

South Eastern Railway			
Deptt: S&T		Inspection Schedule-A	
Name of Work: Provision of DC Track circuit for dual detection(Hitachi make EI) in various station yards of Kharagpur division.			
S.N.	Description	Cost	Inspection
SOR 2024, Ver 2.1 Items			
1	<p>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 including tracings within 30 days or as defined in the tender document from the date of commissioning of the work, otherwise penalty to be imposed as per tender document. This includes the following drawings for each station: (1) Cable layout plan, (2) Cable corrage plan, (3) Location Hut drawing, (4) Termination chart of end goomties and location hut, (5) Traction bonding plan, (6) Contact Analysis Chart, (7) SWRD & GWRD, (8) Equipment Layout Plan, (9) Power Supply arrangement diagram, (10) Relay Disposition chart, (11) Any other drawing as found relevant as per site condition. Office record if online maintenance is not implemented includes the following: (i) Battery History book, (ii) Track Circuiting Register, (iii) Track circuit maintenance Register, (iv) Cable Meggering Register, (v) Signal History Register, (vi) LED Register, (vii) Glued joint/ Block joint Register, (viii) Point machine Maintenance Register, (ix) Joint Inspection Register such as 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, (xv) Emergency Route Cancellation Register, (xvi) Axle counter reset register, etc.</p> <p>Note:-(i) All the diagram will be made on Auto CAD. The paper size of wiring diagram will be A-3 or as per IRSEM or as per IRSEM. Soft Copy/AUTOCAD file of all drawings to be submitted alongwith paper drawing. Wiring diagram will be made in 'Black colour'. Alteration to wiring diagram will be done using 'RED' and 'Green' colouring scheme. RED = new equipment/contact to be installed or commissioned. GREEN = redundant equipment/contact to be recovered.</p> <p>(i) Up to 5 line yard.</p>	232,428.00	
2	<p>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 including tracings within 30 days or as defined in the tender document from the date of commissioning of the work, otherwise penalty to be imposed as per tender document. This includes the following drawings for each station: (1) Cable layout plan, (2) Cable corrage plan, (3) Location Hut drawing, (4) Termination chart of end goomties and location hut, (5) Traction bonding plan, (6) Contact Analysis Chart, (7) SWRD & GWRD, (8) Equipment Layout Plan, (9) Power Supply arrangement diagram, (10) Relay Disposition chart, (11) Any other drawing as found relevant as per site condition. Office record if online maintenance is not implemented includes the following: (i) Battery History book, (ii) Track Circuiting Register, (iii) Track circuit maintenance Register, (iv) Cable Meggering Register, (v) Signal History Register, (vi) LED Register, (vii) Glued joint/ Block joint Register, (viii) Point machine Maintenance Register, (ix) Joint Inspection Register such as 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, (xv) Emergency Route Cancellation Register, (xvi) Axle counter reset register, etc.</p> <p>Note:-(i) All the diagram will be made on Auto CAD. The paper size of wiring diagram will be A-3 or as per IRSEM or as per IRSEM. Soft Copy/AUTOCAD file of all drawings to be submitted alongwith paper drawing. Wiring diagram will be made in 'Black colour'. Alteration to wiring diagram will be done using 'RED' and 'Green' colouring scheme. RED = new equipment/contact to be installed or commissioned. GREEN = redundant equipment/contact to be recovered.</p> <p>(iii) For more than 10 line yard.</p>	77,475.00	
3	Preparation of Station Working Rules (SWR) in English on the basis of station working rule diagram and gate working rule diagram to be supplied by the contractor. Submission of two draft copy to railway for checking and resubmission of draft in three copies for approval of division after making corrections. Editable Soft copy to be supplied in pen drive.	95,165.00	
4	Preparation of Station Working Rules (SWR) in Hindi/Regional Language of that station on the basis of station working rule diagram and gate working rule diagram to be supplied by the contractor. Submission of two draft copy to railway for checking and resubmission of draft in three copies for approval of division after making corrections. Editable Soft copy to be supplied in pen drive.	95,165.00	
5	<p>Excavation of trench in all kinds of soils including soft rocky area and clearing of roots of trees, rocks, bushes, ballast & reconditioning 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 Technical Circular No. 2 of 1988 & 01/2010 issued by CSTE/SER or any other latest guidelines.</p> <p>Note: In case, trenches are other than prescribed depth & width, Proportionate payment shall be released.</p> <p>Depth 1.0 meter, Width 0.3 meter.</p>	1,118,166.00	

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6	Excavation of trench in all kinds of soils including soft rocky area and clearing of roots of trees, rocks, bushes, ballast & reconditioning 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 Technical Circular No. 2 of 1988 & 01/2010 issued by CSTE/SER or any other latest guidelines. Note: In case, trenches are other than prescribed depth & width, Proportionate payment shall be released. Depth 0.8 meter, Width 0.3 meter.	780,230.00		
7	Excavation of trenches including clearing of roots of trees etc. in hard/rocky soil by chiselling up to a depth of 0.5 meter to 0.8 meter and width 0.3 meter at the bottom. Supply & placing split RCC pipes with collar (for jointing pipes) of 100 mm nominal diameter to Spec. No. IS: 10262- 2019 or latest and IS 456-2000 as per SEM Drawing No. 15- D3 (Sheet-2) on sieved soil of 30 mm over cable and concreting(1:2:3) throughout the length upto a layer of 75mm approximately, then back filling the trench by digging and carrying earth from a distance of maximum 30 meters and then ramming of soil after cable laying. This also includes supply of collar and all the materials for concreting by the contractor.	412,300.00		
8	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. Track/ Pucca road/Platform crossing/ Level crossing as per SEM Drawing No.15-D5 including supply, transportation and laying of DWC pipes (full) with collar(for jointing pipes) Inner diameter/Outer diameter:103mm/120mm to Specification No.14830 (Part-2):2001 as per SEM Drawing No. 15-D4 and drawing of cable through DWC pipes with collar(for jointing pipes) including back filling and ramming after cable laying as specified in Tech. Circular No. 2 of 1988 & 01/2010 issued by CSTE/SER for S&T Cables or any latest guidelines. This includes repairing and plastering of Platform/Pucca road after cable laying.	1,907,160.00		
9	Cutting and smoothening of inside surface of sizes 80 mm deep and 170 mm width for single/multiple cable chase in concrete or hard rocks or platform or cemented floor. This work includes laying and covering of cable laid in the chase with standard sizes Second class/Fly Ash brick placed and embedded longitudinally and plastered on the top of the bricks and curing 72 hrs. as per Drawing No. Con/SK/T/1 Note: Sundries materials such as Bricks, sand, cement etc., shall be supplied by the contractor at site and to be inspected by Railway Site Engineer before placing in the chase. Note: In case, chase cutting & smoothening are other than prescribed depth & width, Proportionate payment shall be released.	153,600.00		
10	Horizontal Drilling by using manual pushing method (also called moling) at minimum depth of 1.5 meter below the formation level of earth as per decision of Engineer in charge. Boring diameter should be atleast 110mm. The ground level shall be considered ignoring the bank height of the bank of the road. Note: DWC/HDPE/GI Pipe Supply is 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 laying of the cables into DWC/HDPE/GI pipe.	613,800.00		
11	HDD: In case of short stretches (less than 100 m in single stretch) Micro Tunnelling through Horizontal directional drilling (HDD) machine, preparation of sites, boring and laying of HDPE pipes of size (Outer/Inner diameter= 50mm/42mm) for crossing of S&T cable through HDPE pipe at bridges/culverts/track crossing/pucca road crossing. Boring trench shall be minimum 3 (three) meter below the surface/river bed and minimum 1 m at track/road/pucca road crossing area etc. This includes supply of permanently lubricated HDPE telecom ducts of equal length as per Specification No. RDSO/SPN/TC/45/2013 REVISION 2.0 with latest amendments. For each HDPE duct the following items are to be supplied as per requirement (a) End plug, (b) Cable sealing plugs, (c) Plastic coupler slip fit/push fit type & (d) End plugs to be provided along with drum. In case the site doesn't allow to perform as per schedule, written approval must be obtained from at least site incharge officer. Note: The boring profile should be recorded and submitted for verification of depth and length of boring. 1 HDPE pipe	963,200.00		

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12	<p>HDD: In case of short stretches (less than 100 m in single stretch)</p> <p>Micro Tunnelling through Horizontal directional drilling (HDD) machine, preparation of sites, boring and laying of HDPE pipes of size (Outer/Inner diameter= 50mm/42mm) for crossing of S&T cable through HDPE pipe at bridges/culverts/track crossing/pucca road crossing. Boring trench shall be minimum 3 (three) meter below the surface/river bed and minimum 1 m at track/road/pucca road crossing area etc. This includes supply of permanently lubricated HDPE telecom ducts of equal length as per Specification No. RDSO/SPN/TC/45/2013 REVISION 2.0 with latest amendments. For each HDPE duct the following items are to be supplied as per requirement</p> <p>(a) End plug, (b) Cable sealing plugs, (c) Plastic coupler slip fit/push fit type & (d) End plugs to be provided along with drum. In case the site doesn't allow to perform as per schedule, written approval must be obtained from at least site incharge officer.</p> <p>Note: The boring profile should be recorded and submitted for verification of depth and length of boring.</p> <p>4 HDPE pipe</p>	1,571,200.00		
13	Physical tracing and opening/locating of existing working cables by precision digging for diversion of cables in connection with cable clearance for engineering earth work or for utility shifting without interfering the circuits as per the advice of Railway site engineer.	179,900.00		
14	<p>Supply, transportation and fixing of Galvanised Iron Pipe (make: TATA/Jindal or better) with threaded collars (for jointing pipe) of 100 mm nominal bore Specification No. IS: 1239, Pt-1, 2004 thickness 3.6 mm medium grade, on bridges, culverts, drain or at places as per instruction of the site Engineer including supply and transportation of materials required for fixing the pipe as per SEM Drawing No.15-D7 on culverts and others including drawing of cables inside the pipe with masonry work at bridge entry and exit of the culvert and curing for 72 hours and pipes are to be clamped at max. 2 meter apart with drilling of holes on the pipe at 10 cm apart for S&T Cables.</p> <p>Note: This also includes dismantling of released GI Pipe/Trough and released material should be returned at concerned store.</p>	541,440.00	MITES	
15	<p>Transportation of cables in rolls with or without wooden drums (S&T Cables) from concerned store to the site of works.</p> <p>Note: The unit Drum-KM indicates Drum X length of cable in that drum. It doesn't have any significance over the distance it has to be carried for execution of the work.</p> <p>For illustration - 1 Drum having 1Km of cable when transported for any distance will be paid this amount.</p>	314,280.00		
16	<p>Supply & laying of 300 mm X 300 mm pre-cast/cast in -situ RCC cable ducts including top cover as per RDSO drawing No. SDO/S&T/RCC DUCT/1018/1 & 2, dated 29.5.23 or latest.</p> <p>Note- The rate is inclusive of all type of transportation including labour till it is placed into trenches. The laying of cables shall be paid separately fulfilling the laying procedure as per above drawings.</p>	21,235,186.00	MITES	
17	Laying of S&T Cables (Signal/Quad/Power) in the excavated trench to Drawing No. CON/SK/T/5 or latest. Supply and transportation of 'U' clamps, anchoring of cable at every 10 metres interval with 'U' clamp on trench to Drawing No. CSTE/CON /CABLES/81 or latest. Supply, transportation, and placing of cable demarcating led belt to Drawing No. CON/SK/T/6 or latest	2,732,265.00		
18	Hiring of JCB/Hydra/Poclain machine in good working condition for earth cutting, levelling, dressing etc., of ground/dismantling structures including disposal of debris through dumpers/Shifting the location box or signal post with foundation etc. with contractor's labour including machine operator, fuel etc. Payment shall be made for actual working hours at site & proportionate payment to be made in case less than hours. Note: Vehicle shall not be more than 3 years old.	41,790.00		
19	Removal of normally 13m Rail in the way of cable route trench, signal/location box foundation, track crossing etc. In case of less or more than 13 m, proportionate payment to be done. These obstructions will be removed by the contractor for ensuring proper execution of related works.	40,950.00		
20	<p>Removal of PSC/Wooden/Steel sleeper in the way of cable route trench, signal/location box foundation, track crossing etc. These obstructions will be removed by the contractor for ensuring proper execution of related works.</p> <p>Note: In case of broken sleepers, proportionate payment will be made.</p>	41,300.00		
21	Supply & installation of RFID based Electronic/Pipe route marker for S&T cable with programmable memory for saving the user specific data which can be buried at a depth range 1.5 meter. Make - Stanly/3M or similar Note: 80% payment can be done after supply of item & rest 20% after execution along with final cable route plan including GIS mapping on the web page based/own server.	779,800.00	MITES	

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22	Supply of Steel Apparatus case Full height as per Drawing No. SK/Drg./OL/SER /198 or latest with E type lock . E- type lock & their key ward No. will be decided by site engineer as per Specification No. IRS: S-10/78 with Rev. 8 or latest. Supply of Hylam sheets is not covered under this scope. This includes supply of one key & handle for each four Apparatus Case or minimum one.	4,496,940.00	RITES	
23	Execution of Full Apparatus Case with earth excavation for pit, concrete foundation, surrounding earth work, erection and installation as per Drawing No. Con/SK/T/8 or latest and wiring to be done as per SEM Drawing No.19-D8 or as per direction of site engineer. Supply and fixing of Hylam sheet strip of appropriate size of 3 mm or 6 mm as required with hole for fixing of terminals, fuse blocks, relay and other accessories for signal/track circuit, termination of cable with number embossed ferrules, bunching of cables with PVC tape, proper soldering of cable armour with earth catenary wire, earthing of cable armour as required. Writing & terminal description including Painting of the apparatus case inside and outside after clearing the surface thoroughly and first coating of anticorrosive paint and subsequent two coats of Aluminium paint outside and red oxide inside and lettering etc. This also includes transportation of 25 mm/12mm Hylam sheet for shelf or as required and also includes minor modification in L/Boxes as per site requirement. The contractor shall supply 4 no. of foundation nuts & bolts of size 22 mm dia. x 450 mm long with 2 flat spring washers, with each nut & bolts, sand for filling up cable pit inside the apparatus case including plaster and bolts, nuts, screws, MS Clamps for fixing equipment/cable. Note: - Part payment shall be released after completion of- (i) Foundation- 40%, (ii) Erection - 10%, (iii)	2,359,926.00		
24	Supply of 25 mm thick Hylam Sheet of size 955mm x 400mm per specification no. IS 2036 of 1995 or latest. Note:- In case the requirements are different from the above, proportionate payment will be done.	154,542.00	Authorized Representative of Sr.DSTE/Co/KGP	
25	Supply of 25 mm 6 Way PBT Terminal block as per Specification No. IRS:S-75/2006 Rev. 2.0 or latest as per IRS Drg. No. SA-23756 Alt-3 or its latest amendments.	225,400.00	RDSO	
26	Supply of Non-Deteriorating type of low voltage electric fuse for Railway signalling use, fuse with cylindrical cap without indication, cylindrical fuse as per Specification No. IRS:S-78/2006 or latest. ND Fuse Cylindrical Type 2 Amp.	33,600.00	RDSO	
27	Supply of Non-Deteriorating type of low voltage electric fuse for Railway signalling use, fuse with cylindrical cap without indication, cylindrical fuse as per Specification No. IRS:S-78/2006 or latest. ND Fuse Cylindrical Type 4/6 Amp.	38,500.00	RDSO	
28	Supply of Non-Deteriorating type of low voltage electric fuse for Railway signalling use, fuse with cylindrical cap without indication, cylindrical fuse as per Specification No. IRS:S-78/2006 or latest. ND Fuse Cylindrical Type 10 Amp.	19,250.00	RDSO	
29	Supply of PBT fuse base block as per Specification No. IRS:S-75/2006 Rev. 2.0 or latest as per IRS drawing No. . SA: 23748 with alt 4 or its latest amendments.	76,300.00	RDSO	
30	Supply of Polymeric Positive Temperature co-efficient self-Restoring Type fuse (PPTC) of 24-110V, 2-3 Amps capacity Fuse should have an insulating coating of flame retardant epoxy to meet UL-94, V0 requirement working temperature range 40 Degree Celsius to 85 Degree Celsius and leads to be tin plated copper.	16,800.00	Authorized Representative of Sr.DSTE/Co/KGP	
31	Modification/Upgradation , wiring, validation & alteration of Data Logger/RTU of Digital & Analog Input including NMDL software etc. as per site engineer. The necessary wire from relay to tag block & from tag block to data logger, tag block, terminal, wiring material etc. required for this work to be supplied by contractor. Wire to be procured from RDSO approved firms.	327,985.00		
32	Supply of PVC insulated Single core Multi strand Copper conductor of size 1x2.5 sq.mm suitable on Working Voltage upto 750V as per IS: 694: 2010 latest. Wire Colours shall be decided by engineer-in- Charge.	95,200.00	Authorized Representative of Sr.DSTE/Co/KGP	
33	Supply of PVC insulated Single core Multi-strands Copper conductor of size 1 x 4 Sq.mm suitable on Working Voltage upto 750V as per IS: 694: 2010 latest. Wire Colours shall be decided by engineer-in- Charge.	136,000.00	Authorized Representative of Sr.DSTE/Co/KGP	
34	Supply of PVC Insulated Single core Multistrand , unsheathed with plain annealed/tinned copper conductor 16/0.2 mm diameter as per Specification No. IRS:S-76/89 or latest. Wire Colours shall be decided by engineer-in-Charge. Note: The requirement of plain/tinned copper to be decided by the Engineer in charge.	258,456.00	RDSO	
35	Supply of PVC Insulated single core cable multistrand , unsheathed with plain annealed/tinned copper conductor 3/0.75 mm diameter as per Specification No. IRS:S-76/89 or latest. Wire Colours shall be decided by engineer-in-Charge. Note: The requirement of plain/tinned copper to be decided by the Engineer in charge.	680,896.00	RDSO	
36	Supply of PVC Insulated single core cable multistrand , unsheathed with plain annealed/tinned copper conductor 7/0.75 mm diameter as per Specification No. IRS:S-76/89 or latest. Wire Colours shall be decided by engineer-in-Charge. Note: The requirement of plain/tinned copper to be decided by the Engineer in charge.	349,960.00	RDSO	

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37	Supply of DC-DC converter 110/(24 - 32 V, 10A) as per Specification No. RDSO/SPN/165/2023 Ver. 4.0, Amdt.1 or latest. It should be compatible with existing system as specified by Railway in charge.	714,924.00	RDSO	
38	Supply of SMR Module (110 V/20 Amp) as per Specification No. RDSO/SPN/165/2012 Ver. 3.0 or latest. It should be compatible with existing system as specified by Railway in charge.	1,696,240.00	RDSO	
39	Supply of CVT 2 KVA as per Specification No. RDSO/SPN/165/2012 Ver. 3.0 or latest. It should be compatible with existing system as specified by Railway in charge.	2,155,946.00	RDSO	
40	Transportation, installation and charging of 2V lead acid type Secondary Cell and preparation of electrolyte for each cell. Charging to be done as per OEM's instruction with uninterrupted power supply in presence of Railway representative. After charging, it should be kept at the dedicated location as per use. Note- If power is not available at site of work, charging may be done at nearby location as per convenience of the railway. This includes transportation of uncharged cells at the site of charging, supply of acid, distilled water at the site of charging and transportation of charged cells back to the site of work. 2 Volt 80AH	296,460.00		
41	Supply, installation and commissioning of Capacity 05 litre Distilled Water Plant (heavy metal type/industrial grade).	42,315.00	Authorized Representative of Sr.DSTE/Co/KGP	
42	Supply of Track lead Junction Box (TLJB) made of fibre reinforced plastic as per RDSO drawing No. SA 20101/M (IRS) or SI-10272 (FRP) and as per Specification No. RDSO/SPN/151/1997 or latest with bush & ARA terminals conforming to IRS: S-75/91 or latest. 1 way 60mm PBT terminals, 18" GI pipe of adequate size & MS angles 1500x50x50 mm ³ are also to be supplied by the contractor.	1,395,680.00	MITES	
43	Supply of 110V AC, 50 Hz, 10A Track Feed Battery Charger as per Specification No. IRS: S-89/2013 Ver.1.0 or latest to charge lead acid cell battery for 1/2/3/4 cells of 80 AH.	881,816.00	RDSO	
44	Supply of "B" Type Choke Coil for single rail track circuits on 25 KV 50 Hz AC electrified sections as per Specification No. IRS: S-65/83 (Amdt 3) or latest.	945,744.00	RDSO	
45	Supply of disc type fixed Track Feed Resistance (Porcelain Base, Phenolic, Moulding Base) 0-30 Ohm (with tapping at 2, 4, 8 & 16 Ohm) as per RDSO Drawing No. SA-20161- 66 or latest and Specification No: IRS:S-23 or latest.	83,448.00	RDSO	
46	Supply of 8 SWG (4.064mm Diameter) GI wire for Track Circuit Bonding or for other application as per Specification No.IS:279/81 or latest.	217,160.00	Authorized Representative of Sr.DSTE/Co/KGP	
47	Supply of 30 mm length Channel Pins, single groove for bonding Track Circuiting wires of 7mm dia. for 4mm dia. bond wire to RDSO Drawing No. S-69/M or latest as per Specification No. IRS: S17-75 Rev 3 & IS: 1573-70 or latest.	9,760.00	Authorized Representative of Sr.DSTE/Co/KGP	
48	Supply of Insulated galvanized flexible stranded wire rope 7x7 construction, 19 mm circumference, Tensile Strength 125-140 Kg per square mm as per Specification No. IRS:S-3/61 or latest wrapped with Extruded jacket of PVC, thickness 2 mm. Wire colour will be decided by Engineer in charge.	757,620.00	Authorized Representative of Sr.DSTE/Co/KGP	
49	Installation, wiring, testing and commissioning of track circuit on Straight Portion of Track (without involving points and crossings) as per Drawing No. SK/DRG/OL/27 or latest and track bonding plan. The work includes drilling of 9/32" hole on Rails, provision of bonding, fixing and	1,094,616.00		
50	Installation, testing and commissioning of track circuit on Point & Crossings as per Drawing No. SK/DRG/OL/27 or latest and track bonding plan. The work includes drilling of 9/32" hole on Rails, provision of bonding, fixing and painting of Track Lead Junction Boxes, termination of tail cables, termination of Track lead wires, double Jumper wires, Installation & wiring of track feed set (Track Charger, Adjustable Resistance, choke coil, fuses, battery, relays etc.), testing of Glued/Block Joints and also lettering/numbering of track lead junction boxes, block joints and track circuits. This also includes transportation of all materials required for the above installation. Note: Track feed set, bonding wires, TLJB, channel pin, tail cable to be supplied by Railway.	859,448.00		
51	Supply of Earth Electrode as per Drawing No. 19-D6 of SEM-2021 or latest. GI pipe conforming to IS:1239 or latest of 3.17 mm thickness, minimum 2.5 m long, 50.8 mm diameter, 4.76 mm diameter drilled holes staggered at distance of 152.4 mm.	699,696.00	MITES	
52	Excavation of earth pit, placing & fixing of Earth electrode with construction of cement enclosure to SEM Drawing No. 19-D6 and drawl of 6 SWG GI/Copper cable from earth electrode to goomties/relay room/cabin/station, etc. and drawl of MS flat 35mm x 6mm for signal post/Location box shall be used as the case may be, including fixing at both ends of the wire/MS flat. This includes transportation of materials. Note: Materials such as charcoals, salt, sal ammoniac, 6 SWG GI wire, copper lugs with Steel bolts & nuts etc. shall be supplied by the contractor. MS flat 35mm x 6mm/Copper cable shall be supplied by Railway.	462,078.00		
53	Supply of 35 mm x 6 mm thick MS Flat Plate Strip as per IS: 226-1975 or latest for earth connection to Signal post, L/Box etc.	214,140.00	Authorized Representative of Sr.DSTE/Co/KGP	

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54	Supply of Class C, Type 2 Protection for 24-60V AC/DC supply as per clause No.3.11.2 of Specification No. RDSO/SPN/165/2023 Ver 4.0 or latest. The Class C shall be with pluggable type, with indication and potential free contact. The supplier should submit OEM certificate, KEMA, UL Certificate with the material, for connection between L1-L2, L1-E & L2-E.	217,892.00	Authorized Representative of Sr.DSTE/Co/KGP	
55	Supply of Earth Leakage Detector (ELD) - 8 channels as per Specification No. RDSO/SPN/ 256/2002 or latest.	2,488,668.00	RDSO	
56	Fabrication of stand/rack, installation, testing & commissioning of Earth Leakage Detector (ELD)- 8 channels as per Specification No. RDSO/SPN/ 256/2002 or latest.	154,622.00		
57	<p>Miscellaneous arrangements for NI period comprising of</p> <p>a) Temporary goomty/Tent of dimension at least 12'x12' at both side of the station yard and at central panel building, furnished with one table, six chairs, emergency light and mosquito repellent.</p> <p>b) Sufficient temporary lighting arrangement throughout the yard from Sunset to sunrise one day prior, during and post NI work. This includes provision of minimum two DG set of minimum 7.5 KVA capacity and halogen/LED flood lights. The DG sets, consumables materials such as Diesel, Operator etc. has to be arranged by the contractor at his own cost.</p> <p>c) Provision of PA System at both the end of the yard, including at central location if required.</p> <p>d) Resting arrangement for atleast 16 staff at night.</p> <p>e) Vehicle for transportation for to and fro movement of S&T staff during NI period.</p> <p>f) Manning of adjacent station to be done by contractor.</p> <p>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.</p> <p>h) This also includes Free home & Free Starter wiring for NI as per the instruction of site engineer and any other works as assigned from time to time by Railway engineer.</p> <p>Up to 200 Routes</p>	699,804.00		
58	<p>Miscellaneous arrangements for NI period comprising of</p> <p>a) Temporary goomty/Tent of dimension at least 12'x12' at both side of the station yard and at central panel building, furnished with one table, six chairs, emergency light and mosquito repellent.</p> <p>b) Sufficient temporary lighting arrangement throughout the yard from Sunset to sunrise one day prior, during and post NI work. This includes provision of minimum two DG set of minimum 7.5 KVA capacity and halogen/LED flood lights. The DG sets, consumables materials such as Diesel, Operator etc. has to be arranged by the contractor at his own cost.</p> <p>c) Provision of PA System at both the end of the yard, including at central location if required.</p> <p>d) Resting arrangement for atleast 16 staff at night.</p> <p>e) Vehicle for transportation for to and fro movement of S&T staff during NI period.</p> <p>f) Manning of adjacent station to be done by contractor.</p> <p>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.</p> <p>h) This also includes Free home & Free Starter wiring for NI as per the instruction of site engineer and any other works as assigned from time to time by Railway engineer.</p> <p>More than 200 Routes</p>	155,512.00		
59	<p>Adjustment, testing and commissioning of complete Interlocking at proposed station 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 commissioning 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. iii) Painting & Lettering of leftover S&T gear and Lettering on Buildings as required for each station as per requirement. iv) Adjustment of Track circuit/Axle counter. v) Changing of signal number during NI. vii) Placement of cross mark on unused signals etc.</p> <p>Up to 200 Route</p>	366,222.00		

S.N.	Description	Cost	Inspection
60	Adjustment, testing and commissioning of complete Interlocking at proposed station as per approved circuit diagram with the satisfaction of Railway representative including all signal equipment erected in location, gومتies, relay room and other related work not covered under schedule but required for the commissioning and post commissioning 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. iii) Painting & Lettering of leftover S&T gear and Lettering on Buildings as required for each station as per requirement. iv) Adjustment of Track circuit/Axle counter. v) Changing of signal number during NI. vii) Placement of cross mark on unused signals etc. More than 200 Routes	91,555.00	
61	Cement Concrete of proportion 1:3:6 (Cement: Sand: Stone chips of 25mm nominal size) for miscellaneous works. It includes excavation, ramming of CC by using vibrator, curing and plastering with cement and sand mixture (aggregate will not exceed beyond 3.8 cm). Note: All materials required for foundation are to be supplied by the contractor.	76,587.00	
62	Chase cutting in floor/wall and restoring of floor/wall with plaster for concealing of 50 mm./25mm conduit pipe (covered separately) in floor/wall then painting with matching colour as per existing colour of the floor/wall.	23,800.00	
		59998308.00	
<u>DSTE/EAST/KGP</u>			

South Eastern Railway			
Deptt: S&T		Inspection Schedule-B	
Name of Work: Provision of DC Track circuit for dual detection(Hitachi make EI) in various station yards of Kharagpur division.			
S.N.	Description	Cost	Inspection
Non SOR Item			
1	Supply of MLK-II Vital Input PCB (For Hitachi make EI)	1847485.32	RDSO
2	Supply of MLK-II Vital Output PCB (For Hitachi make EI)	4516075.20	RDSO
3	Supply of MLK-II Card Files (For Hitachi make EI)	889713.00	RDSO
4	Supply of MLK-II CPU PCB (For Hitachi make EI)	940849.00	RDSO
5	Supply of MLK-II Power Supply PCB (For Hitachi make EI)	712764.40	RDSO
6	Supply of VCOR relay (For Hitachi make EI)	445635.92	RDSO
7	Supply of VCOR relay base (For Hitachi make EI)	34231.56	RDSO
8	Supply of Address Select PCB- 48 Pin (For Hitachi make EI)	426233.24	RDSO
9	Supply of CPU EEPROM PCB (For Hitachi make EI)	48467.96	RDSO
10	Supply of 1 wide blank front panel assembly (For Hitachi make EI)	142552.80	RDSO
11	Supply of 48 pin connector housing assembly (For Hitachi make EI)	94512.00	RDSO
12	Supply of 48 pin connector guide assembly (For Hitachi make EI)	53885.40	RDSO
13	Supply of 48 pin female connector (For Hitachi make EI)	56498.40	RDSO
14	Supply of 48 pin female crimp contact (For Hitachi make EI)	63872.00	RDSO
15	Supply of SYNC PCB(MDSC) (For Hitachi make EI)	769785.56	RDSO
16	Supply of COMMS PCB (For Hitachi make EI)	792594.00	RDSO
17	Supply of Keying Plug (For Hitachi make EI)	535248.00	RDSO
18	Supply of Relay rack. (For Hitachi make EI)	470424.48	Authorized Representative of Sr.DSTE/Co/KGP
19	Supply of DC DC Converter for MLK II Card file (For Hitachi make EI)	176765.60	Authorized Representative of Sr.DSTE/Co/KGP
20	Supply of DC DC Converter for MLK II vital I/O supply (For Hitachi make EI)	132574.20	Authorized Representative of Sr.DSTE/Co/KGP
21	Design, FAT and Submission as planned and as build interface drawing, application logic & equivalent circuits in connection software modification of proposed EI station.	14788998.00	
22	Alteration in existing relay room, this includes supply of wiring materials required for alteration, Alteration in indoor wiring including datalogger, SAT and commissioning in connection software modification of proposed EI station.	9918115.20	
		37857281.24	
DSTE/EAST/KGP			