

Date.....

Letter of Price Bid

Date:

Invitation for Bid No.:

To:

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8;
- (b) We offer to execute the Work in conformity with the Bidding Documents;
- (c) The total price of our Bid is indicated in the **Summary Sheet of Bill of Quantities**;
- (d) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and
- (e) We have not made any deviations from the requirement of the bidding document and we have also not made any tampering or changes in the bidding documents on which the bid is being submitted and if any tampering or changes are detected at any stage, we understand the bid will invite summary rejection and forfeiture of bid security/the contract will be liable to be terminated along with forfeiture of performance security, even if LOA has been issued.
- (f) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Name

Bid No: HORC/HRIDC/Patli/S&T/2023

In the capacity of

Signed

Duly authorized to sign the Bid for and on behalf of

Date

Bill of Quantities

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
1	Supply of Armoured Optical Fiber Cable (OFC) (24 Fiber) Mono Mode as per Spec. No. IRS-TC – 55/2006 (rev.1) Amdt1.1 & RDSO/SPN/TC/110/2020.	Km	2	94,758	1,89,516
2	Supply of permanently lubricated HDPE duct, 40 mm outer dia, as per RDSO spec. No. RDSO/SPN/TC/45/2013 Rev.2 Amndt.2 or latest, along with all accessories like end caps, collars, bends, couplers etc.	Km	2	76,811	1,53,622
3	Supply of basic material to construct unit maintenance free earth as per RDSO Specs. No. RDSO/SPN/197 Ver. 1.0 or latest to achieve a resistance less than 1 ohm. It consist of following: (a) Copper bonded steel electrode of minimum 3.0 meter long, minimum 17.0 mm dia with copper bonding thickness of minimum 250 microns and UL listed and marked = 1 No. (b) Earth enhancement material supplied in sealed bags of minimum 10 kg = 3 Nos. (c) Copper strip of 150x25x6 mm, to terminate earth rod = 1 No. (d) Copper strip of 300x25x6 mm (MEEB) = 1 No. (e) Copper strip of 150x25x6mm (SEEB) = 1 No. (ii) Supply of 35 sq. mm multi strand single core PVC insulated copper cable as per IS: 694 for connecting main earth electrode to MEEB in the equipment room in duplicate.(minimum 10 meter.) (iii) Supply of 16 sq. mm multi strand single core PVC insulated copper cable as per IS: 694 for connecting MEEB to SEEB and SPD to MEEB (minimum 10 meter.) (iv) Supply of 10 sq. mm multi strand single core PVC insulated copper cable as per IS: 694 for connecting various equipments to SEEB (v) Supply of copper lug sleeve for 3/16 cable	Set	2	17,570	35,140

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
4	Supply of underground railway jelly filled 6 Quad cable 0.9 mm dia copper conductor as per RDSO Spec IRS TC 30/2005 (Ver-I) (Amnd 1 to 5) or latest	Km	3	2,83,227	8,49,681
5	supply of 12 core x 1.5 Sqmm (copper conductor) PVC Insulated armoured unscreened underground railway signalling cable as per RDSO spec. IRS:s-63/2014 (Rev. 4.0) or Latest	Km	38	2,22,938	84,71,644
7	supply of 6 core x 1.5 Sqmm (copper conductor) PVC Insulated armoured unscreened underground railway signalling cable as per RDSO spec. IRS:s-63/2014 (Rev. 4.0) or Latest	Km	8	1,32,301	10,58,408
8	Supply of 24 fi ber optical fi ber cable straight joint enclosure (SJC) complete with all accessories along with enclosures with heat shrinkable splice protection sleeve as per RDSO spec. RDSO/SPN/TC68/2014 Revision 1.0, Amndt. 1.0 or latest. Splice losses in no case should be more than 0.1 dB.	Num	2	5,507	11,014
9	Supply of Q-Series Track Relay (QTA2 Type), AC immunized, 9 Ohms, 2F/1B along with plug board (base plate), connectors, retaining clips etc and conforming to BRS:939A & 966(Appendix F2) or latest and RDSO Specn.No.IRS:S-34, S-23 , S-60 or latest, as applicable. The interlocking code for this unit shall be "FGHKX"	Num	15	3,805	57,075

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
10	Supply of Q-Series Line Relay (QNA1 Type), AC immunized, 8F/8B, 24 V DC along with plug board (base plate), connectors, retaining clips etc and conforming to BRS931A and RDSO Specn.No.IRS:S-34, S-23, S-60 or latest, as applicable. The interlocking code for this unit shall be "ABDGH"	Num	20	4,457	89,140
11	Supply of Key Lock Checking Relay (KLCR) working on 24V DC, AC Immunized, metal to metal, with different ward combinations and contact configuration 4F/4B with 2 extra ward plates, RDSO spec No. RDSO/SPN/219/2016 Ver 1.0 with Amendment-1 or latest.	Num	5	8,026	40,130
12	Supply of 16/0.2 mm (0.5 sq mm) PVC insulated multi strand, single core, tinned copper conductor, as per RDSO Specn.No.IRS:S-76/89 (Amnd-3) or latest. Each coil should be of 100/200/500 meters length, Colour of the wire will be specified by the Engineer incharge.	Meter	1600	11	17,408
13	Supply of 1 x 6 Sq mm (Red/Black/Green) multi strand copper power wire, 85 conductor each dia 0.30 +/- 0.01 with insulation thickness of 0.8 mm and nominal conductor resistance of 3.3 ohms/km and test parameters as per RDSO Specn.No.IRS:S-76/89 (Amnd.3) or latest, Colour of the wire will be specified by the Engineer incharge.	Meter	200	48	9,594

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
14	Supply of Track Lead Junction Box(TLJB), 4 way, 250 mm x 255 mm x120 mm made from FRP, as per Drg.No. 20101/M(IRS) or latest, including brass bolts and hylum board sheet with terminals etc. The FRP material shall be as per RDSO spec. RDSO/SPN/151/1997 or latest. The technical specifications are as follows: (a) TLJB complete with cover to be in black/red/grey with all the holes required for mounting on FRP stump (vertical two for each FRP angle) HDPE pipe , cable etc. (b) Each TLJB shall have two Bakelite terminal block fitted horizontally, each Bakelite terminal block shall have two nickel chrome plate with brass terminal alongwith each TLJB , nickel chrome plated brass links(two nos.of adequate strength for vertical linking of the terminals to be supplied. (c) HDPE pipe alongwith two nuts for fixing on the TLJB hole . (d) The FRP stump for mounting the TLJB	Num	30	5,540	1,66,200
15	Supply of Adjustable Track Feed Resistance 30 Ohms (Disc Type), Phenolic moulded base, as per RDSO Drg. No.SA-20161-66/M or latest	Num	15	2,281	34,215
16	Supply of Track feed Battery Charger as per RDSO Specn. No.IRS: S-89/2013 Ver.1.0 or latest. Charging capacity rating should be suitable for charging 80 AH Battery.	Num	15	5,903	88,545
17	Supply of B Type Choke as per RDSO Specn.No.IRS:S-65/83 (Amnd. 3) or latest.	Num	30	5,912	1,77,360

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
18	Supply of uncharged Low Maintenance Lead Acid (LMLA) secondary cell, 2V, 80 AH, in dry condition, shelf mounting type, conforming to RDSO Specn.No.IRS:S-88/2004 or latest, with inter cell connectors, nuts and bolts, washers, microporous vent plug, float etc.	Num	45	5,913	2,66,085
19	Supply of Apparatus Case/Location Box Full as per RDSO drg. no. RDSO/S-11500 or latest, with 'E' type lock and key ward no. 42, . The key and handle should be supplied at the rate of one no. per four Apparatus cases. The 'E' type key lock is as per RDSO Spec. IRS;S-30/64 or latest, RDSO drg. no.SA 3376/M or latest and Key is as per Drg. No. 3377/M or latest.Note: This item includes the supply of 2 Nos E Type Lock fitted on both doors, along with two Key.	Num	15	27,512	4,12,680
20	Supply of Apparatus Case/Location Box Half as per RDSO drg. no. RDSO/S-11507 or latest, with 'E' type lock and key ward no. 42, . The key and handle should be supplied at the rate of one no. per four Apparatus cases. The 'E' type key lock is as per RDSO drg. no.SA 3376/M or latest and Key is as per Drg. No. 3377/M or latest.Note: This item includes the supply of 2 Nos E Type Lock fitted on both doors, along with two Keys.	Num	10	19,114	1,91,140

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
21	Supply of phenolic laminated Sheet, resin bonded, grade P3 in standard size of 1220 X 1220 x 12 mm as per spec. No. IS 2036 of 1995 or latest. Test report of manufacture to be supplied.	Num	25	5,756	1,43,900
22	Supply of Cartridge Fuse block, made of PBT, as per RDSO spec. No. IRS: S-75/2006 (Rev.2) or latest and as per Drawing. No. SA- 23748 (Alt.-4) or latest.	Num	100	244	24,400
23	Supply of Non deteriorating type , Round head type low voltage cartridge fuse as per Spec No IRS:S-78/92 with latest amend. 2/4/6/8/10A rating capacity.	Num	100	123	12,300
24	Supply of ARA Terminal Block made of PBT as per Drg No SA 23741 alt 3 & spec. No IRS S 75/91 with latest amendments with disconnecting links as per Drg no. RST/11336.	Num	2000	119	2,38,000
25	Supply of Disconnect Terminal block for four conductors with screwing cage/clamp type, sliding switch disconnect, as per RDSO spec. RDSO/SPN/189/2004 Ver. 3.0 or latest, for each conductor size up to 2.5 sq. mm, equivalent of M6 terminals. Each terminal block equipped with two markers, on top and bottom, an end plate, two end clamps and adequate length of rails for fitting terminal blocks.	Num	100	193	19,300

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
26	Supply of Medium class GI pipes 100 mm dia (4.5 mm thickness) with thread collars as per IS 1239 (Part 1) 2004 or latest with coupling on culverts/bridges, perforated at a distance of 20 cm or less with 10 mm dia hole, or at any other locations as decided by Site Engineer. It includes supply of all material required for fixing arrangement. Contractor will also supply flexible/corrugated HDPE pipe at the end of GI pipe to protect the cables from sharp edges and sudden bends.	Meter	48	992	47,616
27	Supply of Double Walled Corrugated (DWC) Pipe/duct with associated collars etc. as per RDSO Specification No. RDSO/SPN/204/2011 or latest anti-rodent & anti-oxidant and non flame propagating type in 6 meters straight length and of size 120 mm outer dia,& 103.5 mm inner dia. (The manufacturers, suppliers must produce valid IS license and should be certified under ISO 9000 and shall submit copy of certificate). One coupler with suitable rubber O-ring should be supplied with every 6m of pipe length. (The total quantity of above items is equal to no. of pipes supplied.) DWC pipe shall be marked at every 1 mtr length in such a way that manufacturer's name, vendor name and year of manufacture can be easily identified.	Meter	480	657	3,15,360

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
28	Supply of thermo-shrink jointing kit as per RDSO Specn. No. IRS: TC 77-2012 (Rev.3.0) with (Amdt.-1 to 3) or latest, suitable for 6 Quad/jelly filled cables for straight through/derivation joints. It includes supply of all the accessories, without transformer.	Num	10	3,362	33,620
29	Supply and installation of earth electrode as per standard practice and as per Drawing no. S&T/CONST/6.4/97. It includes supply of GI pipe of 3m length. It includes connecting the earth electrode to the equipments which are required to be earthed including digging of earth pit 3 mtr deep and fixing earth electrode pipe, casting of cement concrete enclosure with cover (cover as per drawing no. S&T/CONST/6.3/97. It includes installation of 7 strand GI wires as earth lead wires, supported on MS flat size 5mm x 40 mm, soldering and nut bolt both, one end of both earth lead wire and MS flat to earth electrode and other end to Location boxes, block equipments, power equipments, cable sheath, signals etc. as per site requirement and as per instructions given by engineer incharge.	Num	25	3,451	86,275

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
30	Supply and laying of RCC Duct cable channel, size 500 mm, height 300 mm (internal/external), length 700mm and cover as per drawing No. GC/HRIDC-SK-GEN-017 dated 09.09.2023, for laying of signalling/telecom cables	Meter	800	1,210	9,68,000

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
31	Supply, Installation, Testing and Commissioning of High Availability Single Section digital axle counter (HASSDAC) with Dual sensor system as per RDSO/ SPN/177/2012 (Version 3) or latest. Th is includes the supply of High frequency web mounting type Tx coil/Rx coil, VR/PR Box duly wired, Vital relays, PR Relays, Clamp with deflector plates & hardware, Dual display reset box/monitoring console with auto resetting facility, Surge voltage protection devices and fi lter card to be mounted on DIN rail etc as per OEM for complete installation & testing & commissioning of (HASSDAC) system. Th is include fixing of track device, relays, wiring, lacing /dressing, cable termination with lug eyelet, drilling holes in rails, Installation of track devices and make it functional along with existing UFSBI/block instrument. Material required other then supply item of HASSDAC shall be arranged by contactor to make it functional. Note: One set of HASSDAC system will include equipment required to monitor One Up line or One Dn line of a full Block Section between two stations.	Set	1	8,49,031	8,49,031

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
32	<p>Installation of DC track circuits (Straight Portion) including supply of materials as per directive of site Engineer. NOTE : (i) This includes drilling 9/32" holes on rails, provision K26 double continuity GI wire bonding, provision of Block Joints 60 Kg/D2752 Kg/90R with machined fish plates, installation of Track lead junction box (separately for (+) and (-) rails), provision of track lead jumper wires/cables, fixing of track circuit equipment i.e. track charger, resistance, fuses, batteries, chokes, relays, anti-titling arrangement and painting, lettering and numbering of DC track circuit equipments etc., (ii) [a] Un-machined fish plates shall be supplied by the Railway's, but machining of fish plates shall be done by the Tenderer. In case of provision of Glued Joints by Engineering Department in lieu of RDSO Block joint, the cost of machining of fish plates@ 100/- per straight track circuit and @ 500/- per point zone track circuit will be deducted. [b] This includes insulation of gauge tie plates, Crossing plates, rod in siding points if required or any other place as instructed by Railway Site Engineer, by Tenderer's insulation materials. Railway will supply Track Charger, B-type choke, Resistance, Un-charged battery, TLJB and relays through a separate schedule/from the stores of railway consignee. These are to be transported to site of work at contractor's cost. Tenderer/Contractor shall supply any other materials that are required for the work.</p>	Num	5	7,719	38,595

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
33	<p>Installation of DC track circuits (Point zone) including supply of materials as per directive of site Engineer. NOTE : (i) This includes drilling 9/32" holes on rails, provision of double continuity GI wire bonding, provision of Block Joints 60 Kg/52 Kg/90R with machined fish plates, installation of Track lead junction box (separately for (+) and (-) rails), provision of track lead jumper wires/cables, fixing of track circuit equipment i.e. track charger, resistance, fuses, batteries, chokes, relays, anti-titling arrangement and painting, lettering and numbering of DC track circuit equipments etc., (ii) [a] Un-machined fish plates shall be supplied by the Railway's, but machining of fish plates shall be done by the Tenderer. In case of provision of Glued Joints by Engineering Department in lieu of RDSO Block joint, the cost of machining of fish plates@ 100/- per straight track circuit and @ 500/- per point zone track circuit will be deducted. [b] This includes insulation of gauge tie plates, Crossing plates, rod in siding points if required or any other place as instructed by Railway Site Engineer, by Tenderer's insulation materials. Railway will supply Track Charger, B-type choke, Resistance, Un-charged battery, TLJB and relays through a separate schedule/from the stores of railway consignee. These are to be transported to site of work at contractor's cost. Tenderer/Contractor shall supply any other materials that are required for the work.</p>	Num	8	12,472	99,776

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
34	Installation of Charging of Lead Acid Batteries, 2V, 80 AH, with contractors own battery grade sulphuric acid and distilled water with minimum two charge - discharge cycles, installation of charged batteries in groups & their connection & wiring. The work shall be done as per the procedure prescribed by the OEM and extant practice of N.C.Rly and instruction of Engineer-in-charge. Detailed measurements of initial charging shall be recorded jointly by contractor & Rly's site-in-charge.	Num	45	247	11,115
35	Installation of thermo shrink jointing kit as per RDSO Specn.No. IRS: TC 77- 2012 (Rev.3.0) with (Amdt.-1 to 3) or latest, suitable for 6 Quad/jelly fi lled cables for straight through/derivation joints. It includes supply of all the accessories, without transformer.	Num	5	1,683	8,415

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
36	<p>Installation of Unit Maintenance Free Earth to achieve a resistance less than 1 ohm as supplied under item no.3 of BOQ. It includes (i) Digging the earth to the required depth. (ii) Insertion of electrode. (iii) Filling of earth enhancing compound (Approx.30 Kg) (iv) Provision of exothermic weld connections to copper tape of 25 mm x 6 mm x 150 mm to the earth electrodes. All material tools and features required for weld will be arranged by contractor. (v) This also includes CC cover 1.5 ft x 1.5 ft . 1 ft wall thickness 2 inch with cover 3 inch thickness. Cables 35 Sq mm/ 16 Sq mm/10 sq mm for connecting earth to busbar, busbar to busbar and busbars to various equipments. Earth electrode of 17.20 mm dia and 3.00 meter long high tensile low carbon steel circular rods molecularly bonded with copper and outer surface (minimum copper bonding thickness of 250 microns to meet requirement of under writer's laboratories (UL) 467-2007 or latest. Copper strips of 150 mm x 25 mm x 6 mm to be welded with each earth electrode, copper strips of 300 mm x 25 mm x 6 mm for main equip-potential busbar, copper strips of 150 mm x 25 mm x 6 mm sub equip-potential busbar in relay room, power room and panel room. GI strip 25 mm x 2 mm for ring formation of earth pits Earth enhancement material in bags for each Earth Electrode. Inspection chamber of size 300 mm x 300 mm x 300 mm (Inside dimension) of approximate 50 mm thick with pulling hooks to cover the earth pits. Note: The installation of this item shall be carried out by the contractor as per RDSO Specn. No. RDSO/SPN/ 197 Ver 1.0 or latest. Typical RDSO approved drawings referred in the RDSO specification document are : (i) SDO/RDSO/E&B/001 for typical installation of Earth, (ii) SDO/RDSO/E&B/002 for typical bonding and earthing connections, (iii) SDO/RDSO/E&B/003 for typical arrangement for earth resistance measurements.</p>	Set	2	7,277	14,554

Bid No: HRC/HRIDC/Pati/S&T/2023

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
37	Laying of HDPE duct as per the approved cable route plan in the excavated trenches/other protected works/RCC channel etc. including all accessories like end caps, collars, bends, couplers etc. The ends of the duct to be sealed with end plugs till OFC blowing is done.	Km	2	8,092	16,184
38	Laying of S&T Cables of various cores/ pairs/ quads in trenches/ GI pipes/ RCC pipes/ DWC pipes etc. as per the site requirement and as per approved cable route plan. This also includes laying of cables in track crossings & road crossings.(Cables will be meggered before and after its laying by contractor under supervision of Railway Representative and he will submit the meggering report of each testing). Length of the cable laid includes the length of the cable coiled for termination purpose	Meter	49000	7	3,35,160
39	Laying and fixing of Medium class GI pipes 100 mm dia (4.5 mm thickness) as per IS 1239 (Part 1) 2004 or latest with coupling on culverts/bridges, perforated at a distance of 20 cm or less with 10 mm dia hole, or at any other locations as decided by Site Engineer.The GI pipe is to be filled with chattered compound. It includes supply of all material required for fixing arrangement. Contractor will also supply flexible/corrugated HDPE pipe at the end of GI pipe to protect the cables from sharp edges and sudden bends. The laying and fixing to be done as per RDSO drawings no. SDO/cable laying/011 and SDO/cable laying/012, issued vide RDSO document no. RDSO/SI/G/2010 Version 1.1 dated 04.02.2014, or latest	Meter	48	190	9,128

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
40	Fabrication and fixing of phenolic laminated sheet of grade P3, minimum 10 mm thick, as per Apparatus case diagram/plan, in location box by providing all fixtures like ARA/Disconnect terminals, fuse blocks, fuses, relays on square bars etc. including fixing of PVC coated string rods at the back side for cable support with contractor's own material like iron angle, nuts, bolts etc. The iron angle for fixing shall be minimum 3 mm thick. This also includes fixing of teak wood shelf minimum 25 mm thick for holding track circuit equipments. The work shall be done as per instructions of Rly engineer at site. (Apparatus case Full)	Num	15	4,479	67,185
41	Fabrication and fixing of phenolic laminated sheet of grade P3, minimum 10 mm thick, as per Apparatus case diagram/plan, in location box by providing all fixtures like ARA/Disconnect terminals, fuse blocks, fuses, relays on square bars etc. including fixing of PVC coated string rods at the back side for cable support with contractor's own material like iron angle, nuts, bolts etc. The iron angle for fixing shall be minimum 3 mm thick. This also includes fixing of teak wood shelf minimum 25 mm thick for holding track circuit equipments. The work shall be done as per instructions of Rly engineer at site. (Apparatus case Half)	Num	10	2,449	24,490
42	Fixing of ARA(M-6) Terminals /Screw less connectors / modular disconnect terminal blocks and fuse blocks on phenolic laminated sheets and fixing by stainless steel/brass nuts & bolts. This includes provision of two additional holes on the board on either side for cable conductor entry. The work shall be carried out as per instructions of railway Engineer incharge. (Supply of all above terminals has been covered separately).	Num	2000	18	36,000

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
43	Termination of Outdoor Cables (Main Cables /tail cables) at ARA/Disconnect type terminals provided in Apparatus Cases, Cable termination rack in relay room, station building, generator room etc. The item includes dressing of cables and wires with dressing threads as per standard practice. All material required for this item will be supplied by contractor. The outdoor cable shall be terminated in Relay Room, DG Room, ASM Room etc under supervision and instructions issued by Engr. incharge of the work	Per Con	4000	15	60,000
44	Dismantling and Releasing of existing Location boxes/Apparatus cases/Jn boxes and other associated S&T fittings. All the released material will be transported to the SSE/Consignee depot	Num	25	972	24,300
45	Excavation of cable trench as per cable route plan, 1.2 meter deep and of 0.3 meter to 0.6 meter wide at bottom as per RDSO sketch No. SDO/CABLE LAY- ING/003, issued vide RDSO document No. RDSO/SI/G/2010 Version 1.1 dated 04.02.2014 or latest, alongside the track in normal soil/strata (including soft rock), conforming to distances as per cable route plan and refilling and ramming of loose soil. This work includes clearing of route from bushes etc, covering of cable laid in trench by loose soil for a layer of 50mm thickness approximately before covering by bricks. The work shall be done as per the extant practice on North Central Railway and instructions of Railway Engineer at site. In case the full depth is Not available, there shall be no proportionate payment and after the approval of minimum JAG officer, the concreting shall be done as per the RDSO drawing No. SDO/Cable laying/003, issued vide RDSO document No. RDSO/SI/G/2010 Version 1.1 dated 04.02.2014 or latest.	Meter	2000	65	1,30,000

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
46	Horizontal Boring/Manual moling without damage to surface road /track for laying/insertion of DWC/GI/HDPE pipe. The bore shall be done at the depth of minimum 1200 mm from the ground level. The ground level shall be considered ignoring the bank height of the bank of the road. Note:- DWC/HDPE/GI Pipe Supply is not covered under this item. Contactor shall provide all material required for work and adequate nos. of labours for proper laying of cables into the bore. Cable shall be laid cautiously so that it should not get damage due to rough handling & pressure on cable. Payment of boring shall be made only after DWC/HDPE/GI pipe is laid in the bore.	Meter	480	616	2,95,680
47	Lettering and Numbering of all S&T gears like Signals, Loc. Boxes, Pt. Machines, TLJBs, Block joints etc. Each item to be taken as one unit.	Num	100	86	8,600
48	Painting of two coats of Enamel paint over one coat of Red Oxide primer after scrapping and cleaning of the surface. Paint to be of reputed make Asian/Dulux/Berger or similar.App. Cases inside and outside to be done by Silver colour. (Apparatus Case Full)	Num	15	682	10,230
49	Painting of two coats of Enamel paint over one coat of Red Oxide primer after scrapping and cleaning of the surface. Paint to be of reputed make Asian/Dulux/Berger or similar.App. Cases inside and outside to be done by Silver colour. (Apparatus Case Half)	Num	10	620	6,200

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
50	Excavation, casting, curing of foundation and Installation and Erection of Apparatus case Full (App. Case as per drg. no. NR/S&T/CON/2.7/97 or latest) with contractor's own frame, cement and other material in the ratio 1:3:6. 'E' type lock to be supplied and installed with App. case. This includes filling of location foundations with river bed sand and plastering on top with a mixture of 1:4 of cement and sand. It covers supply & fixing of lamp holder, switch and lamp etc. in Apparatus Case	Num	15	14,850	2,22,750
51	Excavation, casting, curing of foundation and Installation and Erection of Apparatus case Half (App. Case as per drg. no. NR/S&T/CON/2,8/97 or latest) with contractor's own frame, cement and other material in the ratio 1:3:6. 'E' type lock to be supplied and installed with App. case. This includes filling of location foundations with river bed sand and plastering on top with a mixture of 1:4 of cement and sand. It covers supply & fixing of lamp holder, switch and lamp etc. in Apparatus Case.	Num	10	1,100	11,000
53	Blowing/drawing of OFC cable in the HDPE pipe duct and protective work already provided in the trench. The cable shall be laid only after the successful completion of the DIT (Duct Integrity test). The DIT should be certified by the Railway engineer at site. All the equipments/machinery required shall be arranged by the contractor.	Km	2	17,093	34,186

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
55	Cutting of all types of platforms/road crossing and trenching and excavation to a width and depth of 300 mm x 300 mm, laying of DWC/HDPE/GI pipe in the trench and refilling and concreting it afterwards as per original condition. In hard rocky ground area, cables will be laid normally on layer of soft earth of 0.05 meter thickness previously deposited at bottom of the trench. The cutting to be filled and finished with cement/concrete, as per the RDSO drawing No. SDO/ Cable laying/008, issued vide No. NR/SIG/CABLE LAYING/010	Meter	200	158	31,600
56	Installation of KLCR & its box in location boxes, supply & installation of heavy duty push button, LED indicator on M.S sheet of 4.5 mm thick inside location box for crank handle locking. The work includes fixing & wiring of magneto telephones, wiring of KLCR, push buttons and termination of tail cables as per instructions of Engineer's representative. All material except KLCR relay & its box and magneto telephone (Covered in this schedule at other Sno.) to be supplied by the contractor. This also includes fixing of wards on point machine.Foundation & installation of location box is covered as separate item of schedule.(Per unit is Per Installation).	Num	5	2,193	10,965

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
57	Design, preparation & supply of Six (06) hard copies of each documents along with soft copy for the mention below alongwith original tracing on a standard 7.5 microne polyester film in AUTO CAD FORMAT. (The item includes supply of two sets of drawings for approval and corrections thereon as suggested by HRIDC) , i) Cable route plan , ii) Location box details with location wiring diagram , iii) Cable termination details , iv)Cable corage plan , v) C.T. Rack details , vi) Track bonding plan , vii) Cable jointing details.	Stn	1	44,314	44,314
58	Splicing of 24 core optic fi bre cable and making the splicing joint with contractor's own machine and tools. Joint should be prepared in such a way that the top of the enclosure should be at a depth of minimum 1.2 meter and the enclosure should be covered with soft soil and bricks. Splice loss of each fi bre should be less than 0.05 dB	No.	2	12,752	25,504
59	Supplying and placing of one layer of quality bricks of standard size and of 'B' grade of the local make and spreading on cables laid. (minimum size of brick 200mm X 100mm X 70mm	No.	9000	4	36,000
60	Supply and fixing of RCC cable route marker, made with concrete in the ratio 1:3:6, engraved "NCR" "S&T" on top portion and painted on both sides, along the route at every 50 meter and at route diversion. The cable marker is to be fabricated as per RDSO drawing No. SDO/cable laying/020, issued vide RDSO document No. RDSO/SI/G/2010 Version 1.1 dated 04.02.2014, or latest. The fix- ing work is to be done as per extant practice of NC Railway and as per Railway site supervisor incharge.	No.	60	429	25,740

Bill of Quantities					
Sl. No.	Description of Item	Unit	Quantity	Estimated Rate (in INR)	Total Value (in INR)
Total				INR	1,66,94,070

Note:

2. RDSO inspection for S.No 1,4,5,6,9,10,16,18,22,23,24 and 31.
3. RITES inspection for S.No 19,20 and 30.
4. Consignee for balance items