



IRCON INTERNATIONAL LIMITED

(A Govt. of India Undertaking)

An integrated Engineering and Construction Company

कार्यालय: बी - 40ए, चौथी मंजिल, सेक्टर -1, नोएडा, उत्तर प्रदेश - 201301

Office: B-40A, 4th Floor, Sector 1, Noida, Uttar Pradesh – 201301, Email ID: vimalnagar@ircon.org, recell@ircon.org

No: IRCON/ELECT/5033/RE NWR PKG 3/OT/3A/663

Date: 09.02.2023

To,

M/s. Encorp Powertrans Pvt. Ltd.

Reg. Office Add.: Gut No. 240/5/6/7,

Village, Varangade, Boisar Mahagaon Road,

Boisar E Palghar 401 501

and Correspondence Add.: 105, 1st Floor,

New Udyog Mandir-2, Mogul Lane,

Mahin (W), Mumbai 400016, Maharashtra,

Email ID: Rahul.nowal@encorp.in

(Shri Rahul V. Nowal, Director)

Sub: "Detailed Design Engineering, Survey, Supply, Erection, Testing & Commissioning of 25kV Overhead Equipment, Switching Posts (SSP), SCADA (Supervisory Remote Control and Data Acquisition), Signalling & Telecommunication for Railway Electrification between Thaiyat Hamira (Excl.) - Sanu (Incl.) Section [55.78 RKM / 66.225 TKM] (Package No. 3) under Jodhpur Division of North Western Railway (NWR)": **Letter of Acceptance.**

Ref: NIT, Corrigendum & Letters:

1. e-Procurement Notice No. IRCON/ELECT/5033/RE NWR PKG 3/OT/3A, Dated: 07.10.2022,
2. Corrigendum No. 1, Dated 26.10.2022,
3. Your Offer No. EPT/IRCON/Jodhpur/Tender/5033/01, Dated 01.11.2022,
4. Technical Bid Opened on 04.11.2022, Time: 15:00 Hrs.
5. This Office Email Dated 15.11.2022
6. Your Email Dated 18.11.2022, 22.11.2022,
7. Financial Bid Opened on 04.01.2023, Time 10:30 Hrs
8. This Office Ltr. No. IRCON/ELECT/5033/RE NWR PKG 3/OT/3A/3/4/Ext. of Bid Validity/3, Date 31.01.2023
9. Your Letter No. EPT/IRCON/Jodhpur/Tender/5033/03, Dated 01.02.2023

Dear Sir,

With reference to above, this is to inform you that your offer for subject work has been accepted at a total contract value of **Rs. Rs. 31,18,16,402.14 (Rupees Thirty One Crore Eighteen Lakh Sixteen Thousand Four Hundred Two and Fourteen Paise Only)**, Inclusive of all applicable taxes, **GST@18%**, (i.e. 4.01% Below the estimated cost of **Rs. 32,48,42,590/- (Inclusive of all applicable taxes, GST@18%)**, as per Annexure-I & A on following terms and condition.



पंजीकृत कार्यालय: सी -4, डिस्ट्रिक्ट सेंटर, साकेत, नई दिल्ली -110017, भारत
Registered Office: C-4, District Centre, Saket, New Delhi-110017, INDIA
Tel.: +91-11-29565666, Fax: +91-11-26854000, 26522000
E-mail: info@ircon.org, Web: www.ircon.org
CIN - L45203DL1976GOI008171



1.0 SCOPE OF WORK:

"Detailed Design Engineering, Survey, Supply, Erection, Testing & Commissioning of 25kV Overhead Equipment, Switching Posts (SSP), SCADA (Supervisory Remote Control and Data Acquisition), Signalling & Telecommunication for Railway Electrification between Thaiyat Hamira (Excl.) - Sanu (Incl.) Section [55.78 RKM / 66.225 TKM] (Package No. 3) under Jodhpur Division of North Western Railway (NWR)".

The detailed scope of work shall be as per Clause No. 3 of SCC, Section-V.

2.0 PERFORMANCE SECURITY:

The details of Performance Security / PBG shall be for an amount of 3% (Three Percent) of the contract value i.e. **Rs. 9,354,492/- (Rupees Ninety Three Lakhs Fifty Four Thousand Four Hundred Ninety Two Only)** shall be submitted to the office of **General Manager/Electrical/Project Head, RE NWR PKG-3 Jodhpur Project, IRCON International Limited**, Address: Plot No. A-370, Ganga Path, Vaishali Nagar, Jaipur-302021 within 21 (Twenty One) days from the date of issue of Letter of Acceptance (LOA) as per Clause No. 15.1 of SCC, Section-V.

3.0 CONTRACT AGREEMENT:

The successful bidder shall be required to execute a Contract Agreement with IRCON as per Annexure-I to SCC within 28 days of issue of Letter of Acceptance (LOA) as per Clause No. 16 of SCC, Section-V.

4.0 WORK COMPLETION SCHEDULE

The details of Work Completion Schedule shall be **9 (Nine) Months** from the date of issue of Letter of Acceptance by IRCON, as per Clause No. 6 of SCC, Section-V.

5.0 PAYMENT TERMS:

The Payment will be released to the contractor in accordance to Clause No. 12 of SCC, Section - V.

6.0 DEFECT LIABILITY PERIOD:

The Defects Liability Period shall for a period of Twenty-Four (24) months from the date of Completion against inadequacy in design, defective materials, and error in detailing work, faulty workmanship etc. in accordance to Clause No. 17 of SCC, Section-V.

7.0 INSURANCE:

The Insurance policy shall be obtained & submitted by the contractor in line with Clause No. 18 of SCC, Section - V.

Legal



8.0 You are requested to immediately contact following officials for execution of works under this contract.

General Manager/Electrical/Project Head, RE NWR PKG-3 Jodhpur Project, IRCON International Limited, Address: Plot No. A-370, Ganga Path, Vaishali Nagar, Jaipur-302021, Email ircon.5033@ircon.org.

This letter will constitute a legal and binding contract between IRCON and M/s. Encorp Powertrans Pvt. Ltd till such time the formal contract agreement is signed.

This LOA is a brief of essential conditions of the tender. For details, original tender document and corrigendums/Addendums thereto may be referred. All terms & conditions shall be as per the tender document & subsequent corrigendums/Addendums issued.

This Letter of Acceptance is issued in duplicate. You are requested to return one copy duly signed and stamped in token of your acceptance at the earliest.

Encl. BOQ and Schedule of Rates & Quantity (Thirty Pages)

Thanking you

**For & on behalf of
IRCON International Ltd**


09/02/2023
(Vimal Kishor Nagar)

Chief General Manager/Electrical, Railway Electrification
Email ID: vimalk.nagar@ircon.org

Copy to: For kind information and necessary action please

1. Executive Director/Electrical, New Delhi
2. General Manager/Electrical/Project Head, RE NWR PKG-3 Jodhpur Project, IRCON International Limited, Address: Plot No. A-370, Ganga Path, Vaishali Nagar, Jaipur-302021, Email ircon.5033@ircon.org
3. Jt. General Manager/Finance, RE NWR PKG-3, email Id: atul@ircon.org

} For kind information please.

} For kind information and necessary action pl.



IRCON INTERNATIONAL LIMITED

(A Govt of India Undertaking)



BILL OF QUANTITY (BOQ)

Name of Work: Detailed Design Engineering, Survey, Supply, Erection, Testing & Commissioning of 25kV Overhead Equipment, Switching Posts (SSP), SCADA (Supervisory Remote Control and Data Acquisition), Signalling & Telecommunication for Railway Electrification between Thaiyat Hamira (Excl.) - Sanu (Incl.) Section [55.78 RKM / 66.225 TKM] (Package No. 3) under Jodhpur Division of North Western Railway (NWR)

e-Procurement Notice No. IRCON/ELECT/5033/RE NWR PKG 3/OT/3A, Dated: 07.10.2022

Name of the Bidder/ Bidding Firm / Company :	M/s. Encorp Powertrans Pvt. Ltd. Reg. Office Add.: Gut No. 240/5/6/7, Village, Varangade, Boisar Mahagaon Road, Boisar E Palghar 401 501 and Correspondence Add.: 105, 1st Floor, New Udyog Mandir-2, Mogul Lane, Mahin (W), Mumbai 400016, Maharashtra, Email ID: Rahul.nowal@encorp.in
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PRICE SCHEDULE

NUMBER	TEXT	NUMBER	TEXT	NUMBER	NUMBER	TEXT
Sl. No.	Item Description	Quantity	Units	Estimated Rate in Rs.	TOTAL AMOUNT including all Taxes etc. & GST @ 18% in Rs.	TOTAL AMOUNT In Words
1	2	3	4	5	6	7
1.01	Detailed Design Engineering, Survey, Supply, Erection, Testing & Commissioning of 25kV Overhead Equipment, Switching Posts (SSP), SCADA (Supervisory Remote Control and Data Acquisition), Signalling & Telecommunication for Railway Electrification between Thaiyat Hamira (Excl.) - Sanu (Incl.) Section [55.78 RKM / 66.225 TKM] (Package No. 3) under Jodhpur Division of North Western Railway (NWR) (Details as enclosed Annexure-A & SOR).	1	LOT	324,842,590	324,842,590	INR Thirty Two Crore Forty Eight Lakh Forty Two Thousand Five Hundred Ninety Only
Total Estimate (in Figures)					324,842,590	INR Thirty Two Crore Forty Eight Lakh Forty Two Thousand Five Hundred Ninety Only
Quoted Rate in Figures			Less (-)	4.01%	311,816,402.14	INR Thirty One Crore Eighteen Lakh Sixteen Thousand Four Hundred Two and Fourteen Paise Only
Quoted Rate in Words		INR Thirty One Crore Eighteen Lakh Sixteen Thousand Four Hundred Two and Fourteen Paise Only, (Inclusive of all applicable taxes, GST@18%)				

Legal

09/02/2023



Annexure-A

Detailed Design Engineering, Survey, Supply, Erection, Testing & Commissioning of 25kV Overhead Equipment, Switching Posts (SSP), SCADA (Supervisory Remote Control and Data Acquisition), Signalling & Telecommunication for Railway Electrification between Thaiyat Hamira (Excl.) – Sanu (Incl.) Section [55.78 RKM / 66.225 TKM] (Package No. 3) under Jodhpur Division of North Western Railway (NWR)

BILL OF QUANTITY			
SUMMARY			
SR. NO.	SCH. NO.	DESCRIPTION OF SCHEDULE	Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
-	A	OHE & PSI	
1	16000	RE General (OHE)	7,023,213.00
2	17000	Switching post Building	3,935,313.00
3	19000	OHE Ferrous other than steel structure & SPS	48,902,920.00
4	20000	OHE Non Ferrous "A"	110,933,588.00
5	21000	OHE Non Ferrous "B" (OHE)	4,630,061.00
6	24000	TSS Electrical	2,617,123.00
7	28000	TOOLS & PLANTS (OHE & PSI)	932,597.00
8	29000	SCADA System	24,757,839.00
9	30000A	Common Schedule, Galv. Steel Structure (OHE/TSS/SWS)	71,878,856.00
10	30000B	Concrete for foundation (OHE/TSS/SWS)	32,666,730.00
11	30000C	Misc Common Items (OHE/TSS/SWS)	5,667,278.00
12	33000	General Electrical Services work	2,893,439.00
13	33A	OHE Spare	1,777,272.00
-	-	Sub Total	
-	B	Singal & Telecommunication Works	
14	i)	Schedule-A	3,626,940.00
15	ii)	Schedule-B	2,599,421.00
Grand Total Estimated Value, Incl. of all taxes, duties, levies & GST@18% (INR)			324,842,590
Quoted (%) by M/s. Encorp Powertrans Pvt. Ltd.			-4.01%
Total Quoted Value of Work Incl. of all taxes, duties, levies & GST@18% (INR)			311,816,402.14
INR Thirty One Crore Eighteen Lakh Sixteen Thousand Four Hundred Two and Fourteen Paise Only, (Inclusive of all applicable taxes, GST@18%)			

Legal



BILL OF QUANTITY

Schedule 16000

RE- General (OHE)

Item No	SOR ITEM	Description	Unit	Qty.	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
					Supply	Erection	Supply	Erection	
16001	OHE-1	Preparation and submission of designs and drawings for Overhead Equipment, Switching Station, Sectioning diagram, Power supply diagram, Schematic diagram of Switching Stations, Traction working rule diagram and Instructions etc. required for commissioning of OHE	TKM	66.23	2,284.06	33,111.40	151,261.87	2,192,802.47	2,344,064.34
16002	OHE-2	Supply and Erection of large Span wire (130 sq.mm) including its fittings with insulators:		-	-	-	-	-	-
	(a)	With Porcelain Insulators 1050mm CD	Mtr	198.00	1,006.17	81.87	199,221.66	16,210.26	215,431.92
	(b)	With Composite Insulators 1050mm CD	Mtr	1,692.00	950.45	81.87	1,608,161.40	138,524.04	1,746,685.44
16003	OHE-3	Supply and Erection of materials for Termination of single conductor of overhead equipment or a terminating wire		-	-	-	-	-	-
	(a)	With Porcelain Insulators 1050mm CD	Each	2.00	13,462.17	1,234.69	26,924.34	2,469.38	29,393.72
	(b)	With Composite Insulators 1050mm CD	Each	2.00	10,787.02	1,234.69	21,574.04	2,469.38	24,043.42
16004	OHE-4	Supply and Erection of materials for Termination of all aluminium 25 KV feeder conductor single (spider) including feeder wire		-	-	-	-	-	-
	(b)	With Composite Insulators 1050mm CD	Mtr	650.00	629.86	270.59	409,409.00	175,883.50	585,292.50
16005	OHE-5	Supply and Erection of material for Termination of copper cross feeder with gantries including cross feeder wire		-	-	-	-	-	-
	(a)	With Porcelain Insulators 1050mm CD	Set	6.00	57,037.68	1,447.29	342,226.08	8,683.74	350,909.82
16006	OHE-6	Supply and Erection of Terminal boards in control cubicles,	Each	3.00	13,723.65	617.35	41,170.95	1,852.05	43,023.00
16007	OHE-7	Supply and Erection of iron clad 240V AC and 110V D.C. board with fuse box in control cubicles,	Set	3.00	9,097.56	281.96	27,292.68	845.88	28,138.56
16008	OHE-8 (a)	Supply, Erection, Testing and Commissioning of low maintenance Lead Acid Battery set 40 AH, 110 volts DC as per latest RDSO specifications including filling up of electrolyte and initial charging /discharging etc as required..	Set	3.00	92,376.29	6,628.20	277,128.87	19,884.60	297,013.47

Legal



BILL OF QUANTITY

Schedule 16000

RE- General (OHE)

Item No	SOR ITEM	Description	Unit	Qty.	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
					Supply	Erection	Supply	Erection	
	OHE-8 (b)	Supply, Erection, Testing and Commissioning of battery charger suitable for 110V, 40 AH low maintenance lead Acid battery set as per latest RDSO specifications including all accessories.	Each	3.00	89,936.47	903.84	269,809.41	2,711.52	272,520.93
16011	OHE-10	Modification to existing Overhead Equipment	Mtr	250.00	-	50.02	-	12,505.00	12,505.00
	OHE-10(a)	Extra for modification to existing Overhead Equipment under power block:	Mtr	250.00	-	50.02	-	12,505.00	12,505.00
16012	OHE-11(a)	Manning of switching station i.e SP/SSP and TSS	Man-month	24.00	-	26,509.35	-	636,224.40	636,224.40
	OHE-11(b)	Manning of anti-theft transformer:	Man-month	6.00	-	25,068.89	-	150,413.34	150,413.34
16013	OHE-12(a)	Electrification of switching station (SP/SSP) building as per specification	Each	3.00	-	49,667.10	-	149,001.30	149,001.30
16014	OHE-12(b)	Supply & Erection of Earthing arrangement at switching station	job	3.00	23,893.32	11,354.33	71,679.96	34,062.99	105,742.95
16015	OHE-13	Loading/Unloading, transportation and handing over of all types of dismantled materials etc. if any (other than contractor material)-considering 40 km away from site for 10 MT	Metric Tonne KM	235.00	-	86.40	-	20,304.00	20,304.00
Total Estimated Amount, Incl. of all taxes, duties, levies & GST@18%							3,445,860	3,577,353	7,023,213
					Quoted (%) by M/s. Encorp Powertrans Pvt. Ltd.				-4.01%
Total Quoted Value of Work Incl. of all taxes, duties, levies & GST@18% (INR)									6,741,582.16



BILL OF QUANTITY

Schedule-17000

Switching Post Building (SSP)

Item No	SOR ITEM	Description	Unit	Qty	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
					Supply	Erection	Supply	Erection	
17001	OHE-15	Construction of Switching Station building, RCC work, plastering, brick masonry, retaining wall, filling, compacting and levelling work etc as per RDSO standard drawing and supply and erection of name board of switching station	Each	3.00		1,299,690.34		3,899,071.02	3,899,071.02
17001B	OHE-15(b)	Extra for every 0.3 m or part there of deeper foundations over normal depth (On ground floor area only)	Sq.m	22.50		1,610.74		36,241.65	36,241.65
Total Estimated Amount, Incl. of all taxes, duties, levies & GST@18%								3,935,313	3,935,313
					Quoted (%) by M/s. Encorp Powertrans Pvt. Ltd.				-4.01%
Total Quoted Value of Work Incl. of all taxes, duties, levies & GST@18% (INR)									3,777,506.95



BILL OF QUANTITY

Schedule 19000

OHE - Ferrous other than steel structures and SPS

Item No	SOR Item	Description	Unit	Qty	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
					Supply	Erection	Supply	Erection	
19001	OHE-16	Supply and Erection of a guy rod assembly.	Each	233	9,548.83	1,481.91	2,224,877	345,285	2,570,162
19003	OHE-18	Supply and Erection of bracket assembly with insulators		-	-	-	-	-	-
	(a)	With Porcelain stay & bracket Insulators 1050mm CD	Each	1,031	22,798.02	1,276.32	23,504,759	1,315,886	24,820,645
	(b)	With Composite stay & bracket Insulators 1050mm CD	Each	266	20,401.47	1,276.32	5,426,791	339,501	5,766,292
19004	(c)	Extra on erection under Power Block	Each	8	-	1,276.32	-	10,211	10,211
	OHE-19	Supply and Erection of regulating equipment (3 pulley type) with counter weight assembly suitable for 2000 Kg conventional OHE (665 Kg).	Each	117	75,236.33	5,521.96	8,802,651	646,069	9,448,720
	(a)	Extra on erection under Power Block	Each	2	-	5,521.96	-	11,044	11,044
19005	OHE-20	Supply and Erection of material for termination of double Overhead Equipment conductor		-	-	-	-	-	-
	(a)	With Porcelain Insulators 1050mm CD	Each	89	15,982.14	1,393.96	1,422,410	124,062	1,546,473
	(b)	With Composite Insulators 1050mm CD	Each	27	13,585.59	1,393.96	366,811	37,637	404,448
19006	(c)	Extra on erection under Power Block	Each	2	-	1,393.96	-	2,788	2,788
	OHE-21	Supply and Erection of anti-creep with galvanized steel wire		-	-	-	-	-	-
	(a)	With Porcelain Insulators 1050mm CD	Each	47	37,507.14	3,918.04	1,762,836	184,148	1,946,983
19007	(b)	With Composite Insulators 1050mm CD	Each	1	32,715.13	3,918.04	32,715	3,918	36,633
	OHE-22	Supply and Erection of a structure bond / longitudinal bond / transverse and special bond.	TKM	66.225	26,771.01	8,540.75	1,772,910	565,611	2,338,521
Total Estimated Amount, Incl. of all taxes, duties, levies & GST@18%							45,316,760	3,586,160	48,902,920
					Quoted (%) by M/s. Encorp Powertrans Pvt. Ltd.				-4.01%
Total Quoted Value of Work Incl. of all taxes, duties, levies & GST@18% (INR)									46,941,912.91



BILL OF QUANTITY
Schedule 20000
OHE - Non Ferrous 'A'

Item No	SOR ITEM	Description	Unit	Qty	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
					Supply	Erection	Supply	Erection	
20001	OHE-23(a)	Supply and Erection of Over Head Equipment i.e. contact & catenary wire (excluding cost of supply of contact & catenary wires), jumper wire, dropper wire, contact/catenary clips, fasteners and all other material required at turn out/overlaps/diamond crossings etc. Final checking of OHE and adjustment, inspection to be done by tower wagon for commissioning of conventional OHE.	TKM	66.23	0.00	68352.02	0.00	4526612.52	4526612.52
	(i)	Extra on erection under Power Block	TKM	0.25	0.00	34175.43	0.00	8543.86	8543.86
	20002	OHE-23(b) Supply of contact wire (HDGCC 107/150 Sq.mm) only.	MT	68.00	958544.43	0.00	65181021.24	0.00	65181021.24
20003	OHE-23(c)	Supply of cadmium copper catenary wire (65 Sq. mm) only	MT	43.00	958544.43	0.00	41217410.49	0.00	41217410.49
Total Estimated Amount, Incl. of all taxes, duties, levies & GST@18%				-			106,398,432	4,535,156	110,933,588
Quoted (%) by M/s. Encorp Powertrans Pvt. Ltd.									-4.01%
Total Quoted Value of Work Incl. of all taxes, duties, levies & GST@18% (INR)									106,485,151.12



BILL OF QUANTITY
Schedule 21000 (OHE)
OHE - Non Ferrous "B"

Item No	SOR ITEM	Description	Unit	Qty	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
					Supply	Erection	Supply	Erection	
21001	OHE-24	Supply and Erection of anti-creep with cadmium copper catenary wire.		-	-	-	-	-	-
	(b)	With Composite Insulators 1050mm CD	Each	8	84,301.44	6,291.50	674,411.52	50,332.00	724,743.52
	OHE-25	Supply and erection of section insulator assembly and associated fittings & fasteners for OHE with Bar Insulator		-	-	-	-	-	-
21002	(a)	With Porcelain Insulators 1050mm CD and Bar Insulator	Each	1	102,244.79	6,721.33	102,244.79	6,721.33	108,966.12
	(b)	With Composite Insulators 1050mm CD and Porcelain Bar Insulator	Each	15	100,395.72	6,721.33	1,505,935.80	100,819.95	1,606,755.75
21004	OHE-27	Supply and Erection of 25 KV, 1250A, S.P Isolators and with insulator with/without earth contact assembly:	Each	7	105,425.19	6,952.21	737,976.33	48,665.47	786,641.80
21006	OHE-29	Supply and Erection of all types of copper jumpers	Each	88	9,177.26	506.80	807,598.88	44,598.40	852,197.28
	OHE-29(a)	Extra on erection under Power Block	Each	2	-	506.80	-	1,013.60	1,013.60
21008	OHE-31	Supply of materials and erection of a large copper jumper (160sqmm) between aluminium/Copper busbar and OHE , cross feeder to OHE etc with all associated fittings.	Each	6	11,811.26	506.80	70,867.56	3,040.80	73,908.36
21009	OHE-32 (a)	Supply and Erection of solid copper busbar 18 mm dia including all connectors, bus splice etc.	Mtr	50	4,569.94	248.45	228,497.00	12,422.50	240,919.50
21010	OHE-32 (b)	Supply and erection of Aluminium Bus Bar 36mmx28mm size including all connectors, bus splice etc.	Mtr	105	1,116.93	68.17	117,277.65	7,157.85	124,435.50



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BILL OF QUANTITY
Schedule 21000 (OHE)
OHE - Non Ferrous 'B'

Item No	SOR ITEM	Description	Unit	Qty	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
					Supply	Erection	Supply	Erection	
21011	OHE-34 (a)	Dismantling of traction structure, portals, TTC and associated SPS by cutting under Power Block :	MT	2.5	-	1,897.45	-	4,743.63	4,743.63
21012	OHE-35	Supply and Erection of safety items i.e. Fire extinguishers, set of fire bucket with stand and first aid box, key box with suitable key chain, locks and other misc items required for commissioning of switching station.	Set	3	17,188.12	2,846.18	51,564.36	8,538.54	60,102.90
21013	OHE-36	Supply and Erection of Retro-reflective type boards- 25KV AC OHE danger board/danger board for height gauge, public, staff caution board and special boards required for commissioning of OHE	Each	70	481.50	170.40	33,705.00	11,928.00	45,633.00
Total Estimated Amount, Incl. of all taxes, duties, levies & GST@18%							4,330,079	299,982	4,630,061
Quoted (%) by M/s. Encorp Powertrans Pvt. Ltd.									
Total Quoted Value of Work Incl. of all taxes, duties, levies & GST@18% (INR)							4,444,395.55		



at 15/07/2021

BILL OF QUANTITY
SCHEDULE-B SECTION-I (ELECTRICAL)
SCHEDULE-24000

TRACTION SUB-STATION									
Item No	SOR ITEM	Description	Unit	Qty	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
					Supply	Erection	Supply	Erection	
24012	TSS -8(a)	Supply, erection, testing & commissioning of 25 KV single pole Vacuum circuit breaker with interlocking of rating 1600 amps	Each	1	563820.26	6670.55	563820.26	6670.55	570490.81
24013	TSS -9(a)	Supply, erection, testing and commissioning of 25 KV current transformers (1500-750/5A)	Each	1	102383.63	877.39	102383.63	877.39	103261.02
24014	TSS-10(d)	Supply, erection, testing, and commissioning of control and numeric relay panel suitable for Single Circuit breaker as per latest RDSO specification.	Each	1	1926150.01	17220.72	1926150.01	17220.72	1943370.73
Total Estimated Amount, Incl. of all taxes, duties, levies & GST@							2,592,354	24,769	2,617,123
					Quoted (%) by M/s. Encorp Powertrans Pvt. Ltd.				
Total Quoted Value of Work Incl. of all taxes, duties, levies & GST@18% (INR)					2,512,176.37				



**BILL OF QUANTITY
SCHEDULE -28000
Tools & Plants (OHE & PSI)**

Item No	Description	Unit	Qty.	Unit Rate Incl. of all taxes, duties, levies & GST@18%	Amount, Incl. of all taxes, duties, levies & GST@18%	Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
28004	Pull lift 0.75 T/0.8 T ISI mark (Make TRACTEL or equivalent as approved by engineer)	Nos	2	13,164	26,327.22	26,327.22
28006	Rail jumpers made of multistrand copper PVC Cable 248/0.457 mm size with suitable clamps at both ends as per RDSO specification no ETI/OHE/3/(2/94) with A& C slip no 1 (04/95) or latest and as approved by Engineer.		-	-	-	-
(a)	3 meter length	Each	4	2,144	8,574.92	8,574.92
(b)	5 meter length	Each	4	2,926	11,703.92	11,703.92
(c)	13 meter length	Each	4	4,520	18,081.84	18,081.84
28007	Earthing discharge rod complete suitable for working voltage of 25KV AC traction, fibre glass body screw type in a suitable carry bag as per RDSO specification no ETI/OHE/51(9/87) or latest and as approved by engineer.	Each	6	24,125	144,751.44	144,751.44
28008	Aluminium Straight ladder extendable type (11mtr), Closed height 6mtr Extended height 11 mtr .(SUMER make Ref-AL100/8809 or equivalent as approved by engineer) .	Nos	1	28,334	28,334.47	28,334.47
28010	First aid box made of GI/AL sheet, ISI marked, filled with medicines as per concerned zonal Railway standard with suitable locking arrangement and as approved by Engineer.	Nos	1	3,990	3,989.52	3,989.52
28011	Stretcher two fold type, made of high quality aluminium alloy tubes. Aprox. Dimensions: unfolded 2100x560x150mm and folded 1100x200x110mm, max weight 8kg, suitable for load weight upto 150kg, to be supplied with sturdy carry case as approved by Engineer	Nos	1	5,168	5,167.90	5,167.90
28012	Set of 4 Fire buckets (10Ltrs) capacity with one stand and cover suitable for switching station/TSS and as approved by engineer.	set	2	11,185	22,369.30	22,369.30
28013	Portable fire extinguisher dry chemical powder as per IS:2171, ISI marked (10 kg OR 2 Nos X 5 kg as required at site and as approved by engineer).	Each	2	4,211	8,421.78	8,421.78
28015	D Shackles set of alloy steel consisting one no of each size (1", 3/4", 5/8", 1/2") upto 5T load capacity as per IS:6132 suitable for use in TRD works.	Set	6	3,990	23,937.12	23,937.12
	TESTING AND MEASURING EQUIPMENTS		-	0	-	-
28020	Portable 5KVA Silent diesel Gen Set with battery push button start. Make: KOEL/Honda/Mahindra or as approved by Engineer.	Set	1	306,247	306,246.51	306,246.51
28023	Trans-receiver, VHF, hand held walkie-Talkie set 5W (tuned for rated power of 5 watts), 16 channels, synthesized with 2200 mAH Ni-Mh Battery pack, along with one spare battery pack of capacity 2200mAH and rapid charger suitable to work on 230V AC as per details enclosed. The VHF Walkie-Talkie shall be MIL standard compliant for 810. Make Motorola GP 328/Kenwood TK-2000 as approved by Engineer.	Nos	2	24,187	48,373.62	48,373.62



28029	Portable arc welding machine 250 A capacity, rated out put current 10-250Amps, rated out put voltage 28V, Rated input power-5KVA, electrode size & welding thickness 0.5mm to 3.15mm suitable to work on 230 V ± 15%, 50Hz single phase AC supply, IP23 protection complete set with copper holder, earth clamp and PVC copper cable of suitable size of 10m length.	Each	1	23,301	23,301.37	23,301.37
28042	Spanners set consisting of 4 sets of double ended Ring spanner & 4 sets of double ended Flat type spanner , 12 pieces in each set (6mm to 42mm size), Gedore or Taparia make with ISI Mark or as approved by engineer.	Set	2	19,179	38,357.38	38,357.38
28043	52 pieces socket set (box spanners) with storage case. Cogex make or similar as approved by Engineer.	Set	2	14,384	28,767.22	28,767.22
Sub-Total (A)			-		746,706	746,706
Balance items of ACTM						
Item No	Items	Unit	Qty	Unit Rate Incl. of all taxes, duties, levies & GST@18%	Amount, Incl. of all taxes, duties, levies & GST@18%	Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
1	Come-along clamps for Catenary suitable for 19/2.108 mm conductor	Each	4	6655.2	26,620.80	26,620.80
2	Come-along clamps for contact wire 107mm ²	Each	4	6793.85	27,175.40	27,175.40
3	Come-along clamps for Aluminium "SPIDER" Conductor (20mm ²)	Each	4	11230.65	44,922.60	44,922.60
4	Come-along clamps for earth wire (19/2.5mm) Galvanized steel	Each	2	6655.2	13,310.40	13,310.40
5	Flood light fitting with 500 Watt Lamps	Each	4	970.55	3,882.20	3,882.20
6	Portable Fire Extinguisher (Cap.9 ltr.) Foam Type	Each	2	2079.75	4,159.50	4,159.50
7	Contact Wire Cutter 36"	Each	1	3327.6	3,327.60	3,327.60
8	Dropper Wire cutter 12"	Each	1	2079.75	2,079.75	2,079.75
9	Single Sleeve Pulley block 3 1/2" x 1/2" Groove Steel	Each	4	1317.18	5,268.72	5,268.72
10	Single Sleeve pulley Block 6"x1" Groove Steel	Each	2	1733.13	3,466.26	3,466.26
11	Contact Wire twist-cum-bender 6"	Each	2	3223.62	6,447.24	6,447.24
12	1 m. long, 5 Ton	Each	6	859.63	5,157.78	5,157.78
13	Slewing Gadget	Each	1	9012.25	9,012.25	9,012.25
14	Contact Wire Splicing Jig	Each	1	19411	19,411.00	19,411.00
15	Metric Tape	Each	-	-	-	-
16	a) 30 m.	Each	1	371.38	371.38	371.38
17	b) 15 m.	Each	1	185.7	185.70	185.70
18	Aluminium ladder with hook on top 8'	Each	2	5546	11,092.00	11,092.00
Sub-Total (B)			-		185,891	185,891
Grand Total Estimated Amount, Incl. of all taxes, duties, levies & GST@18%					932,597	932,597
(A+B)						
Quoted (%) by M/s. Encorp Powertrans Pvt. Ltd.						-4.01%
Total Quoted Value of Work Incl. of all taxes, duties, levies & GST@18% (INR)						895,199.86



BILL OF QUANTITY
SCHEDULE-1, SECTION-1
SCADA SYSTEM (GENERAL)

Sr. No.	Item No	SOR Item	Description	Unit	Qty	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
						Supply	Erection	Supply	Erection	
1	29001	SCADA-1	Preparation and supply of Design & Drawing of SCADA for RCC, TSS, SP & SSP	Job	1	0.00	240123.96	0.00	240123.96	240123.96
2	29002	SCADA-2	Supply, Erection, Testing and Commissioning of Supervisory Control and Data Acquisition (SCADA) equipments at the Remote Control Centre for required work stations as per RDSO Specification No. TI/RCC/SCADA/0130 (Rev-2) with amendments.	Job	1	7210124.57	653750.33	7210124.57	653750.33	7863874.90
3	29002A	SCADA-2(a)	Supply, installation & testing of standard SCADA software as per RDSO specification No. TI/RCC/SCADA/0130 (Rev-2) with amendments.	Job	1	3840131.10	435139.68	3840131.10	435139.68	4275270.78
4	29003C	SCADA-3(c)	Supply, Erection, Testing and commissioning of Remote Station Equipments at Remote stations as per RDSO specification No. TI/RCC/SCADA/0130 (Rev-2) with amendments for Sub Sectioning Post (SSP).	Eac h	3	1133863.86	76361.17	3401591.58	229083.51	3630675.09
5	29004	SCADA-4	Supply, Erection, Testing and Commissioning of maintenance free/Low maintenance type 400 AH Lead Acid battery sets as per RDSO Specification No. TI/RCC/SCADA/0130 (Rev-2) with amendments.	Set	1	1671583.34	61604.64	1671583.34	61604.64	1733187.98
6	29004A	SCADA-4(a)	Supply, Erection, Testing and Commissioning of 2x5 KVA dual redundant hot standby UPS system as per RDSO specification No. TI/RCC/SCADA/0130 (Rev-2) with amendments.	Set	1	549050.70	42706.93	549050.70	42706.93	591757.63
7	29005	SCADA-5	Supply & Erection of furniture at RCC as per RDSO specification No. TI/RCC/SCADA/0130 (Rev-2) with amendments.	Set	1	484736.61	36346.30	484736.61	36346.30	521082.91
8	29006	SCADA-6	Modification/up gradation, testing & commissioning in existing standard SCADA software at RCC Equipments for configuration, integration/ hooking up of additional RTUs of adjacent section with master station i.e- RCC, TSS, SP and SSP	Job	1	0.00	906427.57	0.00	906427.57	906427.57



Sr. No.	Item No	SOR Item	Description	Unit	Qty	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18%
9	29007	SCADA-7	Supply, Erection, Testing & Commissioning of GPS Receiver with 3 nos digital clock at RCC as per RDSO specification No. TI/RCC/SCADA/0130 (Rev-2) with amendments.	Job	1	427434.18	26300.88	427434.18	26300.88	453735.06
10	29008	SCADA-8	Supply, Erection, Testing and commissioning of Hardware & Software for TPC/Head quarter and Railway Board.	Job	1	1191587.95	114801.81	1191587.95	114801.81	1306389.76
11	29009	SCADA-9	Supply of 10% spare cards for AMC for Operation & Maintenance as per RDSO specification No. TI/RCC/SCADA/0130 (Rev-2) with amendments.	Job	1	1584186.36	0.00	1584186.36	0.00	1584186.36
12	29010	SCADA-10	Supply of Special Tools & Plants for maintenance as per RDSO specification No. TI/RCC/SCADA/0130 (Rev-2) with amendments.	Set	1	412179.56	0.00	412179.56	0.00	412179.56
13	29011 B	SCADA-11(b)	Erection, integration, testing & commissioning for existing and new equipments for SSP.	Job	3	0.00	84801.08	0.00	254403.24	254403.24
14	29012A	SCADA-12(a)	Integration of Energy data from RCC to SMC	Job	1	0.00	138284.35	0.00	138284.35	138284.35
15	29012B	SCADA-12(b)	Integration of Energy data from SMC to SLDC	Job	1	0.00	138284.35	0.00	138284.35	138284.35
16	29013	SCADA-13	Supply, installation, testing & commissioning of web server of standard SCADA software for Railway SLDC as per RDSO specification No. TI/RCC/SCADA/0130 (Rev-2) with amendments.	Job	1	667099.74	40876.21	667099.74	40876.21	707975.95
Grand Total Estimated Amount, Incl. of all taxes, duties, levies & GST@18%								21,439,706	3,318,134	24,757,839
						Quoted (%) by M/s. Encorp Powertrans Pvt. Ltd.				
						Total Quoted Value of Work Incl. of all taxes, duties, levies & GST@18% (INR)				
						23,765,049.66				



Legal

BILL OF QUANTITY
Common Schedule of OHE/TSS/SWS

Schedule 30000A

Item No	SOR ITEM	Description	Unit	Qty	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
					Supply	Erection	Supply	Erection	
30009	CS-9	Supply and erection of all types of galvanised Steel Structures, Small Parts Steel etc.	MT	619	112345.74	3775.19	69542013.06	2336842.61	71878855.67
Grand Total Amount, Incl. of all taxes, duties, levies & GST@18%				-			69,542,013	2,336,843	71,878,856

Schedule 30000B

Concrete for Foundation OHE/TSS/SWS

30006A	CS-6 (a)	Providing and laying of concrete for foundation and plinth in all types of Soils as per relevant RDSO drawings.	CUM	3424	6424.24	2078.1	21996597.76	7115414.4	29112012.16
30006B	CS-6 (b)	Providing and laying of concrete for foundation and plinth in all types of Soils as per relevant RDSO drawings.	CUM	240	7588.88	2078.1	1821331.2	498744	2320075.2
30007A	CS-7 (a)	100% Extra Payment over CS-6(a), (b) and (c) for foundation and plinth in Hard Rock/heavy concrete requiring chiseling/Blasting/machine breaking	CUM	400.00	0	2078.1	0	831240	831240
30007B	CS-7 (b)	50% Extra Payment over CS-6(a), (b) and (c) for foundation and plinth in Soft Rock/Hard soil requiring chiseling/Blasting/machine breaking and in Black Cotton Soil	CUM	342.00	0	1039.67	0	355567.14	355567.14
30008	CS-8	Providing and laying of Reinforced Concrete for Pier/Column/Pile, Cable Trench and Trench Cover and special designed foundations requiring reinforcement.	CUM	5	0	9567	0	47835	47835
Grand Total Amount, Incl. of all taxes, duties, levies & GST@18%				-			23,817,929	8,848,801	32,666,730

Schedule 30000C

Miscellaneous Common Items of OHE/TSS/SWS

30001	CS-1	Supply, erection, testing and commissioning of 25 KV, 1600 Amp vacuum Interruptor	Each	4	439114.19	5019.57	1756456.76	20078.28	1776535.04
30002	CS-2	Supply, erection, testing and commissioning of 25 KV Potential Transformer Type-I or Type-II	Each	6	89479.33	945.43	536875.98	5672.58	542548.56
30003	CS-3	Supply, erection, testing and commissioning of 42 KV Lightning Arrestor with surge monitor, counter and cable	Each	8	32267.7	661.8	258141.6	5294.4	263436



Item No	SOR ITEM	Description	Unit	Qty	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
					Supply	Erection	Supply	Erection	
30004	CS-4	Supply and installation of cables for SWS	Mtr	300	249.55	19.79	74865	5937	80802
30005A	CS-5(a)	Supply, erection, oil filtration, testing & commissioning of 25KV/240V 10 KVA Auxiliary (LT) Supply Transformers oil type with DO fuse switch, anti climbing device, Arcing horns, pedestal insulators, copper jumper and earth electrode etc.		-	0	0	0	0	0
	(i)	With Porcelain Insulators 1050mm CD	Set	4	116095.33	15497.34	464381.32	61989.36	526370.68
	(ii)	With Composite Insulators 1050mm CD	Set	1	113969.21	15497.34	113969.21	15497.34	129466.55
30010	CS-10	Supply and erection of Fencing Panels, Uprights, Gate and Anti-Climbing device	Mtr	114	3564.04	119.82	406300.56	13659.48	419960.04
30011	CS-11	Supply and erection of Aluminium Jumper with Fastners	Each	5	2805.5	296.82	14027.5	1484.1	15511.6
30012	CS-12	Supply and erection of Copper Strips for equipment earthing	Mtr	20	1692.98	179.19	33859.6	3583.8	37443.4
30014	CS-14	Supply and spreading of gravel/ ballast in the switching yard (SP/SP/TSS)	Cum	21	1271.93	8.8	26710.53	184.8	26895.33
30017	CS-17	Supply, erection, testing and commissioning of anti theft transformer 240 volt/2.2 KV 5 KVA, with DO Fuse switch excavation of cable trench, laying of cables, earthing, jumpering, DG set including dismantling of above equipments as per directions of engineer.	each location	1	90510.5	62940.26	90510.5	62940.26	153450.76
30020	CS-20	supply and laying of dry stone boulder pitching of aprox 300mm thickness in exposed slopes at SWS and OHE Foundations etc .	cum	220	997.1	248.45	219362	54659	274021
30021	CS-21	Extra Earthwork in filling at OHE Foundations	cum	900	233.06	57.17	209754	51453	261207
30023(a)	CS-23(a)	Supply and erection of 25 Kv double pole isolator 1600/1250 Amp with insulators	Each	5	108877.09	3467.3	544385.45	17336.5	561721.95
30023(b)	CS-23(b)	Supply and erection of single pole isolator 1600 Amp with insulators	Each	1	60201.82	3467.3	60201.82	3467.3	63669.12
30024A	CS-24(a)	Excavation of Earth to the required depth below ground level, burying 13mtrs long rail and connecting it as per latest RDSO drawings at switching stations/mid section including covering back and proper dressing up of earth (Rail will be supplied by Railway excluding earth electrode).	job	3	0	17925.77	0	53777.31	53777.31



Item No	SOR ITEM	Description	Unit	Qty	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
					Supply	Erection	Supply	Erection	
30024C	CS-24(c)	Supply and erection of earth lead using 75x8mm GI flat laid in ground/exposed as per the site requirement	Mtr	75	604.64	286.93	45348	21519.75	66867.75
	(a)	Person with arms.	Per Person / day	90	888.27	0	79944.3	0	79944.3
	(b)	Person without arm	Per Person / day	90	808.02	0	72721.8	0	72721.8
30026	CS-26	Supply & erection of 25 KV support /Post insulators with fittings and fasteners	Each	50	5029.47	189.08	251473.5	9454	260927.5
Grand Total Amount, Incl. of all taxes, duties, levies & GST@18%				-			5,259,289	407,988	5,667,278
Total Estimated Amount (Sch_30000A+30000B+30000C), Incl. of all taxes, duties, levies & GST@18%							98,619,231	11,593,632	110,212,864
Quoted (%) by M/s. Encorp Powertrans Pvt. Ltd.									-4.01%
Total Quoted Value of Work Incl. of all taxes, duties, levies & GST@18% (INR)									105,793,328.15



Legd

ELECTRICAL GENERAL SERVICES WORKS

SCHEDULE - 33000

This schedule shall be read in conjunction with its Explanatory Notes and Technical Specifications for various items included therein

Item No.	Description of items	Unit	Qty.	Unit Rate Incl. of all taxes, duties, levies & GST@18%		Amount, Incl. of all taxes, duties, levies & GST@18%		Grand Total, Incl. of all taxes, duties, levies & GST@18%
				Supply	Erection	Supply	Erection	
SECTION - D : EXTERNAL ELCTRIFICATION WORKS								
33019	Supply and erection of GI pipe - class 'B' ISI marked with accessories including bends etc. for support of cable with erected pole/ recessing in wall/ floor/ passing earth strip OR passing cable as required:		-	-	-	-	-	-
ii)	50 mm dia	Meter	20	503.50	79.15	10070.00	1583.00	11653.00
33020	Supply, erection, testing & commissioning of control and distribution panel for colour light signalling supply in 25 kV AC traction system as per RSDO technical specifications No. TI/SPC/PSI/CLS/ 0020 (12/02) With A&C slips No. 1 to 4 or latest, connections as Required.		-	-	-	-	-	-
i)	For 5-10 kVA AT	No.	2	89870.69	14115.48	179741.38	28230.96	207972.34
SECTION - F : EARTHING ARRANGEMENT								
33032	Earthing with 3 meter long, 50mm dia, G.I. pipe class 'B' earth electrode, adding the charcoal or coke and salt, providing concrete enclosure and MS cover plate with lifting arrangement etc. including connections with 4mm G.I. wire from earth electrode to switch board / electrical equipment as required.	Job	30	3594.83	565.06	107844.90	16951.80	124796.70
SECTION - G : CABLING								
33036	Supply, and laying of 1.1 KV grade LT XLPE insulated armoured, aluminium conductor cable, making good the damages, end terminations with aluminium crimping socket/ plugs, provisions of cable route markers, testing & commissioning etc. as required as per technical specifications.		-	-	-	-	-	-
iii)	2 Core 70 sq.mm	Meter	2800	687.09	171.50	1923852.00	480200.00	2404052.00
section - I : LAYING OF 11 KV / 33 KV CABLES				0.00	0.00	0.00	0.00	0.00
33044 (e)	Supply and laying of HDPE pipe DWC/Split DWC type, of size 110 mm outer dia, Grade PN4, PE80, ISI marked (either single piece of full round or two half round split pieces set), under the Railway track/ road etc. digging of trench and back filling with excavated earth after laying of pipe and making good the damages as required.	Meter	20	345.19	24.19	6903.80	483.80	7387.60
33044(f)	Supply and laying of HDPE pipe DWC/Split DWC type, of size 110 mm outer dia, Grade PN4, PE80, ISI marked (either single piece or full round of two half round split pieces set), under the Railway track/ road etc. with trench less method and making good the damages as required.	Meter	72	345.19	899.25	24853.68	64746.00	89599.68
SECTION - N : DISMANTLING WORKS				0.00	0.00	0.00	0.00	0.00
33058	Supply installation testing & commissioning of cubical type mast mounted, dust & vermin proof, LT control switch board conforming to IS:8623 (latest version), complete.		-	-	-	-	-	-
ii)	a) with TPN MCCB 63A, 35 KA, fixed type (lcs=100% lcu)-1 No b) copper busbars 200A (for 10 KVA AT)	No.	2	19261.46	4727.14	38522.92	9454.28	47977.20
Grand Total Estimated Amount, Incl. of all taxes, duties, levies & GST@18%						2,291,789	601,650	2,893,439
Quoted (%) by M/s. Encorp Powertrans Pvt. Ltd.								-4.01%
Total Quoted Value of Work Incl. of all taxes, duties, levies & GST@18% (INR)								2,777,412.10



BILL OF QUANTITY
Schedule 33A
OHE Spare

OHE FITTINGS / COMPONENTS, INSULATORS, NUT BOLTS & COPPER WIRE ETC.

ANNEXURE-I

S. N.	Description of Item	Unit	Qty.	Unit Rate Incl. of all taxes, duties, levies & GST@18%	Amount, Incl. of all taxes, duties, levies & GST@18%	Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
1	Stay Insulators (Porcelan)	Nos	20	3211.51	64230.20	64230.20
2	Bracket Insulators (Porcelan)	Nos	20	3171.37	63427.40	63427.40
3	SI Core Insulator (Sectioning Insulator)	Nos	2	7225.89	14451.78	14451.78
4	9T Insulator	Nos	5	6423.01	32115.05	32115.05
5	25 kV Pedestal Insulator	Nos	10	5620.14	56201.40	56201.40
6	Operating Rod Insulator	Nos	2	2890.36	5780.72	5780.72
7	25 kV DO fuse link 1A	Nos	20	160.57	3211.40	3211.40
8	25 KV Single pole Isolator 1250 amp	Nos	4	44961.09	179844.36	179844.36
9	25 KV Single pole Isolator 1250 amp with E/H	Nos	1	61018.62	61018.62	61018.62
10	SS wire rope (8.65 mtr)	Nos	5	2569.20	12846.00	12846.00
11	LV Box Assembly for 10 KV	Nos	1	10437.40	10437.40	10437.40
12	JB Box Assembly for 10 KV	Nos	1	13648.90	13648.90	13648.90
13	LV Box Assembly for 5 KV	Nos	1	8028.76	8028.76	8028.76
14	Earth electrode 4.0 M	Nos	1	2408.63	2408.63	2408.63
15	Earth electrode RI 7021 (3.10 m)	Nos	5	1846.62	9233.10	9233.10
	GI FASTENERS		-	0.00	0.00	0.00
1	GI Bolt 16x60/38 mm with nut without hole	Nos	20	31.31	626.20	626.20
2	GI Bolt 16x65/37 mm with nut & spilt pin	Nos	70	28.18	1972.60	1972.60
3	G.I Bolt M16x175/60mm with Nut & L/N	Nos	20	54.92	1098.40	1098.40
4	G.I Bolt M16x360x100 mm with Nut & L/N	Nos	100	96.68	9668.00	9668.00
5	G.I Bolt M20x260x100 mm with Nut & L/N	Nos	20	119.52	2390.40	2390.40
6	G.I Bolt M20x470x65mm with Nut & L/N	Nos	20	180.84	3616.80	3616.80
7	G.I Bolt M20x560x550x100 with nut & L/N	Nos	20	300.03	6000.60	6000.60
8	G.I Bolt M20x660x650 x100 with nut & L/N	Nos	20	358.40	7168.00	7168.00
9	GI spring Washer-16 mm	Nos	100	4.00	400.00	400.00
10	GI spring Washer-20 mm	Nos	100	5.63	563.00	563.00
11	GI SH pin 20x55/60 mm with hole with punched washer A-22 and annealed copper split pin 4x40	Nos	40	46.57	1862.80	1862.80
12	Cu pin 2.5x20 mm	Nos	100	4.83	483.00	483.00



S. N.	Description of Item	Unit	Qty.	Unit Rate Incl. of all taxes, duties, levies & GST@18%	Amount, Incl. of all taxes, duties, levies & GST@18%	Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
13	Al Alloy rivets dia 6x35 mm	Nos	100	17.67	1767.00	1767.00
14	Al Alloy rivets dia 6x50 mm	Nos	100	20.87	2087.00	2087.00
	STAINLESS STEEL FASTENERS		-	0.00	0.00	0.00
1	SS Bolt 10x30/25 mm with nut & L/nut	Nos	30	31.71	951.30	951.30
	OHE FITTINGS		-	0.00	0.00	0.00
1	Terminal connector RI No. 1009 & 1009-1	Nos	10	1798.45	17984.50	17984.50
2	Contact wire PG clamp (RI 1030-3, 160/150, 107, 65 mm) with SS fastener	Nos	10	224.80	2248.00	2248.00
3	Contact wire parallel clamp (RI No. 1040-2) with fastener	Nos	20	224.80	4496.00	4496.00
4	PG clamp 1050-2 (130/105 sq.mm)	Nos	20	401.43	8028.60	8028.60
5	P.G clamp (RI No. 1050-3)	Nos	20	417.50	8350.00	8350.00
6	Contact wire splice (RI1081-1)	Nos	10	1734.21	17342.10	17342.10
7	Catenary wire splice RI -1090 (1091, 1092, 1093& 1094)	Nos	10	963.45	9634.50	9634.50
8	Contact wire ending cone (RI-1110-2) (1118 & 1119)	Nos	10	361.30	3613.00	3613.00
9	Catenary wire ending clamp RI-1120	Nos	10	963.45	9634.50	9634.50
10	Large span wire ending clamp-1140 (1131, 1143, 1102)	Nos	10	1605.75	16057.50	16057.50
11	150 sq.mm x-feeder ending clamp (RI-1131, 1104, 1102)	set	6	1525.47	9152.82	9152.82
12	RI 1160 (Suspension clamp)	Set	35	698.51	24447.85	24447.85
13	Steel wire ending clamp (RI 1360) (1131, 1361, 1362, 1360)	Nos	10	1501.37	15013.70	15013.70
14	Packing shadle -RI 1174	Nos	50	64.23	3211.50	3211.50
15	Contact wire dropper clip comp (RI No.1180) (1181 & 1182)	Nos	100	83.51	8351.00	8351.00
16	contact wire swivel clip part (RI No.1220)	Nos	40	228.01	9120.40	9120.40
17	18 mm suspension clevis (RI No. 1270-1)- RI 1272 w/o fasteners	Set	10	321.15	3211.50	3211.50
18	Raised Register Arm clamp assembly (RI No.1371-1)	Set	4	361.30	1445.20	1445.20
19	30/38 mm Std. Bkt Tube (RI 2041)	Mtr	5	321.15	1605.75	1605.75
20	40/49 mm Large bracket tube (RI 2081)	Mtr	90	369.33	33239.70	33239.70
21	25/33 mm nominal bore tube for RT/ST (RI-2401 & 2431)	Mtr	100	192.69	19269.00	19269.00
22	Tube cap RI- 2104-1 (for large Bkt)	Nos	35	73.87	2585.45	2585.45
23	Large catenary susp bracket 2130 (RI-2131 & 2132)	Nos	35	1236.44	43275.40	43275.40
24	RI 2160-1 Large register arm hook	Set	20	353.26	7065.20	7065.20
25	25 mm Drop bracket assembly (RI-2361-1)	Set	35	393.40	13769.00	13769.00
26	Bent steady arm hook (RI No. 2391-1)	Nos	20	176.63	3532.60	3532.60
27	BFB Steady arm swivel RI 2392	Nos	20	115.62	2312.40	2312.40
28	Tubular stay adjuster (RI No. 2402)	Nos	30	317.94	9538.20	9538.20
29	Tubular stay adjuster RI 2402-1 (16 holes)	Nos	30	313.12	9393.60	9393.60
30	Tubular stay sleeve RI 2403-2 with bolt	Nos	30	176.63	5298.90	5298.90



S. N.	Description of Item	Unit	Qty.	Unit Rate Incl. of all taxes, duties, levies & GST@18%	Amount, Incl. of all taxes, duties, levies & GST@18%	Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
31	Register Arm eye piece RI 2422-2	Nos	30	104.38	3131.40	3131.40
32	Tube cap RI- 2423-1 (for RT)	Nos	35	57.81	2023.35	2023.35
33	Tube cap 40 mm	Nos	25	73.87	1846.75	1846.75
34	Raised Register Arm Adjuster (RI-2432)	Nos	4	289.04	1156.16	1156.16
35	Dropper clip for RRT (25) (RI No. 2471-1)	Nos	35	24.08	842.80	842.80
36	Antiwind clamp (RI No.2550-3)	Set	10	152.55	1525.50	1525.50
37	Mast fittings for hook insulator-(RI 3021-1)	Nos	20	393.40	7868.00	7868.00
38	Mast BKT fitting assembly (RI No. 3070-1)	Nos	15	1292.63	19389.45	19389.45
39	Anchor Bolt 0.85 m (RI 5001-3)	Nos	4	377.35	1509.40	1509.40
40	Guy rod (RI No. 5004, 9.35 m)	Nos	1	5539.85	5539.85	5539.85
41	Guy rod (RI No. 5005, 9.70 m)	Nos	1	5620.14	5620.14	5620.14
42	Guy rod (5.35 Mtr) (RI No. 5006-1)	Nos	1	3934.10	3934.10	3934.10
43	Anchor V bolt Complete with N/LN/FW/ (RI 5007-1)	Nos	2	361.30	722.60	722.60
44	RI 5008 (Anchor Loop)	Nos	2	2167.77	4335.54	4335.54
45	RI 5220-2 (Guy rod double strap)	Nos	4	497.78	1991.12	1991.12
46	9 Tonne adjuster clevis type (RI No.5020-2)	Nos	4	1091.91	4367.64	4367.64
47	Guide tube pipe 5.6 m long (RI 5063-1)	Nos	4	1276.57	5106.28	5106.28
48	Counter Wt. eye rod suitable for Conv OHE (RI 5094)	set	1	770.76	770.76	770.76
49	Counter weight assembly suitable for conv OHE (735 kg per set)	Set	1	46619.03	46619.03	46619.03
50	5 kg counter weight RI 5098	Nos	1	883.16	883.16	883.16
51	Counter weight eye rod RI SK 288 (1.80 Mtr long) (599)	Nos	2	963.45	1926.90	1926.90
52	Double eye distance rod (RI 5183)	Nos	4	658.36	2633.44	2633.44
53	Clevis & eye RI 5322-1(5041)	Nos	15	289.04	4335.60	4335.60
54	SS wire rope ending clamp RI 5341	Nos	5	1445.17	7225.85	7225.85
55	Earth wire mast clamp RI 7040	Nos	10	2408.63	24086.30	24086.30
	Conductors		-	0.00	0.00	0.00
1	5 mm dropper wire	MT	0.05	773588.94	38679.45	38679.45
2	5 mm special dropper	MT	0.05	773588.94	38679.45	38679.45
3	50 Sq.mm Jumper wire	MT	0.013	813858.30	10580.16	10580.16
4	105 sq.mm G-Jumper	MT	0.12	833127.34	99975.28	99975.28
5	150 sq.mm copper x-feeder wire	Mtr	100	1177.65	117765.00	117765.00
6	Galvanised steel wire (19/2.5 mm)	Mtr	1700	141.49	240533.00	240533.00
	Total Amount, (Annexure-I) Incl. of all taxes, duties, levies & GST@18%		-		1605370	1605370

Annexure-II



S. N.	Description of Item	Unit	Qty.	Unit Rate Incl. of all taxes, duties, levies & GST@18%	Amount, Incl. of all taxes, duties, levies & GST@18%	Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
1	160 sqmm large jumper wire (195 kg)	Mtr	130	1250.77	162600.10	162600.10
2	Equalizing Plate	Nos.	4	884.05	3536.20	3536.20
3	L-Clamp	Nos.	15	384.37	5765.55	5765.55
Total Amount,(Annexure-II) Incl. of all taxes, duties, levies & GST@18%					171902	171902
Grand Total Estimated Amount, (Ann. I + II) Incl. of all taxes, duties, levies					1777272	1777272
Quoted (%) by M/s. Encorp Powertrans Pvt. Ltd.						-4.01%
Total Quoted Value of Work Incl. of all taxes, duties, levies & GST@18% (INR)						1,706,003.39



Singal & Telecommunication Works

S. No.	Description of S&T items	Unit	Qty.	Unit Rate Incl. of all taxes, duties, levies & GST@18%	Amount, Incl. of all taxes, duties, levies & GST@18%	Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
	Schedule-A					
	Relays, Relay racks, CT racks, Tag blocks, Terminal fuses					
1	Supply of DC neutral line relay QNA1K, AC Immune, DC neutral line 24V, 6F/6B contacts, complete with plug board, retaining clip and connectors. Conforming to BRS-931A & RDSO letter no STS/E/Relays/UEA/PI dated 30.05.97/Annexure II and IRS:S34 & IRS:S23 or latest. The interlocking code for this unit shall be "CDEKY".	no	30	5577.71	167331.3	167331.3
2	Supply of Q-Series Track Relay (QTA2 Type), AC immunized, 9 Ohms, 2F/1B along with plug board (base plate), connectors, retaining clips etc and conforming to BRS:939A & 966(Appendix F2) or latest. The interlocking code for this unit shall be "FGHKX".	no	5	4328.25	21641.25	21641.25
3	Supply of Q-Series Line Relay (QNA1 Type), AC immunized, 8F/8B, 24 V DC along with plug board (base plate), connectors, retaining clips etc and conforming to BRS-931A and RDSO Specn.No.IRS:S-34, S-23 and S-60 or latest. The interlocking code for this unit shall be "ABDGH".	no	5	4535.67	22678.35	22678.35
4	Q-Series Neutral Line Relay(QSPA1 Type), 24V DC,8F/4B along with plug board (base plate), connectors, retaining clips etc and conforming to BRS-933A and RDSO Specn.No.IRS:S-34, S-23 & S 60 or latest. The interlocking code for this unit shall be "ABDEJ".	no	5	6039.49	30197.45	30197.45
5(i)	Supply of Disconnect Terminal Block, Screw less type, 4-wire front entry (Two in-put & Two out-put) The colour will be decided by Engineer - in - Charge. (Preferably In Blue, Red & Grey Colors in the ratio of 1:2:3)	No.	200	63.31	12662	12662
5(ii)	Supply of End plate for item 4.28 (i) of Chapter 4 of revised SOR 2.5mm/0.091 in thick as per site requirement.	no.	20	11.86	237.2	237.2
5(iii)	Supply of End Stopper for item 4.28 (i) of Chapter 4 of revised SOR 10mm/0.0394 in width as per site requirement.	no	40	11.86	474.4	474.4
5(iv)	Supply of Carrier Rails for above 35mm x 7.5mm, 1mm/0.039 in thickness un-slotted type as per site requirement	Mtr	10	123.98	1239.8	1239.8
5(v)	Supply of Markers strip for item 4.28 (i) of Chapter 4 of revised SOR	no	20	18.46	369.2	369.2
	Lightening Arrestor & Safety items					
6	Supply of Rubber Mat for Power Equipment room. (5mm/10mm/12 mm/20 mm thick)	kg	30	123.98	3719.4	3719.4
7	Supply of Channel Pins MS (Galvanized) single groove, 7 mm suitable for 4mm dia bonding wire as per spec No IRS S 17 & RDSO Drg No. S-69/M.	no	100	6.6	660	660
8	Supply of GI wire 8 SWG (4mm dia) suitable for track circuit rail bonding.	kg	50	76.5	3825	3825
	Cable laying materials & execution etc.					
9	Supply of Medium class GI pipes 100 mm dia(4.5 mm thickness) as per IS 1239 (Part 1) : 2004 with coupling on culverts bridges as per Drg.No.CSTE/NWR/SOR/06 to 12 or at any other locations as decided by Site Engineer. It includes supply of all material required for fixing arrangement. Contractor will also supply flexible/corrugated HDPE pipe at the end of GI pipe to protect the cables from sharp edges and sudden bends.	Mtr	50	881.55	44077.5	44077.5



Singal & Telecommunication Works

S. No.	Description of S&T items	Unit	Qty.	Unit Rate Incl. of all taxes, duties, levies & GST@18%	Amount, Incl. of all taxes, duties, levies & GST@18%	Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
10	Supply of Double Walled Corrugated (DWC) HDPE Pipe/duct with associated collars etc. as per RDSO Specification No. RDSO/SPN/204/2011 or latest anti-rodent & antioxidant and non flame propagating type in 6 meters straight length and of size 120 mm outer dia & 103.5 mm inner dia. (The manufacturers, suppliers must produce valid IS license and should be certified under ISO 9000 and shall submit copy of certificate). One of the following coupling arrangements should also be supplied with each pipe as per the site requirement. 1) Suitable snap fit coupler with rubber O-Ring 2) Spacers 3) Tees 4) Bend, 5) End-cap (The total quantity of above items is equal to no. of pipes supplied.)	no	10	2083.99	20839.9	20839.9
11	Supply of Thermo shrink Universal Jointing kit for Quad Cable (for straight joints) as per RDSO spec IRS/TC-77/2012 revision 3 With latest Amd.	no	10	2490.22	24902.2	24902.2
12	Supply of RCC cable route marker engraved and painted on both side along the route at every 50 meter and route diversion as per Drg. No 4014/00/CC4 or latest/ Stone marker.	no	70	380.92	26664.4	26664.4
	Earthing materials etc			0	0	0
13	Supply of Normal Earth Electrode for earthing of S&T Installations with all the associated assembly/materials as per standard practice and as per Drg. No.CSTE/NWR/SOR/14A&14B.It includes supply of GI pipes of 3m length. Supply of Maintenance Free Earth as per spec RDSO/E&B/001 dtd.19.09.08.It consist of following. (a)Copper bonded steel electrode of 3.0m long,17.2 mm dia with copper bonding thickness of minimum macrons and UL listed and marked=1 no.(b) Earth enhancement material supplied in sealed bags of minimum 10kg=2 nos.(c) copper strip of 150x25x6mm, to terminate earth rod=1 no.(d) copper strip of 300x25x6mm, to terminate earth rod(MEEB)=1 no.(e)copper strip of 150x25x6mm, to terminate earth rod(SEEBS)=1 no.(f)Supply of 35 sq.mm with multi strand single core PVC insulated copper cable as per IS:694 for connecting main earth electrode to MEEB in the equipment room duplicate(minimum 10 meter).(g)Supply of 16 sq.mm with multi strand single core PVC insulated copper cable as per IS:694 for connecting MEEB to SEEBS and SPD to MEEB(minimum 10 meter).(h)Supply of 10 sq.mm with multi strand single core PVC insulated copper cable as per IS:694 for connecting for connecting various equipments to SEEBS.(i)Supply of copper lug sleeve for 3/18 cable	Nos.	60	2587.67	155260.2	155260.2
14		Lot	10	20316.86	203168.6	203168.6
	Telecom Items.....			0	0	0
15	Supply of UTP CAT-6 cable in a roll of 305 meter and make Siemens/ Systemax / Panduit/ Tyco/ Krone/ AMP.	Mtr	100	21.71	2171	2171
16	Supply of patch chord cable (10 meter long) with FC/PC connectors compatible with SDH equipments as per TEC Specn.No.GR/OFJ-02/01 May 2004 with latest Amendment.	no	6	1097.63	6585.78	6585.78



Singal & Telecommunication Works

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17	Supply of 2 Mb Programmable Primary Digital drop insert multiplexer as per RDSO Specs. IRS TC- 68/2004 (Amnd.1) or latest with conference facility and other stipulation to tender documents and fully wired for 30 channel complete with power supply card, remote control, supervision facility and all other accessories, installation material, manuals etc. It should have facilities to accommodate data interface card in multi drop mode and should be able to support cards needed for video conferencing and ISDN. It shall support NMS installed at Test Room and may operate local/remote location of entire section. It also includes submission of all technical documents, manuals and supply of all miscellaneous items which will be required for final testing and commissioning of system. The above MUX should be equipped with following circuits: - i) 2 wire/ 4 wire E&M VF circuits (minimum 16 nos ckts) ii) Subscriber loop circuits (minimum 4 nos ckts) iii) Exchange loop interface circuits (minimum 8 circuits) iv) This also includes connecting all pigtails, optical patch cords etc to the SDH equipments. This also includes connection of SDH and primary MUX equipment with all interface cards to the 48V Bus including supply of wires and connectors termination of all evens on DDF taking PVC cable over runway or a wall and termination of VF interface circuit to the Krone type.	Nos	1	293846.53	293846.53	293846.53
18	Supply of Pre Lubricated HDPE duct, 40 mm OD, 33 ID as per RDSO specification No. RDSO/SPN/TC/45/2013/Rev.2.0 or latest, The item also includes supply of all the accessories of HDPE duct like end caps, collars, bends, couplers etc.	Km	3.5	55991.62	195970.67	195970.67
19	Supply of Universal 2/4 wire way station control Telephone with PSU as per RDSO spec. no. IRS: TC:82: 2005) (with Amd. 1 or latest)	No	10	23480.26	234802.6	234802.6
20	Supply of 20 Pairs Krone type D.P. box as per Tech spec, make Hensel or superior.	No	6	2275.07	13650.42	13650.42
21	Supply of VF Transformers (2T/3T), 1120/470 Ohms as per RDSO Specn.No. IRS: TC-76/2000 with Amnd 1 or latest for emergency joints in 6-Quad Cable.	Nos	6	1069.84	6419.04	6419.04
22	Supply of Emergency Socket Box made of FRP material as per RDSO Specification No. RDSO/SPN/TC/44/2002 Version 2.0 Amendment No. 3 or latest.	No	5	5058.51	25292.55	25292.55
23	Supply of underground jelly filled 6-Quad cable of size 0.9 sqmm dia conforming to spec no. IRS:TC-30/2005 (Ver-1) with amd-5 or latest.	Km	4	400074.35	1600297.4	1600297.4
24	Supply of 24 Fibre Armoured OFC cable as per RDSO specn. No IRS-TC-55/2006 Rev-1 Amd.2 with latest amendment.	Km	4	115466.33	461865.32	461865.32
25	Supply of 10 Pair PUJF cable 0.63 mm dia PUJF telecom cables IRS:TC-41/97 amd-2 or latest	Km	0.3	153636	46090.8	46090.8
Total of Sch-A, Incl. of all taxes, duties, levies & GST@18%					3,626,940	3,626,940
Schedule-B						



Singal & Telecommunication Works

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26	Excavation of trench as per cable route plan, 1.2 mtr deep, 300mm wide at the bottom along main line in normal soil. This work includes covering of cable laid in trenches by loose soil for a layer of 50 mm thickness approximately before covering by shahabad stone/bricks, clearing of route, bushes etc and refilling of the trench by excavated soil and ramming after laying of the required quantity of cables as per instructions of Engineer at site. If it is not possible to reach the required depth at any location, then the contractor shall obtain prior approval of Engineer-in-charge before commencement of cable laying process and only then shall the proportionate payment be made to the contractor.	km	4	81568.44	326273.76	326273.76
27	Excavation of trench as per cable route plan, 1 mtr deep, 300mm wide at the bottom along main line in hard soil / murrum, This work includes covering of cable laid in trenches by loose soil for a layer of 50 mm thickness approximately before covering by shahbad bricks.	km	0.5	116506.82	58253.41	58253.41
28	Excavation of trench 1m deep and 300 mm wide across the track for Track crossing & refilling. The work shall be done as per existant practice of NWR & Instruction of Engineer.	Mtr	50	188.07	9403.5	9403.5
29	Preparation of cable duct 150mm wide x 300mm deep for laying of cable in rocky area and refilling the duct(after cable laying) with concrete mixture of proportion 1:3:6 and grouting ends at the either side of the rocky portion using concrete mixture with contractor's own materials and excavated earth to its original condition.	Mtr	200	805.07	161014	161014
31	Supply and placing of second class bricks in excavated trenches within station limit/ station area. The contractor shall arrange to place the bricks flat and position them breadth wise so that an average eight to nine bricks shall be laid.	Nos.	27000	17.59	474930	474930
30	Supply and fixing of protective screen of expanded metal 12 SWG of size 1200 x 1500 mm on signals as per std. practice in RE Area.	Nos	6	5896.23	35377.38	35377.38
32	Provision/installation of bonding with GI wire for track jumper & fish plate joints bonds. This will include drilling of 7.0/7.1/7.2 mm dia holes in rails(4 nos.) and provision of two jumpers for each bonds etc.with clipping of bonds etc.with contractors own tools as per instruction of rly engineer at site.	No	400	208.4	83360	83360
33	Termination of Outdoor Cables (Main Cables /tail cables) at both ends in location boxes, cable termination rack in relay room, station building, generator room etc. The item includes dressing of cables and wires with dressing threads as per standard practice. All material required for this item will be supplied by contractor. The outdoor cable shall be terminated in Relay Room, DG Room, ASM Room etc under supervision and instructions issued by Engr. incharge of the work.	Per cond. utor	1000	9.81	9810	9810
34	Fixing of ARA(M-6) Terminals /Screw less connectors / modular disconnect terminal blocks 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.(Supply of all above terminals have been covered separately.	no	100	14.51	1451	1451
35	Fixing of Medium class GI pipes 100 mm dia(4.5 mm thickness) as per IS 1239 (Part 1) : 2004 with coupling on culverts bridges as per Drg.No.CSTE/NWR/SOR/06 to 12 or at any other locations as decided by Site Engineer. It includes installation of all material required for fixing arrangement. Contractor will install flexible/corrugated HDPE pipe at the end of GI pipe along with any masonry work(if required) to protect the cables from sharp edges and sudden bends.	mtr	50	220.4	11020	11020
36	Placing of DWC HDPE/RCC/GI pipes along with collars in trenches at places near track and road, crossings, platform cuttings etc.	Rm	50	34.29	1714.5	1714.5



Singal & Telecommunication Works

S. No.	Description of S&T items	Unit	Qty.	Unit Rate Incl. of all taxes, duties, levies & GST@18%	Amount, Incl. of all taxes, duties, levies & GST@18%	Grand Total, Incl. of all taxes, duties, levies & GST@18% (INR)
37	Jointing of 4 / 6 quad /Signaling cable with Heat Shrinkable straight through Jointing Kit. All the material required for the work are to be arranged by contractor himself at his own cost except Thermo shrinkable Joint Kit/Rapid Joint Kit. After jointing the cable through test such as insulation test, continuity cable losses etc. to be carried out jointly with Railway Engineer. If any defect or any damage is observed during jointing, the contractor has to redo the joint free of cost.	no	6	1341.41	8048.46	8048.46
38	Horizontal direction drilling/boring without damage of surface road /track using Auger Machine(HDD machine). The bore shall be upto 200 mm dia & shall be done at the depth of minimum 1200 mm from the ground level. The ground level shall be considered ignoring the bank height of the bank of the road. The length of the bore shall be minimum 4 Mtrs long. This include insertion of different dia DWC-HDPE pipe/ GI pipes coupling etc. as per direction of Engineer In charge. Note:- Pipe Supply is not covered under this item. Contractor shall provide all material required for boring and adequate nos. of labours for proper laying of cables into the bore. Cable shall be laid cautiously so that it should not get damage due to rough handling & pressure on cable. Transportation at site and Installation of RCC cable route marker engraved and painted on both side along the route at every 50 meter and route diversion as per Drg. No 4014/00/CC4 or latest/ Stone marker.	mtr	50	1394.16	69708	69708
39	Transferring of Signaling/Telecom cables from existing Location box to New Location box . The work include breaking/ Dismantling of Existing foundation of locations, excavating and removing / segregating coils of 2C/6C/12C/19C/24C/30C/Quad cables which may be about 10 mtrs. 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 staff present at site. The cable is then to be inserted and terminated in new location box. The item includes neatly dressing of cable, making wiring tree etc.The material required to dressing /lacing will be arranged by contractor. The work is required to be done systematically and with due precaution during the block or disconnection within the time that may be allowed. The excavation work to be done carefully without damaging the cable to avoid undue failure. (Termination charges will be given separately). Note: Proportionate payment will be made if cable of other length. One No unit = One cable of 10 m length)	no	100	95.23	9523	9523
40	Shifting of Exposed cables. The item includes Removal of exposed cable from existing trench & laying the same in new trenches. Digging, Placing of capping/Half round RCC pipe covered separately.	km	2	7950.8	15901.6	15901.6
41	Laying of S&T Cables of various cores/ pairs/ quads in trenches/ GI pipes/ RCC pipes/ DWC pipes/ Trunking. This also includes laying of cables in track crossings & road crossings. Item includes provision of labels of coloured plastic adhesive tapes or any other identifiable material on each cable to give the cable number at each Gantry Post/hectometer post.(Cables will be meggered before and after its laying by contractor under supervision of Railway Representative and he will submit the meggering report of each testing). Length of the cable laid includes the length of the cable coiled for termination purposes.	Rm	8000	10.55	84400	84400



Singal & Telecommunication Works

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43	Installation of Unit Maintenance Free Earth as supplied under item no. 13.3 of Chapter 13 of SOR. It includes (i) Digging the earth to the required depth. (ii) Insertion of electrode. (iii) Filling of earth enhancing compound (Approx. 30 Kg) (iv) Provision of exothermic weld connections to copper tape of 25 mm x 6 mm x 150 mm to the earth electrodes. All material tools and features required for weld will be arranged by contractor. (v) This also includes CC cover 1.5 ft x 1.5 ft. 1 ft wall thickness 2 inch with cover 3 inch thickness. Cables 35 Sq mm/ 16 Sq mm/10 sq mm for connecting earth to busbar, busbar to busbar and busbars to various equipments. Earth electrode of 17.20 mm dia and 3.00 meter long high tensile low carbon steel circular rods molecularly bonded with copper and outer surface (minimum copper bonding thickness of 250 microns to made requirement of under writer's laboratories (UL) 467-2007 or latest. Copper strips of 150 mm x 25 mm x 6 mm to be welded with each earth electrode, copper strips of 300 mm x 25 mm x 6 mm for main equip- potential busbar, copper strips of 150 mm x 25 mm x 6 mm sub equip-potential busbar in relay room, power room and panel room. GI strip 25 mm x 2 mm for ring formation of earth pits Earth enhancement material in bags for each Earth Electrode. Inspection chamber of site 300 mm x 300 mm x 300 mm (Inside dimension) of approximate 50 mm thick with pulling hooks to cover the earth pits. Note: The installation of this item shall be carried out by the contractor as per RDSO Specn.No.RDSO/SPN/ 197/2008 or latest and conforming to RDSO Drg.No.S DO/RDSO/E&B/001 or latest.	Set	10	9111.13	91111.3	91111.3
44	Installation of Normal Earth Electrode for earthing of S&T installations as per standard practice and connecting it to the equipments which are required to be earthed including digging of earth pit 3mtr deep and fixing earth electrode pipe/casting of cement concrete enclosure with cover as per Drg.No.CSTE/NWR/SOR/14A & 14B.It includes installation of 7 strand GI wires as earth lead wires and soldering one end of earth lead wire to earth electrode and other end to the equipments as per instruction given by engineer including painting & writing of enclosure.	Nos	60	646.91	38814.6	38814.6
	Telecom Installation					
45	Supply,preparation,splicing and installation of straight joint for 24 fiber along with enclosures withh heat shrinkable splice protection, splicing of Optic fiber cable and testing as per RDSO/SPN/TC/68/2014, Rev.1.0 Amendment No. 1.1 or latest. All materials including Fusion splicing machine used for fiber splicing and, OTDR for testing and other testing materials if any shall be arranged by the contractor itself..	Nos.	6	14778.89	88673.34	88673.34
46	Supply, installation and complete wiring of optical fibre cable termination box for 24 fibres complete with base housing, base mountings with fixing arrangement etc & splicing of fibre with low loss of pigtail cables as per detailed spec mentioned in respective tender documents. Two pairs of fibres shall be derived from either side of OFC cable at every OFC cable hut provided at wayside stations through pigtails with FC/PC connectors and remaining fibres on either side will be made through by splicing. At OFC terminal stations/MW repeater stations, all fibre shall be derived from either side and to be terminated in OFC termination box through pig tails and FC/PC connector and testing of 2 x 24 fibre of cable with all connectors material is per the instruction of site engineer. The OFC termination box to be supplied as per TEC No. G/FTB 01-02 March-99 or latest. Splice losses in no case should be more than 0.1 dB. Necessary o dB connectors should be provided by contractor in OFC termination box.	Nos	6	28235.19	169411.14	169411.14
47	Supply and installation of Fiber Distribution Management system(24 F) complete with all accessories as per spec. RDSO/SPN/TC/37/2000 Rev.3(with latest amdt) suitable for termination of two numbers of 24 fiber OFC at Repeater station/cable hut and splicing of fiber with pigtail as per spec. This includes testing of OFC cable.(All items required for execution of work shall be supplied by the contractor)	Nos	6	43502.62	261015.72	261015.72



Singal & Telecommunication Works

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48	Installation, wiring, testing and commissioning of 2 Mb Programmable Primary Digital drop insert multiplexer as per RDSO Specs. IRS TC- 68/2004 (Amnd.1) or latest with conference facility and other stipulation to tender documents and fully wired for 30 channel complete with power supply card, remote control, supervision facility and all other accessories, installation material, manuals etc. It should have facilities to accommodate data interface card in multi drop mode and should be able to support cards needed for video conferencing and ISDN. It shall support NMS installed at Test Room and may operate local/remote location of entire section. It also includes submission of all technical documents, manuals and supply of all miscellaneous items which will be required for final testing and commissioning of system. The above MUX should be equipped with following circuits: - i) 2 wire/ 4 wire E&M VF circuits (minimum 16 nos ckts) ii) Subscriber loop circuits (minimum 4 nos ckts) iii) Exchange loop interface circuits (minimum 8 circuits) iv) This also includes connecting all pigtails, optical patch cords etc to the SDH equipments. This also includes connection of SDH and primary MUX equipment with all interface cards to the 48V Bus including supply of wires and connectors termination of all evens on DDF taking PVC cable over runway or a wall and termination of VF interface circuit to the Krone type.	No.	1	73461.63	73461.63	73461.63
49	Laying of Pre Lubricated HDPE duct, 40 mm OD, 33 ID as per RDSO specification No. RDSO/SPN/TC/45/2013/Rev.2.0 or latest. The item also includes supply of all the accessories of HDPE duct like end caps, collars, bends, couplers etc.	Km	3.5	13997.9	48992.65	48992.65
50	Blowing/Drawing of OFC cable in the HDPE duct, and in protective works already provided.	Km	4	12521.96	50087.84	50087.84
51	Construction of brick chamber of optical fiber cable straight through joint. It also includes supply and provision of all the material required for this item like bricks, sand, cement etc. The cement and sand should be in ratio 1:6	Nos	6	6100.45	36602.7	36602.7
52	Final location joint survey of proposed cable route plan(Quad/OFC Cable) and submission for approval of Railway. The details instruction/guidelines regarding joint survey and preparation of cable route plan are enclosed in Tender document. Contractor will submit two copies of prints with soft copy for 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 submission of final cable route plan on 75 micron standard polyester film which includes details of entire section in which Quad /OFC Cables are laid. Once Railway has approved/signed tracings for cable route plan then contractor will submit 6 (Six) sets of zerox copies for cable route plan in proper binding form. Fabrication and erection of emergency rail post along the side of Rly track as per the location given by site engineer. It includes supply, fixing and wiring of socket box on emergency rail post. It includes supply of all the items except the Rails and Cable which will be arranged/provided by Railway. The contractor will complete all related work along with excavation if required for erection/installation of emergency rail post. 6-Pin emergency socket will be supplied as per RDSO Spec.No.IRS:TC42/87. Each socket box should have inbuilt universal lock facility with key as per sample approved by site engineer. Note: Contractor will supply the emergency socket box only after sample got approved from site engineer.	km	4	1142.1	4568.4	4568.4
53		No	3	2606.9	7820.7	7820.7



Singal & Telecommunication Works

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54	Painting of emergency post and sockets in sections as per instructions of the site engineer in charge. This shall include all material, labour and transportation required for painting of emergency post and sockets in section.	no	3	288.23	864.69	864.69
55	Fixing and wiring of 20 Pairs Krone type D.P. box as per Tech spec, make Hensel or superior.	no	6	568.77	3412.62	3412.62
56	Supply, wiring, testing & installation of way station control equipment as per RDSO/SPN/TC/65/2007 with amnd-2 including latest amendment with necessary mounting arrangement on composite rack. It shall be 48 v DC operated to give connection to at least four station telephone & having facility to give more connection by using 3 way amplifier. Accepted Make/Brand-Marvel.	no	3	93502.25	280506.75	280506.75
	Total Sch-B, Incl. of all taxes, duties, levies & GST@18%				2,599,421	2,599,421
	Total Est. Sch-A + Sch-B (Incl. of all taxes, duties, levies & GST@18%), freight, insurance & inspection				6,226,361	6,226,361
				Quoted (%) by M/s. Encorp Powertrans Pvt. Ltd.		
				Total Quoted Value of Work Incl. of all taxes, duties, levies & GST@18% (INR)		
				-4.01%		
				5,976,683.92		



Signature Not Verified

Digitally signed by DEEPAK KUMAR KOSE
Date: 2023.02.09 18:21:47 IST
Location: eProcurement System for Central PSUs