

No.: IRCON/2060C/CGRP/e-Tender/24-25/GAD-PND/EL-04/LOA/16784

Dated 20.11.2024

To,

M/s RS Infraprojects Pvt Ltd

H-70, LANE W-10, Sanik Farms

NEW DELHI 110062

Email ID: projects.power@rsinfra.in**(Letter of Acceptance)**

Sub.: "Design, supply, erection, testing & commissioning of 25 Kv, 50 Hz, single phase, OHE traction system, TSS, switching posts in Sendurgarh- Pendra road section & SCADA work of Gevra- Pendra Road section, along with associated works in connection with new BG electrified Rail corridor in the state of Chhattisgarh over South East Central Railway." – **Letter of Acceptance.**

Ref.: 1) e-NIT No. IRCON/2060C/CGRP/e-Tender/24-25/GAD-PND/EL-04 dated 11.06.2024.

2) Corrigendum No-1, dated 18.06.2024

3) Corrigendum No-2, Date: 28.06.2024 & its amendment dated 29.06.2024

4) Technical Bid opened on 08.07.2024 & Financial bid opened on 02.09.2024

5) Your negotiated offer dated 07.10.2024.

1. The Competent Authority has accepted your offer for the work of "Design, supply, erection, testing & commissioning of 25 Kv, 50 Hz, single phase, OHE traction system, TSS, switching posts in Sendurgarh- Pendra road section & SCADA work of Gevra- Pendra Road section, along with associated works in connection with new BG electrified Rail corridor in the state of Chhattisgarh over South East Central Railway" at your offered cost of **Rs.153,73,77,807/- (Rupees one fifty three crores, seventy three lakh, seventy seven thousand eight hundred seven only)** inclusive of all taxes, duties, GST etc. The detailed bill of quantity (BOQ) is enclosed herewith as **Annexure-I**.
2. The completion period of work is **12 (Twelve) months** from the date of issue of letter of acceptance including monsoon period **i.e. up to 19.11.2025** as per clause no. 45 of SCC. This LOA shall be treated as notice of commencement of work.
3. It is requested to submit a Performance Security for an amount of Rs 7,68,68,890/- (Rupees Seven Crore Sixty Eight Lakhs Sixty Eight Thousand Eight Hundred Ninety only) @ 5% (Five percent) of the contract value in the prescribe form as per clause no 31.1/8.1 of SCC/GCC in favour of IRCON INTERNATIONAL Limited, within 21 days of issue of this letter.
4. The rates of following items shall not be taken for future comparison as LAR and quantity shall be restricted for positive variation.

- Schedule A :- OHE-22, 32, 37, 38, 41, 42, 43, 51, 52, 54 and OHE-9(a)
- Schedule B :- TSS-16, 17, 18, 24, 29, 52, 53
- Schedule C :- SCADA-3, 4, 5

मुख्य महाप्रबंधक(विद्युत)
इरकॉन इंटरनेशनल लिमि., बिलासपुर
Chief General Manager (Elect.)
Ircon International Ltd, Bilaspur

20.11.24

5. The negotiated offer (Ref-5) of L-1 bidder M/s R.S. Infraprojects Pvt Limited along with another similar work floated vide NIT Ref IRCON/2060/CGRP/e-TENDER/23-24/Surak- Sendurgarh /EL-02 dtd. 10.06.2024 for which LOA is being awarded separately.
6. This letter will constitute a legal and binding contract between Ircon International limited and M/s RS Infraprojects Pvt Ltd till such time the contract Agreement is signed. You will enter into and execute the contract agreement within 28 days from the date of issue of this letter as per clause no. 32/12.5 of SCC/GCC on the stamp paper of the requisite value as per the prevailing laws to be arranged at your cost.
7. All other terms and conditions shall be as per Tender documents, which shall form an integral part of this contract and shall be binding on you.
8. This letter is being issued to you in duplicate as per clause No. 23 of Instructions to Tenderer of Tender document, one copy of which may please be returned within 7 (seven) days of the issue of the LOA. Duplicate copy shall be duly stamped and signed and returned as a token of your unconditional acceptance
9. You are requested to contact Project Head/(CGM/Electrical) Bilaspur, Chhattisgarh for further instructions.

Thanking you

Encl: Annexure-I (BOQ)

Yours faithfully
For and on behalf of
Ircon international limited



(N.S. Bharel)

Chief General Manager/Electrical

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इरकॉन इंटरनेशनल लिमि., बिलासपुर
Chief General Manager (Elect.)
Ircon International Ltd., Bilaspur

Copy to:

1. Director/Projects for kind information
2. CEO/CEWRL, COO/CEWRL & CFO/CEWRL Raipur for kind information please.
3. PD/CGRP, CGM/Elect/CGRP for information & n.a. please.
4. GM/Fin./Bilaspur for information & n.a. please.
5. JGM/E/KHS & RIG and DGM/Elect/BSP for information & n.a.

ANNEXURE-I

Name of Work: Design, supply, erection, testing & commissioning of 25 Kv, 50 Hz, single phase, OHE traction system, TSS, switching posts in Sendurgarh- Pendra road section & SCADA work of Gevra-Pendra Road section, along with associated works in connection with new BG electrified Rail corridor in the state of Chhattisgarh over South East Central Railway.

SUMMARY OF BILL OF QUANTITIES

Sl.No	Schedule	Description	Basic Amount (Rs)
1	Schedule-A	25 KV OHE and SWS work	100,22,02,234
2	Schedule-B	132KV/25 KV TSS work	15,57,01,427
3	Schedule-C	SCADA Work	5,40,61,500
4	Total Basic amount (Sch. A, B & C)		1,21,19,65,161
5	GST @ 18%		21,81,53,729
6	Total amount inclusive of GST		143,01,18,890
7	Rate Quoted by L-1 Bidder @7.5% above inclusive of GST (i.e. By M/s R.S. Infraprojects Pvt Ltd)		1,53,73,77,807
8	Total awarded cost in words: Rupees one fifty three crores, seventy three lakh, seventy seven thousand eight hundred seven only		



(N.S. Bharel)

Chief General Manager/Electrical

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Chief General Manager (Elect.)
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Schedule-A - OHE work

Bill of Quantities- DESIGN, SUPPLY, ERECTION, TESTING & COMMISSIONING OF 25 KV, 50HZ, SINGLE PHASE, OHE TRACTION SYSTEM OF SENDURGARH-PND AND ASSOCIATED WORKS IN CONNECTION WITH NEW BG ELECTRIFIED RAIL CORRIDOR IN THE STATE OF CHHATTISGARH OVER SOUTH EAST CENTRAL RAILWAY (67 RKM/ 160TKM)

<i>Sr. No.</i>	<i>BOQ item No</i>	<i>Description</i>	<i>Unit</i>	<i>Qty</i>	<i>Supply Rate</i>	<i>Erection Rate</i>	<i>Total Supply Amount</i>	<i>Total Erection Amount</i>	<i>Total</i>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8= 5x6</i>	<i>9=5x7</i>	<i>10= 8+9</i>
	OHE General								
1	OHE-1	Preparation of drawings as well of site survey and submission of desired drawings for Overhead Equipment, Switching Stations, Sectioning diagram, Power supply diagram, Schematic diagram of Switching Statons, Traction working rule diagram and Instructions etc. required for commissioning including preperation and submission of EIG documents							
2	OHE-1 (a)	Submission of all Initial drawings/ Good for construction drawings for OHE	TKM	160	1264	18901	2,02,240	30,24,160	32,26,400
3	OHE-1 (b)	Submission of all As Erected drawings for OHE	TKM	160	543	8099	86,880	12,95,840	13,82,720
4	OHE-1 (c)	Submission of all Initial drawings/ Good for construction switching posts drawings	Job	4	0	23003	0	92,012	92,012
5	OHE-1 (d)	Submission of all As Erected switching post drawings	Job	4	0	9859	0	39,436	39,436
6	OHE-1 (e)	Provision of OHE section diagram board at stations/Cabin	No	5	0	8500	0	42,500	42,500
7	OHE-1 (f)	Preperation and submission of Station work rule (Appendix G) complete with SWR drawing	No	10	0	11000	0	1,10,000	1,10,000
8	OHE-2	Supply and Erection of Span wire (130 sq.mm) including mounting arrangements with 9-Ton insulators:.	Mtr	2200	808	73	17,77,600	1,60,600	19,38,200
9	OHE-3	Supply and Erection of materials for Termination of single conductor of overhead equipment or a terminating wire with 9-Ton insulators:	Each	21	10796	1095	2,26,716	22,995	2,49,711

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10	OHE-4	Supply and Erection of materials for Termination of all aluminum 25 KV feeder conductor single (spider) including feeder wire with 9-Ton insulators:	Mtr	11000	537	239	59,07,000	26,29,000	85,36,000
11	OHE-5	Supply and Erection of material for Termination of copper cross feeder with gantries including cross feeder wire with 9-Ton insulators:	Set	18	45737	1283	8,23,266	23,094	8,46,360
12	OHE-6	Supply and erection of terminal boards in control cubicles for SP/SSP	No.	4	11005	547	44,020	2,188	46,208
13	OHE-7	Supply and Erection of iron clad 240V AC or 110V D.C. board with fuse box in control cubicles,	Set	4	7294	249	29,176	996	30,172
14	OHE-8	Supply and Erection of Maintenance Free Batteries 110V, 40 AH with Battery Chargers:	Set	4	261791	10281	10,47,164	41,124	10,88,288
15	OHE-9 (a)	Supply, Erection, Oil Filtration, Testing and Commissioning of 25 KV/240 Volt, 10 KVA, LT supply transformer with 25 KV D. O. fuse switch, anticlimbing device, insulator, copper jumper and earth electrode etc:	Set	13	198825	14100	25,84,725	1,83,300	27,68,025
16	OHE-9 (b)	Supply, Erection, Oil Filtration, Testing and Commissioning of 25 KV/240 Volt, 25 KVA, LT supply transformer with 25 KV D. O. fuse switch, anticlimbing device, insulator, copper jumper and earth electrode etc:	Set	11	258586	14100	28,44,446	1,55,100	29,99,546
17	OHE-10	Modification to existing OHE i.e. Transfer of equipment from one mast or support to another, provision of additional bracket assembly/ assemblies on a mast or support, re-adjustment of a head-span, dismantling of Overhead Equipment, dismantling of feeder	Mtr	2000	0	46	0	92,000	92,000
18	OHE-11	Manning of switching station i.e. SP/SSP/TSS	month X location	48	46457	0	22,29,936	0	22,29,936
19	OHE-12	Electrification of switching station building as per specification	Each	4	0	44001	0	1,76,004	1,76,004
20	OHE-13 (a)	Supply & Erection of Earthing arrangement at switching station i. e. earth electrodes, earth bus, 50x6 mm MS flat, 8 SWG GI wire etc. to achieve IR value for energisation	job	4	19161	10058	76,644	40,232	1,16,876

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21	OHE-13 (b)	Excavation of Earth to the specified depth below the ground level and to bury 13 meters long rail (or suitable length mast) alongwith supply of rails/ masts & all accessories	each	8	40738	2494	3,25,904	19,952	3,45,856
22	OHE-14	Loading/ Unloading and transportation of all type of steel structures, portals, TTC, copper/ alluminium conductores and SPS etc. other than contractor material.	MTKM	4000	0	77	0	3,08,000	3,08,000
		Sub Total of (A)					1,82,05,717	84,58,533	2,66,64,250
(B)	Building Works								
23	OHE-15	Construction of Switching Station building, RCC work, plastering, brick masonry, retaining wall, filling, compacting and leveling work etc. and supply and erection of name board of switching station.	Each	4	570034	0	22,80,136	0	22,80,136
24	OHE-16	Supply and spreading of gravel/ ballast in the switch yard.	Cum	85	1189	9	1,01,065	765	1,01,830
25	OHE-17 (a)	Earth work involved in filling of earth in any excavation or low lying area (including compaction)	Cum	60	597	0	35,820	0	35,820
26	OHE-17 (b)	Boulder pitching on the slopes at locations of OHE structures/ switching posts	Cum	800	0	2575	0	20,60,000	20,60,000
		Sub Total of (B)					24,17,021	20,60,765	44,77,786
(C)	Other OHE Items								
27	OHE-18	Supply and Erection of material for termination of double Overhead Equipment conductor with insulators:	Each	430	15626	1506	67,19,180	6,47,580	73,66,760
28	OHE-19	Supply and erection of section insulator assembly with insulators and associated fittings & fasteners for OHE with Bar Insulator	Each	30	100322	7286	30,09,660	2,18,580	32,28,240
29	OHE-20	Supply and Erection of PTFE type short neutral section assembly:.	Each	8	1183920	7473	94,71,360	59,784	95,31,144
30	OHE-21	Supply and Erection of 25 KV, S.P Isolators 1600 Amps with insulator & with/ without earth contact assembly:	Each	22	103442	7536	22,75,724	1,65,792	24,41,516

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31	OHE-22	Supply and Erection of 25 KV double pole isolator with insulator & with/without earth contact assembly:	Each	16	160811	8254	25,72,976	1,32,064	27,05,040
32	OHE-23	Supply and Erection of suitable length of contact wire in the span under any overline structure; complete with supply and erection of end fittings, jumpers, PG clamps etc (however payment of contact wire shall be made under differenr BOQ item meant for it)	Each	70	2894	3886	2,02,580	2,72,020	4,74,600
33	OHE-24	Supply and erection of large copper jumper (160 sqmm) (Excluding jumper wire)between aluminium bus/ OHE and cross feeder with all associated fittings and materials required for same.	Each	64	11590	550	7,41,760	35,200	7,76,960
34	OHE-25	Supply and Erection of all types of connectors for aluminium / copper bus bar required for commissioning of switching stations with fasteners.	Each	250	6348	95	15,87,000	23,750	16,10,750
35	OHE-26	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 Stations.	Set	4	16866	3086	67,464	12,344	79,808
36	OHE-27	Supply and Erection of 25 KV AC OHE danger board / danger board for height gauge, public / staff caution board, Shock treatment charts at station buildings & SP/SSP etc. required for commissioning of OHE/SWSs.	Each	450	0	1632	0	7,34,400	7,34,400
37	OHE-28	Supply and erection of 25kv 1600/2000 Amps vacuum Interruptor	Each	15	329509	4024	49,42,635	60,360	50,02,995
38	OHE-29	Supply erection testing & commissioning of 25kv 2000 Amps single pole vacuumCircuit breaker with interlocking	Each	1	415331	5249	4,15,331	5,249	4,20,580
39	OHE-30	Supply, Erection, testing & commissioning of Control and Relay Panel for One CB as per RDSO spec. No. TI/PSI/PROTCT/6071 (for one CB)	Each	1	2249050	79578	22,49,050	79,578	23,28,628
40	OHE-31 (a)	Supply and erection of 25 KV Potential Trasformer Type-I or Type-II	Each	13	86765	832	11,27,945	10,816	11,38,761

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41	OHE-31 (b)	Supply & erection of 25kV Current Transformer (1500-750/5A)	Each	1	71236	692	71,236	692	71,928
42	OHE-32	Supply and erection of 42 KV Lightning Arrestor complete with its disconnector assembly	Each	17	58170	2305	9,88,890	39,185	10,28,075
43	OHE-33	Supply and installation of cables for all SWS	Mtr	1500	234	20	3,51,000	30,000	3,81,000
44	OHE-34	Supply and erection of Aluminium Jumper with Fastners and fittings	Each	50	2624	306	1,31,200	15,300	1,46,500
45	OHE-35	Supply and erection of Aluminium Bus Bar 50mm x 39mm	Mtr.	400	570	47	2,28,000	18,800	2,46,800
46	OHE-36	Supply and erection of anti-theft transformer 240 V/2.2. KV, 5 KVA with DO fuse switch. Excavation o cable trench, laying of cables, earthing, jumpering, DG set including dismantling of above equipments	each	0	84668	65045	0	0	0
		Sub Total of (C)					3,71,52,991	25,61,494	3,97,14,485
(D)	Insulators								
47	OHE-37	Supply of stay arm Porcelain insulator (CD-1050 mm)	Each	3900	3489	0	1,36,07,100	0	1,36,07,100
48	OHE-38	Supply of bracket Porcelain insulator (CD-1050 mm)	Each	3900	3447	0	1,34,43,300	0	1,34,43,300
49	OHE-39	Supply & Erection of 25 kV Support insulator with Fittings and Fasteners	Each	215	3767	150	8,09,905	32,250	8,42,155
		Sub Total of (D)					2,78,60,305	32,250	2,78,92,555
(E)	OHE Non Ferrous								
50	OHE-40	Supply and Erection of anti-creep wire using catenary wire (with supply of insulators, anticreep wire shall be paid separatly).	Each	135	7435	4232	10,03,725	5,71,320	15,75,045
51	OHE-41	Supply and Erection of Over Head Equipment i.e. contact & catenary wire (excluding cost of supply of contact , catenary dropper & Jumper wires) jumper wire, dropper wire, contact / catenary clips, fasteners and all other material required at turn out/ overlaps / diamond crossing. Final checking of OHE and adjustment, inspection to be done by Tower Wagon for commissioning of Conventional OHE.	TKM	160	0	67067	0	1,07,30,720	1,07,30,720

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52	OHE-42	Supply of contact wire (HDGCC 107 Sq.mm) and dropper wire	MT	200	1055298	0	21,10,59,600	0	21,10,59,600
53	OHE-43	Supply of cadmium copper catenary wire (65 Sq. mm) and all jumper wires	MT	140	1054674	0	14,76,54,360	0	14,76,54,360
54	OHE-44	Supply and erection of Copper Strips for equipment earthing	Mtr	200	1584	185	3,16,800	37,000	3,53,800
55	OHE-45	Erection of all type of copper jumpers (other than C, G, ATJ, F jumpers which are covered in OHE erection schedule) Jumper wires will be supplied in separate BOQ schedule)	Each	400	9004	550	36,01,600	2,20,000	38,21,600
		Sub Total of (E)					36,36,36,085	1,15,59,040	37,51,95,125
(F)	Concreting work								
56	OHE-46	Supply and erection of Concrete for Foundation and Plinth, in all types of soil/soft rock	CUM	9500	4865	1890	4,62,17,500	1,79,55,000	6,41,72,500
57	OHE-47	Supply and erection of Concrete for Foundation and Plinth in extra hard rock requiring use of rock breaker including breaking of exsisting foundation and recast	CUM	6500	5296	5171	3,44,24,000	3,36,11,500	6,80,35,500
58	OHE-48	Supply and erection of Concrete for Foundation and Plinth for Reinforced Concrete.	CUM	700	0	8699	0	60,89,300	60,89,300
		Sub Total of (F)					8,06,41,500	5,76,55,800	13,82,97,300
(G)	OHE Ferrous Items								
59	OHE-49	Supply and Erection of a guy rod assembly:	Each	740	11263	810	83,34,620	5,99,400	89,34,020
60	OHE-50	Supply and Erection of protective screen on FOBs/ ROBs:	Each	200	33091	0	66,18,200	0	66,18,200
61	OHE-51	Supply and Erection of bracket assembly without insulators as per OHE plan:	Each	3900	20744	1380	8,09,01,600	53,82,000	8,62,83,600
62	OHE-52	Supply and Erection of regulating equipment (modifie 3 pulley type) with counter weight assembly for conventional OHE	Each	360	99291	3290	3,57,44,760	11,84,400	3,69,29,160
63	OHE-53 (a)	Supply and erection of a structure bond/ Longotudinal bond/ Transverse and Special bond	TKM	160	26174	9225	41,87,840	14,76,000	56,63,840

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64	OHE-53 (b)	Supply and erection of Single earth electrode 3 mtr with connection to nearest traction rail/structure	Each	40	2434	1002	97,360	40,080	1,37,440
65	<u>OHE-54</u>	Supply and erection of all types of galvanized steel structures, small parts steel etc.	<u>MT</u>	1725	119767	7799	20,65,98,075	1,34,53,275	22,00,51,350
66	<u>OHE-55</u>	Supply and erection of fencing panels, Uprights, Gate and anti climbing device for SWS	<u>Mtr</u>	290	3794	124	11,00,260	35,960	11,36,220
67	OHE-56	Supply and erection of M-27 x 500 mm Hilty AM8.8 rod and core cutting of 32 mm dia into 400 mm depth and grouting with Hilty RE-500	Each	60	0	15316	0	9,18,960	9,18,960
68	OHE-57	Supply and erection of M-16 x 300mm Hilty V anchor and core cutting of 20 mm dia into 200mm depth and grouting with Hilty RE-500	Each	80	0	7078	0	5,66,240	5,66,240
69	OHE-58	Breaking and removal of concrete from already casted foundation with hand held rock breaker.	Cum	100	0	7942	0	7,94,200	7,94,200
		Sub Total of (G)					34,35,82,715	2,44,50,515	36,80,33,230
(H)	OHE Misc modification/dismantling Items								
70	OHE-59	OHE Miscellaneous Modification/dismantling of existing OHE as per individual rates mentioned below (Item 59(a) to 59(r))	LS				75,000	3,00,000	3,75,000
71	OHE-59 (a)	Slewing and reslewing of OHE	span		0	7676			
72	OHE-59 (b)	Splicing and extension of OHE	No.		3521	5061			
73	OHE-59 (c)	Adjustment of existing OHE & TW checking	span		0	678			
74	OHE-59(d)	Dismantling of OHE	km		0	28965			
75	OHE-59(e)	Dismantling of mast/ structure upright (by cutting)	Nos.		0	2709			
76	OHE-59 (f)	Dismantling of cantilever	Nos.		0	678			
77	OHE-59 (g)	Dismantling of feeder / return conductor	mtr		0	74			
78	OHE-59 (h)	Dismantling of section insulator	Nos.		0	3070			
79	OHE-59 (i)	Dismantling of SP/DP isolator	Nos.		0	2237			
80	OHE-59 (j)	Dismantling of portal boom pieces	Nos.		0	13831			
81	OHE-59 (k)	Dismantling of TTC boom	Nos.		0	5024			
82	OHE-59 (l)	Dismantling of Guy Rod	Nos.		0	688			
83	OHE-59(m)	Dismantling of Anti-creep	set		0	4423			

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84	OHE-59 (n)	Dismantling of Regulating Equipment with counter weight assembly	Nos.		0	2839			
85	OHE-59 (o)	Dismantling of post insulator	Nos.		0	490			
86	OHE-59 (p)	Dismantling of AT	Nos.		0	11408			
87	OHE-59 (q)	Dismantling of caution board	Nos.		0	82			
88	OHE-59 (r)	Dismantling of SPS	MT		0	6451			
89	OHE-60	Execution(Erection/dismantling) under power block @100% extra of erection/dismantling rate	LS					4,00,000	4,00,000
		Sub Total of (H)					75,000	7,00,000	7,75,000
(I)	Misc. Electrical General Work								
90	GS-1	Supply, Installation, testing and commissioning of cubical type mast mouted, dust & vermin proof, LT control switch board of 14 SWG CRCA sheet comprising conforming to IS:8623 (latest version), complete with stud type incoming and outgoing terminals suitable for 70 sq mm cable & hinged door & panel lock etc.							
91	GS-1 (i)	a) with TPN MCCB 63A, 35KA, Fixed type (Ics=100% Icu) - 1 no b) Copper busbars 200A (for 10 KVA AT)	Nos.	9	11369	3121	1,02,321	28,089	1,30,410
92	GS-1(ii)	a) with TPN MCCB 150A, 35KA, Fixed type (Ics=100% Icu) - 1 no b) Copper busbars 300A (for 25 KVA AT)	Nos.	10	13507	3708	1,35,070	37,080	1,72,150
93	GS-2	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:							
94	GS-2(i)	32 mm dia	Meter	50	193	35	9,650	1,750	11,400
95	GS-2(ii)	40 mm dia	Meter	250	229	39	57,250	9,750	67,000
96	GS-2(iii)	50 mm dia	Meter	100	297	52	29,700	5,200	34,900

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97	GS-3	Supply, erection, testing & commissioning of auto change-over type control and distribution panel for colour light signalling supply in 25KV AC traction system as per RDSO technical specifications No.TI/SPC/PSI/CLS/0023 including latest amendment.							
98	GS-3(i)	For-10 KVA AT	Nos.	4	53046	9321	2,12,184	37,284	2,49,468
99	GS-3(ii)	For 25 KVA AT	Nos.	5	112864	19829	5,64,320	99,145	6,63,465
100	GS-4	Supply, laying 1.1KV grade LT XLPE insulator armoured, aluminium conductor cable, making good the damages, end terminations with aluminium crimping socket/lugs, provision of cable route markers, testing and commissioning etc. as required as per Technical specifications:							
101	GS-4(i)	2 Crore 16 Sq. mm.	Meter	500	205	52	1,02,500	26,000	1,28,500
102	GS-4(ii)	2 Crore 70 Sq. mm.	Meter	5000	406	72	20,30,000	3,60,000	23,90,000
103	GS-4(iii)	2 Crore 185 Sq. mm.	Meter	18500	837	93	1,54,84,500	17,20,500	1,72,05,000
104	GS-4(iv)	Extra for provision of cable route marker	Nos.	250	247	13	61,750	3,250	65,000
105	GS-5	AC Sub distribution board 40 Amps with DP MCB 40 Amp, 1 for incoming, and 4 Nos 20 Amps DP MCB for outgoing	Nos.	10	3214	307	32,140	3,070	35,210
		Sub Total of (I)					1,88,21,385	23,31,118	2,11,52,503
	J	Total Cost in Rs. (A+B+C+D+E+F+G+H+I) (Schedule-A)							1,00,22,02,234
	K	GST @ 18% on above (=J*18%)							18,03,96,402
	L	Total Value inclusive of GST (=J+K)							1,18,25,98,636
	M	Quoted value by L-1 Bidder@ 7.5% above Inclusive of GST (Schedule-A) in Rs.							1,27,12,93,534

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Schedule-B (TSS work)
BOQ for DESIGN , SUPPLY , ERECTION , TESTING & COMMISSIONING OF 30/42 MVA , 132/27 KV TRACTION SUBSTATION
(Location - BHADI TSS)

<i>Sr. No.</i>	<i>SOR item</i>	<i>Description</i>	<i>Unit</i>	<i>Qty</i>	<i>Supply Rate</i>	<i>Erection Rate</i>	<i>Total Supply Amount</i>	<i>Total Erection Amount</i>	<i>Total</i>
1	TSS-1	Supply and erection of Concrete for Foundation and Plinth, in all types of soil/ soft rock (other than hard rock)	Cum	800	4865	1890	38,92,000	15,12,000	54,04,000
2	TSS-2	Supply and erection of Concrete for Foundation and Plinth in hard rock	Cum	35	5296	5171	1,85,360	1,80,985	3,66,345
3	TSS-3	Supply & erection of Reinforced concrete for Pier/ Column/ Pile, Cable Trench & Trench Covers, Drain, Baffle Wall and any equipment foundation (if required).	Cum	360	0	8699	0	31,31,640	31,31,640
4	TSS-4	Excavation of Earth to the depth of 1 mtr below ground level for burying 13 mtr long rail.	Nos.	1	40738	2494	40,738	2,494	43,232
5	TSS-5	Soil filling & Compaction in TSS Yard.	Cum	1000	597	0	5,97,000	0	5,97,000
6	TSS-6	Supply and spreading of Ballast/ Gravel in the Switch Yard.	Cum	400	1189	9	4,75,600	3,600	4,79,200
7	TSS-7	Providing of Cross Track in TSS	Route Mtr	80	0	31413	0	25,13,040	25,13,040
8	TSS-8	Supply and fixing of Rails for Transformer	Mtr	20	4814	561	96,280	11,220	1,07,500
9	TSS-9	Supply, Erection, testing & commissioning of 132 kV Tripple Pole SF-6 gas Circuit Breaker (1600 A) with interlock arrangement.	Nos.	2	795328	7474	15,90,656	14,948	16,05,604
10	TSS-10	Supply & erection of 132 kV Tripple Pole Isolator with/without Earth Blade Assembly (manually operated) (1250 A).	Nos.	5	321312	3242	16,06,560	16,210	16,22,770
11	TSS-11	Supply and Erection of 132 kV current transformer assembly (400-200/5A).	Nos.	4	269635	1673	10,78,540	6,692	10,85,232
12	TSS-12	Supply & erection of 120 kV lightning arrestors	Nos.	8	157774	1184	12,62,192	9,472	12,71,664
13	TSS-13	Supply, Erection, testing & commissioning of 25 KV single pole Vacuum Circuit Breaker 2000 A with interlocking arrangement.	Nos.	5	415331	5249	20,76,655	26,245	21,02,900

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14	TSS-14	Supply & erection of 25 kV Current Transformer (3000-1500/5A)	Nos.	6	106256	1455	6,37,536	8,730	6,46,266
15	TSS-15	Supply & erection of 25 kV current transformers (200-100/5A)	Nos.	1	57211	4075	57,211	4,075	61,286
16	TSS-16	Supply, Erection, Testing & Commissioning of Numerical Control & Relay Panel suitable for Double Transformers at Traction Substation.	Nos.	1	6012712	186441	60,12,712	1,86,441	61,99,153
17	TSS-17	Supply, Erection, Testing & Commissioning of Numerical Control & Relay Panel for Shunt Capacitor Bank.	Nos.	1	1463559	74576	14,63,559	74,576	15,38,135
18	TSS-18	Supply, Erection, testing and commissioning of 132/27 kV, 30/42 MVA, ONAN/ ONAF, Single Phase Traction Power Transformer as per RDSO Specification	Nos.	2	43120000	1980000	8,62,40,000	39,60,000	9,02,00,000
19	TSS-19	Supply and Erection of 25 kV Double Pole Isolators (3150 A) with interlocking arrangement & with insulators	Nos.	5	140588	4565	7,02,940	22,825	7,25,765
20	TSS-20	Supply and Erection of 25 kV Single Pole Isolators (3150 A) with interlocking arrangement & with insulators	Nos.	8	69713	2966	5,57,704	23,728	5,81,432
21	TSS-21	Supply, Erection, testing & commissioning of 25kV shunt capacitor banks of 5500 KVAR rating including Dry type low loss series reactor, 25kV Neutral Current Transformer (NCT) and control and relay panel for cap bank, etc.	Set	1	2760318	61762	27,60,318	61,762	28,22,080
22	TSS-22	Supply and Erection of 25 kV Vacuum Type Interrupter 2000 A	Nos.	5	329509	4024	16,47,545	20,120	16,67,665
23	TSS-23	Supply & Erection of 25 kV Potential Transformer (Type-I & Type-II)	Nos.	7	86765	832	6,07,355	5,824	6,13,179
24	TSS-24	Supply & erection of 42 kV Lightning Arrestor.	Nos.	7	58170	2305	4,07,190	16,135	4,23,325
25	TSS-25	Supply, Erection, Oil filtration, testing and commissioning of 25 kV/240 V, 25 KVA Auxiliary (LT) supply transformer, Oil type complete with 25 kV DO fuse switch, anticlimbing device, insulators, copper jumper and Earth electrodes etc.	Nos.	2	258586	14100	5,17,172	28,200	5,45,372
26	TSS-26	Supply and Erection of earth lead of 75mm x 8mm MS flat laid in the ground or exposed as per site requirement	Mtr	1200	182	57	2,18,400	68,400	2,86,800

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27	TSS-27	Supply and Erection of Earth leads 50mm x 6mm mild steel flat laid in the ground or exposed as per site requirement	Mtr	1200	89	45	1,06,800	54,000	1,60,800
28	TSS-28	Supply and Erection of 8 SWG G.I Wire for earthing	Mtr	120	16	19	1,920	2,280	4,200
29	TSS-29	Supply and erection of 40/36 mm dia MS Rod for earth mat	Mtr	3800	418	20	15,88,400	76,000	16,64,400
30	TSS-30	Supply & Erection of earth screen wire (19/2.5mm) including termination	Mtr	400	232	14	92,800	5,600	98,400
31	TSS-31	Supply and erection of all types of Galvanized steel structures, small parts steel etc.	MT	50	119767	7799	59,88,350	3,89,950	63,78,300
32	TSS-32	Supply and erection of Fencing Panels, Uprights, Gate and Anti-Climbing device	Mtr	380	3794	124	14,41,720	47,120	14,88,840
33	TSS-33	Supply and Erection of Earth electrode for TSS as per requirement.	Nos.	60	2434	1002	1,46,040	60,120	2,06,160
34	TSS-34	Supply and Erection of copper Jumper with fittings and fastener required for TSS	Nos.	24	3276	483	78,624	11,592	90,216
35	TSS-35	supply and erection of copper cross feeder wire 150 Sq. mm including 9 ton insulators and all materials for its termination	Set	8	45737	1283	3,65,896	10,264	3,76,160
36	TSS-36	Supply of materials and erection of a large copper jumper (160 sq mm) between Aluminium Bus/ OHE and cross feeder with associated fittings	Nos.	4	10188	468	40,752	1,872	42,624
37	TSS-37	Supply and installation of copper control cables of required sizes and strands.	Mtr	10000	187	17	18,70,000	1,70,000	20,40,000
38	TSS-38	Supply & erection of tubular aluminium busbars 88/76.2 mm dia	Mtr	40	849	85	33,960	3,400	37,360
39	TSS-39	Supply & erection of tubular aluminium busbars 50/39 mm dia	Mtr	300	570	47	1,71,000	14,100	1,85,100
40	TSS-40	Supply & erection of 'ZEBRA' ACSR Conductor	Mtr	400	352	10	1,40,800	4,000	1,44,800
41	TSS-41	Supply & erection of all types connectors, Bus splice & TEE connectors etc. required for commissioning of TSS equipment	Nos.	270	2181	30	5,88,870	8,100	5,96,970
42	TSS-42	Supply & erection of 132 kV Support Insulator with fittings and fasteners	Nos.	15	32912	561	4,93,680	8,415	5,02,095

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43	TSS-43	Supply & erection of 25 kV Support Insulator with fittings and fasteners	Nos.	50	3800	150	1,90,000	7,500	1,97,500
44	TSS-44	Supply and erection of 132 KV termination (with/without adjuster) complete with Disc Insulators	Nos.	16	11930	293	1,90,880	4,688	1,95,568
45	TSS-45	Design and drawings for 132/25 kV Traction Sub-station including Feeding Post and Capacitor Banks & General Electrical cable layout Plan	Nos.	1	0	117184	0	1,17,184	1,17,184
46	TSS-46	Supply & Erection 110 V, 200 AH Low Maintenance Lead Acid Batteries set.	Set	1	327558	16991	3,27,558	16,991	3,44,549
47	TSS-47	Supply & Erection of Battery Chargers for 110 V 200 AH Battery Bank	Nos.	2	192761	9989	3,85,522	19,978	4,05,500
48	TSS-48	Supply, Erection and Commissioning of 240V AC and 110V DC Distribution Boards in the control room for TSS	Nos.	1	30828	700	30,828	700	31,528
49	TSS-49	Supply of TSS testing equipments	LS	1	147184	0	1,47,184	0	1,47,184
50	TSS-50	Supply of TSS T&P	LS	1	285639	0	2,85,639	0	2,85,639
51	TSS-51	Supply of single phase Relay testing kit (Megger make) for all types of numerical relays with all accessories with suitable lap top of Dell/HP make of 15.6 inch monitor of 11th/12th generation or latest	Set	0	1061922	0	0	0	0
52	TSS-52	Supply erection testing and commissioning of 132 kV CT(400-200/1-1A,CL-0.2s) for metering purpose make as per approved list of CSPC	Nos.	4	503002	1673	20,12,008	6,692	20,18,700
53	TSS-53	Supply erection testing and commissioning of 132 kV PT(132/110V, CL-0.2) for metering purposes make as per approved list of CSPC	Nos.	8	359950	1597	28,79,600	12,776	28,92,376
54	TSS-54	Supply erection testing and commissioning of ABT type meter for metering purpose make as per approved list of CSPC	Nos.	2	333273	1673	6,66,546	3,346	6,69,892
55	TSS-55	Construction of TSS building (as per RDSO design), Piling, RCC work, plastering, brick masonry, retaining wall, Plumbing work, providing 1000 Ltr capacity water tank, construction of septic tank, finished toilet, provision of doors windows, tiling work, filling,	Job	1	0	5007113	0	50,07,113	50,07,113

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		compacting and leveling work etc. and supply and erection of name board of TSS.							
		GS & MISC Items for TSS			0	0			
56	GS-1	Wiring for light/ ceiling fan/ exhaust fan/ call bell/ light group etc. Point including circuit wiring, sub-main wiring with Fire Retardant (FR)< PVC insulated, multistranded, copper conductor, single core cable on surface/in recessed PVC conduits, distribution boards, sub distribution boards, earthing etc as required, wiring shall be done as per size of cables. no of points permissible in each and sub main as indicated in Explanatory Notes.	Point	80	0	1500	0	1,20,000	1,20,000
57	GS-2	Wiring for power plug point including circuit wiring, sub main wiring, with fire retardant (FR) PVC insulated, multistranded, copper conductor, single core on surface/in recessed PVC conduits, distribution boards, sub distribution boards, earthing with G.I. Pipeelectrode etc as required. Wiring shall be done as per sizes of cables, no. of points permissible in each circuit and sub main as indicated in Explanatory Notes.	Point	20	0	2752	0	55,040	55,040
58	GS-3	Supply, installation, testing and commissioning of 230 V 1200/1400 mm (Without Regulator) A.C. ceiling fan with double bell bearing and suitable capacitor compelte with wiring with 1.5sq mm FR, PVC insulated, copper conductor single/three core cable as instructed. Etc as required.	Nos.	12	2114	353	25,368	4,236	29,604
59	GS-4	Supply and fixing of tepped type, electronic fan regulator with suitable rating for the C/Fan on the existing phenoic laminated sheet copper plate/modular plate of switch box, including connections, testing & commissioning as required.	Nos.	12	405	94	4,860	1,128	5,988
60	GS-5	Supplying, installation, testing and commissioning of LED lamp 5-15 watts, 250 volts, 2 pin, equivalent to compact flourescent lamp (11-23 W CFL) completed with electronic ballast.	Nos.	20	212	35	4,240	700	4,940

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61	GS-6	Supply, erection, testing and commissioning of LED Street Light 70-75 W fitting with luminaries, 220-240V AC 50Hz, CRI>70, IP-65, power factor >0.95 cool while, intergral driver, lumen output 3500lm, confirming to IEC 60598 and IS 10322 and railway specification. Make Crompton Greaves, Phillips, Halonix, Havells.	Nos.	15	17634	527	2,64,510	7,905	2,72,415
62	GS-7	Supply and installation of 1x20W LED Tube light fitting complete with LED lamp similar to phillips Model No.TMC 501 P1xT-LED 22W P3241 or equivalent or as per railway specification as approved by engineer.	Nos.	30	1872	126	56,160	3,780	59,940
63	GS-8	Supply, erection, testing and commissioning of flood light LED light similar of phillips model BVP 410 LED 144 CW HE NB FG S3 XT IP 65,220-240V 140W or equivalent as approved by engineer, nominal made of LM6 PDC Housing and cover, mounting C clamp/fixture complete	Nos.	4	46496	630	1,85,984	2,520	1,88,504
64	GS-9	Supplying, erection, testing and commissioning of 300 mm 900 rpm exhaust fan suitable for I-Phase, 230 Votts, AC supply complete with capacitor, louver shutters, grouting bolts with nuts, making opening/ modification in the wall to suit the size of the fan. Making good the damages. connections with 1.5 sq mm, FR.PVC insulated, multistranded copper conductor, single core/three cable as instructed, earthing etc. as required.	Nos.	4	3202	524	12,808	2,096	14,904
65	GS-10	Supply & Erection of B Class 40 mm dia GI Pipe	Mtr	40	327	52	13,080	2,080	15,160
66	GS-11	Supply & Erection of B Class 50 mm dia GI Pipe	Mtr	50	422	69	21,100	3,450	24,550
67	GS-12	Supply & Erection of B Class 65 mm dia GI Pipe	Mtr	50	532	90	26,600	4,500	31,100
68	GS-13	Supply & Erection of B Class 80 mm dia GI Pipe	Mtr	100	709	116	70,900	11,600	82,500
69	GS-14	Supply & Erection of B Class 100 mm dia GI Pipe	Mtr	50	999	164	49,950	8,200	58,150
70	GS-15	Supply & Erection of B Class 150 mm dia GI Pipe	Mtr	30	1624	268	48,720	8,040	56,760

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71	GS-16	Supply, laying of 2CX16 Sq. mm. 1.1 kV grade LT XLPE insulated armoured, Al conductor cable, making good the damages, end terminations with Al crimping socket/lugs, provision of cable route markers, testing and commissioning etc. as required as per Technical specifications:	Mtr	3000	292	69	8,76,000	2,07,000	10,83,000
72	GS-17	Supply & Erection of 7 mtr G.I Octagonal Pole for Street Light	Nos.	15	15128	3879	2,26,920	58,185	2,85,105
73	GS-18	Supply & Erection of Single arm bracket suitable for street light fixture	Nos.	15	455	117	6,825	1,755	8,580
74	GS-19	Supply of furniture set for substation Control Room	Set	1	75134	0	75,134	0	75,134
75	GS-20	Supply of Ladder Set	Set	1	128561	0	1,28,561	0	1,28,561
76	GS-21	Supply and installation of single phase 2 HP submersible pump set make CRI/CG or equivalent of any reputed make	Nos.	2	44955	9560	89,910	19,120	1,09,030
77	GS-22	Supply & connection of single submersible cable of size 1 x 3 x 2.5/4 sq mm	Mtr	100	112	9	11,200	900	12,100
78	GS-23	Supply fixing connection testing commissioning of single phase 2 HP control panel	Nos.	1	3203	374	3,203	374	3,577
79	GS-24	Supply & erection of AC Distribution Board 40 A with following MCBs- 1. Incomer MCB 40 A -1 No. 2. Outgoing MCB 6-20 A -4 Nos.	Nos.	2	3214	307	6,428	614	7,042
	A	Total Cost in Rs. (Schedule-B)							15,57,01,427
	B	GST @ 18% on above (=A*18%)							2,80,26,257
	C	Total Value inclusive of GST (=A+B)							18,37,27,684
	D	Quoted value by L-1 Bidder @ 7.5% above inclusive of GST (Schedule-B) in Rs.							19,75,07,260

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Schedule-C (SCADA Work)									
Bill of Quantities for SCADA work of CEWRL work between Gevra Road to Pendra Road									
SI No	BOQ ITEM No	Description	Unit	Qty.	Rate (Rs)		Amount in Rs		Total Amount in Rs
					Supply	Erection	Supply	Erection	
1	SCADA-1	Preparation and supply of Design & Drawing for SCADA at RCC,TSS, SP & SSP	Job	1	0	4,32,076	0	4,32,076	4,32,076
2	SCADA-2	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 as per RDSO Spec No. TI/SPC/RCC/SCADA/0134	Job	1	0	6,90,582	0	6,90,582	6,90,582
3	SCADA-3	Supply, Erection, Testing & Commissioning of Remote Station Equipments at remote stations as per RDSO Spec No. TI/SPC/RCC/SCADA/0134 for TSS (For Double Line Section).	Each	3	15,84,280	1,20,021	47,52,840	3,60,063	51,12,903
4	SCADA-4	Supply, Erection, Testing & Commissioning of Remote Station Equipments at remote stations as per RDSO Spec No. TI/SPC/RCC/SCADA/0134 for SP (For Double Line Section).	Each	4	13,92,246	1,05,619	55,68,984	4,22,476	59,91,460
5	SCADA-5	Supply, Erection, Testing & Commissioning of Remote Station Equipments at remote stations as per RDSO Spec No. TI/SPC/RCC/SCADA/0134 for SSP (For Double Line Section).	Each	4	13,92,246	1,05,619	55,68,984	4,22,476	59,91,460
6	SCADA-6	Supply, Erection, Testing & commissioning of Maintenance Free/Low Maintenance type 200AH Lead Acid battery.	Set	2	3,23,704	16,991	6,47,408	33,982	6,81,390
7	SCADA-7	Supply of 10% spare cards for operation & maintenance as per RDSO Spec No. TI/SPC/RCC/SCADA/0134	Job	1	15,89,081	0	15,89,081	0	15,89,081

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8	SCADA-8	Provision of Full Cyber Security hardware upgrade as per RDSO Spec No. TI/SPC/RCC/SCADA/0134 of existing SCADA. (Existing SCADA Computer Hardware will be retained.)	Job	1	2,92,83,395	4,61,441	2,92,83,395	4,61,441	2,97,44,836
9	SCADA-9	Upgradation of existing SCADA Software at RCC as per RDSO Spec No. TI/SPC/RCC/SCADA/0134.	Job	1	0	23,30,508	0	23,30,508	23,30,508
10	SCADA-10	Integration of energy data of TSS with State Load Dispatch Centre for Traction Energy Management System.	-	-	-	-	-	-	-
11	SCADA-10(a)	Integration of the energy data of TSS from RCC to SEMC	Each	3	0	2,20,839	0	6,62,517	6,62,517
12	SCADA-10(b)	Integration of the energy data from SEMC to SLDC	Each	3	0	2,20,839	0	6,62,517	6,62,517
13	SCADA-11	Modification/Integration of additional BM/CB's in the existing RTU's including RCC Software Modification at RCC with amendments compatible with existing SERVER	Job	2	0	86,085	0	1,72,170	1,72,170
	A	Total Cost in Rs. (Schedule-C)							5,40,61,500
	B	GST @18% on above (=A*18%)							97,31,070
	C	Total value inclusive of GST (=A+B)							6,37,92,570
	D	Quoted rate by L-1 Bidder @ 7.5% above (Schedule-C)							6,85,77,013

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(N.S. Bharel)
Chief General Manager/Electrical

मुख्य महाप्रबंधक(विद्युत)
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Chief General Manager (Elect.)
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