

<b>Status of completed work</b>				
<b>Sl.No.</b>	<b>Item Description</b>	<b>Unit</b>	<b>Total Qty</b>	<b>Completed work till 17.11.2022 (Q)</b>
<b>Annexure-I:Works</b>				
1	Supply and Fixing of RE Protective Screens on signals	NO's	2	0
2	Supply & Installation of Maintenance free earthing and bonding system as per RDSO.	NO's	12	6
3	Supply of galvanised Steel tape of size 6 x 50 mm as per IS 2629 of 1985 (Re-affirmed 2001) for interconnection between MF earth pits	Mtrs	0	0
4	Installation of 48V/200AH VRLA maintenance free battery		5	3
5	Supply of Electronic Gate Telephone System - 24V DC power pack with MF battery-7AH for electronic LC gate Telephone or similar / advanced.	NO's	0	0
6	Supply and Installation of various boards like BSLB / GWB / STOP / Calling-ON boards etc.,	NO's	0	0
7	Installation,including earthing of 42U 19" covered racks for housing SDH and PD-MUX equipment's, DDF, FMS, MDF, using krone module etc.		7	6
8	Installation testing and commission of 2 MB programmable primary digital drop insert multiplexer	Nos	7	4
9	Supply & fixing of PVC channels of size 60x60 mm required by BHEL Engineer in charge. Railway by fixing / clamp to the wall for indoor wiring purposes& drawing of indoor cables.	Mtrs	0	112
10	Supply & Installation of conventional earth pit for earthing of S&T installations.	NO's	126	111
11	Modification / Alteration / shifting of existing Integrated power supply system (IPS) system	NO's	2	0
12	Installation, termination, wiring, testing and commissioning of interlocked section (Electronic Interlocking). The S&T modification equipment installed within the station are needs to be integrated and functionally tested with each other in totality.	Per Station	2	0
13	Installation, termination, wiring, testing and commissioning of point machine	Per Machine	2	0
14	Painting of MS Flat with one coating of red oxide as primary and two coats of anti-corrosive black.	Mtrs	800	795
15	Supply of MS flat of size 40 x 6mm	Mtrs	800	1110

Sl.No.	Item Description	Unit	Total Qty	Completed work till 17.11.2022 (Q)
16	Shifting of S&T Location / Battery boxes ( Horizontal re-location)	Per Box	2	0
17	Installation of copper tape 3 x 25 mm	Mtrs	120	551
18	Supply of copper tape 3 x 25 mm	Mtrs	120	551
19	Excavation of square coil pit of size 1mtr X 1.5mtr and depth 1mtr for providing coil at joint locations / location box / points signals, culverts, bridges and at LC gates.	NO's	20	15
20	Installation of Junction Box	NO's	1	0
21	Carrying out alterations to the existing SM's control panel.	LS	1	2
22	Supply of Beetel make Push Button telephone with CLI (Model-M51) or similar	NO's	23	27
23	Erection & wiring of shunt signal post.	NO's	2	0
24	Installation of Independent shunt signals complete with post, surface base, position light shunt signal unit, Anchor bolts, Universal lock with key etc.,	NO's	2	0
25	Supply of LED signal unit for junction type route indicator/shunt/calling on	NO's	0	32
26	Design and drawings for complete indoor signaling work for RE modifications in existing stations as per SIP.	Per Station	8	5
27	Painting, Letter writing, Numbering of termination particulars over all Indoor & Outdoor Gears at Complete STATION including LC gate.	Per Station	9	6
28	Supply of Various types of markers as :- P / C / G / A / IB markers	NO's	16	0
29	Installation and commissioning of 4 wire way station equipment's, power supply unit at SP / SSP / Station / TSS / AEN / PWI / SI offices/Residences.	NO's	15	15
30	Supply of Portable Emergency telephone 4 wire	NO's		0
31	Supply of Power supply unit (PSU) for telecom installation at way side equipment	NO's		0
32	Initial charging of lead acid low maintenance batteries 48V, 200AH VRLA or any other batteries.	NO's	81.25	216
33	installation of SMPS battery chargers for telecom use 48V, 25 Amps in N+1 configuration using 3 modules of 25 Amps (FR/BC) suitable for 200 AH LM Batteries with lightning and surge protection with automatic switching between the modules.	NO's	11	3

Sl.No.	Item Description	Unit	Total Qty	Completed work till 17.11.2022 (Q)
34	Fixing of 10 pair CT box and termination of cable at the station/LC gates, TSS, PS, SSP, Quarters, Service buildings etc.	NO's	20	0
35	Modification of existing PA system to suit RE requirement	NO's	3	3
36	Excavation of trench 0.35m width 1.2m deep in all categories of soil such as black cotton / hard soil / murrum / soft rock mixed with boulders etc., as per cable route plan. Back filling the trench with earth to the level of surrounding ground after laying cables.	KM's	4.347	3.188
37	Laying of signaling / power / cables of various sizes.	KM's	26.49	6.226
38	Excavation of PIT, casting of concrete foundation for Location Box- Single case, erection of location box, Lamp holder 2 pin with switch, wiring material, wiring, testing and commissioning.	Per Box	88	78
39	Installation of Location Box - Full case complete with E Type Lock, Hylem Sheet, Universal Lock with Key	NO's	26	15
40	Installation of Location Box - Half case complete with E Type Lock, Hylem Sheet, Universal Lock with Key	NO's	3	0
41	Excavation of cable trench of 1 m depth & 0.3m depth wide across the track crossing, platform & refilling	KM's	0	0
42	Digging of cable trench to a depth of not less than 30 cm and width 15 cm. In rocky terrain, concreting the trench with 150mm thick concrete in the ratio 1:2:4 and back filling with excavated soil.	Mtrs	0	0
43	Drawing of PVC sheathed cable in PVC conduit pipe/casing. PVC conduit pipe of 32 / 20 mm (External dia.), thickness 1.5 mm, medium density fit for electrical purposes	Mtrs	450	414
44	Track crossing by Horizontal boring method as advised by the engineer at site. Confirming to IS 139 heavy class in the Bore drilled with coupler between two pipes .All the joints of casing pipes should be tightened leak proof.	Mtrs	0	0
45	Perforation and Fixing of GI Pipes on- Drains, & LC Gates	Mtrs	0	9

SI.No.	Item Description	Unit	Total Qty	Completed work till 17.11.2022 (Q)
46	Supply of GI pipe 100 mm dia class "B" ISI marked with accessories including bends	Mtrs	560	560
47	Supply of Mild steel channel for trough/GI pipe fixing on grider bridge	Mtrs	0	0
48	Excavation of cable pit without damaging existing working cables, laying& insertion of new extra cables.	Per Box	1	0
49	Release of complete indoor and outdoor S&T equipment from stations / LC gates, and transportation of released material to the S&T depot by contractor.	Per Station	4	4
50	Testing of OFC cable including supply of joint protection and splicing activity.	KM's	5	0
51	Testing Quad cable	KM's	1.5	0
<b>Annexure-II:New Items</b>				
1	Installation of Maple 4C system with all other accessories at station/SP/SSP/TSS	No	0	
2	Installation of rack mounted FMS fibre parts no.1U 24 Fs 24FP Raychem make including 24 Nos 0.2 db FC/PC Adaptors and 24 Nos 900 MICRON 1.5 meter FCPC pigtails with RDSO specification No.RDSO/SPN/TC- 037-2000 (ver3) or latest.	No.	33	20
3	installation of control room Equipment with all accessories as per RDSO Spec.No.SPN/TC/66/2007 with amendment 2.	No.	1	1
4	Installation of control way station Equipment as per RDSO Spec.No. RDSO/SPN/TC:/66/2007 with Amendment 2.	No.	1	1
5	Supply and Installation of DWC pipe with one snap fit coupler and 'O' ring conforming to RDSO/SPN/204/2011 Ver. 1.1or latest RDSO specification , Non-metallic, corrugated, multiwalled, normal duty, pliable, without protection against chemical attack and Non flame propagating in 6 meter length of size 120 mm outer dia& 102 mm inner dia.( Permitted tolerance in dia = +/- 2 mm).	Mtr	1	0
6	Provision of of new TLD box, GI pipe, 2X2.5 Sq mm cable and wire rope with accessories as per dwg no. RVNL/S&T/SG-017/2005, termination of cable in TLD boxes and connection/bonding to track as per railway practice.	Nos	1	0

SI.No.	Item Description	Unit	Total Qty	Completed work till 17.11.2022 (Q)
7	Supply and installation of Bonding with GI Wire 4mm dia (8 SWG ) for track jumper & fish plate joints(S & T "Z" Bond) bonds.This will include Drilling of 7.0/7.1/7.2 mm dia holes in rails ( 4nos. ) and provision of two jumpers for each bond, clipping of bonds etc with contractors own tools as per Instruction of Engineer at site.	Nos	20	0
8	Installation of Adjustable Track feed Resistance.	No.	62	0
9	Supply of Ground Connection for 143mm throw IRS type machine complete (5Rods)	Set	0	0
10	Installation of fuse Holder 20 Amp capacity to IRS Spec S 78/92(or IRS.S 78/Tentative) or latest./Fuse links 20 / Amp capacity to IRS Spec S 78/92 or latest.	No.	0	0
11	Supply and Installation of 230- 110V/1.5 KVA IPS Transfomer	nos	0	0
12	Laying of indoor Signaling cable on ladder, dressing, and terminating the same on Old and New CT rack, wherever required, to patch the Old Outdoor Signaling cable in new installation.	per Stn	1	0
13	Supply of Multistrand flexible Cable Red, green yellow for signal wiring size 2.5 sq mm dia.	Mtrs	3250	6249
14	Fabrication, supply, fixing of RCC cable marker is to be done as per drg. No. CORE/S&T/ALD/SK/600/2013. The lettering on the cable marker shall be "TELE", "OFC" as per the instruction of the incharge supervisor at site office.	No.	10	0
15	Supply, placing and positioning width wise , of second- class country made Bricks above the screened earth after laying the cable. (placing of bricks @ eight to nine bricks to cater one meter length)	KMs	0	0
16	Provision of precast RCC Joint Chamber as per drawings OR Excavation for Jointing pit and preparing RCC joint chamber of 1.2 mtr dia of 60 cm height with 2 piece cover on top and bottom cover with holes for drainage (reinforcement drawing will be as per technical specification ) .This includes water cooling of chamber, backfilling and ramming of trench after laying and consolidated of soil as well as disposal of soil as per plan as advised by site engineer.	No.	5	0
17	Installation of `B' type choke.	No's	124	97

SI.No.	Item Description	Unit	Total Qty	Completed work till 17.11.2022 (Q)
18	Installation of TF Charger.	No's	62	40
19	Installation of LM Secondary cell 80 AH or equivalent.	No's	186	107
20	Installation of VF transformer (1120:470 ) 6 Quad for Block Equipment & EC sockets	NO's	62	0
21	Placing and positioning width wise , of second- class country made Bricks above the screened earth after laying the cable. (placing of bricks @ eight to nine bricks to cater one meter length)(cost of brick not included)	km	1	0
22	Centering and shuttering including strutting, propping etc and removal of form for : Foundations, footings, bases of columns etc for mass concrete	Sqm	1	0
23	Reinforcement for RCC work including straightening, cutting, bending, placing in position and binding all complete Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	1	0
24	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge. Nominal concrete 1:4:8 or leaner mix (i/c equivalent design mix)	cum	1	0
25	Demolishing R.C.C. work by mechanical means and stockpiling at designated locations and disposal of dismantled materials up to a lead of 1 kilometre, stacking serviceable and unserviceable material separately including cutting reinforcement bars.	cum	1	2
26	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead. For thickness of tiles 10 mm to 25 mm	sqm	1	2
27	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge In cement mortar	cum	1	0

SI.No.	Item Description	Unit	Total Qty	Completed work till 17.11.2022 (Q)
28	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	1	0
29	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in: Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1	0
30	15mm cement plaster on the rough side of single or half brick wall of mix: 1:6 ( 1 cement : 6 fine sand)	Sqm	1	2
31	Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement .	CUDM	1	0
32	Extra over and above the above mentioned item for cutting of reinforcement, all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.	SQCM	1	0
33	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar 1:6 etc. complete.	CUM	1	0
34	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	1	0

SI.No.	Item Description	Unit	Total Qty	Completed work till 17.11.2022 (Q)
35	Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar 1:6, painting, finishing to match with existing finishing, scaffolding/supporting at all level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete.	SQM	1	0
36	Installation, wiring, testing, commissioning of Interlocked Station (Panel/Mechanical). The S&T modification equipments installed with the station are needs to be integrated and functionally tested with each other in totality	per Stn	0	0
37	Installation of Rack Type STM-1 ADM unit with STM-1 aggregate interface, 21 E1s and 4 nos. of 10/100 base-T Ethernet port order wire, power supply unit, sub rack installation material and necessary material etc.	No's	7	4
<b>Annexure-III: Additional Items for M/s. Sanmati</b>				
1	Supply of Rotary key transmitter	No's	0	
2	Fixing of 20 pair CT box and termination of cable at the station/LC gates, TSS, PS, SSP, Quarters, Service buildings etc.	NO's	20	12
3	Installtion of DC-DC Convertors	Nos	2	0
4	Installation of Rod Insulator	Nos	2	0
5	Supply & Erection of Cable Termination Rack Assembly complete with wall supports, scaffolding, 8 way/ ARA/ Modular terminal, 96 way tag-block and other necessary accessories etc. The work shall be done as per approved plan, extent practice on Rly. and the instructions of Railway Engineer at site.	Nos	2	1



Sl.No.	Item Description	Unit	Total Qty	Completed work till 17.11.2022 (Q)
6	Supply and erection of Relay rack (1 way rack) universal type as per drg.no.S&T/MFT/291 with scaffolding, POWDER COATING with stainless steel nuts and bolts for fixing the racks. Supporting angles, frame mounting triangle base with 'J' bolts and insulation of required numbers complete to suit QN1 / K-50 prewired tag blocks with suitable inner frames. Erection of relay rack shall be with scaffolding on MS bases and insulators with J bolts and nuts using cement are to be painted in 2 coats with enamel prints colour approved by site incharge.	Nos	2	1
7	Installation of Wire Insulator	Nos	0	0
8	Installation of Cable Termination Panel	No's	0	0
9	Installation of 12 U Rack	No's	24	18
10	Installation of TRE	No's	1	0
11	Installation of 3-Way Amplifier	No's	2	0
12	Installation of Emergency Control Equipment	No's	1	0
13	Installation and Commissioning of NMS along with other S&T equipment at Head Quarter	No's	1	0
14	Casting, concreting & curing of foundation for main signal as per item 2 of Technical Specification of Enclosure- I	No's	1	0
15	Supply of Colour Light Signal post 3.6 meter and ladder 3.5 meter with base	No's	16	16
16	Supply of CLS post 4.6 meter and ladder 4.5 meter with base	No's	4	4
17	Supply of Colour Light Signal unit 2 Aspect complete without lenses, lamps & signal transformers	No's	7	7
18	Installation, erection and wiring of Colour Light Signal 2 aspect complete as per item-4/ item-17 of Technical Specification of Enclosure-I	No's	12	12
19	Supply and fitting of E type lock with all accessories for Relay Room/ Equipment Room/ Battery Room	No's	2	0
20	Provision of crank handles locking arrangement on point machine to suit ward group and KLCR.	Set	2	0

SI.No.	Item Description	Unit	Total Qty	Completed work till 17.11.2022 (Q)
21	Testing & commissioning of MACLS installation as a whole shall be carried out by the engineer in charge of work with the help of representative of contractor, artisan staff/ labours and testing of equipment shall be provided by the contractor & testing shall be carried out to ensure compliance of SEM, RE manual, G & SR, Block Working Manual & adherence to specification of the tenders both for the outdoor works & indoor works.	per LC gate	2	4
22	Supply of Sliding Boom Gate as per E. Rly. Signal work shop / HWH's Drg. No. BSA/29/730, BSA/29/731 & BSA/29/737 this includes supply of 8 Nos. "E" type lock with key as per IRS spec. IRS:S-30/64 with latest amdt. Key lock "E" type as per Drg. No. SA-3376/M with latest Key, for E type lock as per Drg. No. 3377/M with latest amendment Ward No. to be decided by the site in charge "E" type lock to be fixed on MS plate as mentioned in the Drawing Note : As per CSTE approved Drawing NO. SI/TYP/0059 & SI/TYP/0060 wherever applicable.	No's	2	2
23	Casting, Concreting & Curing of foundation 1:3:6 for sliding gate as per Drg. No. SGW-SDAH/Sliding gate foundation/2012 including supply & fixing of holding down bolts with washers and rules, MS plates of size 350mm x 350mm x 8mm, 10 foundations required by the contractor	No's	2	0
24	Installation & commissioning of Sliding Boom Gate. This includes levelling, fixing of sliding boom with fixing of "E" type lock etc. as per CSTE approved drawing No. SI/TYP/0059 & SI/TYP/0060. Note: all materials except sliding boom gate to be supplied by the contractor.	No's	2	0
25	Relay fail safe electronic time delay device mounted on Q series relay base and cover with fixed timing of 120/60 sec conforming to IRS-S-61-2000 amendment 1 or latest, IRS:S:34 & IRS:S:23 (as applicable)	No's	1	0
26	Installation of IPS for LC Gate	No's	2	0
27	Supply and Installation of Panel for LC Gate	No's	2	2
28	Ring Earthing	No's	7	4
<b>Annexure-IV: Additional Items added in amendment no.3 dated:19.10.2021</b>				

SI.No.	Item Description	Unit	Total Qty	Completed work till 17.11.2022 (Q)
NS-29	Installation of 40x 6 mm MS Flat for Earthing of existing LBs & Signal Posts by replacing existing GI wire and connecting to existing Earth Pipe.	meter	400.3	0
NS-30	Supply and Installation of RCC Enclosure for Earth Pit	Nos	250	234
NS-31	Supply and Installation of RCC Enclosure cover for Earth Pit	Nos	135	274
NS-32	Installation of Conventional earth pit including earth connection to S&T installation by suitable means(Ms flat/copper wire) as required. (Earth pipe supplied by BHEL)	Nos	125	0
NS-33	Wiring in existing Full Location Boxes	Nos	90	60
NS-34	Wiring in existing Half Location Boxes	Nos	26	18
NS-35	Supply and installation of ladder in OFC hut	meter	30	0
NS-36	Supply of all consumables, charging, wiring and in new Full Location Boxes	Nos	36	10
NS-37	Supply of all consumables, charging, wiring and in new Half Location Boxes	Nos	22	7
NS-38	Installation along with stand for Telephone [Telephone will be a separate line item].	Nos	13	13
NS-39	Installation, erection and wiring of Colour Light Signal 2 aspect	Nos	7	9
NS-40	Installation, erection and wiring of Colour Light Signal 3 aspect	Nos	7	6
NS-41	Installation, erection and wiring of Colour Light Signal 4 aspect	Nos	2	3
NS-42	Supply of Colour Light Signal 3 Aspect	Nos	7	7
NS-43	Supply of Colour Light Signal 4 Aspect	Nos	2	2
NS-44	25 mm PVC Pipe	meter	110	80
NS-45	40 mm PVC Pipe	meter	44	0
NS-46	100 mm PVC Pipe	meter	70	0
NS-47	40 mm GI Pipe	meter	125	0
NS-48	25mm Flexible conduit Pipe	meter	130	60
NS-49	Insulator for Earthing	Nos	120	12
NS-50	50x6 mm copper strip for BUS BAR	meter	70	9
NS-51	25x6 mm copper strip for BUS BAR	meter	145.01	0
NS-52	63 Amp MCB	Nos	3	0
NS-53	16 Amp MCB	Nos	3	2

<b>Sl.No.</b>	<b>Item Description</b>	<b>Unit</b>	<b>Total Qty</b>	<b>Completed work till 17.11.2022 (Q)</b>
NS-54	Change over panel	Nos	2	0
NS-55	18 mm Cu wire	meter	600	155
NS-56	Supply and installation of WAGO/Phoenix Terminals	Nos	4499	0
NS-57	Extra Splicing, supply of OFC Joint enclosure and Termination of OFC Cable (by other party)	Nos	7	7
NS-58	Supply of wires, insulator, paint and consumables for Relay room wiring	Nos	3	1