

## SOUTH WESTERN RAILWAY

|   |  |                             |                  |                              |  |
|---|--|-----------------------------|------------------|------------------------------|--|
|   | <b>Detailed estimate No. Y/SG.191/III/2024/05</b>  | <b>Allocation</b>           | <b>008445 21</b> | <b>Tender Type : Deposit</b> |  |
|   | <b>Name of work:</b> S&T estimate for elimination for Engineering Interlocked LC no.20 @ CTA yard in view construction of ROB by NHAI  |                             |                  |                              |  |
|   | <b>Tender Notice No.: 21-S&amp;T/MYS/2025-02</b>   | <b>Tender Type: Deposit</b> | <b>EMD</b>       |                              |  |
|   | <b>Technical Specification</b>   |                             |                  |                              |  |
|   | <p>Signal and Telecom works involves: -</p> <p>The works to be executed can broadly be grouped as under:</p> <p>Provision of new cables.</p> <p>Trenching, Provision of GI Pipe, Laying, Refiling, digging, Excavation of pit, concrete foundation, erection, shifting of apparatus case, termination, wiring of signal/point/LC control circuit, painting of existing apparatus case, alteration to painting apparatus case, fixing, alteration to existing track circuits, installation of point machine, fixing of PBT terminals, releasing of signaling assets, alteration to panel and etc. as per section requirement.</p> <p>Provision of earth electrodes.</p> <p>Provision of signaling arrangements.</p> <p>Provision of PA systems and magneto telephone communication.</p> <p>Testing and Commissioning of station [up to 5 roads].</p> <p>Designing of signaling plan.</p> <p>Designing of circuits diagrams/table of control.</p> <p>It includes supply RCC cable markers, enameled number plates, post type shunt signal, ground type shunt signal, off set brackets, cable termination box, PBT terminals 25/60 mm centre, apparatus case full/half size, electronic timer relay, lamp proving relay, QBCA1- heavy duty contact relays, electronic key transmitter, track feed battery, B type choke, rubber mat, Non-deteriorating (ND) type of fuse block, HDPE pipe, AC/DC digital clamp meter, steel almirah, steel ladder, DWC pipe, electronic point machine, ground connection, signal aspect, Relays, cable route tracer, insulation tool kit, cable router marker, optical fiber, joint kit, 20 pair CT box, CAT – 6 cable, VF Transformer etc., as per requirement.</p> <p>The work shall be executed as per 25KV RE standards.</p> <p>Designing and documentation including completion documents of signalling drawings for indoor (Misc. works as per requirement) and outdoor work.</p> <p>Transportation of various signaling and telecom equipment from SSE/Stores/SRM/Mysuru (or at any other nominated store which will be intimated from time to time) to the work site.</p> <p>Removal of S&amp;T infringements or shifting of signaling gears like LC gates, location boxes, signals, cables etc. and telecom gears like cables, EC post etc. wherever required.</p> <p>Submission of as made drawings as per extant practice of South Western Railway.</p> <p>Laying of OFC, cables along with duct.</p> <p>Provision of telecom equipments including networking, supply, installation and commissioning.gears like cables, EC post etc. wherever required.</p> <p>supply of EI cards, designling of EI logic, FAT, SAT, installation and testing of EI systems.</p> <p>Provision of signal foudation, location box foundation, &amp; erection</p> <p>Submission of as made drawings as per extant practice of South Western Railway.</p> <p>Laying of OFC, cables along with duct.</p> <p>Provision of telecom equipments including networking, supply, installation and commissioning</p> |                             |                  |                              |  |
|   | <b>Explanation of Items</b>  |                             |                  |                              |  |
| 1 | Current RDSO specifications are mentioned here. However, while procuring only the LATEST RDSO SPECIFICATION will prevail and material to be inspected as per latest RDSO specifications.   |                             |                  |                              |  |
| 2 | Materials shall be procured from the RDSO approved vendor list, prior approval of Railways shall be obtained before placing the order with vendors under Development orders  |                             |                  |                              |  |
| 3 | Drawing number mentioned here are current and may be updated. Latest drawings are required to be followed while execution of work.   |                             |                  |                              |  |
| 4 | The quantities of sub items against each item are to be calculated/assessed and approval of Engineer to be taken before consolidated procurement of such items and for arranging inspection by RDSO/RITES, as indicated under Inspection Agency.   |                             |                  |                              |  |
| 5 | The explanation mentioned for the schedule items below is to clarify further on the technical details about the schedule item. The items available in the schedule of this NIT shall be executed as per the explanation & Technical specifications given below.  |                             |                  |                              |  |
| 6 | The works are to be done as per instruction of supervisor/officer in charge of the work and details mentioned in the schedule, all miscellaneous materials required for the work shall be supplied by the Contractor.  |                             |                  |                              |  |

|                |   |       |                 |      |            |                                 |                   |
|----------------|---|-------|-----------------|------|------------|---------------------------------|-------------------|
| 7              | The explanation mentioned for the schedule items below is to clarify further on the technical details about the schedule item. The items available in the schedule of this NIT shall be executed as per the explanation & Technical specifications given below.   |       |                 |      |            |                                 |                   |
| 8              | All terminations in newly provided location boxes, CT racks and relay racks shall be as per RB letter No. 2023/Sig/17-Sig Equip/Maintenance/Part dtd. 06-11-2023 and the decision of engineer in this regard shall be treated as final and binding on the contractor.   |       |                 |      |            |                                 |                   |
| 9              | S&T works shall be carried out under proper disconnection or line block as applicable.  |       |                 |      |            |                                 |                   |
| 10             | All the work site safety for safe passage of train services and manpower should be ensured.   |       |                 |      |            |                                 |                   |
| 11             | All the work shall be done as per technical specifications attached with the tender document as applicable.   |       |                 |      |            |                                 |                   |
| 12             | All works are to be executed under direct supervision of Consignee or his authorized representative.  |       |                 |      |            |                                 |                   |
| 13             | All materials required to execute the work are to be carried by the contractor from Consignee's Go down to work site at his own cost.   |       |                 |      |            |                                 |                   |
| 14             | Released materials, if any are to be deposited to Consignee's Go down.  |       |                 |      |            |                                 |                   |
| 15             | Period completion is Six months [06].   |       |                 |      |            |                                 |                   |
| 16             | All supply items inspected by RDSO/Consignee as mentioned in inspection clause/schedule/technical specification.  |       |                 |      |            |                                 |                   |
| 17             | Clarification about the latest policies/ practices for execution of work can be received from the Office of Sr Divisional Signal and Telecommunication Engineer/Mysuru Division, 2nd floor, DRM Building, Irwin Road, South Western Railway, Mysuru-570001  |       |                 |      |            |                                 |                   |
| TENDER SECTION |   |       |                 |      |            |                                 |                   |
|                |   |       |                 |      |            | Allocation:008445 21 ( Deposit) |                   |
| SCHEDULE -A    |   |       |                 |      |            |                                 |                   |
| SN             | Description of work   | Unit  | Unit Rate Rs. P | Qty  | Amount Rs. | Reference                       | Inspection Agency |
| 1              | Excavation of cable trench in all kinds of soil except hard rocky areas including clearing of roots of trees rocks, bushes etc. to a depth of 1.0Mtrs and to a width of 0.3 Mtrs. Laying of cables is not included in this schedule.<br>Work shall be carried out as per the instruction of the in charge supervisors/ officer  | Mtrs  | 34.65           | 1000 | 34650      | 10_101                          | Consignee         |
| 2              | Excavation of trench to a depth of 1 Mtr. for track crossing of cables, laying of DWC/ RCC pipes with collar/coupling, refilling of trench by ramming and consolidating it as per the instructions of Railway representative at site. During excavation of trench it has to be ensured that the excavated soil does not mix with the ballast available. The depth of 1m trench shall be from the bottom of sleepers for track crossings. Laying of cables is not included in this schedule. (Supply of DWC/RCC pipes with couplers/ collars is not included in this schedule).<br>Work shall be carried out as per the instruction of the in charge supervisors/ officer  | Mtrs. | 208.35          | 10   | 2083.5     | 10_106                          | Consignee         |
| 3              | Excavation of trench to a depth of 1 Mtr. for road crossing of cables, laying of DWC/ RCC pipes with collar/ coupling, refilling of trench by ramming and consolidating it and resurfacing it to the original position. Laying of cables is not included in this schedule. (Supply of DWC/RCC pipes with couplers/ collars is not included in this schedule).<br>Work shall be carried out as per the instruction of the in charge supervisors/ officer   | Mtrs. | 270.83          | 10   | 2708.3     | 10_107                          | Consignee         |
| 4              | Provision of GI pipes (50/100mm dia) for cable laying with offset at both ends and with couplings over RCC Bridges/ Drainage/ Culverts with concrete masonry supports of size 300mm x 300 mm x 300 mm at an interval of 2m. The ends of the pipes shall be closed with brick masonry abutments work so that no cable is exposed, The work shall be carried out as per the instructions of Railway representative at site. (Supply of GI pipes with couplings and laying of cables is not included in this schedule). [Stone jelly of size 20/25mm, bricks, sand, cement and all other miscellaneous materials required for the work shall be supplied by the Contractor].<br>Work shall be carried out as per the instruction of the in charge supervisors/ officer | Mtrs. | 181.95          | 12   | 2183.4     | 10_108                          | Consignee         |
| 5              | Provision of GI pipes-(50/100mm dia) for cable laying with offset at both ends and with couplings over girder bridges by fixing on suitable MS Clamps at an interval of 2 Mtrs. The ends of the pipes shall be closed with brick masonry abutments work so that no cable is exposed, The work shall be carried out as per the instructions of Railway representative at site. (Supply of GI pipes with couplings and laying of cables is not included in this schedule). [MS angles, flats, bolts and nuts for manufacturing fixing clamps, bricks, river sand , cement and all other miscellaneous required for the work shall be supplied by the Contractor].   | Mtrs. | 215.25          | 12   | 2583       | 10_109                          | Consignee         |



|    |   |                    |         |     |         |        |           |
|----|---|--------------------|---------|-----|---------|--------|-----------|
| 16 | <p>APPARATUS CASE FULL SIZE FOUNDATION</p> <p>NOTE:-<br/>1. ALL DIMENSIONS ARE IN MM.<br/>2. CONCRETE FOUNDATION WITH MIXTURE OF CEMENT, SAND AND JELLY CHIPS, SIZE 20, WITH RATIO 1:3:6.<br/>3. OUTER SURFACE SHOULD BE PLASTERED WITH 1:4 CEMENT AND SAND.<br/>4. ON ALL SIDES OF THE EARTH SHOULD BE RAMMED INTO THE LEVEL AS SHOWN IN THE SKETCH.<br/>5. FOUNDATION BOLT OF SIZE 22 MM DIA., 450 MM LONG WITH 2 FLAT SPRING WASHERS &amp; ONE NUT IS TO BE USED.</p>  | Nos.               | 9875.3  | 1   | 9875.3  | 10_201 | Consignee |
| 17 | <p>Excavation of pit, casting concrete foundation and erection of apparatus case half size as per Drg. No.SG/CN/02/7, fixing one 'E' type lock for the front door and latching arrangement for the back door, and fixing of one hardwood shelf plank 37mm thick and painting the apparatus case inside and outside with one coat of red-oxide and two coats of aluminium paints. (Supply of apparatus case is not included in this schedule). [Foundation bolts and nuts, cement, 'E' type locks, river sand, stone jelly of size 20/25mm, 37mm hard wood planks, latching arrangements, paints, varnish, fixing bolts &amp; nuts and all other miscellaneous materials required for the work shall be supplied by the Contractor]</p> <p>APPARATUS CASE HALF/QUARTER SIZE FOUNDATION</p> <p>NOTE:-<br/>1. ALL DIMENSIONS ARE IN MM.<br/>2. CONCRETE FOUNDATION WITH MIXTURE OF CEMENT, SAND AND JELLY CHIPS, SIZE 20, WITH RATIO 1:3:6.<br/>3. OUTER SURFACE SHOULD BE PLASTERED WITH 1:4 CEMENT AND SAND.<br/>4. ON ALL SIDES OF THE EARTH SHOULD BE RAMMED INTO THE LEVEL AS SHOWN IN THE SKETCH.<br/>5. FOUNDATION BOLT OF SIZE 22 MM DIA., 450 MM LONG WITH 2 FLAT SPRING WASHERS &amp; ONE NUT IS TO BE USED.</p> <p>Work shall be carried out as per the instruction of the in charge supervisors/ officer</p> | Nos.               | 6966.6  | 1   | 6966.6  | 10_202 | Consignee |
| 18 | <p>Excavation of pit in and around the existing location boxes very carefully without damaging the working cables and shifting and turning the location boxes to clear of the infringement as instructed by the Railway representative at site. The work includes ensuring the safety of the signaling system, releasing the cable coils to give access for shifting/turning the location boxes. Necessary masonry work and earth work in and around the location boxes to the required level shall be done as instructed by the Railway representative at site. If the existing earth connections to the location boxes are disturbed, the earth wires shall be properly re-connected. [All materials required for the work shall be supplied by the Contractor].</p> <p>Work shall be carried out as per the instruction of the in charge supervisors/ officer</p> <p>a. Shifting of apparatus case (full)</p> <p>b. Shifting of apparatus case (half)</p> <p>c. Shifting of apparatus case (Quarter)</p>   | Nos.               | 2895    | 1   | 2895    | 10_208 | Consignee |
|    |   | Nos.               | 1916.25 | 1   | 1916.25 |        |           |
|    |   | Nos.               | 1583.25 | 1   | 1583.25 |        |           |
| 19 | <p>Termination of new main/tail cables on the existing terminals/ fuse blocks in apparatus cases/ battery boxes/ CT boxes/ cable termination racks as per approved circuit diagram. The terminal particulars are to be repainted /corrected on the doors of apparatus cases/ battery boxes/ cable termination boxes and FTOT index board as instructed by Railway representative at site. This work includes closing the opening created for entry of new cables in the apparatus cases with masonry brick work and sealing the bottom of the apparatus cases/ cable termination racks with cable compound. [Paints, wire PVC 3/0.75mm and 16/0.2mm copper, sealing compound, bricks, cement, river sand and all other required miscellaneous materials shall be supplied by the contractor].</p>   | Per Terminal Block | 39.78   | 200 | 7956    | 10_209 | Consignee |

|    |   |                    |         |    |          |        |           |
|----|---|--------------------|---------|----|----------|--------|-----------|
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |                    |         |    |          |        |           |
| 20 | Termination of main, tail, Signaling and power cables and internal wiring on terminal/ fuse blocks in new apparatus cases, cable termination boxes and in gate Lodges excluding cable termination rack at relay room. The work includes fixing of all new cables by teakwood clamp on teakwood base plank, fixing of Phynolic synthetic industrial fibre base fine weave cotton fibre board 6mm thick for terminal board to suit each apparatus case, varnishing all teakwood items, fixing of terminals/ fuse blocks on the terminal board, drilling of necessary holes, termination of cables, wiring, identification of cables using aluminium tags with letters punched neatly, as per approved circuit diagram and cable plan, painting of particulars on sleeves and also on the inner side of the doors of apparatus cases. After terminations are over, the side openings of apparatus case foundation shall be closed with brick work, cement plastered, the inter-space filled with river sand up to base level and the bottom surface shall be sealed with sealing compound. (Supply of PBT terminals and Fuse blocks is not covered in this schedule). [Cement, teakwood cable clamp 50mm x 50mm, base planks 100mm x 25mm, Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036 - 1995 - Type F5, PVC/Nylon sleeves, varnish, paints, bolts, nuts and washers, Non- deteriorating type of fuses of various capacities, Aluminium cable tags, sealing compound, country bricks 220mm x 100mm x 60mm, copper bus bars, brass screw, river sand, wire PVC3/0.75mm copper and other miscellaneous materials shall be supplied by the Contractor]. |                    |         |    |          | 10_210 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |                    |         |    |          |        |           |
|    | a. Termination on 25/60mm PBT terminals (new location)(Phynolic sheet)  | Per Terminal Block | 93.16   | 50 | 4658     |        |           |
|    | b. Termination on PBT fuse block (new location) (Phynolic sheet)  | Per Fuse Block     | 113.56  | 10 | 1135.6   |        |           |
| 21 | Termination of main, tail, Signaling and power cables and internal wiring by fixing additional terminals/ fuse blocks on the existing terminal boards of apparatus cases, cable termination boxes etc. The work includes fixing of all new cables by teakwood clamp on teakwood base plank, varnishing all teakwood items, fixing of terminals/ fuse blocks, on the existing terminal boards, drilling of necessary holes, termination of cables, wiring, identification of cables using aluminium tags with letters punched neatly, as per approved circuit diagram and cable plan, painting of particulars on sleeves and also on the inner side of the doors of apparatus cases. After terminations are over, the side openings of apparatus case foundation shall be closed with brick work, cement plastered, the inter-space filled with river sand up to base level and the bottom surface shall be sealed with sealing compound. (Supply of PBT terminals and Fuse blocks is not covered in this schedule). [Cement, teakwood cable clamp 50mm x 50mm, base planks 100mm x 25mm, PVC/Nylon sleeves, varnish, paints, bolts, nuts and washers, Non-deteriorating type of fuses of various capacities, Aluminium cable tags, sealing compound, country bricks 220mm x 100mm x 60mm, copper bus bars, brass screw, river sand, wire PVC3/0.75mm copper and other miscellaneous materials shall be supplied by the Contractor].   |                    |         |    |          | 10_211 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |                    |         |    |          |        |           |
|    | a.Termination of cables on 25/60mm PBT terminals (existing location)  | Per Ter. Block     | 81.68   | 10 | 816.8    |        |           |
|    | b.Termination of cables on PBT fuse block (existing location)   | Per Fuse Block     | 102.08  | 10 | 1020.8   |        |           |
| 22 | Alterations to painted termination/ wiring particulars of functions in the existing apparatus cases, cable termination boxes, etc., on the PVC/ nylon sleeves and painting of new nomenclature on the existing signaling gadgets. This work includes carrying out alterations of particulars on the inner side of the doors of apparatus cases, re-numbering of apparatus cases and cable termination boxes. [Paints and all other miscellaneous materials required for the work shall be supplied by the Contractor].  |                    |         |    |          | 10_216 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |                    |         |    |          |        |           |
|    | a. Alteration to painting particulars (apparatus case - Full size)  | Nos.               | 884.85  | 25 | 22121.25 |        |           |
|    | b. Alteration to painting particulars (apparatus case - half size)  | Nos.               | 464.1   | 10 | 4641     |        |           |
|    | c. Alteration to painting particulars (apparatus case- quarter size/ CT box)  | Nos.               | 337.45  | 5  | 1687.25  |        |           |
| 23 | Excavation of pit, casting concrete foundation as per Drg.No.SG/CN/02/9 using metallic templates, for erection of colour light signals up to 4 aspects. [Foundation bolts, cement, river sand, stone jelly of size 20/25mm dia and all other miscellaneous materials required for the work shall be supplied by the Contractor].  | Nos.               | 5008.20 | 3  | 15024.6  | 10_218 |           |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |                    |         |    |          |        |           |

|    |   |      |          |   |          |        |           |
|----|---|------|----------|---|----------|--------|-----------|
| 24 | Erection of surface base, signal pole, mounting of colour light signal up to 4 aspects complete on Signal pole/ Off-set bracket, (for LED/ filament bulbs) with lenses, triple pole lamp holder, filament switching units, CLS transformer, current regulators (whichever is applicable), fixing of ladder with platform complete and concreting of ladder shoe, fixing of number plates, marker board, lens guard, fixing of speed limit board wherever necessary, termination of tail cables, wiring of signal unit with PVC wire 3/0.75mm copper, provision of EWS locks, and painting of one coat of red oxide and two coats of aluminium/ enamel paints. When the aspect is fixed on Offset bracket using 'U' bolts and nuts, a through bolt shall be provided by drilling a hole in the signal pole to prevent the offset bracket from sliding down. (Supply of surface base, Offset bracket, CLS pole, CLS aspects complete, ladder with shoes and platform, Speed limit board, LED aspects, current regulators, lamp holders, lamps, filament switching unit and CLS transformer is not covered in this schedule). ['U' bolts and nuts, through bolts and nuts, cement, stone jelly 20/25mm dia, river sand, Signal Collar Rings, wire PVC 3/0.75mm copper, lens-guard, all fixing bolts and nuts, lead wool, paints PVC/Nylon sleeves, enameled number plates, enameled marker boards, EWS locks, and all other miscellaneous materials for the work shall be supplied by the Contractor]. | Nos. | 5501.20  | 3 | 16503.6  | 10_219 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |      |          |   |          |        |           |
| 25 | Removal of existing CLS units, fixing of new CLS units with LED aspects/ lamps, holders etc., up to four aspects, directly or using off set brackets duly drilling holes on the signal poles, provision of EWS locks wherever necessary, termination of tail cables and wiring using wire PVC3/0.75mm copper and painting of aspect. The new tail cables shall be taken through the signal poles and the unwanted cables duly released. (Supply of CLS unit with LED aspects/ lamps holders, CLS transformers is not included in this schedule.) [EWS locks, Wire PVC 3/0.75mm copper lenses guard, wire netting arrangements, paints and all other miscellaneous materials shall be supplied by the Contractor].   | Nos. | 5999.25  | 1 | 5999.25  | 10_228 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |      |          |   |          |        |           |
| 26 | Supply of Colour light Signal pole 140mm dia, 4.6m/3.6m tall with necessary inspection as per specification/ drawing/ description enclosed in this Document.  |      |          |   |          | 10_238 | RITES     |
|    | b. Supply of colour light Signal pole (3.6m)  | Nos. | 2974.00  | 3 | 8922     |        |           |
| 27 | Supply of surface base to suit CLS Signal pole 140mm dia with necessary inspection as per specification/ drawing/ description enclosed in this document.  | Nos. | 4118.00  | 3 | 12354    | 10_239 | RITES     |
| 28 | Supply of ladder with platform and shoes to suit CLS pole 4.6m/ 3.6m tall, with necessary inspection as per specification/ drawing/ description enclosed in this document.  |      |          |   |          | 10_240 | RITES     |
|    | b. Supply of ladder with platform and shoes for 3.6m CLS pole   | Nos. | 3089.00  | 3 | 9267     |        |           |
| 29 | Supply of Colour Light Signal Multi Unit type - complete for 4/ 3/ 2 aspect with mounting socket, with necessary inspection as per specification/ drawing/ description enclosed in this document.   |      |          |   |          | 10_243 | RITES     |
|    | c. Supply of colour light Signal unit - 2 aspect  | Nos. | 8580.00  | 3 | 25740    |        |           |
| 30 | Installation of LC control panel cum illuminated diagram board at Level Crossing gate lodge and wiring the same including interconnections and painting. (Supply of LC control panel cum illuminated diagram board is not included in this schedule). [Wire PVC 16/0.2mm copper, soldering materials, LEDs, resistances and all other required miscellaneous materials shall be supplied by the Contractor].  | Nos  | 3437.40  | 1 | 3437.4   | 10_402 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |      |          |   |          |        |           |
| 31 | Excavation of pit, concreting 'A' type foundation and Nos. fixing ground lever frames single/double as per Drg.No.SG/CN/02/11 complete with ground connection. The work includes concreting of 'A' type foundations and fixing of HP lock and connecting the ground lever frame with the HP lock using MS rod as instructed by Railway representative at site. (Supply of ground lever frames, hand plunger locks and 'A' type foundations is not covered in this schedule). [Cement, river sand, stone jelly of size 20/25mm, fixing bolts and nuts with washers and all other miscellaneous materials shall be supplied by the Contractor].   | Nos  | 4531.35  | 2 | 9062.7   | 10_403 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |      |          |   |          |        |           |
| 32 | Interlocking of level crossing gate with Lifting Barrier: This work consists cutting of notches on the drum of the winch, , fixing and levelling of trestles, rod roller assembly, levelling and concreting of 'A' type foundations, fixing of rod diversion cranks, vertical cranks, running of rods (app. 30mtrs.) and connecting them to lever tail at one end and boom locking arrangement at the other end, and painting as per standard practice. The work also includes fixing of wiring of one limit switch for each boom as per the instructions of Railway representative at site. (Supply of HP locks, rods, 'A' type foundations, trestles, segments, rod roller assembly complete and cranks is not covered in this schedule). [Cement, river sand, stone jelly of size 20/25mm dia, coal bengal, paints, all types of bolts & nuts and all other miscellaneous materials shall be supplied by the Contractor].  | Nos  | 12370.05 | 1 | 12370.05 | 10_405 | Consignee |

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|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |     |         |   |         |        |           |
| 33 | Fixing and wiring of Two Nos. of Electronic Gate Warning equipment for each level crossing gate, one on each road warning signal, amplifier in the Set. apparatus case with wire PVC 3/0.75mm and 16/0.2mm copper, and painting. (Electronic Gate Warning Equipment and amplifier will be supplied by Railways). [All wiring, fixing and painting materials shall be supplied by Contractor]. | Set | 2427.75 | 1 | 2427.75 | 10_408 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |     |         |   |         |        |           |

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|----|---|-------------|---------|-----|---------|--------|-----------|
| 34 | Fixing of EKT instrument with (or) without crank handle or on suitable fixtures at station/apparatus case, provision of economiser push switch with locking facility, wiring with wire PVC 16/0.2mm copper, provision of teakwood terminal box covered with decolum along with locking facility and painting. (Supply of electric key transmitter and crank handles is not covered in this schedule). [wire PVC 16/0.2mm copper, wire wound resistance, decolum covered terminal box with locking facility by using 25mm thick teakwood, bolts and nuts, paints, push switches, padlocks and other miscellaneous materials required for this work shall be supplied by the contractor].   | Nos         | 2943.75 | 2   | 5887.5  | 10_414 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |             |         |     |         |        |           |
| 35 | Supply and provision of E type lock with key for fixing the same in LC/HP/FP Locks/SM slides and painting as per standard practice and instructions of Railway representative at site. (Supply of E type Locks, Keys, Paints, all types of screws, bolts & Nuts and all other miscellaneous materials shall be supplied by the Contractor).   | Nos.        | 1266.00 | 3   | 3798    | 10_432 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |             |         |     |         |        |           |
| 36 | Dismantling and releasing of existing Colour light Signals complete (upto 4 aspects) with or without Route Indicators, calling on signals, shunt signals etc., carefully without any damage to the gadgets, accounting and stacking them neatly at a place as instructed by Railway representative at site. The work includes breaking the concrete foundation, closing the resultant pit and resurfacing it by ramming and levelling.  | Nos.        | 1666.50 | 7   | 11665.5 | 10_510 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |             |         |     |         |        |           |
| 37 | Dismantling and releasing of ground lever frame along with all connected gadgets like lever locks, 'E' type locks, HP locks, etc., accounting and stacking them neatly at a place as instructed by Railway representative at site. The work also involves breaking and removal of concrete foundation and the resultant pit shall be filled and consolidated by ramming and levelling.  | Set.        | 3000.00 | 1   | 3000    | 10_512 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |             |         |     |         |        |           |
| 38 | Releasing of point rods with rod roller trestles, complete assembly. This includes releasing of all cranks, compensators and 'A' type concrete foundation on the rod run. The resultant pits are to be covered with earth and consolidated by ramming and levelling.  |             |         |     |         | 10_515 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |             |         |     |         |        |           |
| 39 | a. Releasing of tressles 1/2 way  | Nos.        | 46.65   | 20  | 933     |        |           |
| 40 | b. Releasing of tressles 3/4 way  | Nos.        | 63.30   | 20  | 1266    |        |           |
| 41 | c. Releasing of point roddings  | Per Rod/Mtr | 7.95    | 60  | 477     |        |           |
| 42 | d. Releasing of 'A' type foundations  | Nos.        | 341.70  | 2   | 683.4   |        |           |
| 43 | Releasing of all the S & T gadgets at LC gates like SM slide instruments, illuminated diagram board, block counter, termination box, telephones, emergency key box, etc and concerned wiring, accounting and stacking them neatly at a place as instructed by Railway representative at site. After releasing any holes on the walls/ floor are to be filled with cement mortar and plastered.  | Set         | 5166.00 | 1   | 5166    | 10_516 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |             |         |     |         |        |           |
| 44 | Provision of earth electrodes as per drawing No.SG/SN/02/13 and earthing of metallic sheath and armour of all cables in all apparatus cases, relay room, equipment room, SM's room for block and control, and earthing of all equipments in apparatus cases, power room, relay rack, cable termination rack, control panel, signals, lever frames with MS flat 35mm X 6mm/19c cable (MS flat for closer by areas and MS flat/19c cable combination for farther areas) as per the instructions of Railway representative at site. The work includes painting of earth resistance value on the earth pit. (Supply of 19C cable is not covered in the scope of this schedule). [MS flat for earthing 35mm X 6mm, cement, GI earth electrodes, common salt, charcoal, country bricks, river sand, soldering materials and all other miscellaneous materials required for the work shall be supplied by the Contractor]. | Nos.        | 1799    | 10  | 17990   | 10_234 | Consignee |
|    |   |             |         |     |         |        |           |
| 45 | Supply of PBT terminals 25mm/ 60mm centre and PBT Fuse blocks with necessary inspection as per specification/ drawing/ description enclosed in this document.   |             |         |     |         | 10_249 |           |
|    | a. Supply of PBT terminal - 25mm centre ( RDSO Drg. No.SA 23741/A (Alt 4) & IRS S-75/2006 (Rev.2) and with latest amendment.)   | Nos.        | 44      | 500 | 22000   |        | RDSO      |
|    | b. Supply of PBT terminal - 60mm centre ( RDSO Drg. No.SA 23741/A (Alt 4) & IRS S-75/2006 (Rev.2) and with latest amendment.)   | Nos.        | 60      | 100 | 6000    |        | RDSO      |



|    |  |      |       |   |       |        |              |
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|    |  |      |       |   |       |        |              |
| 46 | Supply of apparatus cases (full/ half/ quarter size) to suit Southern Railway standard with necessary inspection as per specification/ drawing/ description enclosed in this document: |      |       |   |       | 10_251 | <b>RITES</b> |
|    | a. Supply of apparatus case - Full size  | Nos. | 12012 | 1 | 12012 |        |              |
|    | b. Supply of apparatus case - Half size  | Nos. | 8580  | 1 | 8580  |        |              |
|    |  |      |       |   |       |        |              |

|    |   |           |         |    |         |        |           |
|----|---|-----------|---------|----|---------|--------|-----------|
| 47 | Supply of Electric key transmitter - rotary type of required ward Nos. with keys, with necessary inspection as per specification/ drawing/ description enclosed in this document. <b>As per RDSO specification no. IRS:S-21/2001 (Or latest)</b>  | Nos.      | 4279.00 | 3  | 12837   | 10_257 | RDSO      |
| 48 | Fixing of additional plug boards, 50 ways terminal Per blocks and wiring of additional relays as per the Relay approved circuit diagram using wire PVC 16/0.2mm copper. Additional wire supporting tray with cover made of PVC shall be provided wherever required. Alterations to Relay particulars shall be incorporated in the relay Index board. (Supply of relays, plug boards, connectors and retaining clips and 50 way terminal boards is not covered in this schedule). [Wire PVC 16/0.2mm copper, 2 BA terminals, teakwood plank 25mm thick for fixing resistors and condensers, soldering materials, bunching thread, wire wound resistance, condenser, wire supporting tray with cover of suitable size made of PVC, paint, varnish and all other miscellaneous materials required for the work shall be supplied by the Contractor )<br><b>As per specification/ No. IRS S.21/2001 Rev.1.0 or latest</b>   | Per Relay | 392.70  | 2  | 785.4   | 10_305 | RDSO      |
| 49 | Carrying out alterations to the existing relays in the Per relay racks/apparatus cases as per the approved Relay circuit diagram using wire PVC 16/0.2mm copper. The work includes painting alterations and releasing the unwanted wires carefully without disturbing the existing wiring. [Wire PVC 16/0.2mm copper, soldering materials, bunching threads, condensers, resistances and teakwood plank for fixing them and all other miscellaneous materials required for the work shall be supplied by the Contractor].   | Per Relay | 376.04  | 25 | 9401    | 10_306 | Consignee |
| 50 | <b>Work shall be carried out as per the instruction of the in charge supervisors/ officer</b><br>Manufacture and supply of M.S. relay frames of suitable size to hold up to 4/ 8/ 12/ 20 relays /plug in type HMU as required by Railways and fixing them in apparatus cases for all types of signal control circuits, LC gate control circuit and Point control circuits, fixing of plug boards, relays, resistors and electrolytic condensers on Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036 - 1995 - Type F5, wiring and termination as per approved circuit diagram and painting the particulars. (Supply of all types of relays, plug boards, connectors, retaining clips and plug in type HMU is not covered in this schedule). [Wire PVC copper, 3/0.75mm and 16/0.2mm copper, Phynolic synthetic industrial fibre base fine weave cotton fibre sheet - 6mm thick to IS specification 2036 - 1995 - Type F5, for fixing resistors and condensers, MS flats 25mm x 6mm brass bolts and nuts, paints, soldering materials, resistors, condensers and all other miscellaneous materials required for the work shall be supplied by the contractor].<br>c. Wiring of Signal/ Point/ LC control circuit (up to 12 relays/plug in type HMU)  | 0<br>Set  | 6137.85 | 1  | 6137.85 | 10_212 | Consignee |
| 51 | <b>Work shall be carried out as per the instruction of the in charge supervisors/ officer</b><br>Design, fabrication and supply of Gate Indication Panel of 16 SWG, powder coated MS sheet of size 450mm x 300mm x 100mm approximately consisting of different colour LEDs with holders suitable to work on 24VDC supply. Indications on the front panel shall be as per typical diagram supplied by Railways. All descriptions on the front panel have to be neatly painted. The Panel shall then be wired using wire PVC 16/0.2mm copper as per the approved circuit diagram and installed in the gate lodge as instructed by Railway representative at site. [All materials required for the work shall be supplied by the Contractor].  | Nos       | 7843.50 | 1  | 7843.5  | 10_409 | Consignee |
| 52 | <b>Work shall be carried out as per the instruction of the in charge supervisors/ officer</b><br>Releasing of existing apparatus cases (Full/ Half/ Quarter size) without damage after releasing the shelf planks, Terminal blocks, Fuse Blocks, Terminal Boards, Relays of all types EKTs, Secondary Cells, power equipments, 'E' type locks, etc., and breaking the concrete foundation. After releasing, the resultant pits are to be closed and consolidated by ramming and levelling. The released materials shall be accounted and stacked at a place as instructed by Railway representative at site.<br><b>Work shall be carried out as per the instruction of the in charge supervisors/ officer</b>   | Nos.      | 1625.25 | 8  | 13002   | 10_507 | Consignee |
| 53 | Submission of all relevant final 'Asmades' of circuit diagrams, contact analysis charts, termination particulars of apparatus cases and cable termination rack, power supply arrangements, relay index board, cable plans, cable route plans, red boundary plans and all other particulars covered under various schedules. All 'As makes' shall be prepared by the Contractor in AUTOCAD 2000 or latest and submitted in CDs. One copy of the 'As makes' check print shall be submitted before Testing the circuits. The final negatives shall be made in tracing sheet (80 to 90 gsm). All 'As makes' except cable plan, cable route plan, bonding diagram & power supply diagram shall be prepared in A3 size. On approval the contractor shall submit along with the negatives, 8 copies in each, duly making booklet neatly bound. Out of 8 sets, 2 sets of drawings and other plans shall be kept in transparent plastic cover (2 sheets back to back in one plastic cover) and handed over to Railways. Also the contractor has to supply one set of As makes in 'Reproduction Film'. The approved circuit diagram will be issued by Railways in soft copy as well as two sets of hard copies. Wherever alterations to existing circuits are involved, the existing as-made circuit diagrams will be supplied by Railways either in CDs or RP film. The Contractor shall incorporate the details of all the new wirings and alterations in the CD/ RP film and submit them to Railways. On approval 8 copies shall be made for As-made circuit diagrams also as mentioned above. | per sheet | 206.55  | 25 | 5163.75 | 10_428 | Consignee |

☐ Work shall be carried out as per the instruction of the in charge supervisors/ officer

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|----|---|-----------------|--------------------|------|--------|---|-----------|
| 54 | Transportation of Signalling materials by road as per the instructions of Railway representative at site. The work also includes loading and unloading of the materials.  |                 |                    |      |        | 10_521                                  | Consignee |
|    | a. Transportation upto 100 Kms.   | per ton.<br>Km. | 12.30              | 2000 | 24600  |   |           |
|    | b. Transportation more than 100 Kms.  | per ton.<br>Km. | 7.52               | 6000 | 45120  |   |           |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |                 |                    |      |        |   |           |
|    |   |                 |                    |      |        |   |           |
|    | <b>SCHEDULE -B</b>  |                 |                    |      |        |   |           |
| SN | Description of work   | Unit            | Unit Rate<br>Rs. P | Rate | amount | Reference                               |           |
| 1  | Track crossing by Horizontal Boring Method based on RDSO Report No. BS - 105. This also includes insertion of HDPE Pipe of 110mm Outer dia in the Bore drilled.(Supply of HDPE Pipe is not included).   | Mtrs            | 2264               | 10   | 22640  | SWR-SOR                                 | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |                 |                    |      |        |   |           |
| 2  | High Density Polyethylene Pipes (HDPE) of 110 mm Outer Dia, 10 mm Wall Thickness, along with one coupler for every 6 Meters as per specification No. IS 4984: 2016 with latest ammendments and Material Grade:PE 80.  | Mtrs            | 675                | 30   | 20250  |   | Consignee |
|    |   |                 |                    |      |        |   |           |
| 3  | Termination of Main, Tail, Signalling and power cables and internal wiring on terminal/ fuse blocks in cable termination Rack at relay room. The work includes fixing of all new cables by teakwood clamp on teakwood base plank, fixing of Hylem sheet 10 mm thick for terminal board , varnishing all teakwood items, fixing of terminals/ fuse blocks on the terminal board, drilling of necessary holes, termination of cables, wiring, identification of cables using aluminium tags with letters punched neatly, as per approved circuit diagram and cable plan, painting of particulars on sleeves . After terminations are over, cable entry at the bottom shall be closed with , cement plastered, the inter-space filled with sand upto base level and the bottom surface shall be sealed with sealing compound. Cable armour to be soldered to earth.(Supply of cable termination racks is not included in this schedule). [All bolts and nuts with washers, Hylum Sheet 10 mm Thick, cement, sand, stone jelly, Teak wood base , paints and all other miscellaneous materials required for the work shall be supplied by the contractor]a. Termination on 25/60mm PBT terminals | per terminal    | 144                | 100  | 14400  |   | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |                 |                    |      |        |   |           |
| 4  | Concreting of cable laid in the trench or GI pipe/DWC/HDPE pipe in which cable is already laid to a size of 300*300mm with 1:3:6 mortar. (All the matetials required for the work should be supplied by the contractor)   | RMT             | 495                | 20   | 9900   |   | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |                 |                    |      |        |   |           |
| 5  | Providing services of helping hand man power to carry out miscellaneous/sundry works in the office/field between 08.00 hrs and 20.00 hrs of the day and accompanying Railway staff with all expenses of transportation, accomodation, food, consumables etc., with all ascents/descents, taxes, octroi, cess, fees, duties, with contractors tools and plants, materials, consumables, labour, crew, machineries with all lead and lift etc., complete as per special conditions, specification, regulation and as directed by Railway Engineer-in-charge.  | Man Day         | 498                | 90   | 44820  |   | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |                 |                    |      |        |   |           |
| 6  | Supply and laying of Split DWC pipe of 120/103 mm dia, 2 meter long in already dug cable trenches. The unit of RMT means two split pipes of 1 Mtr each. Material shall be supplied as per specification RDSO/SPN/204/2011 or latest   | RMT             | 284                | 1000 | 284000 |   | Consignee |
|    | Work shall be carried out as per the instruction of the in charge supervisors/ officer  |                 |                    |      |        |   |           |
|    |   |                 |                    |      |        |   |           |
|    | <b>SCH-C (Non SOR)</b>  |                 |                    |      |        |   |           |
| 4  | PVC Wire 16/0.2 mm YELLOW PVC INSULATED COPPER WIRE , ATC SPEC IRS/76/89 WITH LATEST AMENDMENT (CABLE SHALL BE SUPPLIED IN 100 MTRS BUNDLES) make Ravi cabs or better   | mtrs            | 2000               | 5.9  | 11800  | P.O.No.: LM236099101045 dated 17-NOV-23 | RITES     |
|    |   |                 |                    |      |        |   |           |
| 5  | Main LED Signal lighting unit 1 10V AC consisting of LED signal YELLOW aspect as per RDSO specification. No. RDSO/SPN/199/2010 REV.1 . I . with latest amendment for Integrated LED signal lighting unit compatible for housing in existing CLS main signal YELLOW aspect.<br>Necessary OEM warranty certificate shall be submitted   | Nos             | 8732               | 10   | 87320  | P.O.No.L920508510012 3 dt.28.02.2020    | RDSO      |
|    |   |                 |                    |      |        |   |           |

|    |   |     |          |    |       |   |           |
|----|---|-----|----------|----|-------|---|-----------|
| 6  | Main LED Signal lighting unit 110V AC consisting of LED signal RED aspect as per RDSO specification. No.RDSO/SPN/199/2010 REV.I . I . with latest amendment for Integrated LED signal lighting unit compatible for housing in existing CLS main signal RED aspect.<br><b>Necessary OEM warranty certificate shall be submitted</b>        | Nos | 8732     | 10 | 87320 | P.O.No.L9205084100I22 dt.28.02.2020   | RDSO      |
| 7  | Main LED Signal lighting unit 110V AC consisting of LED signal GREEN aspect as per RDSO specification. No. RDSO/SPN/199/2010 REV.I . I . w r t. latest amendment for Integrated LED signal lighting unit compatible for housing in existing CLS main signal GREEN aspect.<br><b>Necessary OEM warranty certificate shall be submitted</b> | Nos | 9912     | 10 | 99120 | P.O.No.L920508310012 4 dt.28.02.2020  | RDSO      |
| 8  | Clamp meter CEM DT-339 AC/DC Leakage Current Clamp Meter ot better  | Nos | 12000    | 2  | 24000 | BQ  | Consignee |
| 9  | Supply of Dominos and alteration of existing operating control cum indication panel.  | Nos | 1900.00  | 6  | 11400 | Y/SG- 191/III/20 17/123 dt.14.05.2018   | Consignee |
|    | <b>Work shall be carried out as per the instruction of the in charge supervisors/ officer and dominos should compability to work with existing domino panels and wiring shall be dosne as per railway incharge instructions</b>   |     |          |    |       |   |           |
| 10 | Installation and commissioning of road warning signal with out civil works  | Set | 10000.00 | 1  | 10000 | Letter No: MYSORE DIVISION-GATI SHAKTI / 02-2022- 3LC-GSU-MYS / 0092382006726 dt.06.12.2022 |           |
|    | <b>Required works such as foundation, erection, testing, and commissioning, and all other miscellaneous works for commissioning of the road warning signal are within the scope of work.</b>  |     |          |    |       |   |           |

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| RCIL-SOR |  |       |          |      |       |        |           |
|----------|--|-------|----------|------|-------|--------|-----------|
|          | Casting of circular FRP chamber, bottom plate and top covers(1:2:4 concrete mix) with reinforcement, two hooks in each half cover, provision of duct holes as shown in the drawing. Excavation of circular pit to a depth of 1300 mm, dia of 1500 mm, positioning of bottom plates, chamber and top covers .(two halves). Chamber to be filled with river sand to the brim of the chamber after cable blowing and splicing, top covers placed, refilled with excavated soil and rammed etc., complete to the finished item of work as directed by the RailTel Engineer-in-Charge .   | Nos.  | 4279     | 2    | 8558  | RCIL   | Consignee |
| 1        | Casting of circular FRP chamber, bottom plate and top covers(1:2:4 concrete mix) with reinforcement, two hooks in each half cover, provision of duct holes as shown in the drawing. Excavation of circular pit to a depth of 1300 mm, dia of 1500 mm, positioning of bottom plates, chamber and top covers .(two halves). Chamber to be filled with river sand to the brim of the chamber after cable blowing and splicing, top covers placed, refilled with excavated soil and rammed etc., complete to the finished item of work as directed by the RailTel Engineer-in-Charge.  |       |          |      |       |        |           |
| 2        | Providing dry sand in FRP/RCC joint chambers up to 400mm height  | Nos.  | 750      | 2    | 1500  |        | Consignee |
|          | Filling of the RCC joint chambers with dry sand mixed with ant termite chemical as required in specification up to 400mm height and the cover is refixed in position.  |       |          |      |       |        |           |
| 3        | Laying of OFC /Quad Cable in trench and through HDPE/GI/RCC pipes where ever necessary.  | Mtrs  | 15       | 2000 | 30000 |        | Consignee |
|          | This item should comply with the drawing no DRG.NO.RDSO/TCDO/COP-7(a) in Telecom Maual 2021  |       |          |      |       |        |           |
|          | Laying of HDPE duct in trenches. Supply and pulling of nylon rope through it.  | Mtrs  | 12       | 1000 | 12000 |        | Consignee |
| 4        | During duct laying care must be taken not to twist duct in any direction. For this purpose, the survival (rotating hook) shall be attached between pulling line and pulling eye at the end of duct so as to avoid any possible twist during pulling and laying of the cable. In case it is planned to lay the cable in duct by pulling the cable by using a winch; the duct should be provided with a nylon rope for pulling the cable.  |       |          |      |       |        |           |
|          | Splicing and termination of Fiber OFC (Splice enclose supplied by RailTel)   | Nos   | 7872     | 2    | 15744 |        | Consignee |
| 5        | Optic Fibre joint closure as per RDSO Specn. No. RDSO/SPN/TC/68/2014 Rev 1.0 with latest .The closures should be suitable for all types of cable structures for splicing the armoured optical fibre cables. The joint enclosures shall be suitable for splicing of optical fibre cables with single mode fibres as per ITU Rec. G 652 D (03/03 or latest) for transmission at wavelengths of 1310 nm, 1550 nm and between 1285 to 1330 nm  |       |          |      |       |        |           |
|          |  |       |          |      |       |        |           |
|          | <b>SOR-2011</b>  |       |          |      |       |        |           |
|          | Supply of Double walled corrugated pipe - 103.5mm inner dia & 120mm outer dia conforming to specification No. IS 14930(Part 2): 2001 with one coupler for every 6m of pipe as specified in Vol.II of the Tender document.  | Mtrs. | 263.20   | 60   | 15792 | 10_121 | Consignee |
| 1        | Double Walled Corrugated (DWC) HDPE pipe, size 103.5 mm inner dia & 120 mm outer dia, conforming to IS 14930 (Part-2): 2001 (latest amendment), suitable for underground cable protection in Railway works, including one HDPE coupler for every 6 m length of pipe, complete in all respects as specified in Vol-II of Tender Document.   |       |          |      |       |        |           |
|          | Supply and provision of earth electrodes as per RDSO Nos. specification No.RDSO/SPN/TC/75/2008 with copper base of size 1000mm X 1000 X 3mm, for sophisticated signaling equipments. The work involves digging of pit to a depth of 2.5m and placing of the copper plate and connecting it to the signaling equipments through copper strips 25mm X 3mm (2 No's) by welding and taking it through to the wall of the equipment room where it shall be connected to a copper bus bar fixed on the wall. The work also involves providing a perforated up to 2m HDPE pipe 75mm OD - 4mm thick, 2600mm long vertically at the centre of the copper plate which shall be used for watering. The work also involves back filling the pit by a mixture of app 200kg of charcoal/ graphite and soil free from sand, gravel and stone in the ratio of 6:1. The pit shall be covered using an RCC slab 100mm thick supported by an MS angle 50mmx50mmx3mm and MS rods 6mm dia. The HDPE pipe shall be | Nos.  | 31118.00 | 2    | 62236 | 10_235 | Consignee |

|                |   |                 |         |      |       |        |           |
|----------------|---|-----------------|---------|------|-------|--------|-----------|
| 4              | The item specification must comply with RDSO Drawing No.SG/SWR/057 and Earthing of metallic sheath and armour of all cables in all equipment room, and earthing of all equipment's in apparatus cases, power room, relay rack, cable termination rack, control panel, signals, lever frames with MS of flat 35mm X 6mm or 19c cable (MS flat for closer by areas and MS flat/19c cable combination for farther areas) as per the instructions of Railway representative at site. The work includes painting of earth resistance value on the earth pit. [MS flat for earthing 35mm X 6mm, cement, GI earth electrodes, common salt, charcoal, country bricks, river sand, soldering materials and all other miscellaneous materials required for the work shall be supplied by the Contractor]. |                 |         |      |       |        |           |
| 3              | Transportation of Signalling materials by road as per the instructions of Railway representative at site. The work also includes loading and unloading of the materials.  |                 |         |      |       | 10_521 | Consignee |
|                | a. Transportation upto 100 Kms.   | per ton.<br>Km. | 12.30   | 1000 | 12300 |        |           |
|                | b. Transportation more than 100 Kms.  | per ton.<br>Km. | 7.52    | 2000 | 15040 |        |           |
|                | Loading and unlaoding of materilas as per instructions of railway representative at site.   |                 |         |      |       |        |           |
| <b>SWR SOR</b> |   |                 |         |      |       |        |           |
| 1              | Provision of normal joint of Heat Shrinkable type complete for 6 quad cable. After the jointing the through cable has to be tested for insulation resistance and loop resistance in presence of Railway Engineer and in case of any defect the jointing has to be re-done free of cost by the contractor. [Heat Shrinkable jointing kit conforming to RDSO Specification No.IRS-TC 77/2006 covered in the supply portion has to be used for this purpose. The contractor should supply all other small items including thermal sleeves free of cost which are required for making a joint. Only gas blower to be used for blowing].   | Nos.            | 3553.00 | 20   | 71060 |        | Consignee |
|                | Thermo Shrink jointing kit for jointing underground Quad cable as per specification no. IRS: TC 77-2012 (Rev. 3) amendment -1 including latest amendments   |                 |         |      |       |        |           |
| 2              | Supply of Joint kit conforming to RDSO specificaliton No.[RS-TC 77 2000 Revision  or fatest for Quad cable  | Nos.            | 3891.00 | 20   | 77820 |        | Consignee |
|                | Thermo Shrink jointing kit for jointing underground Quad cable as per specification no. IRS: TC 77-2012 (Rev. 3) amendment -1 including latest amendments   |                 |         |      |       |        |           |

|         |  |       |          |     |       |   |           |
|---------|--|-------|----------|-----|-------|---|-----------|
| 3       | Supply and Fixing of PVC casing and capping/Pvc pipe of minimum 25 mm size or higher as per requirement at site on the wall/floor etc., using bends, coupler and T joints and flexible pipe wherever necessary with fixture in the OFC room from equipment rack to common termination and from OFC room to SM room/Reservation office /Data logger/FOJS room etc. (All required material for fixing to be arranged by the contractor   | Mtrs. | 53.00    | 100 | 5300  | SWR SOR   | Consignee |
|         | The wiring shall be done on PVC Casing & capping / PVC conduit of suitable size depending upon the requirement, along the walls from C.T. Boxes to the equipments. Wires from the equipments to the table for telephone and other equipments shall also be taken accordingly. For crossing of floor the wiring shall be taken inside the GI pipe minimum 25 mm dia, buried inside the floor and bent at both the ends. All the wiring shall be terminated on the telephone termination strip/Rosette suitably fixed in a wooden box, for facilitating connection to telephone and block instruments etc. |       |          |     |       |   |           |
| 4       | Supply of Telecom Termination panel with WAGO/Phaeonbr/Elmex make or similar disconnecting Terminals blocks of size 1500mm x 500mm x 200mm thickness 1.6mm (16 SWG) 150 numbers of disconnecting terminal block with accessories. (The box should be divided in to two compartments 500 mm from TOP with door anangement including locking, and bottom 1000mm closed fully with screws WAGO/Phaeonix/Elmex terminals suitable for cable dimensions maximum of 2.5 sq.mm. Provision of easy and ensuring aesthetics   | Nos.  | 45842.00 | 1   | 45842 |   | Consignee |
|         | The item specification must comply with RDSO/SPN/189/2004 Ver. 3.0.  |       |          |     |       |   |           |
| 5       | Fixing of 'Telecom Termination Panel'and termination of cables on A/ago/krone connectors as per the instructions of the site Engineer.   | Nos.  | 5110.00  | 1   | 5110  |   | Consignee |
|         | The item specification must comply with RDSO/SPN/189/2004 Ver. 3.0.  |       |          |     |       |   |           |
| 6       | Permanently Lubricated High Density Polyethylene Duct (PLB-HDPE), 40/33 mm Dia, along with End Cap, End Plug, Cable Sealing Plug and Couplers, as per RDSO/SPN/TC/45/2013 Rev.2 (upto Amdt.2) or latest  | KM    | 89106.00 | 1   | 89106 |   | Consignee |
|         | The item specification must comply with RDSO/SPN/TC/45/2013 Rev. 2.0 with Amendment 3.0.   |       |          |     |       |   |           |
| Non-SOR |  |       |          |     |       |   |           |
| 3       | Supply of VF Transformer 470 : 600 Ohms Rack Mountable as per RDSO Specification IRS : TC-22/76 or latest.   | Nos.  | 767.00   | 20  | 15340 | P.O.No.: 98225617100784 dated 26-12-22  | Consignee |
|         | The item specification must comply with RDSO specification No IRS:TC:22-2021 Ver. 1.1  |       |          |     |       |   |           |
| 4       | Supply of STP CAT- 6 Cable compliant with latest EIA/TIA-568-C.2 Standard for CAT 6 Cable 305 Mtrs Roll /Bundle.   | Mtrs. | 25       | 610 | 15250 | MYSORE DIVISION-S AND T / 03-SNT-MYS-2024-02 / 10611090109587 Dtd:05/08/24      | Consignee |
|         | STP (Shielded Twisted Pair) CAT-6 Cable shall be compliant with latest EIA/TIA568-B.2-1 standard for CAT 6 cable or as specified by purchaser. The screen of the STP cable should be properly grounded as mentioned in the RDSO Specification No RDSO/SPN/TC/65/2021 Ver. 6.0 Amdt. 1, 2 & 3.  |       |          |     |       |   |           |
| 5       | Excavation of joint pit/cable coil pit up to the size of 1m depth X 1.5m length X 1.5m breadth for providing joint/coil at joint locations and at culverts. bridges. L.C gates etc..this includes backfilling and ramming of the pit after the cable laying and onsolidating of the soil as well as disposal of soil as per plan or as advised by the railway representative   | Nos.  | 1100     | 20  | 22000 | MYSORE DIVISION-S AND T / 15-SNT-MYS- 2022-04 / 10233790070966 dated 03/02/2023 | Consignee |
|         | Excavation of joint pit/cable coil pit up to the size of 1m depth X 1.5m length X 1.5m breadth for providing joint/coil at joint locations and at culverts. bridges. L.C gates etc..this includes backfilling and ramming of the pit after the cable laying and onsolidating of the soil as well as disposal of soil as per plan or as advised by the railway representative   |       |          |     |       |   |           |



|   |  |      |       |    |       |   |           |
|---|--|------|-------|----|-------|---|-----------|
| 6 | Testing of Quad Cable to find the location of LOW insulation/break fault including temporary jointing the cable for testing.   | Nos. | 607.5 | 20 | 12150 | Letter No. MYSORE DIVISION -S AND<br>T/06-SNT-MYS-2021-<br>02/10536400048921 of dated<br>31/01/2022 | Consignee |
|   | Testing of Quad Cable to find the location of LOW insulation/break fault including temporary jointing the cable for  |      |       |    |       |   |           |
| 7 | Handheld True RMS Insulation Resistance Tester with 6000 display counts combined feature of a digital multimeter . 20Gigaohm insulation tester @1kV,PI/DAR function, 600 V AC/DC, 99 sets data storage, CAT IV 600V Safety rating. Used for resistance testing of precise tools including motors, cables, transformers, switches, electrical appliances and insulated materials  | Nos. | 33984 | 1  | 33984 | BQ.S1KVSUL-24849 08-Apr-2022  | Consignee |
|   | Handheld True RMS Insulation Resistance Tester with 6000 display counts combined feature of a digital multimeter . 20Gigaohm insulation tester @1kV,PI/DAR function, 600 V AC/DC, 99 sets data storage, CAT IV 600V Safety rating. Used for resistance testing of precise tools including motors, cables, transformers, switches, electrical appliances and insulated materials. |      |       |    |       |   |           |