



No. MRVC/W/274/LOA

Date: 14.02.2026

Letter of Acceptance

**M/s Texmaco Rail & Engineering Ltd, Mumbai ,
301,3rd floor ,A Wing. New India Chambers,
Behind Marol MIDC Bus Depot, MIDC Cros Road A,
Andheri(East),Mumbai-400093.**

Email ID:- brightpower@brightpower.in

Kind Attention: Sh. U.V KAMATH, Executive Director.

Subject: Letter of Acceptance for the work of “**Design, Supply, Installation, Testing and Commissioning of Signalling equipments/gears in connection with Construction of Proposed 5th & 6th line in between Borivali (BVI)-Virar (VR) section in Mumbai Suburban under (MUTP-IIIA)**”.

Ref : i) Request for Tender RFB No. MRVC-W-274 Dated: 15/10/2025
ii) Your Technical Bid opened on 05.12.2025 and Financial Bid opened on 16.01.2026 respectively.

1. This is to notify you that your Bid ID 3327214 ,Price Bid opened on date 16.01.2026 for execution of the **Design, Supply, Installation, Testing and Commissioning of Signalling equipments/gears in connection with Construction of Proposed 5th & 6th line in between Borivali (BVI)-Virar (VR) section in Mumbai Suburban under (MUTP-IIIA)** for the Accepted Contract Amount of the equivalent of **INR 219,17,76,192.00/- + GST @18%** (*in word Rupees Two Hundred Nineteen Crore Seventeen Lakh Seventy-Six Thousand One Hundred Ninety Two Only+ Eighteen % GST*) as corrected and modified in accordance with the Instructions to Bidders, is hereby accepted by Competent Authority of MRVC.
2. The Schedule wise accepted rates for execution of the Contract is annexed as **"Annexure-I"** .
3. Deploy the following **Key Personnel** as per section 5 clause 1.3.3 for the execution of the work. The figures indicated in Table below are the minimum number of Contractor's Personnel required which are to be deployed as per the minimum level of supervision.



मुंबई रेलवे विकास कॉर्पोरेशन लिमिटेड
भारत सरकार, रेल मंत्रालय का एक सार्वजनिक उपक्रम
MUMBAI RAILWAY VIKAS CORPORATION LTD.
(A PSU of Government of India, Ministry of Railways)

Sr No.	Designation of Contractor's Personnel	Minimum Number of Personnels to be deployed	Relevant academic qualifications	Minimum years of relevant work experience	Penalty for non-deployment of Contractor's Personnel in INR per Month
1	Project Manager	One	B.E./B.Tech in Electronics/ Electrical/ Instrumentation Engineering Or any retired Railway officer of Signal and Telecommunication cadre, retired in minimum Senior scale or Junior Administrative grade	Minimum 05 years' experience of handling/ Managing S&T works.	1,00,000
2	Project Engineer-Signalling	2 Nos (one for indoor and one for outdoor work)	B.E./B.Tech Or Diploma in Electronics/ Electrical/ Instrumentation Engineering Or any retired Railway Supervisor, retired in Senior Supervisor scale	Minimum 03 years for B.E./B.Tech and 05 years for Diploma Holder. Experience of handling/ Managing S&T works.	75,000
3	Quality Control Engineer	1	B.E./B.Tech Or Diploma in Electronics/ Electrical/ Instrumentation Engineering	Minimum 03 years for B.E./B.Tech and 05 years for Diploma Holder experience of working as Quality Control Engineer.	75,000



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Sr No.	Designation of Contractor's Personnel	Minimum Number of Personnels to be deployed	Relevant academic qualifications	Minimum years of relevant work experience	Penalty for non-deployment of Contractor's Personnel in INR per Month
4	Site Supervisor for Signalling work	06	B.E./B.Tech Or Diploma in Electronics/ Electrical/ Instrumentation Engineering	Minimum 03 years for B.E./B.Tech and 05 years for Diploma Holder experience of working as Site Supervisor for Signalling work	75,000
5	Environment, Health and Safety Engineer	As per SHE Manual requirements	In reference to the table in Annexure-3 of SHE Manual, the category of this contract shall be "D". The SHE manager, Safety Officer and Safety Supervisors shall be deployed through out the execution of contract. The Electrical supervisor and Environment manager shall be deployed as per the requirement and schedule adopted. Penalty for non compliance of SHE manual shall be imposed as prescribed in SHE manual.		

4. The work is to be completed within **36 months** from issuance of Notice to Proceed.
5. A sum of **Rs. 1,39,38,000/-** deposited as Bid Security shall be dealt in accordance with SCC/GCC clause 16.1 Part II with latest amendments.
6. You are requested to furnish the Performance Guarantee (PG) for **Rs.12,93,14,795.33** Rupees Twelve Crore Ninety-Three Lakh Fourteen Thousand Seven Hundred Ninety-Five and Paise Thirty-Three Only within 21 days from the date of issue of Letter of Acceptance (LOA) in accordance with GCC and SCC clause 16.4, in the format given in Form COF 4. Extension of time for submission of PG beyond 21 (Twenty-one) days and up to 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 12% per annum



shall be charged for the delay beyond 21 (Twenty one) days, i.e. from 22nd day after the date of issue LOA. Further, if the 60th day happens to be a declared holiday in the office of MRVC, submission of PG can be accepted on the next working day.

In all other cases, if the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminated. In case contract is terminated MRVC shall be entitled to forfeit Bid Security and other dues payable to the contractor against that particular contract, subject to maximum of PG amount.

In case a tenderer has not submitted Bid Security on the strength of their registration as a Startup recognized by Department of Industrial Policy and Promotion (DIPP) under Ministry of Commerce and Industry, DIPP shall be informed to this effect.

7. GSTIN of MRVC in the State of Maharashtra is **27AACCM1284BIZU**.
8. PVC is applicable for this tender. If PVC applicable the Base Date for PVC calculation is **04/11/2025** i.e one month prior to closing of Tender as per GCC/SCC clause 46A.2.
9. The Defect Liability Period/Maintenance Period as per GCC/SCC clause 50 (1) part-II is **30 days** after the date of Commissioning. If the system is tested and ready for commissioning but commissioning is pending on account of Railways/MRVC then **60 days** after successful Testing.
10. Mobilization Advance is applicable as per GCC/SCC clause 46. (4) part II.
11. You are requested to submit the **Insurance Policy** as per SCC Part C clause 9 within **28 days** of issuance of LOA or before signing of contract agreement, whichever is earlier.
12. You shall execute the formal Contract Agreement within 15 days after receipt of the contract agreement from the employer. This LOA shall constitute a binding contract between us, until the formal agreement is executed.



You are required to return one copy duly signed by the Authorised Representative and stamped on all pages of this Letter of Acceptance as a token of your unconditional acceptance within 07 days from the date of issue/receipt of this letter.

All other terms and conditions as stipulated in the Tender Document shall be applicable.

Kindly acknowledge the receipt.

DA: As above

(Dinesh Vashishtha)
CSTE-MRVC

Copy to:

1. TEC Members: CSTE, CM-Finance & Planning and CPM-IV-Civil.
2. Chief Manager (Finance & Planning)/ FA&CAO
3. CSTE-Project
4. Assistant Labour Commissioner(Central), Shri. Kumar Amritesh, Shram Raksha Bhawan, Opposite Priyadarshini, Shiv Shrushti Road, Eastern Express Highway, Sion, Mumbai-400022.
5. Labour Enforcement Officer(Central), Shri. Rubal Singh, Shram Raksha Bhawan, Opp. Priyadarshini, Shiv Shrushti Road, Eastern Express Highway, Sion, Mumbai-400022.

Price Schedule/Bill of Quantities(BOQ)

Name of the Work: Design, Supply, Installation, Testing and Commissioning of Signalling equipments/gears in connection with Construction of Proposed 5TH & 6TH line in between Borivali (BVI)-Virar (VR) section in Mumbai Suburban under (MUTP-IIIa)

LOA No.MRVC-W-274 Dated:14.02.2026

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
	Schedule A (Supply Items)					
	Indoor Supply					
1	Design, manufacture and supply of Hot Standby Architecture Electronic Interlocking (EI) system complete as per specifications mentioned in chapter-VII of volume-II alongwith Interface Equipments, Relays, cabinets, racks, wires and wiring material etc and Industrial grade maintenance Terminals (with Industrial grade 55" LED or higher size with UPS minimum 1 hr back up with Printer) as per requirements. All items shall be supplied as per, per functional bit/station for functioning of EI. For positive variation card/ Module wise etc. breakup cost should be furnished by tenderer within 30 days of issuance of LOA. The payment for positive variation in this item shall be made based on the requirement of card/module/components and cost breakup submitted. Note : Rate does not include cost of VDUs and Embedded PC . Dual operator Industrial Grade VDU panel and Embedded PC will be taken separately.	A1.1		Per Functional Vital Bit		
i	DAHISAR EI, RDSO/SPN/192/2019 Ver.2.0 with latest amendment.	A1.i	400	-do-	70540.84	2,82,16,336
ii	Mira road EI, RDSO/SPN/192/2019 Ver.2.0 with latest amendment.	A1.ii	400	-do-	70540.84	2,82,16,336
iii	Naigaon EI, RDSO/SPN/192/2019 Ver.2.0 with latest amendment.	A1.iii	400	-do-	70540.84	2,82,16,336
iv	Nallasopara EI,RDSO/SPN/192/2019 Ver.2.0 with latest amendment.	A1.iv	400	-do-	70540.84	2,82,16,336
v	For Bhayander with two Ocs, RDSO/SPN/203/2011 Ver1 or latest.	A1.v	800	-do-	70540.84	5,64,32,672
2	Design, manufacture and supply of Hot Standby Architecture Electronic Interlocking (EI) system complete as per RDSO specification No. RDSO/SPN/203/2011 with latest amendment if any with latest a Modification/Alteration in existing EI (Electronic Interlocking) as per latest RDSO guidelines/TAN. It includes: Design and modification in existing Interface and Interlocking circuits and logic of EI system including modification in the VDU(Video Display Unit)/ LCP(Local Control panel)/ CCIP (Control cum Indication Panel), Maintenance terminal (MPC), Data Logger, Relay rack wiring. The complete work should comply with the latest RDSO specifications and guidelines and as per approved SIP and circuit diagrams. All the material (Interface cards / relays / wiring material / connectors / fuses / communication devices etc.) shall be provided by the contractor. The work also includes the supply of modified Selection table, Interface Circuits, VDU/ LCP/CCIP diagram etc. to suit the modified SIP. It also includes the carrying out of FAT, SAT (as applicable) jointly with Railways and satisfactory commissioning. All plans/drawings/circuits etc. should be prepared on AUTO CAD, soft copy to be supplied on Pen Drive and 06 sets of hard copies also to be supplied. Alteration more than 20 routes.	A2				
i	For Borivali station Siemens EI with one OCs Alteration	A2.i	70	Per Route	265634.83	1,85,94,438
ii	For Vasai Road station with Two OCs Alteration	A2.ii	50	Per Route	265634.83	1,32,81,742
iii	For Virar station Kyosan EI(K5D) with Two OCs Alteration	A2.iii	50	Per Route	265634.83	1,32,81,742
3	Supply, Installation and Commissioning of EI VDU (Industrial Grade Visual Display Unit, 4K with all suitable accessories Compatible to EI Interlocking in Safe Mode 24x7 at controlling station. The item must comply minimum following specification:- a) Screen Size (Diagonal):- As below b) Resolution :- 4K c) Viewing angle degree: - 178x178 degree d) Brightness :- 500 Nits e) contrast ratio 4000:1 f) Backlit :- Direct LED g) Jack Interface: - HDMI -3 no. 1.2 DP, DVI USB 2.0 -2 no. CI Slot RF In AV In Component In (RCA5 Type) Digital Audio Out RGB In (D-sub 15pin)-PC PC Audio Input RS232C (D-Sub 9pin) RJ45 Stereo mini jack. h) Optical Out :- Available Note: - Screen size will be decided as per instruction of engineer	A3				
i	Approximate Screen size 55 inch	A3.i	9	No	73421.19	6,60,791

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
ii	Approximate Screen size 65 inch	A3.ii	9	No	105296.61	9,47,669
iii	Approximate Screen size 75 inch	A3.iii	5	No	165678.43	8,28,392
4	Supply and Installation of Modular power supply arrangement for VDU and industrial PC (Embedded PC) with input and output redundancy arrangement and Hot pluggable Modules as per RDSO specification. Make Gallant or similar. One set consists of 1. Input O- ring diode module with potential free -1 No contacts (PFC) for two 110 V DC sources from IPS and single 110 VDC bus Qty 1 No. 2. Isolated Inverters (Master / slave) - Input-110 V DC Output: 120 V AC/220V A500VA - 02 Nos. 3. Isolated DC-DC converters- Input : 110 vDC Output : 24 V DC/ 10A, Qty -10 Nos. 4. 3 U SSRack with back panel mother board / front panel power connectors inverter auto change over switch and all required over switch and all required protection circuits (3U height for main rack 132.5mm +/-10% & 1U height for mounting 44.5mm +/- 10%) Qty - 1 No. Make Gallant or similar.	A4	5	No.	231238.98	11,56,195
5	Supply & installation of Industrial Grade Embedded PC as per RDSO TAN no. STS/E/TAN/3007 dated 2.11.12 or latest.	A5	10	No.	152000.00	15,20,000
6	Supply of documents for both Phase-I and Phase-II as per specifications mentioned in chapter-VII.	A6	16	No	93418.55	14,94,697
7	Supply of Instruments and Tool Kits required for Trouble Shooting and repair of hardware and software for EI as per specifications mentioned in chapter-VII of volume-II .	A7	5	Set	110340.11	5,51,701
8	Earthing of EI equipment, relay racks and Power equipment etc to be done along with the supply of all requisite materials. Earthing shall be in the form of Ring Earth conforming to RDSO specification No. RDSO/SPN/197/2008 (with a min. of 6 maintenance free earth electrodes) as per specifications mentioned in chapter-VII.	A8	7	Job	112940.22	7,90,582
9	Work Station Table large size with required fittings and arrangement for station Master Panel Operator room for Fixing of VDU-2nos as operating panel as per specifications mentioned in Annexure-2 of chapter-VII.	A9	5	No	818688.68	40,93,443
10	Design of ST/LT/TOC/Square sheet/RCC (Three copy) for approval. More than four line station	A10	15	Set	30666.10	4,59,992
11	Re-Design of EI Systems after FAT/SAT with related to application logic & Interface Circuit. Note:- After FAT/SAT either Minimum 2 functional gear (Addition/Deletion of point/signal/Track) or modification in TOC minimum 5 routes in accordance of 3.47, 5.16 and other issues.	A11	10	No.	483450.00	48,34,500
Dataloggers						
12	Supply of Data logger system of 1024 digital and 32 analog inputs with IP/Ethernet protocol along with networking equipments/accessories for Railway S&T installation as per specifications mentioned in chapter-VII.	A12	7	No	7,00,000.00	49,00,000
13	Failure Analysis System (FAS) & Fault Diagnostic software for data logger of 1024/2048 / 4096 digital inputs as per specifications mentioned in chapter-VII of volume-II	A13	7	No	3,00,000.00	21,00,000
14	Failure Analysis System or Central Monitoring Unit with Printer. As per technical specification IRS: S-992006 (Amdt-4) or latest. The specification of Failure Analysis System should be got approved from the Engineer in charge before supply. The Specification of Failure Analysis System shall be as per technical specification given in contract Agreement or higher version as approved by Engineer In-Charge. (Technical specification shall be provided in tender documents.)	A14	2	No	2,43,505.86	4,87,012
15	Supply of 750VA-ON Line UPS for FAS as per specifications mentioned in chapter-VII of volume-II	A15	7	No	35,000.00	2,45,000
16	Supply of Battery Charger for Railway S&T installation self regulating floor mounting type with 230 V AC single phase input and output 24 V DC, 20A as per spec. IRS.S.86/2000 with latest amendments for datalogger.	A16	7	No	29434.23729	2,06,040
17	Supply of 12V, 42 AH VRLA Batteries as per specification IRS:S 93/96 with amendment 1 for datalogger.	A17	14	Set	4021.61	56,303
CT Racks and other indoor material						
18	Supply of Cable termination racks as per specifications mentioned in chapter-VII of volume-II	A18	60	No	35,000.00	21,00,000

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
19	Supply of Relay QNA1-K AC, AC immunized, 08F/08B, 12F-4B, 24VDC (1000 Ohm) as per specifications mentioned in chapter-VII.	A19	1000	No	4,500.00	45,00,000
20	Supply of PVC Vinyl flooring linolium Sheet of 1.5mm Thickness	A20	3000	Sq.Ft	17	51,000
21	Supply of Fire Extinguisher CO2 type (capacity 6.5 kg.) (QTY 120 = 90 for Sig + 30 for Tele)	A21	100	Nos.	9,000.00	9,00,000
	Indoor cables and wires					
22	Supply of PVC flexible copper cable single core multistrand 1 x 2.5 Sq.mm (50 conductor each diameter 0.25 +/- 0.01) as per specifications mentioned in chapter-VII.	A22	15	KM	39000.00	5,85,000
23	Supply of PVC flexible copper cable single core multistrand 1 x 6 Sq.mm as per specifications mentioned in chapter-VII.	A23	10	KM	80000.00	8,00,000
24	Supply of PVC flexible copper cable single core multistrand 1 x 10 Sq.mm as per specifications mentioned in chapter-VII.	A24	10	KM	150000.00	15,00,000
25	Supply of PVC flexible copper cable single core multistrand 1 x 16 Sq.mm (126 conductor each diameter 0.40 +/- 0.01) as per specifications mentioned in chapter-VII.	A25	10	KM	200000.00	20,00,000
26	Supply of PVC flexible copper cable single core multistrand 1 x 25 Sq.mm (196 conductor each diameter 0.40 +/- 0.01) as per specifications mentioned in chapter-VII.	A26	5	KM	400000.00	20,00,000
27	Supply of PVC flexible copper cable single core multistrand 1 x 35 Sq.mm (276 conductor each diameter 0.40 +/- 0.01) as per specifications mentioned in chapter-VII.	A27	5000	Mtr	525	26,25,000
28	Supply of PVC Indoor Cable 1x60x0.6mm dia as per specifications mentioned in chapter-VII.	A28	2	Km	300000.00	6,00,000
29	Supply of PVC Indoor Cable 1x40x0.6mm dia as per specifications mentioned in chapter-VII.	A29	2	Km	250000.00	5,00,000
30	Supply of PVC Indoor Cable 1 x 24 x 1 mm dia as per specifications mentioned in chapter-VII.	A30	7	Km	310000.00	21,70,000
31	Supply of Indoor tinned Jumper Wire of various colour as per specifications mentioned in chapter-VII.	A31	1	Km	7000.00	7,000
32	Supply of Indoor Jumper Wire ATC 1 x 1 mm dia. as per specifications mentioned in chapter-VII.	A32	2	Km	10000.00	20,000
33	Supply of wire 16/0.2 as per specifications mentioned in chapter-VII.	A33	25	km	5000.00	1,25,000
	Connectors, terminals, fuses etc for indoor					
34	Supply of Modular terminal block of 2.5 sq.mm 2 in 2 out type disconnect type terminal along with as per specifications mentioned in chapter-VII.	A34	63000	No	130.00	81,90,000
35	Supply of End Plate for above Item	A35	6300	No	30.00	1,89,000
36	Supply of End Stopper for above Item	A36	6300	No	30.00	1,89,000
37	Supply of DIN Channel for the terminals 1 Mtrs each.	A37	670	Mtr/No.	150.00	1,00,500
38	D type fuse block non indicating type low voltage non deteriorating fuse base suitable for fuse link of capacity 2A/6A/10A as per specifications mentioned in chapter-VII.	A38	400	Nos	350.00	1,40,000
39	D type fuse link non indicating type low voltage non detonating, capacity 2A/6A/10A as per specifications mentioned in chapter-VII.	A39	800	Nos	150.00	1,20,000
40	Tag block 200 way way with PVC covers as per specifications mentioned in chapter-VII.	A40	50	No	2500.00	1,25,000
41	Supply of Standard Tools set as per annexure-11 of chapter-VII.	A41	9	Set	100000.00	9,00,000
42	Supply of Fuse auto changeover system for 0.6 to 4 Amp used in Railway Signaling System as per specifications mentioned in chapter-VII. One Automatic changeover Unit comprise 32 nos. of external Non Deteriorating Type or 'G' type fuses from 0.6 Amp to 4 Amp capacities which are in signaling circuits.	A42	200	Per module	28,000.00	56,00,000
43	Supply of Fuse auto changeover system for 4 to 10 Amp used in Railway Signaling System as per specifications mentioned in chapter-VII. One Automatic changeover Unit comprise 24 nos. of external Non Deteriorating Type or 'G' type fuses from 4 Amp to 10 Amp capacities which are in signaling circuits.	A43	80	Per module	40,000.00	32,00,000
44	Supply of test and measuring instruments as per technical specification	A44				

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
i	Supply of Digital Multimeter of Fluke 287 Industrial, True RMS with temperature, Analog bar graph, Digital display, Backlight, 1000V AC/DC, measure up to 10A, 20A for up to 30 second or Superior.	A44.i	9	No.	1,00,000.00	9,00,000
ii	Supply of Digital low current clamp meter to measure current leaks (parasitic drawa down to 1 mA) and electric loads from 1mA to 100 Amp AC/DC , Voltages from 0 to 600V AC/DC , small jaw size to measure current in signalling circuit , 4 digit display . Make -Fluke, GTC/KEW , Scope or superior with better specification as mentioned with all accessories like test lead, batteries and carrying case, sample may be got approved from consignee before supply.	A44.ii	9	No.	40,000.00	3,60,000
iii	Supply of Handheld Digital Earth Tester for earth/ground resistance measurement up to 1000 ohms. Any reputed make like meggar etc. sample may be got approved from consignee before supply.	A44.iii	5	No.	1,00,000.00	5,00,000
45	Supply of Cycle chain Machine for drilling hole in rail	A45	7	No.	18000.00	1,26,000
46	Supply of RFID Marker Locator, 8000 Marker records, Built in GPS Module, 1.5m Depth Range 4 X 20 Digit LCD Display for 101.4kHz Telecom Markers. RFID Marker locator provided complete with Marker Database software and cloud data storage service facility (unlimited data storage) Make :	A46	2	No.	450000.00	9,00,000
Power supply (IPS and DG set.)						
47	SUPPLY AND COMMISSIONING OF SMPS BASED INTEGRATED POWER SUPPLY SYSTEM as per specifications mentioned in chapter-VII.	A47	26	Set	16,00,000.00	4,16,00,000
48	Supply of Microprocessor based universal earth resistance sensing ELD unit 12 channel AC/DC as per specifications mentioned in chapter-VII	A48	21	Nos	1,22,000.00	25,62,000
49	Program switches, snap action, base mounting type along with acrylic cover and mounting bracket, 25A, 9 poles, and 3 positions as per specifications mentioned in chapter-VII of volume-II	A49	119	No.	8,000.00	9,52,000
50	Program switches, snap action, base mounting type along with acrylic cover and mounting bracket, 63A, 9 poles, and 3 positions make as per specifications mentioned in chapter-VII of volume-II	A50	30	No.	14,000.00	4,20,000
51	Power supply distribution board for all supplies, with fuses and links, as per the instructions of engineer in charge.	A51	20	No.	30,000.00	6,00,000
52	Supply of Single phase, 50KVA TVSS	A52	12	Nos	50,000.00	6,00,000
53	Supply of Isolation transformer Input 230V AC single phase 50 Hz Output 230 V AC Single phase 50 Hz Capacity 50KVA as per specifications mentioned in chapter-VII of volume-II	A53	12	Nos	2,00,000.00	24,00,000
54	Supply of Copper Tape 25 x 6 mm (Bonding Ring Conductor) Mounted on insulated standofd (1 round)	A54	1140	Mts	1,000.00	11,40,000
Transformer Rectifier Set						
55	Supply of Transformer 230V/110-130V Single Phase 5 KVA as per specifications mentioned in chapter-VII.	A55	10	Nos	30,000.00	3,00,000
56	Supply of Transformer Rectifier 230V A.C./ 120V DC/40 A. as per specifications mentioned in chapter-VII.	A56	9	Nos	1,50,000.00	13,50,000
57	Supply of Transformer Rectifier Set 230V A.C./ 24V DC/20A as per specifications mentioned in chapter-VII.	A57	40	Nos	50,000.00	20,00,000
58	Supply of Rubber Mat for Power Equipment room. (5mm thick)	A58	1000	Kg	170.00	1,70,000
59	Supply of Distribution Cum Auto-changeover Box between two AC supplies of 110V as per specifications mentioned in chapter-VII.	A59	42	Nos	70,000.00	29,40,000
60	Supply of Distribution Cum Auto-changeover Box between two DC supplies of 24/60VDC as per specifications mentioned in chapter-VII.	A60	44	Nos	70,000.00	30,80,000
FIRE ALARM SYSTEM						
61	Supply of anlog addressable two loop fire alarm control panel with minimum 125 devices per loop along with battery backup without GSM interface module as per RDSO/SPN/217/2025 Ver 3.1 or latest specifications mentioned in chapter-VII.	A61	9	Nos	1,50,000.00	13,50,000
62	Supply of Addressable Manual call point with inbuilt fault isolator as per RDSO/SPN/217/2025 Ver 3.1 or latest specifications mentioned in chapter-VII.	A62	15	Nos	4,400.00	66,000

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
63	Supply of Addressable loop powdered sounder cum strobe with inbuilt fault isolator as per RDSO/SPN/217/2025 Ver 3.1 or latest specifications mentioned in chapter-VII.	A63	15	Nos	8,900.00	1,33,500
64	Supply of Addressable heat and smoke multisensor with base and inbuilt fault isolator as per RDSO/SPN/217/2025 Ver 3.1 or latest specifications mentioned in chapter-VII.	A64	204	Nos	2,900.00	5,91,600
65	Supply of Aspirating (air sampling) type system for relay room with inbuilt fault isolator. Including smoke detector for Relay Room with programmable 4 stage alarm generation & with 4 addressable modules with control Panel,power supply unit , battery backup etc. and shall comply to RDSO/SPN/217/2025 Ver 3.1 or latest.	A65	9	Nos	2,40,297.30	21,62,676
66	Supply of 2CX1.5 sqmm Un-armoured fire survival flexible cable (Fire survival circuit integrity cable) The cables should meet fire performance test under simultaneous action of flame, water stress and impacts on single sample at 950°C for minimum 2 hours, certified by UL or FM or Vds or LPCB or BRE Global or any recognized lab by Government of India and shall comply RDSO/SPN/217/2025 Ver 3.1 or latest or latest specifications mentioned in chapter-VII.	A66	9	Number /Station /HUT	11,620.42	1,04,584
67	Supply of Analogue type Linear heat sensing(LHS) cable and shall comply to RDSO/SPN/217/2025 Ver 3.1 or latest or latest specifications mentioned in chapter-VII.	A67	3000	Mtr	813.53	24,40,590
68	Supply and Installation of air sampling CPVC PIPE with all required fitting accesseries for aspiration smoke detector syatem an comply to RDSO/SPN/217/2025 Ver 3.1 or latest or latest specifications mentioned in chapter-VII.	A68	9	Station/ HUT	44,211.86	3,97,907
	Automatic Fire Suppression System (AFSS)					
69	Supply of Automatic fire suppression system for signalling installation as per draft RDSO specification no. RDSO/SPN/218/2016 * complete design of the system shall be UL/FM/VDS/LPCB approved. ** Each schedule item is supported with detailed annexures which are extract of draft RDSO spec. no. RDSO/SPN/218/2016 however all supporting annexure/ description are indicative and in case of any deviation details given in draft RDSO Spec. no. RDSO/SPN/218/2016 will prevail.	A69				
i	Design and supply of 120 Lts cylinder with valve and warning signboard. The product shall be UL/FM/Vds /LPCB approved.	A69.i	18	Nos.	82,000.00	14,76,000
ii	Supply of master cylinder accessories listed below . The product shall be UL/FM/Vds /LPCB approved (a) Pressure gauge + low pressure supervisory switch (b) Electromagnetic actuator © Manual actuator (d) Neumatic actuator (e) Flexible discharge .	A69.ii	4	Set	47,000.00	1,88,000
iii	Supply of end slave cylinder acceries listed below -The product shall be UL/FM/Vds /LPCB approved (a) Pressure gauge + low pressure supervisory switch (b) Neumatic actuator (c) Flexible discharge hose (d)Flexible actuation hose (+1Nos extra) (e) Tee (f) Elbow.	A69.iii	12	Nos	27,000.00	3,24,000
iv	Supply of 3 Mts novec 1230 flued factory field in above cylinder .The product shall be UL/FM/Vds /LPCB approved.	A69.iv	2000	Kg	2,750.00	55,00,000
v	Supply of check valve .The product shall be UL/FM/Vds /LPCB approved.	A69.v	10	Nos	11,450.00	1,14,500
vi	Supply of discharge nozzles valve .The product shall be UL/FM/Vds /LPCB approved.	A69.vi	20	Nos	2,750.00	55,000
vii	Supply of pressure switch suitable to above cylinder .	A69.vii	10	Nos	4,700.00	47,000
viii	Supply of Gas release panel with battery backup.	A69.viii	5	Nos	19,000.00	95,000
ix	Supply of manual abort switch suitable to above cylinder.	A69.ix	5	Nos	2,400.00	12,000
x	Supply of manual release switch suitable to above cylinder.	A69.x	5	Nos	2,400.00	12,000
xi	Supply of Gas manifold for two cylinder made of schedule 40 seamless pipe with required coupling , end cap etc.	A69.xi	10	Set	1,200.00	12,000
xii	Supply of schedule 40 seamless pipe as per ASTM A106,GrB, Sch40, with fitting conforming to ASTM A 105, sch.40 including pipe supports, painting etcfor the protected room up to the cylinder banks, this includes for relay and power room .	A69.xii	5	LS	63,000.00	3,15,000
xiii	Supply of 2Cx1.5 Sqmm shielded ATC FRLS armoured cables(product should ISI marked).	A69.xiii	5000	Mts	102.00	5,10,000

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
xiv	Supply and fixing of PVC casing and capping / PVC pipe of minimum 25mm size or higher as per requirement at site on the wall/ floor etc, using bends, couple and T joints and flexible pipe whenever necessary with fixtures.(all required material for fixing to be arranged by Contractor).	A69.xiv	1000	Mts	78.00	78,000
xv	Supply of 4 connection points single potential through screw less terminal block for 6 Sqmm-35 Sqmm , 4 connection points 284-621/624 or superior, suitable for power cable connection.	A69.xv	500	Nos	250.00	1,25,000
	ASM Office articles					
70	Supply of Office Revolving Chair Godrej Make Model No.9u02r Bravo Or Similar of reputed brand will be specified by Engineer in-charge.	A70	50	No	15,000.00	7,50,000
71	Supply of Office Chair with continious Arm Model Godrej CH 1007 or similar.	A71	100	No	5,000.00	5,00,000
72	Supply of Office Table of size of table of model no T9 of godrej or equivalent model of same make with 3 drawers on lef handside & one locker on the right handside.Olive brown with duplicate keys.	A72	50	No	16,000.00	8,00,000
73	Supply of Plain storage almirah with 4 adjustable shelves size 1980 mm height,915 mm width, 485 mm depth.	A73	50	No	22,000.00	11,00,000
	Outdoor Supply					
	Colour Light Signals Main and Shunt, complete with LED units, posts, CLS Units etc.					
74	Supply of Colour Light Signal Post and Assemblies Complete. as per specifications mentioned in chapter-VII.	A74	327	No.	21,500.00	70,30,500
75	Supply of Non Metallic (FRP) colour light signal housing multi unit type for railway signaling suitable for RE area TWO Aspects. Complete without lenses, lamps and signal transformer as per specifications mentioned in chapter-VII.	A75	65	No.	34,000.00	22,10,000
76	Supply of Non Metallic (FRP) colour light signal housing multi unit type for railway signalling suitable for RE area FOUR Aspects. Complete without lenses, lamps and signal transformer as per specifications mentioned in chapter-VII.	A76	262	No.	45,000.00	1,17,90,000
77	Supply of 1 way Junction Route Indicator in FRP body without lenses and transformers as per specifications mentioned in chapter-VII.	A77	50	No.	40,000.00	20,00,000
78	Supply of 2 way Junction Route Indicator in FRP body without lenses and transformers as per specifications mentioned in chapter-VII.	A78	26	No.	50,000.00	13,00,000
79	Supply of 3 way Junction Route Indicator in FRP body without lenses and transformers as per specifications mentioned in chapter-VII.	A79	2	No.	53,000.00	1,06,000
80	Supply of 5 way Junction Route Indicator in FRP body without lenses and transformers as per specifications mentioned in chapter-VII.	A80	9	No.	60,000.00	5,40,000
81	Supply of Assign / AG sign Signal Unit as per specifications mentioned in chapter-VII.	A81	75	No.	8,800.00	6,60,000
82	Supply of Calling-On Signal Unit in FRP as per specifications mentioned in chapter-VII.	A82	116	No.	11,500.00	13,34,000
83	Supply of Offset bracket for main signal as per RDSO drawings	A83	87	Nos.	3,000.00	2,61,000
84	Supply of Hand Cuff Locks	A84	600	Nos.	200.00	1,20,000
85	Supply of Position Light Shunt Signal Unit Complete with Post (made of GI Pipe of 80 mm Diameter Medium Class IS Spec. No. IS: 1239 Pt. 1/1990, Base, Hood, Cover etc as per specifications mentioned in chapter-VII.	A85	57	No	6,500.00	3,70,500
86	Supply of dependent type LED based postiion light shunt signal unit complete in FRP body as per specifications mentioned in chapter-VII.	A86	93	No	19,000.00	17,67,000
87	Supply of LED Signal lighiting base Unit for main Signal (Green) as per specifications mentioned in chapter-VII.	A87	262	No	7,200.55	18,86,544
88	Supply of LED Signal lighiting Unit for main Signal (Yellow) as per specifications mentioned in chapter-VII.	A88	599	No	6,306.19	37,77,408
89	Supply of LED Signal lighiting Unit for main Signal (RED) as per specifications mentioned in chapter-VII.	A89	327	No	6,306.19	20,62,124
90	Supply of LED Signal lighiting Unit for ROUTE Indicator as per specifications mentioned in chapter-VII.	A90	685	No	4,180.32	28,63,519
91	Supply of Calling ON Signal Lghitning unit as per specifications mentioned in chapter-VII.	A91	116	No	5,067.32	5,87,809
92	Supply of LED Signal lighiting Unit for SHUNT Signal as per specifications mentioned in chapter-VII.	A92	357	No	4,182.53	14,93,163
93	Supply of LED Signal Lighting unit for A sign as per specifications mentioned in chapter-VII.	A93	75	No.	4,180.32	3,13,524

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
94	Supply of Multi Lamp numeric indicator (LED) Single/double digit) as per engineer in charge	A94	4	No.	53,103.85	2,12,415
	Outdoor cables Apparatus Cases and other Items					
95	Supply of PVC insulated armoured, unscreened, underground railway signaling copper conductor cable of sizes core 12 x 1.5 sq.mm as per specifications mentioned in chapter-VII.	A95	1600	Km.	1,90,000.00	30,40,00,000
96	Supply of PVC insulated armoured, unscreened, underground railway signaling copper conductor cable of sizes core 6 x 1.5 sq.mm.as per specifications mentioned in chapter-VII.	A96	58	Km.	1,69,659.28	98,40,238
97	Supply of Underground Jelly filled cable 6 quad cable for S&T installation in Electrified area 0.9mm Dia as per specifications mentioned in chapter-VII.	A97	1200	Km.	2,80,000.00	33,60,00,000
98	Supply of 48 Fibre ARMOURED OPTIC FIBRE CABLE as per RDSO /SPN/TC/110/2020 rev.0 or latest as per specifications .	A98	200	Km.	88,604.50	1,77,20,900
99	Supply of 24 fibre Armoured fibre Optical Fibre Cable as per specifications mentioned in chapter-VII.	A99	60	Km.	68,000.00	40,80,000
100	Supply of HDPE Telecom duct 50mm O/D & 42 mm I/D permanently lubricated Anti rodent and non flammable propagating hdpe pipe as per specifications mentioned in chapter-VII.	A100	260	Km	78,000.00	2,02,80,000
101	Supply of straight join for 48-fiber (four trays each accomodating 12 fibrers) with enclousersas per specifications mentioned in chapter-VII.	A101	100	NO	4,500.00	4,50,000
102	Supply of Modular type FULL SS location with details as per specifications mentioned in chapter-VII.	A102	750	No	50,725.41	3,80,44,058
103	Supply of Apparatus Case HALF SS LOCATION without E type lock as per specifications mentioned in chapter-VII.	A103	180	No	44,066.15	79,31,907
104	Supply of E type lock as per specifications mentioned in chapter-VII.	A104	1860	No	2,000.00	37,20,000
105	Supply of ARA Terminal blocks with links made of PBT as per specifications mentioned in chapter-VII.	A105	252000	Nos	85.00	2,14,20,000
106	Supply of Phenolic laminated Sheet, grade P3 in standard size of 1220 X 1220 x 12 mm as per specifications mentioned in chapter-VII.	A106	950	Nos.	6,000.00	57,00,000
107	Supply of Phenolic laminated Sheet, grade P3 in standard size of 1200 X 1200 x 06 mm as per specifications mentioned in chapter-VII.	A107	30	No.	2,300.00	69,000
108	Supply of Thermo shrink Cable Jointing kit (Reinforced) TSF-2 type generally conforming as per specifications mentioned in chapter-VII.	A108	200	No.	3,800.00	7,60,000
109	Supply of Thermo shrink Cable Jointing kit for 12 core generally conforming as per specifications mentioned in chapter-VII.	A109	100	No.	9,491.53	9,49,153
	Digging and laying of Outdoor cables.					
110	Supply of RCC pipes half round of size 200mm dia outer and 150 mm dia internal 1 mtr long as per specifications mentioned in chapter-VII.	A110	5000	Nos.	200.00	10,00,000
111	Supply of Half round RCC with 300 mm outer dia & 250 mm inner dia 1 mtr in length	A111	4000	Nos.	472.92	18,91,680
112	Supply Polyolefin cable channel of size width 240/340 mm, height 155/230 internal/external, length 1meter produced of polyolefin with fire protection class K-1 in accordance with DIN 53438 Part-II for laying signaling/telecom cables, channel attachable to each other with male female swallow tail connectors and having a suitable detachable cover, as per RDSO STS/E/cable laying Precise Vol-IV and as per technical specifications.	A112	90000	Nos.	1,550.00	13,95,00,000
113	Supply of DWC HDPE pipe with one snap fit coupler and 'O' ring fire resistant, anti rodent, in 6 meter length of size 120 mm outer dia as per specifications mentioned in chapter-VII.	A113	10800	mtr	350.00	37,80,000
114	Supply of GI pipe, inner dia. 100mm dia. B-class as per specifications mentioned in chapter-VII.	A114	1440	mtr	1,200.00	17,28,000
115	Supply of GI pipe, inner dia. 300mm dia. B-class as per specifications mentioned in chapter-VII.	A115	1200	Mtr	4,680.00	56,16,000
	Supply and installation of Maintenance free Earth for out door gears					
116	Supply of Maintenance Free Safe Earth Electrode including Earth enhancement material and all accessories required for Earth Connection as per specifications mentioned in chapter-VII.	A116	1000	SET	20,000.00	2,00,00,000
117	Supply of Conventional earth electrode as per specifications mentioned in chapter-VII.	A117	500	Nos.	1,450.00	7,25,000
118	Supply of Lightning & Surge protection device,A class protection as per IS/IEC 62305 and NBC 2016 with Lightning Counter as per specifications mentioned in chapter-VII.	A118	15	SET	15,500.00	2,32,500
	Point machines, KLCR boxes etc.					
119	Supply of Electric Point Machine Non Trailable Design, 143 mm throw with lock detector, cable termination box and slide for lock and detector, low thrust rotary locking type, AC immunity 160V AC as per specifications mentioned in chapter-VII.	A119	100	No	70,000.00	70,00,000

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
120	Supply of Electric point machine, Non trailable, internal locking, 220 mm throw, with IP67 motor ,Minimum AC immunity 400 VAC, with tools & complete accessories including complete ground connection and all insulation, crank handle and along with clamp point lock 60 kg, TWS as per specifications mentioned in chapter-VII.	A120	100	No	1,10,000.00	1,10,00,000
121	Supply of Ground connections, complete set suitable for IRS type/approved point Machine for derail switch with tongue attachment insulation as per specifications mentioned in chapter-VII.	A121	100	Set	10,000.00	10,00,000
122	Supply of Ground connections, complete set suitable for TWS IRS type/approved point Machine for derail switch with tongue attachment insulation as per specifications mentioned in chapter-VII.	A122	100	Set	10,000.00	10,00,000
123	Supply of Key Lock Relay with different ward combinations (Three extra set of ward plate for Point Machine to be supplied with each relay). Siemens Make working on 60V DC/24V DC or functional equivalent without base plates. as per specifications mentioned in chapter-VII.	A123	300	No	12,000.00	36,00,000
124	Supply of 19' 42U cabinet for housing of Pre-wired Crank Handle cum key lock relay box (of metal) alongwith LEDs, with approved type push buttons, 8-way terminal strips, string rod, etc. as per Specification mentioned in chapter-VII of Volume-II (clause 7.6).	A124	24	No	42,000.00	10,08,000
125	Supply, fabrication, fixing & wiring of wiring tree suitable to Siemens points machine as per sample given by Railway. This includes the supply of trminal plate with '8' terminal=02 nos. (Type SG 550901-0209034-001 for Siemens point machine), multistrand copper wire, dressing with thread & provision of copper lug of required size. This includes cost of 02 nos. wiring tree per machine.	A125	300	Per Machine	2,400.00	7,20,000
	MSDAC					
126	Supply of Digital Axle Counter Multi section type complete sysem including the Central Evaluator and final track clearance relay for each secton, Reset boxes, LV boxes, All track side units with detection point complete assembly & fixing arrangement for each detection point, clamps deflector for either side of each detection points, monitoring console for monitoring all the DPs at a time installed at a station/ RH/IBH etc. with all other accessories fully wired and fully equipped as per specifications mentioned in chapter-VII.	A126	1800	Per DP	3,20,000.00	57,60,00,000
127	Supply of Portable operator console for on site programming of Axle Counters along with necessary hardware and software aa per para 1.2 of Technical specifications.	A127	7	Nos	1,20,789.64	8,45,527
128	Supply of Tool Kit for MSDAC suitable for the system supplied against item no. 135 of this schedule.	A128	7	Nos	3,00,000.00	21,00,000
	TMS					
129	Supply of Train Management System --equipment Rack for EBISAT, Part No.ANR 002936 or equivalent	A129	16	Nos.	1,31,371.97	21,01,952
130	Supply of Basic shelf / Extender, Part No. ANR21580 shelf suitable for EBISAT FIU 890 or equivalent	A130	20	Nos.	7,28,588.47	1,45,71,769
131	Supply of Microprocessor Board CTR/1-2, 5 MEGA Part No. ANR 002264 suitable for EBISAT 890 FIU or equivalent	A131	2	Nos.	15,41,161.03	30,82,322
132	Supply of Bus extender Board BFK/4-1 Part No. 213530 suitable for EBISAT 890 FIU or equivalent	A132	18	Nos.	4,41,975.66	79,55,562
133	Supply of BFK Cable - Part No. ANR 213538 or equivalent	A133	18	Nos.	1,17,781.38	21,20,065
134	Supply of Converter Board CONV/4-2 suitable for EBISAT - Part No. ANR 002932 or equivalent	A134	8	Nos.	9,55,566.33	76,44,531
135	Power Supply Unit Card POW/702 part No. ANR 218720 suitable for EBISAT 890 FIU or equivalent	A135	16	Nos.	71,075.50	11,37,208
136	Supply of Input Board EIN/1-1 Board (Each card of 32 channels) suitable for EBISAT 890 FIU. or equivalent	A136	32	Nos.	2,80,743.02	89,83,777
137	Supply of 64 pin IDC EURO connector - Female With dustcover or equivalent duly approved by Railway Site in-charge.	A137	330	Nos.	813.28	2,68,382
138	Supply of 0.4mm 32 Pair PVC insulated indoor cable of Delton / Phinolex/Network make or superior.	A138	1	Km	2,11,544.87	2,53,854
139	Supply of P6 packet Programmable Switch or equivalent	A139	10	Nos.	13,916.52	1,39,165
140	Supply of 16 Amp Double Pole MCB with Transparent cover box Havells, Legrand ,Anchor or suprior make.	A140	10	Nos.	2,226.64	22,266
141	Supply of 5 Feet Local Aluminum Folding Ladder. Ladder should be self supported and it should be made up of rust proof Alluminium of Min 16 SWG. No plastic hinges/Step support should be used.	A141	8	Nos.	3,439.33	27,515
	PLC TO INTERFACE					

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
142	EI Sub rack system with non-vital cards for TMS interface: EI non vital output required to interface with TMS EBISSET similar to Panel processor cards	A142				
i	Supply of Housing for accomodating IO cards S2 19" Hsg with MBD 45 or equivalent	A142.i	20	No.	62,592.43	12,51,849
ii	supply of Input Scanner Module (With Auxiliary Processing)(SCN 41) or equivalent	A142.ii	40	No.	77,590.07	31,03,603
iii	Programable logic interface output (PLIO) Card using microchip having low-power ,high performance with XLP technology, with interface circuits for panel indication by creating specific signalling for Vital and non -Vital 32 bit output. The PLIO cards will be directly interfaced with TMS Ebiset EIN cards.	A142.iii	150	No.	92,525.42	1,38,78,813
iv	Supply of Power Supply Module (PSU41) or equivalent	A142.iv	20	No.	71,075.49	14,21,510
	Schedule B (Execution of works)					
	Electronic Interlocking (EI) Sytem					
143	(a) Phase I- Installation, wiring, programming, testing and commissioning of EI equipment supplied as per specifications mentioned in chapter-VII of volume-II, including transportation from Consignee's depot to site. The works and materials for installation, wiring, testing and commissioning, grouting, cutting of floors, walls, refilling of the same, re-plastering, required CC/ masonry works, fixing/ placing/ laying of insulated ladders/ casing-capping/ cable trays/ RCC/GI pipes / Cables, termination of cables with lugs/ connectors, painting./ lettering are to be provided/ done by the contractor for the equipments supplied vide Item of Schedule "A" of this contract.This also covers the networking of built in EI Data loggers of all the stations to monitor the system to any other places where desired by Engineer-in-charge. (Without OC-4 Stations, With OC-1 station)	B143	5	Job		
i	Without OC-4 Stations,	B143.i	4		8,49,078.81	33,96,315
ii	With OC-1 station)	B143.ii	1		10,61,349.15	10,61,349
144	(b) Phase II- Installation, wiring, programming, testing and commissioning of EI equipment supplied as per specifications mentioned in chapter-VII of volume-II, including transportation from Consignee's depot to site. The works and materials for installation, wiring, testing and commissioning, grouting, cutting of floors, walls, refilling of the same, re-plastering, required CC/ masonry works, fixing/ placing/ laying of insulated ladders/ casing-capping/ cable trays/ RCC/GI pipes / Cables, termination of cables with lugs/ connectors, painting./ lettering are to be provided/ done by the contractor for the equipments supplied vide Item of Schedule "A" of this contract.This also covers the networking of built in EI Data loggers of all the stations to monitor the system to any other places where desired by Engineer-in-charge. (Without OC-4 Stations, With OC-4 station)	B144	8	Job		
i	(Without OC-4 Stations,	B144.i	4		8,49,078.81	33,96,315
ii	With OC-4 station)	B144.ii	4		10,61,349.15	42,45,397
145	Phase I& II -After installation of EI System, Maintenance & Supervision for One year, as per details given in Special Condition of Contract, Technical requirement & SEM. Phase II (<15 days consider as one month) for 19 installations	B145	19	Month	2,62,230.88	49,82,387
146	Training of Technician/ Jr. Engineer for installation, Commissioning, Testing, Repairs & Troubleshooting of EI system. (Hard copies of training material/ course modules to be given to each participant).	B146	300	Man/Da y	1,033.31	3,09,993
147	Training of Officers for installation, Commissioning, Testing, Repairs & Troubleshooting of EI system. (Hard copies of training material/ course modules to be given to each participant).	B147	100	Man/Da y	960.58	96,058
148	Design of Miscellaneous diagram consist of Floor Plan of Relay Room , Battery Room, Power Equipment Room, Data logger room, Power Supply Diagrams along with power supply calculation, Earthing Diagram, Power panel diagram, IPS wiring diagram , Auto change over diagram , Block circuit wiring diagram, Digital Axle counter wiring diagram and all other relevant drawings (Three copy) for approval. More than four line station	B148	7	Set	6,522.88	45,660
149	Design of Cable Route Plan submission of Three paper copies for approval.	B149	8	Set	8,366.95	66,936

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
150	Design and supply of cable courage plan, location particulars, Cable termination rack particulars, cable meggeringreport, earth resistance particulars, Traction bonding diagram, 1/2 wire count sheet and any other drawing in AutoCAD inA3/A4 size. The contractor shall initially supply 3 sets of circuits complete for approval of Railways. Railways will return one set to the contractor duly approved with alterations/corrections, if any. The contractor shall incorporate Railway's alterations/corrections in the tracings without any deviation and submit all tracings complete in all respects to the Railways along with PENDRIVE & 4 sets of final approved drawings. This includes designing of cable coreage plan based upon I.P in consultation with engineer-in-charge For small/medium yards.	B150	8	Per Station	53,981.36	4,31,851
151	Preparation of Cable Route Plan of buried S & T Cables using Radio Detector 8200 GS or Similar model GPS Model,DGSP and Drone for Per Trench per Km. For existing cables as per the instruction of Engineer in-charge. Submission of Drone Report in Hard Copy 1 set and DGPS output in KMZ File format. In Yard Section	B151	60	per trench KM	51,197.46	30,71,848
	Dataloggers					
152	Installation, wiring, testing and commissioning of 1024 digital & 32 analog inputs Data logger complete along with accessories with Contractors own wiring & fixing material as per specifications mentioned in chapter-VII of volume-II	B152	7	Set	20,000.00	1,40,000
	CT Racks					
153	Installation of Cable Termination Racks Assembly complete including wall supports, scaffolding, 8 way/ARA terminals /Screw less connectors, Tag blocks & other necessary accessories etc as per specifications mentioned in chapter-VII of volume-II	B153	60	No	15,000.00	9,00,000
154	Fixing & Wiring of Q series QNA1K/QNA1 (Cutting in Provision) relays. relay base plate/metal to Carbon relay. This includes fuse wiring, bus bar looping etc. required for keeping installation ready for circuit wiring work & panel throughing work. The work shall be done aas per specifications mentioned in chapter-VII of volume-II Note:-Q-series relay wiring should be also done in apparatus cases with suitable fixing frame.Fixing and wiring material shall be supplied by the contactor.	B154	1000	Nos	15,000.00	1,50,00,000
155	Fixing of Screw less connectors and fuse blocks on phenolic laminated sheets and fixing by stainless steel/brass nuts & bolts. This includes provision of two additional holes on the board on either side for cable conductor entry as per specifications mentioned in chapter-VII of volume-II	B155	63000	No.	15.00	9,45,000
	Power supply (IPS)					
156	Installation of IPS at 4 to 6 Line staion as per specifications mentioned in chapter-VII of volume-II	B156	26	set	2,50,000.00	65,00,000
157	Installation, wiring, testing & commissioning of Microprocessor baased universal earth leakage detector unit 12 channel AC/DC as per specifications mentioned in chapter-VII of volume-II	B157	21	Nos	15,000.00	3,15,000
158	Erection of power panel, power supply equipments, stabilizers, Transformers, rectifiers, battery chargers, thermo flasher, ELD programme switchesetc as per specifications mentioned in chapter-VII of volume-II	B158	9	set	25,000.00	2,25,000
159	Instllation & Commissioning of TVSS	B159	12	Nos	5,000.00	60,000
160	Installation of Automatic Changerover System it includes supply of casing cappin, lugs etc. required for installation (Wire will be supplied by the Rlys.) as per specifications mentioned in chapter-VII of volume-II	B160	94	Nos.	15,000.00	14,10,000
	Colour Light Signals Main and Shunt Signals					
161	Casting of CC foundation for signal post as per specifications mentioned in chapter-VII of volume-II	B161	327	No.	12,500.00	40,87,500
162	Installation of Signal Post and signal Unit as per specifications mentioned in chapter-VII of volume-II	B162	327	No.	4,000.00	13,08,000
163	Fixing of Calling-on Signal/A-Sign/AG-Sign unit on signal post. The item includes fixing of Co- On signal /'A' sign/ 'AG' sign unit on signal post with bracket, hood etc. Item includes supply bracket & fixing materials etc. by the contactor. The item also includes termination of cables & wiring inside Co- On signal /'A' sign/ 'AG' sign unit as per standard practice and unit wiring with flexible wire. as per specifications mentioned in chapter-VII of volume-II	B163	191	Nos.	3,000.00	5,73,000
164	Fabrication and fixing of Signal Number Plate,'A' Marker,'AG' Marker,'P' Marker,Arrow Marker,'G' Marker,'C' Marker.marker disk on signals as per specifications mentioned in chapter-VII of volume-II	B164	600	Nos.	1,400.00	8,40,000
165	Casting of CC foundation for position light shunt signal as per specifications mentioned in chapter-VII of volume-II	B165	57	No	3,500.00	1,99,500

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
166	Installation, erection and wiring of independent position light shunt signal/'F' marker.This includes fixing of shunt signal, surface base signal post,LED signal unit/ lenses, lamp hood and wiring of shunt unit and focussing the signal as per specifications mentioned in chapter-VII. All material such as wire,nut& bolt etc. will be supplied by the contractor. Inspection: Site Engineer	B166	57	No	550.00	31,350
167	Fixing of Dependent type Shunt Signal unit with offset bracket as per specifications mentioned in chapter-VII.	B167	93	No	2,100.00	1,95,300
168	Supply and fixing of Protective screen of expanded metal 12 SWG of size 1200 x 1500 mm on signals as per standard practice as per specifications mentioned in chapter-VII.	B168	50	NO	4,800.00	2,40,000
	Excavation, Cable laying and termination					
169	Laying of HDPE duct in trench and its protective work as per specifications mentioned in chapter-VII of volume-II and as per direction of site engineer.	B169	260	km	7,500.00	19,50,000
170	Splicing of optic fiber cable and making the splice joint with contractor's own splicing machine and tools.	B170	100	No.	8,500.00	8,50,000
171	Blowing and drawing of OFC through laid HDPE duct already provided in the trench as per approved cable route plan, taking due care while transporting and sealing both the ends after laying as per specifications mentioned in chapter-VII.	B171	260	km	15,800.00	41,08,000
172	Casting of CC foundation for SINGLE apparatus cases as per specifications mentioned in chapter-VII of volume-II	B172	750	No.	13,500.00	1,01,25,000
173	Casting of CC foundation for HALF/SS apparatus cases as per specifications mentioned in chapter-VII of volume-II	B173	180	No.	12,500.00	22,50,000
174	Installation of SINGLE apparatus cases as per specifications mentioned in chapter-VII of volume-II	B174	750	No.	1,400.00	10,50,000
175	Installation of HALF/SS apparatus cases as per specifications mentioned in chapter-VII of volume-II	B175	180	No.	1,050.00	1,89,000
176	Installation of Eqpt. (Relays, resistance, chargers batteries etc.as applicable) & wiring of the same in apparatus Cases as per location diagrams & circuit diagrams, as per specifications mentioned in chapter-VII of volume-II	B176				
i	Writing works inside A/C single;	B176.i	100	No.	1,800.00	1,80,000
ii	Writing works inside A/C HALF;	B176.ii	100	No.	1,600.00	1,60,000
177	Cement concrete work for miscellaneous items in the ratio 1: 3: 6. Item includes excavation, ramming, curing and plastering with cement & sand mixture (aggregate not exceeding 3.8 cm.) (Aggregate cement & sand to be supplied by the contractor).	B177	300	CUM	7,750.00	23,25,000
178	Providing brick masonry in ratio 1:6 cement and mortar including plastering with 1:4 cement and sand mixture- both sides, 20 mm thick each with contractor's owned class II bricks, including excavation, curing, grouting, bolting etc. wherever required. Bricks sand and cement to be supplied by the contractor.	B178	200	CUM	3,000.00	6,00,000
179	Fixing of ARA terminals and fuse block with provision of holes on hylum sheet and fixing by galvanised nuts & bolts	B179	252000	Nos.	18.00	45,36,000
180	Fabrication of Hylum sheet on MS angle/slotd angle in loc box	B180				
i	Single apparatus case.	B180.i	750	No	3,200.00	24,00,000
ii	Half apparatus case.	B180.ii	180	No.	2,700.00	4,86,000
	Digging and laying of Outdoor cables.					
181	Digging of 1 M deep and 0.3M wide in all type of soil as per specifications mentioned in chapter-VII of volume-II	B181	14000	Cu.m	400.00	56,00,000
182	Digging of cable tranch 0.3 mtr Deep,0.3 mtr wide on asphalted platform / road as per specifications mentioned in chapter-VII of volume-II	B182	750	Cum	3,200.00	24,00,000
183	Track Crossing 1 mtr deep x 0.3 mtr wide as per specifications mentioned in chapter-VII of volume-II	B183	2000	Cum	1,000.00	20,00,000
184	Horizontal direction drilling without damage to surface road manual or using Auger Machine of diamension 100mm as per specifications mentioned in chapter-VII of volume-II	B184	5000	RM	2,400.00	1,20,00,000
185	Laying of S&T Cables of various cores/ pairs/ quads in trenches/ GI pipes/ RCC pipes/ DWC pipes/ Trunking/PVC cable channel. This also includes laying of cables in track crossings & road crossings as per specifications mentioned in chapter-VII of volume-II	B185	3000	km	9,000.00	2,70,00,000
186	Laying of trunking and Capping /Polyolefin Channel in trenchings as per specifications mentioned in chapter-VII of volume-II	B186	94000	RM	85.00	79,90,000
187	Laying of half round pipe directly above cables in trenchings as per specifications mentioned in chapter-VII of volume-II	B187	15000	RM	45.00	6,75,000
188	Laying of DWC/GI/ RCC full round pipe in trench as per specifications mentioned in chapter-VII of volume-II	B188	12240	RM	80.00	9,79,200
189	Fixing of GI pipes for crossing the culverts, bridges etc. and concreting of ends with brick masonry at both ends as per specifications mentioned in chapter-VII of volume-II	B189	2100	Mtr	120.00	2,52,000
190	Preparation of cable pit as per specifications mentioned in chapter-VII of volume-II	B190	12	No.	15,000.00	1,80,000

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
191	Supply and installation of RCC cable route marker engraved and painted on both side along the route every 50 m and route diversion as per Drg. No 4014/00/CC4 or latest/ Stone marker.	B191	1200	No.	550.00	6,60,000
192	Supply and installation of Electronic passive cable route marker with frequency 101.4 KHz Diameter 12 cm, Thickness 34mm, Depth capability 1.5 metre	B192	1200	No.	1,300.00	15,60,000
193	Termination of outdoor cables as per specifications mentioned in chapter-VII of volume-II	B193	350000	No	15.00	52,50,000
194	Supply and fixing of ferrules of different colour, printing of termination details/Functions in different colours of ferrules as per Railway specification and installation in Relay room, Location Box, CTR, JB and Power board etc, in Station and Sections as per policy for writing Signalling installation functions description as per instruction of Engineer incharge. All materials required (i.e. plastic strip lock) for the work shall be supplied by the contractor.	B194	252000	Nos	7.31	18,42,120
195	Removal of rails	B195	1000	Nos.	150.00	1,50,000
196	Removal of sleepers	B196	1000	Nos.	150.00	1,50,000
	Installation of Earthing of signal gears					
197	Installation of maintenance free earth electrode as per specifications mentioned in chapter-VII of volume-II	B197	1000	Nos.	7,000.00	70,00,000
198	Installation of Conventional earth electrode as per specifications mentioned in chapter-VII of volume-II	B198	1086	Nos.	3,500.00	38,01,000
	Point machines, KLCR boxes etc.					
199	Fixing of Electrical point Machine on the extended sleepers as per specifications mentioned in chapter-VII of volume-II	B199	287	No	8,000.00	22,96,000
200	Fixing of KLCR relays in field in half location boxes/ Boxes in SM office. Item includes supply and fixing as per specifications mentioned in chapter-VII of volume-II	B200	287	No	5,000.00	14,35,000
	Fire Alarm & AFSS Execution					
201	Programming installation testing and commissioning of Fire Alarm System (all necessary misc material etc which are not covered in the scope of schedule of work shall be supplied by contractor). The design and calculation shall be checked and certified by manufacturer or trained designer. Other details as per annexure.	B201	7	LS	90,000.00	6,30,000
202	Programming, installation, testing and commissioning of Fire suppression system and integrating with fire alarm system including integration with detection system (it includes all types of design elements, room integrity test by manufacturer as per MPPA guideline mention as per draft RDSO specification no. RDSO/SPN/218/2016 before installation, define checklist as mention in RDSO spec, all necessary misc material etc which are not covered in the scope of schedule of work shall be supplied by contractor.)	B202	4	LOT	1,20,000.00	4,80,000
	Dismantling					
203	Dismantling of Out door signalling gears	B203	100	Gear	2,000.00	2,00,000
204	Releasing of existing Relay Room and Axle counter room materials, includes indoor items complete	B204	7	L.S./per station	59,000.00	4,13,000
205	Releasing of lever frame, old location boxes, signal posts, equipment inside the location boxes, lifting barrier, rodding run, cranks, compensators, relays and relay racks, power equipments etc as applicable including breaking of foundation etc as per the instruction of Rly engineer at site & their transportation to SSE incharge at nominated depot.	B205	7	LS/per station	94,000.00	6,58,000
	MSDAC & Track circuits					
206	Installation of Digital Axle counter Central Evaluator, Wiring from CT rack to Central Evaluator, Installation, and wiring of indoor & outdoor reset box and wiring the power supply including supply of 2 core shielded cable required size copper conductor as per specifications mentioned in chapter-VII of volume-II	B206	130	Set	15,000.00	19,50,000
207	Installation of EJB and Track devices of Digital Axle Counter as per specifications mentioned in chapter-VII of volume-II	B207	1800	Nos	20,000.00	3,60,00,000
	Miscellaneous					
208	Provision of maintenance of storage facility for safe custody and upkeepment of S&T materials & equipment of all kinds intended for use in carrying out the proposed works by setting up suitable store depot in private premises nearby Borivali-Virar section of Western Railway. The rate includes contractor's own arrangement for suitable build up area of Approx. 700 sqft x 4, as approved by the engineer, watchman for security of materials, transportation, electric supply, furniture & taxes etc, complete. The number of stores shall be 1 or 2 or 4 as per the required however total store-month will be as per the quantity.	B208	72	per store month	65,000.00	46,80,000

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
209	Hiring of one AC vehicle (Ertiga/Scorpio or equivalent) with driver in a month for transporting MRVC officials as per specifications mentioned in chapter-VII of volume-II	B209	84	Per Month	80,000.00	67,20,000
210	Hiring of one AC vehicle FOR CSTE OFFICE (Innova or similar) with driver in a month for transporting MRVC officials as per specifications mentioned in chapter-VII of volume-II	B210	108	Per Month	80,000.00	86,40,000
211	Transportation of signaling material/equipments including loading and unloading in 10MT vehicle, anywhere to anywhere (One consignee to another consignee or from another division), and stacking at destination as per instructions of SSE in-charge as per inventory. For carrying heavy materials like cable drums, DG set, Electrical Lifting barrier pedestal, IPS, Batteries, Point machine etc. This item is applicable to only these items which are not covered in the supply schedule i.e. the items are to be provided by Railways.	B211	12000	Per Ton/ Per KM	52.00	6,24,000
212	Loading & un loading & transportation of material from the Stores of SSE (Sig) depot to any other nominated place & vice-versa with the permission of Engineer In Charge. (This item is applicable only for those items which are not covered anywhere in the schedule in the supply or execution.)	B212	4500	Per Ton/ Per KM	6.00	27,000
213	Provision of safety enforcers and data loggers to Engineer-in-charge of MRVC during currency of the contract in terms of clause no. 11.14.5 of Part 1 of general specification	B213				
i	One Passenger safety enforcer	B213.i	60	Per Month	35,000.00	21,00,000
ii	One site safety enforcer	B213.ii	60	Per Month	28,000.00	16,80,000
iii	One MIS data logger OPERATOR	B213.iii	60	Per Month	28,000.00	16,80,000
214	Skilled man power to be provided by contractor for Engg.JCBs working to provide marking & supervisory work for the S&T cables during digging work by JCBs and repairing /restoring/jointing of cables, if damaged. Cables & Joints Material will be provided by railway. White Chuna marking will be done by his/her. Chuna will be provided by contractor. Information for deputing skilled man power for above work will be provided by Railway Engineer incharge before 24 hours from commencement of digging by JCBs. They will check cables route by Cable route tracer and will do chuna marking and will show the cables (on rough sketch) available in a small length approximate 50-100 meters of digging. Note:- Minimum two man will be provided at a time including Cable joiner. they will stay whole time during JCB digging work. (The CV to be got approved by Railway).	B214	10000	Man-Days	1,000.00	1,00,00,000
215	Preparation of drawings by the contractor's draftsman by manual or through computer software such as AutoCad etc. The work includes preparation of drawings for temporary work, modification in the existing drawings, general drawings or any other drawings as directed by the Engineer. Note:- - The person deployed should be well conversant with working on computers and software like AutoCad OR similar software. - Payment will be made for carrying out above activities in shifts of 10.00 hours each on all working days.	B215	60	Per Month	42,000.00	25,20,000
216	Provision of temporary Goomty of 3X3X2.5 mtr on hire for NI working made up of waterproof tent with provision of 1 table, 1 chair and two incandescent lamps. (Electrical connection will be provided by Rlys.)	B216	160	per goomty day	1,000.00	1,60,000
217	Vacuum Free packing in Anti-static Bags of all the cards and than wrapping it with bubble plastic. All card and its accessories should be than packed in Proper 2 layer hard corrugated Box.This also include complete wrapping of RACK/Cabinet with double Bubble plastic and single Layer Corrugated paper.	B217	19	Sets.	12,000.00	2,28,000
218	Hot dip Galvanizing as per RDSO Specn. ETI-OHE-13 [4/84] - Signal post, OFF Set Brackets dia 140mm and length upto 5600 mm./Location boxes, including to and fro transportation.	B218	30000	KG	60.00	18,00,000
219	Hot dip Galvanizing as per RDSO Specn. ETI-OHE-13 [4/84] - Misc. M.S. Fabricated items like point roddings, P/D Brackets etc. length upto 1200mm including to and fro transportation.	B219	20000	KG	50.00	10,00,000

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
220	Fixing of "C" Channel Clamps on Girders. Along with proper coupling of GI/DWC pipes. The work will be executed as per instruction of site incharge and site incharge may take decision as per site condition. All the fixtures, nut bolts, tolls required to fix the channel will be provided by contractor. Proper safety equipment like Helmet, Retereflective Jacket and whistle, flag is to be made available during execution of work.	B220	100	Nos	500.00	50,000
221	Supply and Installation of Modular cable sealing system, for cable entries in to relay room based on multidiameter technology. Rostec make Galvanized Frame G 6x3 or similar with EPDM Module, Stay Plate, Wedge, Assy gel etc. complete with all mounting/fixing accessories and modules.	B221	14	Set	1,00,000.00	14,00,000
222	Provision of bonding with contractors PVC jacket wire rope of Galvanised steel wire 6mm dia (6x 19 strands wire with steel core of 6 mm dia) sheathed with PVC 2mm wall thickness, overall thickness being 10mm for track jumper & fish plate joints bonds. PVC sheath should be made of type 6 compound as per IS 5831 of 1970 or latest. Reclaimed or recycled material should not be used. This will include drilling of 7.1 mm dia holes in rails (4Nos) and provision of two jumpers for each bond, clamping of bonds etc with contractors own materials and tools as per instruction of railway engineer at site.	B222	2000	Nos	180.00	3,60,000
223	Shifting of existing Full Location Boxes coming in the alignment of doubling. The work includes losing & removal of soil around location boxes by excavating soil around foundation, making of pit for shifting of location box horizontally opposite to railway track up to 0.5 to 1.0 mtr. This includes loosening of existing cable coils without any damage. The excavated soil shall be back filled after shifting of Location Boxes. Location box along with its foundation shall be shifted by push method with the help of jacks or by crane by contractors own expenditure under instructions of engineer in-charge at site. Any minor repairs in foundation due to patching shall also be carried out by contractor as per instruction of Engineer incharge. The work may affect train working hence the work shall be done as per margin only or during traffic block only.	B223	120	Per Loc Box	7,000.00	8,40,000
224	Shifting of existing Half Location Boxes coming in the alignment of doubling. The work includes losing & removal of soil around location boxes by excavating soil around foundation, making of pit for shifting of location box horizontally opposite to railway track up to 0.5 to 1.0 mtr. This includes loosening of existing cable coils without any damage. The excavated soil shall be back filled after shifting of Location Boxes. Location box along with its foundation shall be shifted by push method with the help of jacks or by crane by contractors own expenditure under instructions of engineer in-charge at site. Any minor repairs in foundation due to patching shall also be carried out by contractor as per instruction of Engineer incharge. The work may affect train working hence the work shall be done as per margin only or during traffic block only.	B224	60	No.	6,000.00	3,60,000
225	Shifting of infringing cables. The item includes removal of infringing cables from existing trench & laying the same in new trenches .Digging, Placing of capping/ Half round RCC pipe covered seperately.	B225	300	km	8,000.00	24,00,000
226	Making an entrance for new cable in old existing location, Casting concreting and curing of foundation and restoring it to old position by perfect masonry/concreting work. Contractor will ensure that cable entered in Location Box is properly protected.	B226	40	Nos	700.00	28,000
227	Patching work in old location box consisting 1) Digging of pit, cleaning of earth from all sides, breaking of seal of location boxes removal sand from location, marking of new cable holes 2) insertion of cable from ground 3) making place for cable termination in old location, shifting ARA, fuse etc after removal and termination including fixing of ARA. 4) Termination of cable in old location 5) Filling of sand and plastering to all sides upto 50mm below ground level.	B227	150	No	6,500.00	9,75,000
228	Transferring of S&T cables from existing location box to new location box. The work includes breaking dismantling of existing foundation of location, excavating and removing/segregating coils of cables which may be about 10 mts in length. These cables are to be disconnected and removed from the existing location one by one as per the instruction and under the supervision of railway engineer present at site. The cable is then to be inserted and terminated in new location box. The item includes dressing of cable, making of wiring tree. The material required for lacing/dressing shall be arranged by contractor. The work is required to be done systematically with due precaution during the blockor disconnection within the time that is allowed. The excavation work to be done carefully without damaging the cable to avoid any failure. (Termination charge will be given seperately). Note: Proportionate payment will be made if cable of other length One No. unit- One cable of 10 m length.	B228	4000	Nos	700.00	28,00,000

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
229	Releasing of cables from old location boxes and taking it into new location boxes. This includes excavating the earth to release the cables from old location box for taking it into new location. This also includes releasing the old location box and bringing it to nearest station / central cabin. Location (old) will be released only after ensuring all working cables have been shifted in New location.	B229	100	Per location	2,100.00	2,10,000
230	Construction of Concrete platform around Location box foundation including steps, wherever required. The work includes Preparatory work like removing muck from surroundings of location box, disposal of muck away from embankment of tracks, surface leveling for construction of concrete plat form. Preparation of wooden frame along with required wooden planks for the concrete work, supply and transportation of all required materials, viz. cement, sand, gravel, water, concrete mixing tools etc. by deploying labours from station to site shall also inclusive. The work shall be carried out with smooth finishing on platform flooring and standard curing of concreting shall be done as per standard practice. Note: The Location box work sites are between the stations, Borivali to Virar Section. Location box sites are not road accessible. Transportation of work materials to site shall be done by deploying labours from nearest station. Arranging all required materials, transportation and concrete platform construction, flooring finishing and debris removal from work site shall be carried out by the contractor.	B230	930	Per location box.	25,000.00	2,32,50,000
231	Removal of excavated/slip earth/ debris/ malba from the site of works to any other place outside Railway land/premises, including all excavations, handling, re-handling, loading, unloading and leading, etc. all labour and material as a complete job. Removal of Earth (all kinds of soils)/ROCKS, BOULDERS including mud/slush, slipped earth in catch water drains, side drains, over berms in cutting, water way of bridges, over coping of toe/breast/retaining walls etc. including crossing of nallah, railway tracks, making/repairing approach roads if required, all lead, lift, ascent, descents, or any other obstruction. Earth spoils to be dumped outside the cutting or railway embankments as per direction of Engineer in charge	B231	300	Cu.M	150.00	45,000
232	Lettering / Numbering of Signals, Point Machine, Track Lead Junction Boxes, Block Joints, Apparatus Cases etc. (each item to be taken as One Unit) This work will be carried out as per the standard practice being followed in Central Railway.	B232	2200	No.	60.00	1,32,000
233	Locate the existing working S&T cable by cross trench across the exiting cable route at repeated locations along the expected cable path, Identification of the S&T cable, Mark the cable route physically, Excavate the cable trench along the identified cable path to expose complete working cable route cautiously to avoid any damage and subsequent failure of working signalling function. Protect the exposed working cable and keep watchman till the cable is shifted to clear the infringement. Further excavate second cable trench away from the infringement to shift the said exposed cable. Shift the working cable manually to new trench from the old route to clear the infringement, carefully without any damage and failure. The working cable may be one or two or a bunch of cable. if needed shall lay new cable in the new infringement free trench to use for transferring the signal function thereafter. this work is to be done in utmost priority condition to clear the infringement to enable Civil Engineering work. Contractor needs to provide proper resources at site. Transportation, Loading/Unloading of cable and laying of extra cable if required at the site shall be excluded in this item.	B233	10000	Per Route Mtr	407.50	40,75,000
234	Providing HYDRA/JCB machine on hire basis speeding of the work during block/ non- interlocking railway work as directed by engineer in charge at site with all contractors machinery, fuel, operator, crew, assisting labour complete. The rate of hiring the machinery will be per machine per shift per block. One shift means working of 8 hrs or part thereof. The item will be operated during block or Non-interlocking only for the purpose of speeding up the work, for early completion of the work during the block and is intended to be operated to provide additional resources over and above normal resources. The requirement of any machinery for executing a particular item during or prior to block is covered in the rate of relevant items only. The item will be operated at the sole discretion of the engineer. - Hydra crane of 8 to 10 tonne capacity	B234	100	Shift(8hrs)	10,694.00	10,69,400
	TMS EXECUTION					
235	Software Modifications like Site database in central server, Indication list changes & mapping with SDB, changes in detail pictures for Central control room & stations work stations, Changes in RVPU pictures, New tapping chart, EBISSET program generation and configuration, etc as per New SIPs for various yards & sections. (1) Yard Modification of station with route relay interlocking.	B235	8	Station	15,60,588.63	1,24,84,709

Sl. No.	Item Description	Item Code / Make	Quantity	Units	Estimated Rate (WITHOUT GST)	TOTAL AMOUNT In INR(Excluding GST)
236	Design of non vital logic and interface circuits for panel indication by creating specific signalling panel indications non vital output bits. Each non vital output bit will be used for interfacing with EBISAT of TMS.	B236	8	per station	2,65,483.83	21,23,871
237	Fixing and crimping of EURO connector work includes crimping with 32 pair telecom cable at EBISAT end. Item also include complete testing of indication.	B237	300	No.	507.12	1,52,136
238	Laying & wiring of 0.4mm 32Pair PVC Indoor Cable from Relay Rack to TMS EBISAT. Items include termination of cable on TAG on Relay Rack(One Side)	B238	1200	Mtr	15.73	18,876
239	Wiring for TMS indication as per approved circuit diagram from Tag Block to Tag Block and other terminals in the relay room & soldering.	B239	1000	Mtr	19.51	19,510
240	Supply, Laying & Wiring of power wire for providing power supply to EBISAT / MODEMS. Item includes supply of power wire in different standard colors. Each wire will be of copper conductor, Multi strand as per IS 2465/1984 & 1S649/1990 of Size 1 x 6 sq.mm..	B240	500	Mtr	76.57	38,285
241	Dismantling and Relocation of EBISAT Rack along with its Card and accessories in the Relay Room. The work includes transportation of the EBISAT Rack along with its card and accessories from existing relay room to new location of installation	B241	8	No.	6,308.08	50,465
242	Installation, Testing & Commissioning of EBISAT (FIU) including communication networking equipment, modems, data connectivity.	B242	8	No.	18,639.80	1,49,118
243	Total Signalling Cost i.e Sch A+Sch B	C243				2,32,52,71,173
	Safety, Health and Environmental					
244	Payment for ensuring implementation and monitoring of all provisions in Safety, Health and Environmental Manual (SHE Manual) of MRVC during execution of works through entire contract period including deployment of required SHE organization as mentioned in SHE manual with required qualification, arranging training to all workers and staff engaged for work, regular health check up of labours, arranging SHE meetings, SHE Inspection, SHE audit, SHE communication i.e. posters/ signages/ VIDEO/ Audio, SHE housekeeping, Safety training, provision of protective wears, labour welfare measures, Environmental management, traffic management of vehicles for construction activities, etc. complete as detailed in Safety, Health and Environment manual of MRVC.	D244	0.50%	Percent age 0.50% of Total C243	0.00	1,16,26,356
	SCHEDULE PRICE including Sch.A + Sch.B and SHE (Excluding GST)					2,33,68,97,529.00
	Contractors Amount Quoted Percentage 6.21% Below Schedule Price .					2,19,17,76,192
	GST @18%					39,45,19,714.56
	Total Schedule Amount (Including GST)					2,58,62,95,906.56

(Dinesh Vashishtha)
CSTE-MRVC