

RE Telecom SOR April 2013

SN.	Chapter No.	Item No.	Description	Unit	Qty	Unit Rate (in Rs.)	Cost (in Rs.)	Inspecting Agency
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Chapter - I: Preparation of cable route plan.

1	I	00101	Final location joint survey of proposed cable route plan (Quad / OFC cable) and submission for approval of Railway. The details instruction / guide lines regarding joint survey and preparation of cable route plan are given in Tender document. Contractor will submit two copies of prints with soft copy to checking by Railways. If alterations are suggested by Railways, then again two copies of prints will be provided for advance approval after carrying out all the alterations as suggested / proposed by Railways. Tracing will be provided to approval by Railway. All drawings will be prepared in CAD. It also includes preparation and submission of final cable route plan on 75 microne standard polyster film which includes details of entire section in which quad / OFC cables are laid. Once Railway has approved and signed tracings for cable route plan then contractor will submit 6 (six) sets of zerox copies for cable route plan in proper binding form.	Kms	----	966	----	-
			TOTAL OF CHAPTER I			----		

Chapter - II: Cable laying and cable drum transportation

SN.	Chapter No.	Item No.	Description	Unit	Qty	Unit Rate (in Rs.)	Cost (Rs.)	Inspecting Agency
2	II	00201	Trenching up to depth of 1000 mm with 300 mm wide base in all types of soil (Normal soil, Hard soil & Black cotton soil except rocky soil) and backfilling after laying of HDPE pipe / OFC cable and 6 quad/PIJF cable etc. at 1000mm & 800 mm depth respectively as per Drg. No. CORE/S&T/ALD/SK/571/04 Ramming and consolidation of soil in trenches as well as disposal of the soil if any.	Kms	----	57718	----	-
3	II	00202	Trenching up to depth of 1200mm with 300mm wide base in all types of soil (Normal soil, Hard soil & Black cotton soil) and backfilling after laying of HDPE pipe / OFC cable and 6 quad/PIJF cable etc. at 1200mm & 1000 mm depth respectively as per Drg No. CORE/S&T/ALD/SK/571/04. Ramming and consolidation of soil in trenches as well as disposal of the soil if any.	Kms	----	70007	----	-
4	II	00203	Supply and installation of M.S.cable route / joint marker as per Drg. No. GR/RE/TELE/22/83A for normal trench area at the spacing of 50M in the trench and also at places / corners where the route of cable changes. The joints markers shall be provided at all types of joints.	Nos	----	419	----	-
5	II	00204	Supply and installation of M.S.cable route / joint marker as per drg. No. RE/S&T/ALD/ SK /305/ 85A for rocky area.	Nos	----	500	----	-

6	II	00205	Supply of RCC/ Stone cable route marker as per Drg No. CORE/S&T/ALD/SK/600/2013 and its installation in route at the spacing of 50 M in the trench and also at places / corners where the route of cable changes. RCC/Stone cable route markers shall also be provided at all types of joints.	Nos	---- ----	154	----	-
7	II	00206	Supply of cable route marker as per RST/C/203 of FRP (Testing certificate of FRP material from a Government certified laboratory is to be submitted certifying that the FRP material is as per RDSO spec no. RDSO/SPN/151/1997 and installation of cable route marker in route at the spacing of 50 M in the trench and also at places / corners where the route of cable changes.	Nos	----	224	----	-
8	II	00207	Supply of Electronic route marker (TEC approved) and installation, cable detection of capacity to detect cable up to 8 feet depth to be provided at the spacing of 200 M in the trench and also at places / corners where the route of cable changes. The Electronic route marker markers shall also be provided at all types of joints.	Nos	----	1796	----	-
9	II	00208	Supply & laying of RCC pipe/ split pipe of 150 mm dia, 2 meter long in trenches near Traction sub station	Meter	----	461	----	-
10	II	00209	Supply and placing of second class bricks of standard size at site along the excavated trenches within station limit / station area. The contractor shall arrange to place the bricks flat and position them breadthwise so that an average eight to nine bricks shall be laid.	Nos	----	9	----	----

11	II	00210	Supply & fixing of perforated G.I. Pipe of 80mm/75 mm outer/ internal dia as per arrangement shown in Drg No. CORE/S&T/ALD/SK/589/2007 on Girder bridges up to 6 metres for protection of OFC & 6 quad cable separately (with no intermediate support) (Required HDPE pipe shall be procured through seperate item of contract by Railway and supplied to contractor for execution of works)	Met er	----	3138	----	-
12	II	00211	Supply & fixing of perforated G.I. Pipe of 80mm/75 mm outer/ internal dia as per arrangement shown in Drg No. CORE/S&T/ALD/SK/589/2007 on Girder bridges more than 6 metre and up to 12 metres for protection of OFC & 6 quad cable separately (with one intermediate support) (Required HDPE pipe shall be procured through seperate item of contract by Railway and supplied to contractor for execution of works)	Met er	----	1895	----	-
13	II	00212	Supply & fixing of perforated G.I. Pipe of 80mm/75 mm outer/ internal dia as per arrangement shown in Drg No. CORE/S&T/ALD/SK/589/2007 on Girder bridges up to 6 metres for protection of OFC or 6 quad cable. (with no intermediate support) (Required HDPE pipe shall be procured through seperate item of contract by Railway and supplied to contractor for execution of works in case OFC to be laid)	Met er	----	1912	----	-

14	II	00213	Supply & fixing of perforated G.I. Pipe of 80mm/75 mm outer/ internal dia as per arrangement shown in Drg No. CORE/S&T/ALD/SK/589/2007 on Girder bridges more than 6 metre and up to 12 metres for protection of OFC OR 6 quad cable separately (with one intermediate support) (Required HDPE pipe shall be procured through seperate item of contract by Railway and supplied to contractor for execution of works in case OFC to be laid)	Met er	----	1269	----	-
15	II	00214	Supply & fixing of perforated G.I. Pipe of 80mm/75 mm outer/ internal dia as per arrangement shown in Drg No. CORE/S&T/ALD/SK/578/04 on Culverts (pipe box) with high flood level varying from 6 meter to 12 meter for protection of OFC & 6 quad cable separately (Required HDPE pipe shall be procured through seperate item of contract by Railway and supplied to contractor for execution of works)	Met er	----	2005	----	-
16	II	00215	Supply & fixing of perforated G.I. Pipe of 80mm/75 mm outer/ internal dia as per arrangement shown in Drg No. CORE/S&T/ALD/SK/578/04 on Culverts (pipe box) with high flood level up to 6 metres for protection of OFC & 6 quad cable separately (with no intermediate support) (Required HDPE pipe shall be procured through seperate item of contract by Railway and supplied to contractor for execution of works)	Met er	----	3138	----	-

17	II	00216	Supply & fixing of perforated G.I. Pipe of 80mm/75 mm outer/ internal dia as per arrangement shown in Drg No. CORE/S&T/ALD/SK/578/04 on Culverts (pipe box) with high flood level varying from 6 meter to 12 meter for protection of OFC OR 6 quad cable separately (Required HDPE pipe shall be procured through separate item of contract by Railway and supplied to contractor for execution of works in case OFC to be laid in work)	Met er	----	1269	----	-
18	II	00217	Supply & fixing of perforated G.I. Pipe of 80mm/75 mm outer/ internal dia as per arrangement shown in Drg No. CORE/S&T/ALD/SK/578/04 on Culverts (pipe box) with high flood level up to 6 metres for protection of OFC OR 6 quad cable separately (with no intermediate support) (Required HDPE pipe shall be procured through separate item of contract by Railway and supplied to contractor for execution of works)	Met er	----	1912	----	-
19	II	00218	Supply & fixing of RCC Pipe of 150 mm internal dia as per arrangement shown in Drg No. CORE/S&T/ALD/SK/576/04 at belows Culverts and water logged area varying from 6 meter to 12 meter in RCC pipe for protection of OFC and/or 6 quad cable (Required HDPE pipe shall be procured through separate item of contract by Railway and supplied to contractor for execution of works in case OFC to be laid in work)	Met er	----	754	----	-
20	II	00219	Trenching and refilling of trenches at places under track and road. Level crossing gate, cutting near FP as per Drg No. CORE/S&T/ALD/SK/572/04	Met er	----	148	----	-

21	II	00220	Trenching /cutting , reffiling & cement concreating on platform as decided by Railway Engineer	Met er	----	279	----	-
22	II	00221	Supply & laying of RCC pipe of 150 mm dia, 2 meter at places under track and road. Level crossing gate, platforms near FP for protection of OFC & 6 quad or OFC or 6 quad cable / PIJF cable to be laid	Met er	----	399	----	-
23	II	00222	Supply & fixing of perforated G.I. Pipe of 80mm/75 mm outer/ internal dia as per arrangement shown in Drg No. CORE/S&T/ALD/SK/589/2007 (2 pages)& Drg. No.CORE/S&T/ALD /SK/589/2007 on Girder Bridge of length an average length 80 meter (considering for more than 12 meter to 150 meter) without any intermediate support but with metallic fixtures (two per length of 6 meter GI pipe) as per decision of site Engineer for protection of OFC & 6 quad cable to be laid (Required HDPE pipe shall be procured through seperate item of contract by Railway and supplied to contractor for execution of works in case OFC to be laid in work)	Met er	----	1677	----	-

24	II	00223	Supply & fixing of perforated G.I. Pipe of 80mm/75 mm outer/internal dia as per arrangement shown in Drg No. CORE/S&T/ALD/SK/578/04 on Girder Bridge of length an average length 80 meter (considering for more than 12 meter to 150 meter) without any intermediate support but with metallic fixtures (two per length of 6 meter GI pipe) as per decision of site Engineer for protection of OFC OR 6 quad cable to be laid (Required HDPE pipe shall be procured through separate item of contract by Railway and supplied to contractor for execution of works in case OFC to be laid in work)	Met er	----	933	----	-
25	II	00224	Chase cutting 500 mm deep in hard rocky area as per Drg No.CORE/S&T/ALD/SK/579/04 per metre.	Met er	----	300	----	-
26	II	00225	Execution of trench less horizontal boring (HDD) work (boring size up to 125 mm) up to a depth of minimum 1.00 mtr from the ground level at location, as per direction of engineer in charge. This includes supply & laying of DWC HDPE pipe as per specification No. IS 14930 part II or latest of 120 mm OD/103 mm ID).This includes all accessories and tools required to do the trenchless horizontal boring.	Met er	----	1352	----	-
27	II	00226	Supply of 50 mm dia HDPE DWC pipe along fittings & fixing of same at stations, cabins and other buildings with fixing materials as per drawing no.RE/S&T/ALD/SK/495/2000 and making necessary entry arrangements duly approved by engineer incharge as per requirement. This includes all accessories and tools required to do the works.	Met er	----	414	----	-

28	II	00227	Blowing / drawing of OFC cable in in the HDPE pipe duct and in protective works already provided.	Km	----	8256	----	-
29	II	00228	Laying of HDPE duct in the trenches and in the protective works already provided including in HDD portion and supply pulling of Nylone rope through it at diffeent places as per direction of engineer in charge or site engineer.	Km	----	5950	----	-
30	II	00229	Laying of 6 quad cable / derivation cable /PIJF cable in the trenches and in the protective works already povided at diffeent places as per direction of engineer in charge or site engineer.	Km	----	4504	----	-
31	II	00230	Loading, unloading and transportation of cable drums of OFC from Railway depot to the site of work. Measurement for the purpose of payment shall be Railway Track Kms	Drum Km	----	27	----	-
32	II	00231	Loading, unloading and transportation of cable drums of 6 quad cable & derivation cable from Railway depot to the site of work. Measurement for the purpose of payment shall be Railway Track Kms	Drum Km	----	18	----	-
33	II	00232	Cutting of armour of already laid OFC cable as per para 17 of chapterVI Sec III of Tender document.	Nos.	----	758	----	-
			TOTAL OF CHAPTER II			----		

Chapter III: JOINTING & TERMINATION OF CABLES.

SN.	Chapter No.	Item No.	Description	Unit	Qty	Unit Rate (in Rs.)	Cost (Rs.)	Inspecting Agency
34	III	00301	Supply and fixing of 10 pair C.T. Box and termination of cable as per Tech. Spcn Section III, Chapter IX and as per details given in jointing schedule approved by the Engineers.	Nos.	----	1314	----	-
35	III	00302	Supply and fixing of 20 pair C.T. Box and termination of cable as per Tech. Spcn Section III, Chapter IX and as per details given in jointing schedule approved by the Engineers.	Nos.	----	1971	----	----
36	III	00303	Fabrication and erection of Emergency Rail post complete with Emergency socket box made of FRP material as per Spec. No. RDSO/SPN/TC/44/2002 Ver.2 (With latest amendment) and its wiring alongside the Rly. Track at locations to be indicated by the engineer (Rail post shall be supplied by Railway and issued to the contractor for execution. Emergency Socket & Emergency socket box will be procured through separate schedule of this contract and issued to the contractor for execution). All other items shall be supplied/arranged by the contractor.	Nos.	----	1268	----	-

37	III	00304	Fixing of Emergency socket box made of FRP material as per Spec. No. RDSO/SPN/TC/44/2002 Ver.2 (With latest amendment) at locations to be indicated by the engineer . Emergency Socket & Emergency socket box will be procured through separate schedule of this contract and issued to the contractor for execution). All other items shall be supplied/arranged by the contractor.	Nos.	----	757	----	-
38	III	00305	Supply of of OFC joint closure as per Tech. spcn given in Section III Chapter VIII and its installation, splicing of OFC after testing of all fibres as per specifications, drawings and stipulations of tender documents as detailed in section III chapter VI as per cable route plan. This includes provision of pit & all needed materials for splicing of OFC & installation of joint closures .	No.	----	8805	----	-
39	III	00306	Supply of Thermo shrink jointing kit as per Spcn given in Section III Chapter IX & its installation for 6 quad cable for straight through joints and derivation joints for L C gate, pump house etc. where V F Transformers are not required.	Nos.	----	2789	----	----
40	III	00307	Supply of Thermo shrink jointing kit as per Spcn given in Section III Chapter IX & its installation for 6 quad cable for derivation/ termination joints with V F Transformers .(VF Transformer shall be procured against SOR Item No. 00520 and issued to contractor for execution of work.)	Nos.	----	3242	----	----
41	III	00308	Supply of Thermo shrink jointing kit as per Spcn given in Section III Chapter VIII & providing straight through joint on 10/20 pair PIJF cable using thermoshrink jointing kit.	Nos.	----	2411	----	-

42	III	00309	Supply, installation of 50 pair Krone termination box as per specifications, drawings and stipulations of tender documents. This includes all materials required for fixing including salwood /hylem board in cable hut and hardware required for fixing. This also includes termination of all cables and other associated works.	Nos.	----	2461	----	-
43	III	00310	Supply and Installation of Fibre distribution management system including accessories complete as per RDSO specification No. RDSO/SPN/TC/037-2000 (Rev 2) suitable for termination of two nos 24 fibre OFC at Repeater station / cable hut in 19" rack and splicing of fibre with pig tail cable as per specification. This includes testing of OFC cable (All items required for execution of work shall be supplied by the contractor).	Nos.	----	23896	----	-
			TOTAL OF CHAPTER III			----		

Chapter - IV: WIRING, TESTING, INSTALLATION AND COMMISSIONING OF EQUIPMENTS INCLUDING OFC EQUIPMENTS.

SN.	Chapter No.	Item No.	Description	Unit	Qty	Unit Rate (in Rs.)	Cost (Rs.)	Inspecting Agency
44	IV	00401	Wiring, testing, installation & commissioning of control room HQ equipment for controller's use operated on 48 volt DC. (This includes supply of all materials for execution of work such as PVC casing & capping, fixing materials 10/20 pair indoor PVC cable, , wiring & masonry works except control room HQ equipment which will be procured by Railway against other SOR item & issued to contractor for execution).	Nos.	----	1272	----	-

45	IV	00402	Wiring, testing & installation of Test room equipment on 19" rack. (This includes supply of all materials for execution of work such as PVC casing & capping, fixing materials 10/20 pair indoor PVC cable, wiring & masonry works except Test room equipment which will be procured by Railway against other SOR item & issued to contractor for execution).	Nos.	----	1272	----	-
46	IV	00403	Installation, wiring, testing & commissioning of way side equipments on the rack per station wise. (This includes supply of all materials for execution of work except way side equipments which will be procured by Railway against other SOR item & issued to contractor for execution).	Nos.	----	2394	----	-
47	IV	00404	Supply & installation of power pack 230 V AC I/P to 48 V DC of 1 Amp current capacity complete with Battery backup of 48 V/ 7 AH as approved by Engineer in charge.	Nos.	----	20020	----	-
48	IV	00405	Installation of DTMF /way side Telephone in all stations, SP, SSP and TSS. This includes supply & fixing of DP, PVC Channel, Telephone bracket and laying/ termination of switch board cable.	Nos	----	981	----	-
49	IV	00406	Installation and commissioning of Primary digital drop insert Multiplexer, SDH Add/Drop Multiplexers(main stream) with all accessories and	Nos.	----	20549	----	-

			power supply connection, surge and lightning protection arrangement, racks including indoor Krone box, ladder etc in cable hut including wiring of all the equipments up to Krone / C.T. Box of out-door quad / derivation cables.					
50	IV	00407	Installation and commissioning of Primary digital drop insert Multiplexer, SDH Add/Drop Multiplexers (back up stream) with all accessories and power supply connection, surge and lightning protection arrangement, racks including indoor Krone box, ladder etc in cable hut including wiring of all the equipments up to Krone / C.T. Box of out-door quad / derivation cables.	Nos.	----	20549	----	-
51	IV	00408	Installation and commissioning of Primary digital drop insert Multiplexer, with all accessories and power supply connection, surge and lightning protection arrangement, racks including indoor Krone box, ladder etc in cable hut including wiring of all the equipments up to Krone / C.T. Box of out-door quad / derivation cables.	Nos.	----	6870	----	-
52	IV	00409	Supply, installation and commissioning of earthing arrangement (ring earth) as per the technical supplement (Section III, Chapter VIII) at each location of OFC installation.	Nos.	----	17265	----	-
53	IV	00410	Installation, wiring and commissioning of battery chargers & charging and	Nos	----	1264	----	-

			installation of low maintenance lead acid cells on wooden (Sal) rack at each station as per para 5.2 of Sec III, chapter VII of tender document.					
			TOTAL OF CHAPTER - IV			----		

Chapter V: SUPPLY OF EQUIPMENTS INCLUDING OFC EQUIPMENTS

SN.	Chapter No.	Item No.	Description	Unit	Qty	Unit Rate (in Rs.)	Cost (Rs.)	Inspecting Agency
54	V	00501	Supply of control room equipment operated on 48 V DC, with three digit 7 segment LED display and way station calling facility up to 80 stations by pressing push button along with 20 local Telephone calling facility with microphone speaker and handset along with remote patching equipment capacity as per RDSO specification No. RDSO/SPN /TC/66 /2007 with ammendment-2, including latest amendment.	Nos	----	130535	----	----
55	V	00502	Supply of Test room equipment with 19" Rack mounting 48 V DC operated directly interface with OFC 4wire circuit as per RDSO specification no. RDSO/SPN/TC/66/2007 with ammendment-2, including latest amendment.	Nos	----	132077	----	----
56	V	00503	Supply of way station control equipment as per RDSO specification No. RDSO/SPN/TC/66/07 with amendment 2 including latest amendment with	Nos	----	63600	----	----

			necessary mounting arrangement on composite rack or on wall as decided by site engineer. It shall be 48 VDC operated provide to give connect to at least four station Telephone and have a facility to give more connections by using 3 way amplifier.					
57	V	00504	Supply of 3- way amplifier as per RDSO specification No. RDSO/SPN/TC/66/2007 with amendment -2 including latest amendment	Nos.	----	24533	----	-
58	V	00505	Supply of push button telephone Pulse /Tone switchable Telephone set with Redial, Mute, Pause, Flash Tone/ Pulse Facility as per TEC spec No.GR/TEL-02/04 Sept 02 with amendment 2 including latest amendment.	Nos.	30	477	----	----
59	V	00506	Supply of Emergency socket box	Nos.	----	4041	----	-
60	V	00507	Supply of 6 pin Emergency socket .	Nos.	----	237	----	-
61	V	00508	Supply of HDPE Duct 40/33 mm and accessories including coupler for every drum length as per RDSO/SPN/TC/45/2013 Rev.2 or latest . NB: The drum length shall be of one km. This includes the loading, unloading and transportation at the site of work.	Metre	----	38	----	-
62	V	00509	Supply of SDH Add/Drop MUX (STM-1) for main/back up stream at stations in cable huts as per TEC specification No. TEC/GR/ TX/SDH/ 004/04 Jan 2011 or latest. with L-1.1 Optical Interface	Nos.	----	139720	----	-

			and as per technical requirements for OFC system given in section III, Chapter II of tender document, equipped with 21 E1s (including engineering Order-Wire), expandable up to 63 E1s capacity, simply by addition of E1 cards, fully wired, cross connect granularity at VC-12, VC-3 & VC-4 levels, aggregate interface, power unit, sub-racks, installation materials with all other accessories and technical manuals etc. The SDH equipment shall be TEC(TSEC)/RDSO approved on or before date of opening of bid.					
63	V	00510	---Deleted---	Nos.	----	----	----	-
64	V	00511	Supply of 2MB programmable primary digital drop insert multiplexer with conference facility as per technical specifications IRS:TC-68-2012 with latest amendments, with other stipulations of tender document, fully wired for 30 channels complete with power supply unit, remote control supervision facility & all other accessories, installation material, technical manuals etc. The MUX shall be equipped for 16 E&M VF circuits, 4 data circuits of 64kbps, 6 hot line/ subscriber interface circuits and 4 Exchange interface circuits and V.24 low data interface card for SCADA. The equipment shall be RDSO approved on opening of bid.	Nos.	----	139557	----	-
65	V	00512	Supply of surge suppressor for all the 30	Nos.	----	7195	----	-

			circuits derived from primary MUX's (Z-protection) complete as per technical specifications and other stipulations of tender document.					
66	V	00513	Supply of maintenance portable terminals including associated software as per technical specifications and other stipulations of tender document complete with all accessories. It should be possible to plug in the maintenance portable terminal at any of the stations to be programmed for any network element from any location of network and read the full status of any element in the network from maintenance portable terminal.	Nos.	----	73539	----	-
67	V	00514	Supply of covered racks complete with all fittings and accessories for housing SDH equipments, primary MUXs, using krone module and other equipments like runway ladders etc., completely wired and equipped for all channels as per technical specifications and other stipulations of tender document. It should be possible to lock all the equipments with only order wire telephone remaining outside the rack.	Nos.	----	29590	----	-
68	V	00515	Supply of SMPS based battery charger for telecom use of 230V AC/ 48V DC, 25 Amp capacities. This shall be consisting of 3 modules of 12.5 Amps each in 2+1 configuration with automatic switching between the modules as per RDSO spec No.	Nos.	----	49089	----	-

			RDSO/SPN/TL/23/99 (Ver. III) with latest amendment (as on date of opening of technical bid.					
69	V	00516	Supply of low maintenance Lead Acid battery of 48 V DC, 120 AH capacity (24 cells of 2.0 volts) complete with fittings as per RDSO spec no.IRS-S-88/2004 or latest (as on date of opening of bid) with wooden (sal) rack.	Nos.	----	59413	----	-
70	V	00517	OFC jumper cable (10 m long) with FC/PC connector on both sides) as per Tech spcn. Given in Section III, chapter VIII.	Nos.	----	609	----	-
71	V	00518	Supply of 24 fiber straight joint closure (SJC) complete with all accessories as per DOT spec G/OJC-01/01 of Aug 92 with latest ammendment.	Nos.	----	1945	----	-
72	V	00519	Supply of cable termination pannel fitted with 6 nos. of 32 way U link feed pannel along U links complete and mounting arrangement.	Nos.	----	5849	----	-
73	V	00520	V F Transformers (1 Quad/2T) as per Tech spcn. Given in Section III, chapter IX.	Nos.	----	928	----	----
			TOTAL OF CHAPTER - V			----		