the following drawings for each station: (1) Cable layout plan (Main) (2) Cable layout plan (Tail) (3) Cable matching chart (4)Location Hut drawing (5)Termination chart of end goomties and location hut (6)Traction bonding plan (7)Contact Analysis Chart (8) SWRD & GWRD (9)Equipment Layout Plan (10) Power Supply arrangement Diagram (11) Any other drawing as found relevant as per site condition. Office record include the following: (i)Battery History book (ii) Track Circuiting Register. (iii) Track circuit maintenance Register (vi) Lamp Register (vii)Glued joint/ Block joint Register (viii) Point machine Maintenance Register .(ix) Joint Inspection Register (a) P. Way, Electrical & Signal. (x) Relay Register (xi)Route cancellation Register (xii) Relay Room Key Register (xiii) Emergency Point operation Register. (xiv) Crank Handle Register (xvi)Axle counter reset register.Note:(i) All the diagram will be made on CAD. The paper size of wiring diagram will be A-3 and minimum text size of 2mm should be used. Wiring diagram will be made in 'Black colour'. Alteration to wiring diagram will be made in 'Black colour'. Alteration to wiring diagram will be made in 'Black colour'. Alteration to wiring diagram will be made in 'Black colour'. Alteration to wiring diagram will be made in 'Black colour'. Alteration to wiring diagram will be made in 'Black colour'. Alteration to wiring diagram will be done using TWO drawing method' RED and Green colouring should be used on production copies of design detail to indicate changes as follows: RED = new equipment to be installed or commissioned. GREEN = redundant equipment to be recovered.	2.00	32871.98	65743.96
33	33	Installation & commissioning of Earth Leakage Detector - 4 channels as per Spec.No.RDSO/SPN/256/2002 or latest amendment	6.00	4989.09	29934.54
34	34	Supply & errection of Furniture consist of laminated plyboard suitable for all weather with stainless steel frame for housing operator console, CPU and exhaust fan in CPU chamber as per approved drawing.	2.00	169013.72	338027.44
35	35	Drafting of station working rules in English on the basis of station working rule diagram/gate working rule diagram to be supplied by the contractor. Submission of one draft copy to railways for approval, resubmission of draft in three copies, for approval of division after making corrections.	2.00	11536.49	23072.98

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S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
Item- 01	Execut	tion of Micro Tunnelling.	1		T	
Schedule	Sched	ule A4-Execution of Micro Tunnelling.				
					Total	6747248.72
44	44	30° to 50° C for class 13 B type fire with 1 Mtr. Hose pipe fitted with PVC bend complete in all respect. Inspection by representative of Sr. DSTE/Adra.  "Installation and supply of Lightening Protection System Class A type, detail as follows- (1) Lightening arrester technology: Advance Early Seamer Emission. Material: High current discharge stainless steel. International standards: NFC 17- 102. (2) Mast material: FRP pipe and high-grade aluminium. Dimension: 50mm. length: 2 metres FRP pipe and 2 metres high grade aluminium mast. (3) Down conduct cable: PVC insulated copper cable. Dimension: 50 Sq. mm, length: 75mtrs (per set) Lightning strike counter number of counts: 6 digits. Current sensitivity: 1KA to 200 KA, 8/20 micro/Sec. induction Shunt: 0.5 micro. (4) Two (02) No. of maintenance Free Earth with all required consisting as per Specification No. RDSO/SPN/197/2016 Ver 1.0 or latest with all required copper cables and strips. Inspection by representative of Sr. DSTE/ADA."	Set	2.00	98648.00 Total	197296.00 6747248.72
43	43	Supply of ISI marked (IS: 15683) CO2 type fire extinguisher of capacity 4.5 Kg operating temperature - 30° to 50° C for class 13 B type fire with 1 Mtr. Hose		10.00	4814.09	48140.90
42	42	Transportation installation and commissioning of PA system systems complete as per instruction of representative of Sr. DSTE/Adra.		2.00	1693.52	3387.04
41	41	Supply, transportation & installation of Power Terminal 100 Amps.	Numbers	300.00	285.01	85503.00
40	40	Termination, installation, wiring alterations/ modifications including wiring/termination on existing signalling equipments and indoor gears as per latest alterations, testing and commissioning of Power Racks.		4.00	20212.00	80848.00
39	39	Supply and Installation of Glass fronted Key box made of teek wood/ sisam wood for Rotary key transmitters/KLCR etc. with locking arrangement and 1 no. of godrej make padlock it should be done as per site supervisor instructions. After installation it should be painted and lettering as per SER practice.		6.00	2459.11	14754.66
38	38	Supply of 15 copies of SWR in Hindi finally approved by railways along with cover and soft copy (PDF) in CD-R. This has to be done after CRS sanction has been obtained.		2.00	6633.47	13266.94
37	37	Supply of 15 copies of SWR in English finally approved by railways along with cover and soft copy (PDF) in CD-R. This has to be done after CRS sanction has been obtained.		2.00	6633.47	13266.94
36	36	Preparation of station working rules in Hindi. Procedure to be followed as per above item.	Numbers	2.00	11536.49	23072.98

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1	01	Micro Tunnelling:- Transportation of HDT machine with accessories including handling of store materials, preparation of sites and boring (Boring size minimum 225 mm for laying of four (4)nos. of 50mm HDPE pipes as required and as per site engineer forplacing and for crossing of signalling/OFC cable through HDPE pipe at bridges/culverts/trackcrossing/pucca road crossing, boring trench shall be minimum 3 (three)meter below the river bed and track/road/pucca road crossing area. This includes supply of 4 number of permanently lubricated HDPE telecom ducts of equal length as per RDSO spec. no. RDSO/SPN/TC/45/2013 REVISION 2.0with latest amendments. For each HDPE duct the following items are to be supplied as per requirement and specify by site engineer (a) End plugs (b) Cable sealing plugs (c) Plastic cuplers slip fit/push fit type (d) End plugs to be provided along with drum. NOTE: Inspection-RDSO. Cost of fuel and all others items which will be required for laying of cable throughHDPE pipe shall be carry out by the contractor. The work shall be executed as per site engineer, Boring up to the length of 150 mtrs. NOTE: Work to be carried out at any place in division asper site engineer. NOTE: (a) Payment will be made as per actual length & boring done. The dispensation, if any, laid down in schedule should be obtained at least at JAG officer level. (b) If the depth of trench is not uniform in a span of 100mtr. or shorter lengths if site condition demands along the cable run, minimum depth will be taken for that particular stretch for payment. The boring profile should be recorded and submitted for verification of depth and length of boring and payment.		2000.00	1908.90	3817800.00
		pengin or boning and payment.			Total	3817800.00
Schedule	Schedi	ule B1-Supply of Signalling items				
-		of Signalling items				
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	01	Non-Deteriorating type low voltage electric fuse for Railway signalling make rating voltage 230 V AC/DC & Rated current: 2 to 16 Amps capacity, fuse with cylindrical cap without indication size 14x 51 mm. Complete with base, cylindrical fuse. Spec. no: IRS-S-78/92 with latest amendment. Current rating as per design. (a) Inspection: by RDSO.		400.00	52.70	21080.00
2	02	PBT fuse base to Drg no SA-23748, Alt-4, Specn no IRS-S-75/2006 with latest amendment. Inspection: by RDSO.	Numbers	400.00	164.93	65972.00
3	03	Supply of Terminal block 6-way PBT, 25mm as per Specification No. IRS:S-75/2006 Rev. 2.0 or latest. Inspection: RDSO.	Numbers	1000.00	399.46	399460.00
4	04	Supply of Thermo shrink jointing kits for jointing underground quad cable 0.9mm diameter conductor for straight through joint, condenser joints, Y-(Derivation) joint, Loading Coil Joint, Transformer Joint as per Specification No. IRS-TC-77/2012 Rev.3 with Amd. 3.0 or latest. Inspection: RDSO.		16.00	3125.60	50009.60
5	05	Supply of Earth Leakage Detector - 4 channels as per Specification No. RDSO/SPN/ 256/2002 or latest. Inspection: Representative of Sr.DSTE/Adra.	Set	6.00	42712.71	256276.26
6	06	Supply of Colour Light Signal, Multi Unit type Two Aspect complete but without lamp, lenses & transformers as per IRS:S-26/64 and RDSO Drawing No. SA23003 A/M (Adv) or latest. Mounting socket including its material shall be as per RDSO Drawing No. S 23005/M for post mounting on 140 mm outside diameter post. Inspection: Representative of Sr. DSTE/Adra.		12.00	15238.24	182858.88

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7	07	Supply of Colour Light Signal, Multi Unit type Three Aspect complete but without lamp, lenses & transformers a sper IRS:S-26/64 and RDSO Drawing No. SA23002 A/M (Adv) or latest. Mounting socket including its material shall be as per RDSO Drawing No. S 23005/M for post mounting on 140 mm outside diameter post. Inspection: Representative of Sr. DSTE/Adra.	12.00	18443.98	221327.76
8	08	Supply of Tubular (Seamless) Post for Colour Light Signal 5.5 meter Specification No. IRS:S-6/81 or latest to suit 140mmm dia base Inspection: Representative of Sr. DSTE/Adra.	24.00	15680.00	376320.00
9	09	Supply of Cast Iron (Grade-20) Signal base 140 mm diameter tube Drawing No. S-2011/M as per Specification No. IRS:S-10/78 & IS:210 or latest. Inspection: Representative of Sr. DSTE/Adra.	24.00	5907.79	141786.96
10	10	Supply of Ladder 5.5 meter for Colour Light Signal as per RDSO Drawing No. SA-23156 (Adv) and Stage with Ladder foundation as per Drawing No. S-2033/M(IRS) as per Specification No. IRS:S-10/78 & IS:210 or latest. Inspection: Representative of Sr. DSTE/Adra.	24.00	13100.73	314417.52
11	11	Supply of Off set bracket for Colour Light Main Signal Unit to fix on post of 140 mm outside diameter as per RDSO Drawing No. SA- 23080 (Adv.) Alt-1 and Specification No. IRS-S-10/78 or latest. Inspection: Representative of Sr. DSTE/Adra.	4.00	3174.35	12697.40
12	12	Route Indicator Junction Type 5 lamp type with Arm and Drum complete but without lens and lamps 4 way RH/LH Drg.No.SA 23404 (Adv) . Spec.No.IRS:S-66/84 or latest, Material to be procured from RDSO approved firm. Inspection: Representative of Sr.DSTE/Adra.	4.00	19308.23	77232.92
13	13	Supply of Shunt Signal Position Light type complete with base, post etc as per Drg. No.SA- 23840 (Adv.) Alt '1', S-23203 and Drg. No. 23845(Adv.) for 90 mm dia mounting socket as per Specification No. IRS: S-10/78 with Rev. 8 or latest. Inspection: Representative of Sr.DSTE/Adra.	4.00	6812.55	27250.20
14	14	Supply of Calling On signal (CLS Type) as per Drawing No: SA 24351 (Adv.) and Specification No. IRS-S-10/78 and IRS:S-26/64 this includes all accessories like lens, hood etc. Material to be procured from RDSO approved firm. Inspection: Representative of Sr.DSTE/Adra.	4.00	3708.19	14832.76
15	15	Supply of Signal Number plate/Arrow Marker plate pressure sensitive Retro reflective type high intensity grade white with imprinted 'Number/Alphabet/Arrow' in black/White of size as per SEM Drg.19-D10(Sheet 6 to 10) with film thickness 0.3mm on ACP sheet with Clamp for Main/Shunt Signal made of MS Flat of size 30mm x 3mm with nut & bolt as per SEM Drg.No. 19-D10(Sheet 9-10). Inspection: Representative of Sr. DSTE/ADA.	40.00	291.20	11648.00
16	16	Supply of Signal Marker Retro reflective type high intensity grade white with imprinted 'A'/'AG'/'G'/'C'/'P' in black of size as per SEM Drg.19-D10(Sheet 1 to 5) with film thickness 0.3mm on ACP sheet with Clamp for Main/Shunt Signal made of MS Flat of size 30mm x 3mm with nut & bolt as per SEM Drg.No. 19-D10(Sheet 9-10).	8.00	176.00	1408.00
17	17		8.00	4704.00	37632.00
18	18	Supply of Steel Apparatus case Full height as per Drg. No. :SK/Drg/OL/ SER/ 198. with lock & key ward No. 42 Specn. No. IRS-S-10/78 or latest including 2 no of hylum sheet of 25mm for shelf . Inspection: Representative of Sr.DSTE/Adra.	60.00	21183.51	1271010.60

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19	19	Supply of Composite Relay Rack/Q series Relay Rack as per Drawing No. SK/DRG/OL/SER/192, Sheet 1 or 2 or latest and must be powder coated of stone grey colour. Inspection: Representative of Sr.DSTE/Adra.		28.00	17568.62	491921.36
20	20	Supply of MS Cable termination Racks with full size of 6 mm thick hylum sheet as per Drawing No. SK/DRG/OL/SER/197 or latest and must be powder coated of stone grey colour. Inspection: Representative of Sr.DSTE/Adra.		8.00	12519.93	100159.44
21	21	Supply of Point JB fitted with 3 nos. of 40 mm bore GI pipe 600 mm long as per Drg no SGW/MGS/Pt 4/ 91 fixed on hylum sheet with u-channel (75x40x1500)mm for fixing ARA terminal. Inspection: Representative of Sr.DSTE/Adra		8.00	7680.57	61444.56
22	22	Supply of Insulating materials of Ground connection as per Drg No. RDSO/S-3266, RDSO/S-3265,S-23199, S-8813, S-8804, S-8640. Material to be procured from RDSO approved firm. Inspection: Representative of Sr.DSTE/Adra.		8.00	423.99	3391.92
23	23	Supply of Insulating materials set for gauge tie plate made of Nylon- 66 as per Specification no. IRS:S:40/84 or latest. Each set consisting as following (a) Insulation Plate Drg No. T-10370-1 No. (b) Insulation Bush Drg No. T-10371- 2 Nos. (c) Insulation Washer Drg No. T-10372-6 Nos. Material to be procured from RDSO approved firm. Inspection: Representative of Sr.DSTE/Adra.		8.00	172.97	1383.76
24	24	Supply of Strecher bar insulation. Material to be procured from RDSO approved firm. Inspection: Representative of Sr.DSTE/Adra.	Set	24.00	267.11	6410.64
25	25	Pipe lock with key ring size inside dia 40.5mm, outside dia 60mm. Thickness 20mm, lock length 65mm. Inspection: Representative of Sr. DSTE/ADRA.	Numbers	60.00	158.90	9534.00
26	26	Supply of Earth Electrodes as per Drawing No.CON/SK/8/3/84, GI pipe confirming to IS:1239 of 3.0mm thickness, 3.0 meter long, 50.0mm diameter, 5 mm diameter drilled holes staggered at distance of 150 mm. Inspection: Representative of Sr.DSTE/Adra.		80.00	2314.69	185175.20
27	27	Supply of MS Flat Plate Strip (Specification no. 226 STD or latest 35 mm x 6 mm thick for earth connection to Signal post, L/Box etc.Inspection: Representative of Sr.DSTE/Adra.		500.00	168.50	84250.00
28	28	Supply of basic material to construct Maintenance Free Earth for Ring Earth consisting as per Specification No. RDSO/SPN/197/2016 Ver 1.0 or latest, bonding connections drawing no. SDO/RDSO/E&B/002. (a) Copper bonded steel electrodes of 3.0 m long, 17.0 mm dia minimum with copper bonding thickness of min 250 micron and UL listed and marked -1 No. (b) Earth Enhancement compound of RDSO approved brand supplied in sealed bags of min 30-35 Kgs 1 Nos. (c) Copper Strip of 200mm x 25mm x 6mm to exothermically welded to Earth electrode- 1no. (d) Copper Strip of 300mm x 25mm x 6mm (MEEB) - 1no. (e) Copper Strip of 150mm x 25mm x 6mm (SEEB)- 1no. Inspection: Representative of Sr.DSTE/Adra.		34.00	11492.04	390729.36
29	29	Supply of 35 Sq mm Multi-strand Single Core PVC insulated Copper Connector as per IS:694 for connecting Main Earth Electrode to MEEB in the equipment room in duplicate. Inspection by representative of Sr. DSTE/ADA.		340.00	238.38	81049.20

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30	30	Supply of 16 Sq mm Multi-strand Single Core PVC insulated Copper Connector as per IS:694 for connecting MEEB to SEEB and SPDs to MEEB. Inspection by representative of Sr. DSTE/ADA.		200.00	157.47	31494.00
31	31	Supply of 10 Sq mm Multi-strand Single Core PVC insulated Copper Connector a sperIS:694 for connecting various equipments to SEEB. Inspection by representative of Sr. DSTE/ADA.		200.00	106.75	21350.00
32	32	Supply of Negative Bus Bar 20 mm X 5 mm /3mm thick made of copper bar with OBA brass screw & washer (The bar and screw should be nickel plated) Minimum length of one piece is 0.3 Mtr. Inspection: Representative of Sr. DSTE/ADRA.		50.00	830.31	41515.50
33	33	Supply of basic material to construct Maintenance Free Earth for Ring Earth consisting as per Specification No. RDSO/SPN/197/2016 Ver 1.0 or latest, bonding connections drawing no. SDO/RDSO/E&B/002. (a) Copper bonded steel electrodes of 3.0 m long, 17.0 mm dia minimum with copper bonding thickness of min 250 micron and UL listed and marked -1 No. (b) Earth Enhancement compound of RDSO approved brand supplied in sealed bags of min 30-35 Kgs 1 Nos. (c) Copper Strip of 200mm x 25mm x 6mm to exothermically welded to Earth electrode- 1no. (d) Copper Strip of 300mm x 25mm x 6mm (MEEB) - 1no. (e) Copper Strip of 150mm x 25mm x 6mm (SEEB)- 1no. Inspection: RDSO		16.00	11492.04	183872.64
34	34	Supply of 50x6 mm Galvanised steel tape for interconnecting the earth pits. Inspection: RDSO	Metre	80.00	407.88	32630.40
35	35	Supply of 25x3 mm bare copper strips in the equipment room . Inspection: RDSO	Metre	80.00	919.35	73548.00
36	36	Supply of 35 Sq mm Multi-strand Single Core PVC insulated Copper Connector as per IS:694 for connecting Main Earth Electrode to MEEB in the equipment room in duplicate. Inspection by representative of Sr. DSTE/ADA.		240.00	238.38	57211.20
37	37	Supply of 16 Sq mm Multi-strand Single Core PVC insulated Copper Connector as per IS:694 for connecting MEEB to SEEB and SPDs to MEEB. Inspection by representative of Sr. DSTE/ADA.		200.00	157.47	31494.00
38	38	Supply of 10 Sq mm Multi-strand Single Core PVC insulated Copper Connector a sperIS:694 for connecting various equipments to SEEB. Inspection by representative of Sr. DSTE/ADA.		200.00	106.75	21350.00
39	39	Supply of Hylum Sheet 12mm of size 4 foot x 4 foot as per specification no. IS 2036 of 1995 or latest. Inspection by representative of Sr. DSTE/ADA.		4.00	2950.00	11800.00
40	40	Steel Table with Sunmica Top Godrej make Model no. T - 9 (Table Sizes) or T101 or whichever is better similar. Inspection: Representative of Sr. DSTE/ADRA.	Numbers	8.00	23254.53	186036.24
41	41	Cushioned Chair Godrej make Model CH -7 B or similar. Inspection: Representative of Sr. DSTE/ADRA.	Numbers	10.00	5071.13	50711.30
42	42	Steel Almirah of Godrej make (Store Well Plain) or similar size 1980 x 915 x 485 mm. Inspection : Representative of Sr. DSTE/ADRA.		4.00	35000.93	140003.72
43	43	EXECUTIVE Revolving chair with cushion (high / low back depending upon personal choice) MODEL- GODREJ CH-7001 or PCH -7102R or ZUARI MAKE MODEL 420 OR similar or whichever better than these. Inspection: by Representative of Sr. DSTE/ADRA.		4.00	18527.84	74111.36
44	44	Drawing File Cabinet for 6 drawers Godrej make or similar. Dimension: Overall Depth:865mm, Overall Height: 625mm,Overall Width: 1170mm, Drawer Depth: 780mm, Height:65mm, Width: 1040mm. Inspection; Representative of Sr. DSTE/ADRA.		2.00	53480.14	106960.28

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45	45	Computer Table (Size in L x B x H in mm): 1500 x600x750mm, Key Board pull out tray, drawer and top made off MDF. Godrej or similar. Inspection: Rep. of Sr. DSTE/ADRA.		4.00	5509.80	22039.20
46	46	"Supply of PVC insulated Single core Multi-strands Copper conductor of cable of 1 x 4 Sqmm suitable on Working Voltage 1100V as per IS: 694: 2010 latest. Wire Colours shall be decided by engineer-in-Charge. Inspection by representative of Sr. DSTE/ADA."		600.00	34.17	20502.00
47	47	"Supply of 1 x 6 Sqmm (Red/Black/Green) Multi strand copper power wire as per IS:694/2010 or latest, 84 conductor each diameter 0.30mm with insulation thickness of 0.8 mm and nominal conductor resistance of 3.3 ohms/km and test parameters as per Specification No. IRS:S-76/89 or latest.Colour of the wire which is required will be specified by the Engineer incharge. Inspection by representative of Sr. DSTE/ADA."		600.00	73.08	43848.00
48	48	Supply of Electrically operated lifting barrier (ELB) 24V/110V DC/110V AC without hand generator & boom length of 9.76 meter/32 feet confirming to IS:277 with Base metal as IS: 513 grade CR3, the boom shall be painted alternately with 300-mm bands of black and yellow colour and additionally provided with luminous stripes (reflective tape) as per RDSO Drg. No. RDSO/S 11600, complete set as per Specification No. RDSO/SPN/208/2012 Ver. 2 Amd.1.0 or latest. List of spares & tool kit items mentioned in Para 10 of RDSO Specification shall also be supplied.		2.00	221925.76	443851.52
49	49	Supply of Class B & C Surge protection Device (SPD) - Type I & II with Visual Indication and Potential free contact to remote monitoring as per Specification No. RDSO/SPN/165/2012 Ver 3.0 or latest and IEC standard 61643 for Single line 230V AC application with handling Lightning surges of 10/350 microseconds and Switching surges of 8/20 microseconds. One Set consists of 3 Nos of SPD (2 No.of B Class (L-N, N-E) and one no.of C Class (L-N) all enclosed in a Box with KEMA or VDE certified as per latest IEC 61643-11-2011 Standard. Class B &C Surge protection device required with Three modules only.Inspection: Representative of Sr.DSTE/Adra.		6.00	6272.00	37632.00
50	50	"Supply of Data logger system for Railway S&T Installations with 1024 Digital and 64 Analog inputs as per Specification No. IRS:S-99/2006 (Amdt-3) or latest with power supply arrangement (batteries and charger), fault diagnostic software for failure analysis, modem card, as per technical specification. Its includes:- CMU (i3 or latest with 256 GB SSD or better) with UPS (minimum 6 hrs. battery back up) and Laser Printer- 01 No.(HP 1020 or better). Magnetic door lock coil to be supplied along with equipment. Inspection: RDSO."		2.00	417626.61	835253.22
51	51	"Supply of Remote terminal unit (RTU) with 128 Digital & 16 Analog inputs with modem as per Specification No. IRS:S-99/2006 (Amdt-3) or latest. Magnetic door lock coil to be supplied along with equipment. Inspection: RDSO."		2.00	147118.72	294237.44
52	52	"Supply of MCB 1x63A, DP complete with HRC type back up fuses with 4/6 way fittings housed in a weather proof MS box suitable for fixing on AT mast or others. Inspection: Representative of Sr.DSTE/Adra"	:	8.00	4201.11	33608.88
53	53	"Supply of MCB 1x32A, DP complete with HRC type back up fuses with 4/6 way fittings housed in a weather proof MS box. Havells or similar. Inspection: Representative of Sr.DSTE/Adra"	:	8.00	1716.17	13729.36
54	54	"Supply of 63 Amp DPDT Switch. Inspection: Representative of Sr.DSTE/Adra"	Numbers	4.00	6239.56	24958.24

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				•	Total	7732418.80
		ule B2-Supply of Telecom items				
-		of Telecom items	ı	1		
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	01	Supply of 10/100/1000mbps Media Converter (Single mode 20kms) make-DIGISOL model-DG5123 or similar. Inspection by representative of Sr. DSTE/ADRA.	Numbers	4.00	2688.00	10752.00
2	02	Supply of UTP CAT-6 cable, having bare Copper Conductor of diameter 0.5 mm, Suitable for Gigabit Ethernet TEC Specification No. G/WIR 06/02 or latest. make: AMP, MOLEX or D-LINK. Inspection by Represntative of Sr.DSTE/ADRA.		400.00	8.98	3592.00
3	03	Supply of ISI marked PVC conduit pipe (25mm dia.) with all sundry materials required for fixing and drawal of cable. Make: Anchor/Finolex/ Polycab. Inspection by representative of Sr.DSTE/ADA.		1200.00	30.10	36120.00
4	04	Supply of Amplifier set 230V AC 24V DC 120 Watt Capacity with USB/Bluetooth facility, Make Ahuja/Philips Model SSA-120M or higher specification, Inspection by Representative of Sr.DSTE/ADRA.		4.00	9426.03	37704.12
5	05	Supply of Microphone, Make Ahuja Model AUD99XLR and one Microphone Stand Make Ahuja Model DGN or higher specification. Inspection by Representative of Sr.DSTE/ADRA.		4.00	1499.00	5996.00
6	06	Supply of Column type speaker 30W. make such as Ahuja/Philips/JBL. Inspection by Representative of Sr.DSTE/ADRA.		4.00	4732.02	18928.08
7	07	Supply of Wall Speaker with Volume control for Waiting Room 6W. make such as Ahuja/Philips/JBL. Inspection by Representative of Sr.DSTE/ADRA.		10.00	1085.64	10856.40
8	08	"Supply of Horn type speaker 30W. make such as Ahuja/Philips/JBL. Inspection by Represntative of Sr.DSTE/ADRA."	Numbers	12.00	1696.80	20361.60
9	09	Supply of PVC switch board cable 05 pair/0.5 mm conductor dia as per TEC specification GR/WIR-06/03 of March 2002 or latest. Standard IRS condition with latest amendment will be applicable. Make: D-link/Molex/Havells. Inspection by representative of Sr.DSTE/ADA.		800.00	15.12	12096.00
10	10	Supply of PVC switch board cable 10 pair/0.5 mm conductor dia as per TEC specification GR/WIR-06/03 of March 2002 or latest. Standard IRS condition with latest amendment will be applicable. Make: D-link/Molex/Havells. Inspection by representative of Sr.DSTE/ADA.		200.00	48.13	9626.00
11	11	Supply of Analog Display, metal body hand driven Insulation Tester 100V, 100 Mega Ohms complete in leather case and testing probes with lead cables and (Hand Generating Type). Make Waco or similar. Inspection by Represntative of Sr.DSTE/ADRA.		4.00	4170.88	16683.52
12	12	Supply of Analog Display,metal body hand driven Insulation Tester 500V, 100 Mega Ohms complete in leather case and testing probes with lead cables and (Hand Generating Type). Make Waco or similar. Inspection by Represntative of Sr.DSTE/ADRA.		4.00	2587.20	10348.80
13	13	Supply of earth tester 500 volt upto 100 ohms (testing instrument). Inspection by representative of Sr. DSTE/ADRA.	Numbers	4.00	8430.00	33720.00

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Supply transportation & installation of Maple-4C(O)(V4) Numbers 19" Rack mountable device consisting of 4 E1 ports and three slots and one slot populated with 2W,4W,E&M supporting upto 8 interface . Balance two slot empty unit supports both AC/DC power supply ,including 50 pin cable one no. for supporting both 2W/4W,E&M AC	2.00	50150.00	100300.00
adapter one number for BPAC and UFSBI working on OFC media. MAKE- MROTEK/Fabio/Team Engineers. Inspection by representative of Sr. DSTE/ADRA.			
15 Supply of 20 pair Cable Termination Box Wago type with Numbers disconnection and reconnection facility and termination of cables as per details of jointing schedule approved by the Rly. Engineer Wago Module should be suitable for termination of 0.9 mm dia Quad cable. Inspection by representative of Sr.DSTE/ADA.	20.00	2262.70	45254.00
16 Supply of Electronic LC gate telephone system with voice Set recorder as per RDSO Specification No. RDSO/SPN/TC/51/11, Rev.3.0 or latest, Model No. GTM -124 Master Telephone. Make: Bentron/Epsilon/Anuvidyut. Inspection by representative of Sr. DSTE/ADRA.	4.00	48384.00	193536.00
17 Supply of Electronic LC gate telephone system with voice Numbers recorder as per RDSO Specification No. RDSO/SPN/TC/51/11, Rev.3.0 or latest, Model No.GTM - 124, Slave Telephone. Make: Bentron/Epsilon/Anuvidyut. Inspection by representative of Sr. DSTE/ADRA.	24.00	5040.00	120960.00
18 Supply of Electronic LC gate telephone system with voice Numbers recorder as per RDSO Specification No. RDSO/SPN/TC/51/11, Rev.3.0 or latest, Model No. GTM -124, 24 V Power pack with MF battery 7 AH for LC gate telephone . Make: Bentron/Epsilon/Anuvidyut. Inspection by representative of Sr. DSTE/ADRA.	28.00	6384.00	178752.00
19 Supply of 2T all type VF Transformer (Cylindrical type) as Numbers per specification no: IRS-TC-76/2000 with amendment 1 or latest. Inspection by representative of Sr. DSTE/ADRA.	20.00	1232.00	24640.00
20 Supply of Automatic Media Changeover of Modems Set working on redundant channels for data transmission on OFC/QUAD/MICROWAVE radio. Qty. 01 Pair & Modem for UFSBI (for use with secondary media OFC/QUAD) Qty 01 Pair. Inspection by representative of Sr. DSTE/ADRA.	4.00	38920.00	155680.00
21 Supply of Push Button Auto Telephone with Tone/Pulse Numbers switching facility, Caller ID facility. Make: Beetel/Panasoic or similar. Inspection by representative of Sr. DSTE/ADRA.	20.00	844.48	16889.60
22 Supply of LAN tester UTP cable tester. Inspection by Numbers representative of Sr. DSTE/ADRA.	4.00	180.24	720.96
23 Supply of Desk type Electronic Magneto Telephone Numbers having IRS specs no TC/79/2000 or with latest amendments. Inspection by representative of Sr. DSTE/ADRA.	8.00	2464.00	19712.00
24 Supply of True RMS Digital Multimetre. Fluke 117 or Numbers better. Inspection by representative of Sr. DSTE/ADRA.	4.00	26376.95	105507.80
25	20.00	198.00	3960.00
26	20.00	198.00	3960.00
27 SC-LC patch cord of 5 Mtr. Length. Inspection by Numbers representative of Sr. DSTE/ADRA.	20.00	198.00	3960.00
28 Crinping tools. Inspection by representative of Sr. Numbers DSTE/ADRA.	10.00	1174.00	11740.00
29 RJ-45 Connector. Inspection by representative of Sr. Numbers DSTE/ADRA.	200.00	5.00	1000.00

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30	30	SFP Module 20 Km. Inspection by representative of Sr. DSTE/ADRA.	Numbers	20.00	2800.00	56000.00
31	31	Supply of LED Display Digital Clock. Inspection by representative of Sr. DSTE/ADRA.	Numbers	20.00	1580.00	31600.00
32	32	Supply, Installation and Commissioning of GPS synchronized double sided [LED] type digital platform clock with white coloured LED as per RDSO specification No. RDSO/SPN/TC@ 47>47@ 2008 (Rev 3.0) Amd. 2 or latest with all required accessories. Inspection: RDSO.		12.00	43680.00	524160.00
	-				Total	1825116.88
Schedule	Sched	ule G1-Execution of Electronic Interlocking System.				
Item- 01	Execut	ion of Electronic Interlocking System.				
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount
1	01	Transportation, Installation, wiring, testing and commissioning of EI equipments as per RDSO specification no. RDSO /SPN/192/2019 or latest with amendments supplied as per items of schedule 'G-2' including transportation from consignee's Depot to the site of work for work at following station as indicated below. It also covers interconnection of EI equipment with relay racks, IPS, Datalogger, Operator & maintenace VDU and other equipments necessary to make the EI system functional for the station. This also includes FAT & SAT testing before NI as per the instruction of RDSO and site engineer. It also includes supply of square -sheet test report, I-FAT, FAT & SAT reports, documents required for TSAA approval, etc. for stations. EI System at BZC & RNGR.		2.00	504198.00	1008396.00
	la				Total	1008396.00
		ule G2-Supply Electronic Interlocking System				
+		Electronic Interlocking System				
S No.	Item No	Description of Item	Unit	Qty	Rate	Amount

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#### 4. ELIGIBILITY CONDITIONS

#### **Submission of Document Verification Certificate**

S.No.	•	Confirmation Required		Documents Uploading
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.  [ Click here to download the Format of Self Certificatio)	No	INο	Allowed (Mandatory)

#### **Standard Technical Criteria**

5	S.No.	Description	Confirmation	Remarks	Documents
			Required	Allowed	Uploading

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1	10.1 Technical Eligibility Criteria: (a) The tenderer must have successfully completed or substantially completed any one of the following categories of work(s) during last 07 (seven) years, ending last day of month previous to the one in which tender is invited: (i) Three similar works each costing not less than the amount equal to 30% of advertised value of the tender, or (ii) Two similar works each costing not less than the amount equal to 40% of advertised value of the tender, or (iii) One similar work costing not less than the amount equal to 60% of advertised value of the tender. (b) (1) In case of tenders for composite works (e.g. works involving more than one distinct component, such as Civil Engineering works, S&T works, Electrical works, OHE works etc. and in the case of major bridges - substructure, superstructure etc.), tenderer must have successfully completed or substantially completed any one of the following categories of work(s) during last 07 (seven) years, ending last day of month previous to the one in which tender is invited: (i) Three similar works each costing not less than the amount equal to 30% of advertised value of each component of tender, or (ii) Two similar works each costing not less than the amount equal to 40% of advertised value of each component of tender, or (iii) One similar work each costing not less than the amount equal to 60% of advertised value of each component of tender. Details eligibility Criteria as given in IRGCC April 2022 with upto date modification will be followed.	No	No	Allowed (Mandatory)
1	Defination of Similar Work :- Panel Work (Outdoor+Indoor), RRI Work (Indoor/Outdoor+Indoor), EI/SSI Work (Indoor/Outdoor+Indoor).	No	No	Not Allowed

#### Standard Financial Criteria

S.No.	Description	Confirmation Required		Documents Uploading
1	10.2. Financial Eligibility Criteria: The tenderer must have a minimum average annual contractual turnover of V/N or V whichever is less; where V= Advertised value of the tender in crores of Rupees N= Number of years prescribed for completion of work for which bids have been invited. The average annual contractual turnover shall be calculated as an average of "total contractual payments" in the previous three financial years, as per the audited balance sheet. However, in case balance sheet of the previous year is yet to be prepared/ audited, the audited balance sheet of the fourth previous year shall be considered for calculating average annual contractual turnover. The tenderers shall submit requisite information as per Annexure-VIB, along with copies of Audited Balance Sheets duly certified by the Chartered Accountant/ Certificate from Chartered Accountant duly supported by Audited Balance Sheet. Details eligibility Criteria as given in IRGCC April 2022 with upto date modification will be followed.	No	No	Allowed (Mandatory)

#### 5. COMPLIANCE

#### **Commercial-Compliance**

S.No.	Description	Confirmation Required		Documents Uploading
1	Provisions of Make in India Policy 2017 issued by Govt. of India, as amended from time to time, shall be followed for consideration of tenders.	Yes	No	Allowed (Optional)
2	Tenderer is requested to submit copy of PAN card along with the tender offer	Yes	No	Allowed (Optional)
3	As per Clause 14 (i) of Tender Form Second Sheet IRGCC April 2022 (Part-I), The tenderer shall clearly specify whether the tender is submitted on his own (Proprietary Firm) or on behalf of a Partnership Firm / Company / Joint Venture (JV) / Registered Society / Registered Trust / Hindu Undivided Family (HUF) / Limited Liability Partnership (LLP) etc. The tenderer(s) shall enclose the attested copies of the constitution of their concern, and copy of PAN Card along with their tender. Tender Documents in such cases are to be signed by such persons as may be legally competent to sign them on behalf of the firm, company, association, trust or society, as the case may be.	Yes	No	Allowed (Optional)
4	The tenderer has to confirm and submit required document as mentioned in Clause 14(ii)(a) to (g) of Tender Form Second Sheet IRGCC April 2022(Part I).		No	Allowed (Optional)
5	Tenderer is requested to submit copy of GSTIN Certificate along with the tender offer.	Yes	No	Allowed (Optional)
6	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**

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**Tender No:** SnT\_e\_Tender\_ADA\_22\_23\_41 **Closing Date/Time:** 31/10/2022 11:00

S.No.	Description	Confirmation Required		Documents Uploading
1	Please refer all attached document and IRGCC April 2022 with all the issued corrections slip.	No	No	Not Allowed
2	If tenderer wants to attach any other relevant certificate/documents/information is requested to attach. But please avoid unnecessary attachment of unnecessary documents.		No	Not Allowed
3	All tenderers are advised to upload clear and readable documents only. If any document is found unreadable then the offer of tenderer may be rejected. Also, it is notable to upload all necessary documents with their quote. If any minimum and compulsory document is not uploaded then their offer may be rejected. However, rejection or acceptance of offer on this ground solely depends on discretion of the tender accepting authority (TAA).	No	No	Not Allowed
4	Tenderer is advised to go through IRGCC April 2022 issued by Railway board and Tender documents attached with this tender before quoting their rate. The successful Tenderer(s) shall be required to execute an agreement with Railway for carrying out the work according to Standard General Conditions of Contract, Special Conditions / Specifications annexed to the tender and Standard Specifications (Works and Materials) of Railway as amended/corrected up to latest correction slips, mentioned in tender. Special condition of this tender will be prevail in case of any contradiction	No	No	Not Allowed
5	Tender Committee members for this tender have full right with approval of Tender Accepting Authority to reduce, increase or completely delete any of item or items or even any schedule without taking any consent of the tenderer, if they feels description of any item is confusing or due to abnormally higher rates or due to any other reasons for any item or items or any schedule of this tender.	No	No	Not Allowed
6	In case of any contradict wording or any typographical error is found in the tender, interpretation and decision of Railway authority will be final.	No	No	Not Allowed
7	All the Rates are inclusive of GST and the tenderer has to quote their rate inclusive of GST only. This tender is bound with existing taxation rules	No	No	Not Allowed
8	Tentative SIP is attached with this tender advertisement; hence it is requested to go through it before quoting.	No	No	Not Allowed
9	Tenderers are advised to submit the offer considering GST 18%.	No	No	Not Allowed

#### **Special Conditions**

	·			Documents Uploading
1	Tenderer are required to complete the work as per given time line in Tender document.	No	No	Not Allowed

#### **Technical-Compliances**

S.No.				Documents Uploading
1	List of Personnel, Organization available on hand and proposed to be engaged for the subject work.		Nο	Allowed (Mandatory)
2	List of plant and machinery available on hand (Own) and proposed to be inducted (Own and hired to be given separately) for the subject work.	Yes	Nο	Allowed (Mandatory)
3	List of works on hand indicating description of work, contract value, approximate value of balance work yet to be done their date of award and scheduled date of completion.		Nο	Allowed (Optional)
4	Information regarding Employment/ Partnership etc. of Retired Railway Employees with the tenderer to comply Para no. 11 (regarding credentials) and 16 (Declaration of Retired employee) of Engg. IRGCC April 2022.		Nο	Allowed (Optional)

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5	5	Modification of existing El system: In order to ensure that bidder is fully aware about the modification of the existing El system's (Make Ansaldo-Now Hitachi) costing at the time of bidding so that quotes are realistic and reasonable. The following Criteria must be included. (i) The tenderer shall submit the breakup of required El hardware/Modules/Cards/Sub-system/Relays etc. as per RDSO specification for modification work including inter module communication to make the electronic interlocking operational and functional as per the tentative Signalling Interlocking Plan attached with tender documents.	Yes	Nο	Allowed (Mandatory)
5	5.1	The required card/parts of equipment of EI shall be procured from RDSO approved sources and installation, testing and commissioning of EI shall also be got done from the same source (OEM) including after sales support required during the warranty period.		No	Allowed (Mandatory)
5.2		The successful bidder shall submit an undertaking from RDSO approved EI OEM, before the supply of material, to confirm compliance with extent RDSO guidelines and to meet contract specific requirements. (Ref: Railway Board Letter No.: 2013/Sig/23/01/(pt) Dup, dated 17.02.2022)		No	Allowed (Mandatory)
6	6 Submit PDF copy of self-certificate in support of site visit.		Yes	No	Allowed (Optional)

#### 6. Documents attached with tender

S.No.	Document Name	Document Description
1	EIPolicyRailwayBoard17022022.pdf	El Policy Railway Board 17022022
2	BELIATORESip22.4.22- Tentetive.pdf	SIP BZC Tentative
3	RAINAGARSip22.4.22- Tentetive.pdf	SIP RNGR Tentative
4	TenderDocumentEIBZCRNGR- 41.pdf	Tender Document
5	IRGCC_April-2022_2022_CE- I_CT_GCC- 2022_POLICY_27.04.22.pdf	IRGCC APRIL 2022

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: KAUSHAL KUMAR GARG

**Designation:** Sr.DSTEAdra

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