

## **Scope of work , Schedule and specification**

### **Name of work :**

- A. TRD work in connection with Provision of an additional line at Khemli station (common user work).
- B. TRD work in connection with Mangliyawas Provision of FOB at MLI (Footfall) 135 stations to eliminate the deficiency of MEA at 1 station.
- C. TRD work in connection with the Provision of Electronic Interlocking in place of Panel Interlocking along with MSDAC at 02 station of Ajmer division. (Ghosunda and Fatehnagar)

**Total Cost of work : Rs. 58,83,164.4**

**Total cost of work: (In Words) : Fifty Eight Lakhs Eighty Three Thousand One Hundred Sixty Four Rupees and Forty Paise Only**

**Completion Period: 12 Months**

**Maintenance Period :12 Months**

### **Note :**

- I. The RITES inspection required to be done for all the individual NS ( including all sub-assemblies and parts) having value\* more than 5 Lacs. The value for the NS will be calculated for the clubbed quantities in all schedules ( Schedule- A , Schedule -B and Schedule-C).**  
  
***(Value of the individual NS will be evaluated on the basis of awarded cost )***
- II. All supply items other than having value less than 5 Lacs will be inspected by the Railway Representative nominated by Sr.DEE/TrD & GSU Ajmer at site.**
- III. All the expenses/fees related to the RITES inspection / factory (RITES or consignee) inspection /lab test/ documentation will be borne by the contractor.**

**Schedule- A****Name of Work : TRD work in connection with Provision of an additional line at Khemli station (common user work).**

<b>SN</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Unit Rate</b>	<b>Amount (in Rs.)</b>
1	Preparation of design and drawing for over head equipment and verification of purchaser modification in plan	TKM	0.7	24467.00	17126.90
2	Concrate for foundation and plinth in all type of soil and rock	CuM	40	8960.00	358400.00
3	Supply of rolled or fabricated and galvanized traction mast, TTC, Portals, AT masts, feeder mast, bridge masts, DA, SPS etc	MT	6.5	149663.00	972809.50
4	Erection of rolled or fabricated and galvanized traction mast, TTC, Portals, AT masts, feeder mast, bridge masts, DA, SPS etc.	MT	6.5	11649.00	75718.50
5	Supply of material for Guy rod assembly	Nos.	3	13727.00	41181.00
6	Erection of material for Guy rod assembly	Nos.	3	1999.00	5997.00
7	Supply of Single bracket assembly	Nos.	20	37124.00	742480.00
8	Erection of single bracket assembly.	Nos.	20	2779.00	55580.00
9	Supply of Large span wire (130sqmm)	Mtrs.	80	690.00	55200.00
10	Erection of Large span wire (130sqmm)	Mtrs.	80	31.00	2480.00
11	Supply of Large span wire Ending clamp (130 Sqmm)	Nos.	2	1348.00	2696.00
12	Erection of Large span wire Ending clamp (130 Sqmm)	Nos.	2	133.00	266.00
13	Supply of material for overhead equipment with complete fitting. (W/O Contact & catenary wire )	TKM	0.7	67056.00	46939.20
14	Erection of material for overhead equipment with complete fitting.	TKM	0.7	63362.00	44353.40
15	Supply of material for regulating equipments (ATD)	Nos.	1	88417.00	88417.00
16	Erection of Material for regulating equipments (ATD)	Nos.	1	7968.00	7968.00
17	Supply for material for termination of Double conductor of overhead equipment	Nos.	1	19512.00	19512.00
18	Erection for material for termination of Double conductor of overhead equipment	Nos.	1	2927.00	2927.00
19	Supply of material for anticreap with galvanized steel wire	Nos.	1	59124.00	59124.00
20	Erection of material for anticreap with galvanized steel wire	Nos.	1	4970.00	4970.00
21	Supply of material for solid core cut in (9 tonne) insulator	Nos.	2	12802.00	25604.00
22	Erection of material for solid core cut in (9 tonne) insulator	Nos.	2	1081.00	2162.00
23	Supply of material for suspension insulator	Nos.	2	11806.00	23612.00
24	Erection of material for suspension insulator	Nos.	2	691.00	1382.00

25	Supply of material for post insulator	Nos.	2	9981.00	19962.00
26	Erection of material for post insulator	Nos.	2	692.00	1384.00
27	Supply of material for section insulator assembly	Nos.	1	101143.00	101143.00
28	Erection of material for section insulator assembly	Nos.	1	5443.00	5443.00
29	Supply of material for Copper jumper	Nos.	3	8098.00	24294.00
30	Erection of material for Copper jumper	Nos.	3	612.00	1836.00
31	Supply of Structure bonds	Nos.	20	1198.00	23960.00
32	Erection of structure bonds	Nos.	20	407.00	8140.00
33	Supply of Longitudinal Bonds	Nos.	10	641.00	6410.00
34	Erection of Longitudinal Bonds	Nos.	10	409.00	4090.00
35	Supply of Transverse & special Bonds	Nos.	10	1018.00	10180.00
36	Erection of Transverse & special Bonds	Nos.	10	492.00	4920.00
37	Transfer of OHE from one support to another support	Nos.	4	6974.00	27896.00
38	Supply of material for new dropper and re-adjustment of dropper	Span	2	4807.00	9614.00
39	Erection of material for New dropper and re-adjustment of dropper	Span	2	601.00	1202.00
40	Transportation charges for OHE material	MT-KM	1400	16.00	22400.00
41	Construction of TSWR as per approved sectioning diagram and ACTM	Nos.	1	12077.00	12077.00
42	Fabrication and supply of traction SWR diagram boards of size approx 4'x3' or 6'x4' or 5'x4' on suitable acrylic FRP sheets framed in teak wood/ metal frame as per approved SWR diagram with coloring as per code of section.	Sq-Ft	33	1029.00	33957.00
43	Supply of material for Splicing and extension of OHE	Nos.	1	6758.00	6758.00
44	Erection of material for Splicing and extension of OHE	Nos.	1	5870.00	5870.00
45	Dismantling of Mast / Upright by gas cutting	Nos.	2	1468.00	2936.00
46	Power Block charges (As per Annexure-A)	LS	1	135648.40	135648.40
<b>Cost of Work</b>					<b>3127025.90</b>

**Power Block Annexure (Item No. 46 )**

<b>Power Block Charges Annexure-A</b>					
<b>Name of Work : TRD work in connection with Provision of an additional line at Khemli station (common user work).</b>					
<b>Sr. No.</b>	<b>Description</b>	<b>Unit</b>	<b>QTY</b>	<b><u>Unit Rate</u></b>	<b><u>Amount (in Rs.)</u></b>
1	Erection of rolled or fabricated and galvanized traction mast, TTC, Portals, AT masts, feeder mast, bridge masts, DA, SPS etc.	MT	1	11649.00	11649.00
2	Erection of material for Guy rod assembly	Nos.	1	1999.00	1999.00
3	Erection of single bracket assembly.	Nos.	5	2779.00	13895.00
4	Erection of Large span wire (130sqmm)	Mtrs.	80	31.00	2480.00
5	Erection of Large span wire Ending clamp (130 Sqmm)	Nos.	2	133.00	266.00
6	Erection of material for overhead equipment with complete fitting.	TKM	0.7	63362.00	44353.40
7	Erection of Material for regulating equipments (ATD)	Nos.	1	7968.00	7968.00
8	Erection for material for termination of Double conductor of overhead equipment	Nos.	1	2927.00	2927.00
9	Erection of material for solid core cut in (9 tonne) insulator	Nos.	2	1081.00	2162.00
10	Erection of material for suspension insulator	Nos.	2	691.00	1382.00
11	Erection of material for post insulator	Nos.	2	692.00	1384.00
12	Erection of material for section insulator assembly	Nos.	1	5443.00	5443.00
13	Erection of material for Copper jumper	Nos.	3	612.00	1836.00
14	Transfer of OHE from one support to another support	Nos.	4	6974.00	27896.00
15	Erection of material for New dropper and re-adjustment of dropper	Span	2	601.00	1202.00
16	Erection of material for Splicing and extension of OHE	Nos.	1	5870.00	5870.00
17	Dismantling of Mast / Upright by gas cutting	Nos.	2	1468.00	2936.00
<b>Cost of Work</b>					<b>135648.40</b>

**Schedule-B**

**Name of Work : TRD work in connection with Mangliyawas Provision of FOB at MLI (Footfall)  
135 stations to eliminate the deficiency of MEA at 1 station.**

<b>SN</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate</b>	<b>Amount (in Rs.)</b>
1	Concrate for foundation and plinth in all type of soil and rock	CuM	30	8960.00	268800.00
2	Supply of rolled or fabricated and galvanized traction mast, TTC, Portals, AT masts, feeder mast, bridge masts, DA, SPS etc	MT	3.5	149663.00	523820.50
3	Erection of rolled or fabricated and galvanized traction mast, TTC, Portals, AT masts, feeder mast, bridge masts, DA, SPS etc.	MT	3.5	11649.00	40771.50
4	Supply of material for Guy rod assembly	Nos.	2	13727.00	27454.00
5	Erection of material for Guy rod assembly	Nos.	2	1999.00	3998.00
6	Supply of Single bracket assembly	Nos.	4	37124.00	148496.00
7	Erection of single bracket assembly.	Nos.	4	2779.00	11116.00
8	Supply of Large span wire Ending clamp (130 Sqmm)	Nos.	2	1348.00	2696.00
9	Erection of Large span wire Ending clamp (130 Sqmm)	Nos.	2	133.00	266.00
10	Supply for material for termination of Double conductor of overhead equipment	Nos.	2	19512.00	39024.00
11	Erection for material for termination of Double conductor of overhead equipment	Nos.	2	2927.00	5854.00
12	Supply of material for solid core cut in (9 tonne) insulator	Nos.	3	12802.00	38406.00
13	Erection of material for solid core cut in (9 tonne) insulator	Nos.	3	1081.00	3243.00
14	Supply of material for suspension insulator	Nos.	3	11806.00	35418.00
15	Erection of material for suspension insulator	Nos.	3	691.00	2073.00
16	Supply of material for post insulator	Nos.	3	9981.00	29943.00
17	Erection of material for post insulator	Nos.	3	692.00	2076.00
18	Supply of Structure bonds	Nos.	4	1198.00	4792.00
19	Erection of structure bonds	Nos.	4	407.00	1628.00
20	Supply of Longitudinal Bonds	Nos.	5	641.00	3205.00
21	Erection of Longitudinal Bonds	Nos.	5	409.00	2045.00
22	Supply of Transverse & special Bonds	Nos.	5	1018.00	5090.00
23	Erection of Transverse & special Bonds	Nos.	5	492.00	2460.00
24	Supply of material for single earth electrode	Nos.	2	4079.00	8158.00
25	Erection of material for single earth electrode	Nos.	2	1865.00	3730.00
26	Transfer of OHE from one support to another support	Nos.	8	6974.00	55792.00
27	Slewing of OHE	Span	8	5055.00	40440.00
28	Dismantling of Mast / Upright by gas cutting	Nos.	2	1468.00	2936.00
29	Transportation charges for OHE material	MT-KM	5000	16.00	80000.00
30	Breaking of Foundation	Nos.	4	3591.00	14364.00
31	Dismantling of guy rod with termination.	Nos.	2	1449.00	2898.00
32	Dismantling of existing cantilever assembly	Nos.	4	1734.00	6936.00

33	Dismantling of Portal, fabricated steel other than Mast/Upright	MT	1	8644.00	8644.00
34	Supply of 50 mm x 6mm MS flat earth bus	Mtrs.	100	289.00	28900.00
35	Erection of 50 mm x 6mm MS flat earth bus	Mtrs.	100	94.00	9400.00
36	Power Block charges ( As per Annexure-B)	LS	1	131251.50	131251.50
<b>Cost of Work</b>					<b>1596124.50</b>

**Power Block Annexure (Item No. 36 )**

<b>ELECTRICAL (TRD) Department</b>					
<b>Name of Work : TRD work in connection with Mangliyawas Provision of FOB at MLI (Footfall) 135 stations to eliminate the deficiency of MEA at 1 station.</b>					
<b>Sr. No .</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b><u>Unit Rate</u></b>	<b><u>Amount (in Rs.)</u></b>
1	Erection of rolled or fabricated and galvanized traction mast, TTC, Portals, AT masts, feeder mast, bridge masts, DA, SPS etc.	MT	3.5	11649.00	40771.50
2	Erection of material for Guy rod assembly	Nos.	2	1999.00	3998.00
3	Erection of single bracket assembly.	Nos.	4	2779.00	11116.00
4	Erection of Large span wire Ending clamp (130 Sqmm)	Nos.	2	133.00	266.00
5	Erection for material for termination of Double conductor of overhead equipment	Nos.	2	2927.00	5854.00
6	Erection of material for solid core cut in (9 tonne) insulator	Nos.	3	1081.00	3243.00
7	Erection of material for suspension insulator	Nos.	3	691.00	2073.00
8	Erection of material for post insulator	Nos.	3	692.00	2076.00
9	Slewing of OHE	Span	8	5055.00	40440.00
10	Dismantling of Mast / Upright by gas cutting	Nos.	2	1468.00	2936.00
11	Dismantling of guy rod with termination.	Nos.	2	1449.00	2898.00
12	Dismantling of existing cantilever assembly	Nos.	4	1734.00	6936.00
13	Dismantling of Portal, fabricated steel other than Mast/Upright	MT	1	8644.00	8644.00
<b>Cost of Work</b>					<b>131251.50</b>

<b>Schedule-C</b>					
<b>Name of Work : TRD work in connection with the Provision of Electronic Interlocking in place of Panel Interlocking along with MSDAC at 02 station of Ajmer division. (Ghosunda and Fatehnagar)</b>					
<b>Sr. No.</b>	<b>Description</b>	<b>Unit</b>	<b>QTY</b>	<b>Unit Rate</b>	<b>Amount</b>
1	Supply of Structure bonds	Nos.	250	1198.00	299500.00
2	Erection of structure bonds	Nos.	250	407.00	101750.00
3	Supply of Longitudinal Bonds	Nos.	400	641.00	256400.00
4	Erection of Longitudinal Bonds	Nos.	400	409.00	163600.00
5	Supply of Transverse & special Bonds	Nos.	150	1018.00	152700.00
6	Erection of Transverse & special Bonds	Nos.	150	492.00	73800.00
7	Supply of material for single earth electrode	Nos.	6	4079.00	24474.00
8	Erection of material for single earth electrode	Nos.	6	1865.00	11190.00
9	Supply of 50 mm x 6mm MS flat earth bus	Mtrs.	200	289.00	57800.00
10	Erection of 50 mm x 6mm MS flat earth bus	Mtrs.	200	94.00	18800.00
<b>Cost of Work</b>					<b>1160014.00</b>

### **Explanatory Notes for items of Schedule of Rates**

1. Items details in the Schedule of Quantity and rates shall be read in conjunction with explanatory note of schedule of tender for respective items.
2. All items of provision mentioned in SOR covers Design, Manufacture, Supply of materials, Erection, Testing and commissioning as required including small parts such as bolts, nuts, lock nuts, washers etc.
3. The tenderer shall quote the offer in percentage above/below the schedule for rates both in figures and words.
4. The quoted percentage will be applicable to each item and rate of tender schedule for deciding the amount to be paid to the Contractor.
5. The prices shall be commercially firm and without any ambiguity.
6. Basic Quantities and component of material required making up a unit of work for items mentioned in the explanatory notes are indicated for guidance purpose only. It is the sole responsibility of the contractor to supply the system as per design and therefore he shall work out the exact quantities of component required for completing the work and satisfactory operation of the system.
7. Offers quoted with deviations (regarding scope and specification) are likely to be rejected. However, In case of any deviations from the specification are proposed by the tenderer to improve the performance utility and efficiency of the equipment may furnish full particulars of the deviation with justification along with offer.
8. All the equipment and materials to be supplied by the Contractor against various schedule items should confirm to latest RDSO's / CORE's/CEE NWR/I.S. specification and drawings. Material should be procured from sources approved by RDSO/CORE/CEE- NWR Where such list is not available decision of The engineer in-charge.
9. Contractor should note that all specifications as per the latest amendments to RDSO's/CORE/NWR/IS and other relevant standard specifications shall be applicable unless specified otherwise.
10. The Contractor shall arrange all necessary tools, equipments, instruments, spares and other facilities for execution liason, checks and tests and commissioning as specified and decided by The engineer in-charge. All the work should be carried out as per satisfaction of concerned supervisor.
11. Testing and Commissioning: The successful tenderer shall demonstrate various efficiency and other related parameters as specified in the specification but not limited to during testing and commissioning validated with calculations and / or software as desired by the representative of the Electrical Engineer.
12. The information asked to be furnished shall be complete in all manners. If there is any entry like 'shall be furnished later' or blanks are left against any item, the tender is not likely to be considered.



ITEM NO.	Detail Description of items in Schedule of Quantity and Rates
Schedule-A Item No. 1	<p><b>Preparation of design and drawing for overhead equipment and verification of purchaser modification in plan:</b></p> <p>The price shall cover verification of purchaser's overhead equipment pegging plans indicating locations of structures which will be furnished by the purchaser, in stages and preparation of all drawings and designs required to be finalized by the contractor. The price shall include the following:-</p> <ul style="list-style-type: none"> <li>i) Making minor modification with the approval of the purchaser to the layout of structures and overhead equipment, if necessary, and submission of overhead equipment layout plans, including stagger, location of cutting insulator etc.</li> <li>ii) Preparation of cross section drawing/ and structure erection drawings for each structure locations.</li> <li>iii) Modification in the existing plan or layout plan if required.</li> <li>iv) Preparation of profile/ drawings of overhead including detailed study of over line structures such as foot over bridges, road over bridges etc. for maintaining the specified height of contact wire and requisite clearances.</li> <li>v) Preparation of LOP by conducting field survey throughout section/yard and submit the in principle LOP duly certified from field officer / concern SSE/JE and submit to division office for approval. After completion of work contractor have to prepare as erected LOP/ drawing duly verified from field officer/ concern SSE/JE and submit to division office for final approval. After approval as erected LOP/drawing from division office, contractor have to provide 04 Sets (01 set original tracing + 03 set copy of AED) &amp; 01 set (Auto Cad copy).</li> <li>vi) Preparation of track bonding plan with reference to approved track circuit plan. Contractor has to survey in whole yard/section and prepare bonding plan duly verified by concern SSE/JE (TRD) and SSE/JE (Signal) and after that, same to be submit in Divisional office for approval. If any correction required after scrutiny from divisional office or field unit then contractor have to make correction according to instructions and re-put up the same for approval. No extra payment shall be given for corrections/ modification in drawings as suggested to contractor. After approval the bonding plan contractor have to provide 06 set (01 set original tracing + 05 set approved copy) and soft copy (Auto cad) to divisional office.</li> <li>vii) Retracing of Purchasers existing OHE layout plan and verification and incorporating the modification in plan. Contractor shall retrace existing OHE layout plan of open line and will modify incorporating all modifications and supply to the purchaser.</li> <li>viii) Preparation of other designs and drawings including drawing of small parts steel work (other than those for which RDSO standard drawings are available) and Detailed designs for L.T. supply transformer stations.</li> <li>ix) The price shall also cover soil investigation and testing and approved manner.</li> </ul> <p>NOTES FOR MEASUREMENTS :-</p> <p>For the purpose of the payment against this item, the length of track shall be</p>

	<p>measured as under: -</p> <ul style="list-style-type: none"> <li>i) General:-By the difference in the chainages of the length under consideration, as incorporated in the layout plan.</li> <li>ii) Turnouts: - The track taking off shall be deemed as starting from the toe of the switch of the turnout.</li> <li>iii) Crossovers: - The length of track shall be taken as the difference in the chainages of the toes of the switches of the two turnouts constituting the crossovers.</li> <li>iv) Dead end and tops of loops; - The length for payment under this item shall be up to the Chainage of anchor mast of the terminating OHE.</li> <li>v) Diamond crossing with or without slips: The two tracks crossing each other shall be measured independently as per note -1 above as though there were no crossing No extra shall be provided for slip points.</li> </ul> <p>Feeder and return feeders from grid Sub-stations to feeding stations: -This will also be applicable independently in case of feeder/ return feeder/conductors from grid substations to overhead equipment feeding stations in a case of feeders/ conductors running on independent structures (not supporting OHE) along or across tracks.</p>
<p>Schedule-A Item No. 2</p> <p>Schedule-B Item No. 1</p>	<p><b>Concrete for foundation and plinth in all type of soil:</b></p> <p>The price shall cover excavation, supply and handling of all materials and accessories, temporary arrangement for excavation in all type of soil (hard/rocky/normal/black cotton) &amp; concrete work if any, casting concrete including frame work where ever necessary, temping of concrete, grouting of OHE structures and finishing the top of concrete foundation or anchor blocks as per approved designs/drawings. The price shall also include dismantling of all connected temporary arrangements, back filling with earth and compacting the same to the required height and width as per drawings to ensure safety of foundation and removal of soil out of the railway boundary. The payable volume of the foundation shall be design one as shown in the approved drawings, irrespective of the actual configuration assumed by the later. The depth of the excavation shall be measured from the foundation level to the maximum excavated point. For the computation of volume, the volume of steel work shall be ignored.</p> <p>The prices shall also cover the cost of diversion of masonry/earth drain wherever necessary for casting of foundation.</p> <p>OHE structures foundation shall be cast as prescribed in RDSO letter no. TI/CIVE/FND/0 Dtd. 9/9/02. Concrete mix for foundation shall have minimum grade of M-15 with concrete for core in M-20.</p> <p>Foundation casting shall be done in compliance of IS: 456:2000 in each &amp; every respect particularly material quantity, mixing, casting curing, frame work etc. Material used i.e. cement, aggregate and water shall be confirming to IS 458 and relevant IS.</p> <p>The graded coarse aggregate 20 mm nominal size table 2 of the latest version of IS: 383-1970 shall be used for foundation and grouting and muffing (Specification for coarse and fine aggregate for natural sources for concrete).</p> <p>Note-</p> <p>1. The price shall be same for any shape for size of concrete blocks. In calculating the individual volume of concrete, fraction of a cubic meter beyond the</p>

third decimal shall be rounded off to the next nearest third decimal.

2. The prices shall apply for concreting of all foundations for masts, gantries, portals, anchor blocks for guy rods, and fencing uprights.
3. Cost of all concrete will be paid for only under this item and the prices of other item shall not include.
4. For purposes if compilation of concrete the volume of each muff for all masts shall be taken as 0.02 cum., except for masts with balance weights and for column of portal, each head span masts, 2 or 3 track cantilever masts and special fabricated masts for which the volume of muff shall be taken as 0.08 cum. Irrespective of the size and shape of muff on a flat basis.
5. Mixture for casting of foundation shall be 1:2:4 and mixture for grouting shall be 1:1.5:3 the gradation of concrete mixture is as per IS 456 – 2000 (explained as Part – II Chapter – II of foundation).
6. Curing of foundation shall be done by contractor for 21 days.
7. No scroll will be supplied by Railway, contractor will use his scroll. The drawing of the scroll shall be submitted to this office for approval before commencement of work at site.
8. All tests on the test cubes shall be carried out at approved institutes and cost of test shall be borne by the contractor. Cube test report must be submitted to concern SSE/JE (TRD). Contractor has to prepare standard cube of size 150x150x150 mm or as desired by testing laboratory, for every 50 cum of foundation cast & same is to be tested in the Govt. approved laboratory as per IS-516/1959 (or latest) to obtain the result as per IS 456:2000 or latest. The test result of cube to be submitted to Railways. In case the quantity of concrete is less than 50 cum then at least one cube to be prepared and tested.
9. Necessary details like, type, implantation, Chainage shall be supplied by contractor. Cement used shall confirm to latest IS & grade 53.
10. The cement manufactured by any one of recognized brand i.e. Ultratech, Gujrat Ambuja, JK Laxmi, or equivalent useful for casting purpose shall be procured.
11. To make cubicle for OHE structure foundation, digging, earth excavation should be carried out very cautiously so that Electrical /Telecommunication /Signaling cable passing through underground enroute the rail periphery do not get damage. If any Electrical/Telecommunication /Signaling cable damage during foundation work then as per HQ/RB guidelines penalty amount of the same shall be borne by contractor.

The price shall also cover excavation and all reinforced concrete work for foundations including supply of cement and steel for reinforcement and other materials including bending, binding laying of the reinforcement, shoring where necessary casting concrete including frame work where necessary, grouting and finishing the tops of foundation blocks.

**Note:** Nominal reinforcement will be necessary in black cotton soil foundations for which no extra payment shall be made. The steel for nominal reinforcement will be supplied by the contractor.

<p>Schedule-A Item No. 3 &amp; 4</p> <p>Schedule-B Item No. 2 &amp; 3</p>	<p><b>Supply and erection of rolled or fabricated and galvanized traction mast, TTC, portals, AT mast, feeder mast, bridge mast, SPS etc.</b></p> <p>The price includes the supply &amp; erection of Fabricated steel structure with SPS; based on RDSO specification No. ETI/OHE/13 (4/84) with latest A&amp;C slip. The price includes supply &amp; erection of traction main masts of OHE comprising rolled and broad flange beams and fabricated structures. The prices shall also cover cost of supply , erection , alignment and setting before grouting, wherever required, of portals, TTC, Bridge Mast , gantries, 2/3 tracks cantilever structures including tower steel work for feeders for traction Sub-station drop arms standard super masts and suspension brackets for feeders and return conductors, dwarf masts or stub masts for anchoring, complete with anchor plates drilled and welded in position, multiple cantilever cross arm, chairs, adopters for bracket assemblies and all other small part steel works the erection of which is carried out by the contractor. The price also includes supply &amp; erection of all type of SPS required in the whole work. The price shall cover cost of erection, alignment and setting before grouting of individual traction portal booms and main masts whether rolled or fabricated including those for head span by using contractor's crane arranged at his own cost and by Contractor's own labor &amp; tools required to carry out the work. The prices shall also include cost of supply and erection of galvanized bolts, nuts, washers etc.</p> <p>The price shall cover cost of fabrication, galvanization, alignment and setting before grouting of individual traction masts whether rolled or fabricated and shall include masts for head spans. Galvanization thickness shall be as per Railway specification No. ETI/OHE/13 (4/84) with latest amendment. The price also includes the cost of stenciling of location number, height of contact wire, implantation, RL etc. on masts/portal uprights in the manner as directed by the Purchaser. The price also includes the, straightening of masts/portal Uprights bent during transit and cutting of masts/portal uprights to suit the site conditions. The price includes touching up of Galvanization damaged during transportation / carting with cold ZINC paint</p> <p>For purpose of payment the weights of individual traction masts and masts of head span whether rolled or fabricated shall be determined for each type on the basis of the payable black weight as per latest RDSO / CORE guidelines. The payment for fabricated SPS item will be paid as per weight schedule, if there any changes in I section / channel size payment will be made as per actual black weight used after approval of Railway. For special types, the payable black weight per meter length will be indicated by the purchaser at the time of approval of drawings.</p> <p>For standard fabrication steel work for which RDSO/CORE approved drawing are available, the weight of steel work is specified in RDSO/CORE latest drawing / instructions shall be considered for payment. However, in case the unit sectional weight of any member indicated in RDSO's drawing is not in conformity with the unit sectional weight as per the latest IS specification, the weight of the fabricated steel work shall be calculated on the basis of latest IS specification, and the same will be considered for payment for the non standard fabricated steel work, the calculated weight to be considered for payment under this item shall be included in the relevant drawing based on latest IS sectional weight at the time of submitting the designs for approval of the purchaser. There will be no addition for increased weight due to</p>
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	<p>galvanizing or painting or painting or reduction for holes or screw cut.</p> <p>In case required size of channels is not available as per approved drawing, higher size channels can be used with the approval of Sr.DEE/TRD and payment as per actual black weight will be paid. The material is to be procured from the RDSO/CORE approved sources. The price shall also cover the transportation of the mast to the nearest location for erection. Crane of suitable capacity will be arranged by Contractor/Tenderer for Mast erection. In addition, if site is not feasible for crane operation (Certify by Consignee) then as per site feasibility, mast erection crane will be arranged by railway as per requirement of site supervisor.</p>																														
<div>Schedule-A Item No. 5 &amp; 6</div> <div>Schedule-B Item No. 4 &amp; 5</div>	<p><b>Supply and erection of material for guy rod assembly :</b></p> <p>The price shall include the supply and erection of Guy Rod assembly based on Guiding RDSO's/CORE's/CEE NWR/IS/BS specification with latest A&amp;C slip . The price shall cover supply of a guy rod assembly of various lengths for traction masts, feeder line towards or supports complete with masts guy rod fittings, guy rod with adjustments and part/s be grouted in the anchor block for conventional, High rise OHE as well as 2x25 kV OHE. The price shall not include the cost of supply of a dwarf or sub mast with anchor plates drilled and welded in position, where required, for anchorage and small parts steel work complete with bolts and nuts etc., if any for attaching the mast guy rod fittings to the mast /structure which shall be paid for separately under the relevant item. Price indicated against all other items shall be exclusive of the price of erection of guy rod, if any which will be paid for under this item.</p> <p><b>Components requirement:</b></p> <p><b>( Should be as per latest specification with revision ( if any ) :</b></p> <table><tr><th>Railway ID No.</th><th>Item Description</th><th>Qty/Unit</th></tr><tr><td>3241</td><td>Mast Anchor Fitting for cliff type of structure</td><td>01 Nos.</td></tr><tr><td>3232/3242</td><td>Mast guy rod fitting with 4 sets of bolts of 20 mm dia of suitable length with nuts, Locknuts, washers for attachments to mast/S.P.S including appropriate fitting</td><td>01 Set</td></tr><tr><td>5001/ 5001-1/ 5001-3</td><td>Stud bolts for draft mast (850mm) (complete with nut lock nut &amp; split pins)</td><td>02 Nos.</td></tr><tr><td>---</td><td>Triangular attachment for Dwarf Mast</td><td>01 Nos.</td></tr><tr><td>5002</td><td>Guy Rod Strip</td><td>01 Set</td></tr><tr><td>5004 or 5005 or 5005-2 or 5006-2 or 5070-1or 9070 or 9071</td><td>Guy rod with nut, washer, split pin</td><td>01 Set</td></tr><tr><td>5007-1</td><td>Anchor 'V' bolt</td><td>01 Set</td></tr><tr><td>5008</td><td>Anchor loop</td><td>01 Set</td></tr><tr><td>5220-2</td><td>Guy rod double strap assembly.</td><td>(As Required)</td></tr></table> <p>Note:</p> <p>1) In case the contractor desires to adopt a different design for guy rod assembly, same shall be indicated by him in the tender and the components required should be clearly listed under this item as deviation.</p>	Railway ID No.	Item Description	Qty/Unit	3241	Mast Anchor Fitting for cliff type of structure	01 Nos.	3232/3242	Mast guy rod fitting with 4 sets of bolts of 20 mm dia of suitable length with nuts, Locknuts, washers for attachments to mast/S.P.S including appropriate fitting	01 Set	5001/ 5001-1/ 5001-3	Stud bolts for draft mast (850mm) (complete with nut lock nut & split pins)	02 Nos.	---	Triangular attachment for Dwarf Mast	01 Nos.	5002	Guy Rod Strip	01 Set	5004 or 5005 or 5005-2 or 5006-2 or 5070-1or 9070 or 9071	Guy rod with nut, washer, split pin	01 Set	5007-1	Anchor 'V' bolt	01 Set	5008	Anchor loop	01 Set	5220-2	Guy rod double strap assembly.	(As Required)
Railway ID No.	Item Description	Qty/Unit																													
3241	Mast Anchor Fitting for cliff type of structure	01 Nos.																													
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	2) Supply of guy rod assembly at anti creep, portal will also be paid for under this item.
<p>Schedule-A Item No. 7 &amp; 8</p> <p>Schedule-B Item No. 6 &amp; 7</p>	<p><b>Supply and Erection of single bracket assembly:</b></p> <p>The price shall cover cost for Supply and Erection of single cantilever assembly complete with insulator for conventional/High Rise OHE, 2x25 kV OHE and inside the tunnel in accordance to the RDSO's Drawing no. ETI/OHE/G/02106 sheet 1 to 3 or latest. However the contractor is expected to check the existing arrangements and implantation of the respective locations. The price shall cover on a flat rate basis for supply of bracket assembly on a traction mast or Support on drop arm for both conventional and high-rise OHE and shall include those on high/low level platform in the vicinity of turnouts, over bridges or overlaps and at all locations with reduced encumbrance/ terminating wires as per latest RDSO drawing. The price shall include the cost of supply of all components including galvanized steel tube duly fabricated and Porcelain/Composite insulators 1050/1600 mm CD as desired by open line for polluted Zone (Id. 6000-1/6012,6030-1/6033) including bolts, nuts etc. if any. The price shall cover supply of all components including registered arm dropper excluding small parts steel work if any. However, this does not include the anti-creep arrangement at masts/structures, however double suspension clamp where required is included in item. The Joint testing of insulator (ST/BT/9T) with Hydraulic insulator testing machine to be done with Open line. Calibrated Insulator testing machine shall be arranged by Railways. All Components shall comply Latest RDSO/CORE specification.</p> <p>The price shall also cover the provision of copper saddle at catenary suspension clamp as per TI/MI/0059-Rev.03 and provision of supporting contact wires with the provision of 02 Nos. PG clamps on either side of RRA location as per SMI TI/MI/0058 Rev.01. (Contact wire will be provided by Railway)</p> <p>This price shall also include the cost of supply of any extra fittings required in the work for erection of single/double/triple cantilevers.</p> <p>The forged fittings to be used are as per RDSOs specification no. TI/SPC/OHE/Fitting/0130 (10/13) circulated vide RDSO's letter no. TI/OHE/FTGEE/11 dt. 23/27.01.12, TI/OHE/FTGFE/12 dt.3/4.09.12, TI/OHE/FTGFE/2012-17.09.12 or latest.</p> <p>Note: Forged fittings shall be supplied by the contractor in lieu of MCI fittings.</p>
Schedule-A Item No. 9 & 10	<p><b>Supply &amp; Erection of Large span wire (130sqmm):</b></p> <p>The price shall cover supply and erection of large span wire as per latest RDSO specification. The payable length shall be the horizontal distance between the inner faces of traction masts/structures on which the wire is terminated. No extra payment shall be provided for sag. Erection of meters beyond the first decimal shall be rounded off to the nearest first decimal.</p>
Schedule-A Item No. 11 & 12 Schedule-B Item No. 8 & 9	<p><b>Supply &amp; Erection of Large span wire Ending Clamp (130 Sqmm):</b></p> <p>The price shall cover supply and erection of Large span wire ending clamp (130 Sq mm) as per RDSO Drg. No. ETI/OHE/P/1140 Rev-B or latest (to be procured from RDSO/CORE approved sources only)</p>

<p>Schedule-A Item No. 13 &amp; 14</p>	<p><b>Supply &amp; Erection of material for overhead equipment with complete fitting. (Contact and Catenary wire will be supplied by Railway):</b></p> <p>The price shall cover supply and erection of all components ( for both conventional and High Rise OHE) i.e. including contact and catenary dropper clips, parallel clamps for jumpering of C,F Jumper etc. , jumper wire between Catenary and contact for C and F-Jumper, 5 mm dropper wire, contract and catenary wire splices(if required.) but excluding contact wire and Catenary wire.</p> <p>The price shall also cover the supply and erection of all type of retro reflective caution boards and warning board. The price shall include provision of retro reflective number plate on traction mast or structures. The price shall include supply of small parts steel work complete with bolt, nut for attachment of retro reflective number plate to mast/structures.</p> <p>The price shall cover manual erection of all components and wires and conductors including contact wire, catenary wire, Dropper wire, jumper etc. if any but excluding small part steel work if any. The price shall not include termination of conductors.</p> <p>The price shall also cover the cost of supply of any other board for operational necessity where ever necessary as per standard Railway drawing and erection of the same on structures as per requirement of consignee using proper size clamp. Contractor has to collect Catenary and Contact wire from the place specified by the consignee/engineer's representative and has to transport it at the work site. Contractor shall use such jigs, fixtures and mechanism (of his own) which would avoid kink and twists in overhead conductors while manual erection under this item.</p> <p>Note: - All supply item under this NS should be as per latest RDSO specifications. The price shall also include the any extra fitting (SPS excluded) required for turnout, cross over, diamond crossing.</p>
<p>Schedule-A Item No. 15 &amp; 16</p>	<p><b>Supply and Erection of material for regulating equipments (ATD):</b></p> <p>The price shall cover cost of supply and erection of counter weight assembly including 9 Ton adjuster with double strap assembly and normal/antitheft guide tube assembly including the supply of regulating equipment three pulley type , stainless steel wire rope required for the regulating equipment and ATJ jumper for out of run OHE as per as per drawing No. ETI/OHE/SK/432 for connecting out of run OHE with the in running OHE at insulated/un-insulated overlap locations in conventional ,High Rise OHE as well as 2x25 kV OHE and small parts steel work, if any as per latest RDSO specification and revisions. This price shall also cover temperature marking on the ATD mast as per RDSO specification. The price shall also cover adjustment of the entire regulating equipment assembly.</p>
<p>Schedule-A Item No. 17 &amp; 18 Schedule-B Item No. 10 &amp; 11</p>	<p><b>Supply &amp; Erection for material for termination of Double conductor of overhead equipment:</b></p> <p>The price shall cover supply of all materials necessary for the yoked termination of two overhead equipment conductors on a traction mast or structure suitable for conventional ,High Rise OHE as well as 2x25 kV OHE, including appropriate mast anchor fitting, clevis assembly, three adjuster, ending clamps for Catenary and contact wires, anchor double strap assembly, equalizing/ compensating plate and fittings, including the 9 Ton insulator Porcelain/Composite insulators 1050/1600 mm</p>

	CD assembly. The price shall cover erection of all materials including 9 Ton insulator assembly.
Schedule-A Item No. 19 & 20	<p><b>Supply &amp; Erection of material for anti-creep with galvanized steel wire:</b></p> <p>The price shall cover supply and erection of all materials for anti-creep including adjusters, galvanized steel wire, mast anchor fittings at its terminations on either side on structure, ending clamps and fittings, including 9 Ton porcelain/composite insulator assembly and small parts steel work , if any. The price shall cover erection of all material including 9 Ton porcelain insulator assembly.</p> <p>In case the anti-creep extends beyond one span on either side of anti-creep centre payment for extra length shall be paid additionally at the rate of 20% of the rate for item no.19&amp;20 for each extra span.</p>
Schedule-A Item No. 21 & 22 Schedule-B Item No. 12 & 13	<p><b>Supply &amp; Erection of material for Solid core cut-in ( 9-Tonne) insulator:</b></p> <p>The price is applicable to the provision of an additional 9 Ton cut-in- solid core insulator on a flat rate basis with suspension clamp such as in a head span, cross span or in span wire or an overhead equipment conductor at an insulated overlap, anti creep not provided for in other item, the price shall cover supply of all components material for the cut-in-insulator assembly, including cut-in-insulator and appropriate terminal fittings for the conductor and 9 Ton insulator. The price shall cover erection of all components, including the 9 Ton insulator.</p>
Schedule-A Item No. 23 & 24 Schedule-B Item No. 14 & 15	<p><b>Supply &amp; Erection of material for suspension insulator:</b></p> <p>The price is applicable to the provision of 9 Ton cut-in- suspension insulator on a flat rate basis with suspension clamp such as in a head span, cross span or in span wire or an overhead equipment conductor at an insulated overlap, anti-creep not provided for in other item, the price shall cover supply of all components material for the cut-in-suspension insulator assembly, including cut-in- suspension insulator and appropriate terminal fittings for the conductor and 9 Ton insulator. The price shall cover erection of all components, including the 9 Ton suspension insulator.</p>
Schedule-A Item No. 25 & 26 Schedule-B Item No. 16 & 17	<p><b>Supply &amp; Erection of material for post insulator:</b></p> <p>The price is applicable to the provision of 25 KV post porcelain insulator to support copper and aluminum jumper/ bus bar. The price shall cover supply of post insulator and all components and fittings/ angles iron (outrigger) to support the jumpers including small part steelwork with bolts and nuts etc., if any. The price shall cover erection of all components required for the assembly, including post insulator, but excluding small part steelwork with bolts and nuts etc., if any.</p>
Schedule-A Item No. 27 & 28	<p><b>Supply &amp; Erection of material for section insulator assembly:</b></p> <p>The price shall cover supply of all components required for a standard section insulator assembly with all fittings on conventional/high rise OHE both (covering both the overhead equipment conductors) including special droppers for supporting the equipment and all terminal fitting, 02Nos. of stiffeners, fitting for conductors , including the solid core cut in section insulator assembly on the contact wire and runners, 9 Ton insulator assembly on the Catenary and dropper wire as required. The price shall cover erection and adjustment of all components including section insulator assembly, 9 ton insulator on the Catenary and droppers.</p>



	<b>Railway ID No.</b>	<b>Item Description</b>	<b>Qty.</b>
	RI-1120 (1120/ETI/OHE/SK/436)	Catenary Suspension/Ending clamp	02 nos.
	RI-1190 (1192/ETI/OHE/SK/333)	Catenary dropper clip assembly	As required
	RI-6170	Parallel clamp for double contact wire.	12 nos.
	6100	Section insulator assembly	
	RI-6110	Dropper assembly for Section Insulator.	As required
	RI-6100-1	Porcelain section insulator	01 nos.
	RI-6020-1	Porcelain 9 ton insulator	01 nos.
	RI-6181-2	Double straps for section insulator.	As required
	All other material for Section insulator as per Latest RDSO specification.		
Schedule-A Item No. 29 & 30	<b>Supply and erection of copper jumper :</b> The price shall cover, on a flat rate basis, the supply of all components and fittings required for providing a flexible copper jumper connection, including parallel clamps bimetallic and aluminum copper (AL-CU) strips, wherever required and terminal or tee clamps at either end including jumper. The price shall also cover the provision of 03 Nos. PG clamp at each connection point of isolator jumper and contact/catenary wire on either side of isolators as per guidelines provided by NWR/HQ for Vande bharat train operation. The price shall also cover the erection of the complete jumper assembly including jumper wire. The price shall be applicable for any jumper connections in any connection between feeders, L.T. transformers, drop-out switch, lightening arrestors for overhead equipments, isolators for overhead equipments and outgoing busbar for switching stations and G-jumper for Turnout, Crossover and overlaps (160 Sqmm size ).		
Schedule-A Item No. 31 & 32  Schedule-B Item No. 18 & 19  Schedule-C Item No. 1 & 2	<b>Supply &amp; Erection of Structure Bonds:</b> The price shall cover supply and erection of all materials including mild steel flat( Minimum size 40 mm * 6 mm) required to provide a structure bond connecting at traction mast or structures to the nearest non-track – circuited rail, or earth electrode, including all fastener at both ends. The Price shall cover cutting of slit at platform and repairing of platform after erection of bond as per RDSO specification. The price shall include shaping, drilling & Two coat of re-oxide and Two coat of black bituminous paint of the bond and erection of all materials including the bond. The price shall also include provision of heat shrinkable PVC tube for structure bond under track circuit rail. The price shall also cover champhering of the drilled holes for the bonds. The price shall also cover cleating of structure bond if laid in the platform area.		

<p>Schedule-A Item No. 33 &amp; 34</p> <p>Schedule-B Item No. 20 &amp; 21</p> <p>Schedule-C Item No. 3 &amp; 4</p>	<p><b>Supply &amp; Erection of Longitudinal bonds :</b> based on Guiding RDSO's/CORE's/PCEE NW. Rly.'s/IS/BS specification No. ETI/OHE/71(11/90) with latest A&amp;C slip and as per drawing no. ETI/OHE/P/7030 Rev. F or latest. The price shall also include removal of existing longitudinal bonds, if any.</p> <p>The price shall cover the supply and erection of all material including mild steel flats ( Minimum size 40 mm* 6 mm) , fasteners at both ends etc. required to provide longitudinal bond connecting 2 nos. rail and U bond at the rail joint at the locations to be specified by the Engineers representative. The price shall include shaping and drilling of the bond and rail &amp; Two coat of re-oxide and Two coat of black bituminous paint of the bond and erection of all materials including the bonds. The price shall also cover champhering of the drilled holes for the bonds.</p>
<p>Schedule-A Item No. 35 &amp; 36</p> <p>Schedule-B Item No. 22 &amp; 23</p> <p>Schedule-C Item No. 5 &amp; 6</p>	<p><b>Supply &amp; Erection of Transverse and special bonds :</b> The price shall cover supply of all materials (Minimum size 40 mm* 6 mm) including mild steel flats fasteners etc. required to provide transverse bonds connecting rails of the same/adjacent tracks at the locations to be specified by the purchaser.</p> <p>The price shall also cover the supply and erection of all materials including steel flat to provide special bonds at a crossing, foot over/road over bridge/protective screen etc. for which the location will be specified by the purchaser. The price shall include shaping and drilling &amp; two coat of re-oxide and two coat of black bituminous paint of the bond and erection of materials including the bond. The price shall also cover champhering of the drilled holes for the bonds</p>
<p>Schedule-B Item No. 24 &amp; 25</p> <p>Schedule-C Item No. 7 &amp; 8</p>	<p><b>Supply &amp; Erection of material for single earth electrode:</b> The price shall cover supply, Erection, testing and commissioning of an earth electrode assembly as per latest RDSO Specification for OHE /PSI with all accessories &amp; fasteners. The price also covers the provision of a protective concrete box with removable cover. In case of platform the price shall also cover the digging the surface level and erect electrode below ground level and cover the surface with suitable cover with handle. The price shall cover cost of testing and commissioning of an earth electrode confirming to IS 3043, IS 1239 or RDSO Specification with latest amendment. The price also covers cost for manual excavation of earth for providing earth station, cost for wooden charcoal, salt to found earth resistance within limits and erection of protective concrete box and RCC cover. The price also cover cost of marking the earth resistance measurement details (Earth pit number, earth resistance value etc.) on earth pit cover box with yellow and black paint or as desired by concern SSE/JE (TRD).</p>
<p>Schedule-A Item No. 37</p> <p>Schedule-B Item No. 26</p>	<p><b>Transfer of OHE from one support to another support:</b> The price shall cover transfer of overhead equipment like bracket assembly, feeder connection etc. on a new mast or support from the old mast or support and consequent adjustment to overhead equipment required such as re-spacing of droppers, leveling, adjustment etc.</p>
<p>Schedule-B Item No. 27</p>	<p><b>Slewing of OHE:</b> The price shall cover for temporary slewing or lowering of erected OHE adjusted and/or unadjusted to ground for special works, at the request of the Purchaser and restoration and readjustment of the equipment after completion of special works. The price shall be as per span part thereof, including anchoring span.</p>

Schedule-A Item No. 38 & 39	<b>Supply &amp; Erection of material for new dropper and re-adjustment of dropper:</b> The price shall cover the supply and adjusting the droppers for the transferred OHE span with contact and catenary dropper clips.
Schedule-A Item No. 45 Schedule-B Item No. 28	<b>Dismantling of Mast/Upright by gas cutting:</b> The price shall cover the dismantling of OHE mast/upright by gas cutting, after breaking the foundation from top, up to 50 Cm. The dismantled equipment shall be handed over by the Contractor to the SSE/JE/TRD at concerned TRD depot or nominated place decide by consignee. The Price shall also cover removing of stub (left over part of cut mast inside the foundation).
Schedule-A Item No. 40 Schedule-B Item No. 29	<b>Transportation charges for OHE material:</b> The price shall cover picking up, loading, leading and transportation of only railway supplied material (Copper conductor drum, catenary wire drum etc.) by contractor's own tools and labors and vehicles from nominated places as specified by the railway representative/consignee to the work site or any other places. The price shall cover picking up, loading, leading and transportation of Railway released material by contractor's own tools and labors and vehicles from site to concerned SSE/TRD depot at concerned place or any other nominated places as specified by the railway representative/consignee. Contractor will be responsible for safety of material against theft, loss and damage after issuing the material by Railways.
Schedule-B Item No. 30	<b>Breaking of foundation:</b> The price shall include dismantling of all connected temporary arrangements, breaking of concrete foundation of masts, portals, TTC and other OHE structures up to 0.8 M below rail level along with back filling as required and removal of soil. The price also covers cost for removal of debris outside track.
Schedule-B Item No. 31	<b>Dismantling of guy rod with termination:</b> The price shall cover to dismantle the Guy rods with termination, Anchor fitting, Guy rod fittings, double strap, strip & Anchor V bolt etc. and same will be handed over to concerned SSE/TRD at concerned Depot or as desired by SSE/TRD.
Schedule-B Item No. 32	<b>Dismantling of existing cantilever assembly:</b> The price shall cover dismantling of all parts of cantilever and small parts of steel work associated with cantilever assembly and shall be handed over by the Contractor to the concerned SSE/TRD depot at concerned place.
Schedule-A Item No. 41	<b>Construction of traction SWR diagram and booklet as per approved sectioning diagram &amp; ACTM guidelines.</b> The diagram prepared in AUTOCAD & operation rules Annexure shall be prepared in Microsoft word and submitted for approval. After approval supply of 18 hard copy set of drawing with coloring & operation rules Annexure with proper cover and one tracing one soft copy in CD shall be submitted work shall be done as per scope of work and explanatory note. The price shall cover site survey and preparation of all drawings required for sectioning diagram and station working instructions/rule as per RDSO/CORE standards. The price shall also cover preparation/correction/modification of the existing station working rule diagram and working instruction in consultation with consignee Engineer and submit the final 18 set hard copy and 01 soft copy in CD to this office. No extra payment shall be made for modifications

	<p>required to be done due to change in track centers, slewing of tracks and modifications in Engg. Plans or due to changes in scheme by Railways. The sectioning diagram &amp; Station working rule should be submitted in two copies for initial approval. After final approval 18 set of hard copies &amp; 01 soft copy in CD should be submitted to this office. The modification in SWR of adjacent stations shall also be done by contractor at his own cost. The design of sectioning as per guidelines of RDSO/RB duly consulting Railway authority shall also be done.</p>
Schedule-A Item No. 42	<p><b>Fabrication and supply of traction SWR diagram boards of size approx 4'x3' or 6'x4' or 5'x4' on suitable acrylic FRP sheets framed in teak wood/ metal frame as per approved SWR diagram with coloring as per code of section:</b></p> <p>Based on the approved TSWR diagram, contractor shall prepare TSWR diagram board. The work includes the supply and erection of OHE section diagram of the specified area/ location on 6 mm thick acrylic FRP sheet/ ACP / Sun board of mentioned dimensions or of other higher dimension suitable for clear visibility. The TSWR diagram 6 feet X 4 Feet , 4 Feet X 3 Feet width size or as required depends on the size of yard size. If any alteration / modification are required in the diagram as per site requirement, the same should be incorporated by the contractor at his own cost. Frame shall be having suitable hinges to be fixed on the wall in front of station master room. The direction of the diagram should be matched with the actual direction in front of station master.</p>
Schedule-B Item No. 33	<p><b>Dismantling of Portal, fabricated steel other than mast/upright:</b></p> <p>The price shall cover the dismantling of portal boom. TTC boom, and other small part steel and handing over to the concern SSE/JE at his depot or as desired by concern SSE/JE. The price shall cover dismantling/removal/ unloading of existing galvanized steel structure with its associated fittings.</p>
Schedule-B Item No. 34 & 35 Schedule-C Item No. 9 & 10	<p><b>Supply &amp; Erection of 50mm x 6mm MS flat earth bus:</b></p> <p>It covers supply and erection of 50 x 6 mm MS flat earth bus including all material required for fixing of earth bus for earthing of Interrupters, Isolators, Structures, LA &amp; PT, Structure, Main earth bus to rail &amp; Main earth circuit with components i.e. Nut, Bolt and washers as required at site.</p> <p>The prices shall cover the erection of earth bus either buried at the depth 300mm below ground level painted with two coats of red oxide zinc chromate primer and two finishing coats of bitumen or fixed on wooden gutties on wall.</p> <p>It shall include connecting the earth bus to earth electrodes and to various floor on walls mounted equipments or structures to be earthed and also connections to non-track circuited rails where ever required. It shall also cover the cost of making recesses in concrete foundations block or floor or cubicle and covering them up.</p> <p>The connections of earth strip to various equipment structures shall be made with GI bolt and nuts and spring washers / lock nut as per RDSO specification</p>
Schedule-A Item No. 43 & 44	<p><b>Supply and Erection of material for Splicing and extension of OHE:</b></p> <p>The price shall include cost of Supply and erection of Contact Wire Splice (Toothed Type) complete as per RDSO Drg No. ETI/OHE/P/1081-1, Rev-C or latest and Catenary wire Splice complete as per RDSO Drg No. ETI/OHE/P/1090 or latest at nominated place decided by concern SSE/JE (TRD). The price shall also include transportation, man power used, Tools and T&amp;P etc. cost for erection work of the same as desired by concern SSE/JE (TRD).</p>

<p>Schedule-A Item No. 40</p> <p>Schedule-B Item No. 29</p>	<p><b>Power Block Charges As per Annexure :</b></p> <p>The price under this item covers extra charges for erection of equipment in the vicinity of energized overhead equipment and feeders or erection of equipment with joints equipment already energized or on energized equipment which required for a power block (shut off of traction power) under different NS as mentioned.</p> <p>The price payable under this item shall be as per annexure- A attached in Tender document. The extra erection rate under this item will not be payable, if power block is given for a total duration of more than 4 hours in a day.</p> <p>The Contractor shall finalize the quantities of various items of work to be done under a power block, jointly with the Sr.DEE/TRD's Authorized representative prior to start the execution of the work.</p>
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**PART-II**  
**PRICE AND PAYMENT**

1. **SCOPE:** This chapter deals with prices to be paid for supply and/or erection of various items of work or for suppliers and other amounts payable in accordance with accepted schedules of prices and rates and terms and conditions of payment mentioned herein. This is a works contract. The total prices for the completed items of work are the actual prices payable to the Contractor as per the terms and conditions of the contract.
2. **Schedule of Prices:** The unit prices of various items of work shall be included in schedule. All unit prices shall be FIRM irrespective of minor variations in basic quantities and use of alternative types of various components and fittings approved by the Purchaser. Minor changes in basic designs shall not affect unit prices. All unit prices shall be in RUPEES. The prices shall be for materials and erection and will be payable and for execution of work in accordance with specification and approved drawings and designs. The contractor shall carefully note the items of materials, equipment's, fittings and components which will be supplied by the contractor. The prices in schedule shall be inclusive of loss and wastage in transit & erection. The prices shall be inclusive of all incidental charges for transporting, loading, unloading and handling of materials, arranging dispatch by rail/road direct from manufacturer's factory and completing all necessary formalities in this respect, such as submission of forwarding notes, arranging placement of wagons, collection of Railway receipts, all insurance premium, banker's charges for bank guarantee, indemnity bonds, inclusive of cost of stamps etc. The prices shall be inclusive of GST, if any payable on supplies and insurance premium under the Emergency Risks (Goods) Insurance Act in force. The unit prices shall include cost of works and adjustments necessary to be done by the Contractor during or after the test carried out by the Purchaser as per Schedule, unit prices shall be only in rupees and in part thereof rounded off to nearest one rupee. No adjustment of unit prices or prices of fittings, materials, equipment's or components on account of prices fluctuation of raw materials will be permitted. No adjustment on account of variation in insurance and freight charges (Road or Rail) will be permitted. The price shall include siding or shunting charges if any, levied by the Railway. The approximate estimated quantities of various items of work are included in Schedule. But contractor has to assess the quantity as per site condition / approved drawings. If it is considered that the items of work included in Schedule, would not cover all works involved in putting the installation into commission, additional items of work which are considered necessary and unit price of such items shall be included in Schedule. Explanatory notes for such additional items shall be given under deviations from tender papers. If during the execution of the work, the contractor is called upon to carry out any new items of work not included in Schedule, the contractor shall execute such works at such prices as may be actually agreed with Purchaser before commencement.
3. **Price of Equipment's, materials & components :** The prices of individual equipment's, components and materials required for the work inclusive of excise duty, Sales Tax and Insurance premium under the Emergency Risk (Goods) Insurance Act in force if any shall be included in Schedule. The prices shall be related to the actual prices of the components and the materials to the contractor as obtained by him at the time of his submitting his tender. If required by the purchaser the tenderer/contractor shall substantiate such prices. If it is considered that components and materials in addition or as alternative to those included in Schedule is required for the work, and shown in Schedule, such items also shall be included in schedule. No adjustment of rates is permissible if alternative approved fittings the use for any reason whatsoever.

4. **Price of Spares and spares components, fittings and additional supply:** The spares and spare components and fittings and additional supplies will be taken over from the contractor at the prices indicated in Para 3.
5. **Invoicing:** The contractor shall submit his invoicing procedure for approval by the purchaser within two months from the date of receipt of letter of acceptance of tender. Separate invoices shall be submitted for different type of payments mentioned above. All invoices shall be submitted with original supporting documents or certified true copies of supporting documents wherever these are acceptable to the purchaser's engineer. Where copies of original documents are required in support of several invoices, true certified copies of the original documents may be forwarded to the purchaser's engineer, with his consent. Invoices shall be submitted only on the basis of agreed principles and prices, quantities and measurement of works completed shall be approved by the purchaser's engineer prior to the submission of invoices.
6. **Recoveries from the contractor :** All the recoveries for materials supplied and services rendered by the purchaser to the contractor and other refunds due from the contractor shall ordinary be made by deductions from payments due, to the contractor covering the value of supply and erection in the progress payment for erection . The cost of materials supplied by the purchaser under the second sub-Para of 4 will be recovered in full by purchaser. No hire charges will be recovered from the contractor if material taken on loan will be returned within the period of **03 months**. After three months hire charges of complete period or full cost will be recovered as mentioned above.
7. **Measurements:** Payments for field work shall be made in accordance with approved designs and drawings and measured in relevant units, except where provided for otherwise. In case the dimensions of the work are more than those shown in approved designs and drawings, the contractor will not be entitled to any extra payment, unless dimensions were increased on account of physical impossibility of carrying out the work in accordance with approved drawings and designs. In case the dimensions of the work are less than those shown in the approved designs and the drawings and the work is accepted without being rejected, payment will be made as per work actually done. The measurement will be made generally in accordance with standard engineering practice conformity with the technical specification for Schedule.  
The approximate estimated quantities of various items or work are included in Schedule but contractor/Tenderer has to assess the quantities as per site condition / approved drawings.
8. **Payment Term :**
  - i. 70% against supply of material, on receipt & acceptance of material by Railway.
  - ii. 90% of erection rates and balance 20% of supplied material erected, after successful erection of supplied materials.
  - iii. Balance 10 % of supply and erection of material and 30% of material supplied and retained by Railway but not erected in this contract, after successful completion of work.
  - iv. No advance payment will be made against foundation and bonding work.
9. **Final Settlement:** On expiry of the Guarantee period and issue of the certificate of final acceptance of the entire installation the Security deposit will be refunded or Bank Guarantee released to the contractor after adjustment of any dues payable by the contractor to the purchaser.