

VOLUME-II

BILL OF QUANTITIES

PREAMBLE TO BILL OF QUANTITIES

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1. SCOPE

The scope incorporated in the BOQ of the present tender schedule is provisional and includes “Supply, Erection, Testing and Commissioning of 220 KV and 132 KV Transmission Lines modification/diversion/shifting works for Package-V section between Km:169 to Km.190 which are infringing the Yavatmal-Nanded New Broad Gauge Line in the state of Maharashtra, India”.

- 1.1 This Section deals with prices to be paid for supply and/or erection of various items of work in accordance with the accepted rates and the terms and conditions of payment mentioned herein and in the Bill of Quantities. This is a composite works contract. The total prices for the completed items of work are the actual prices payable to the contractor as per the terms and conditions of the contract.
- 1.2 The price quoted also include MSETCL/RITES/RDSO representative inspection and testing charges unless otherwise specified in the bill of quantities or Technical Specification. In case of change of inspection from MSETCL /RDSO/RITES to RVNL/CONSIGNEE, 1% of the cost of material will be deducted by RVNL as inspection charges.
- 1.3 The unit prices indicated under “Supply” in the Schedules are inclusive of prices of materials and all incidental charges for transport, loading/unloading, handling, commission for arranging dispatch direct from manufacturers’ works and completing all formalities in this regard. The prices also include taxes, duties, levies (including octroi) applicable on works contract, insurance/bank guarantee/indemnity bond/stamp duty charges etc. The prices also include provision for losses and wastages in transit and erection. The prices also include inspection charges for MSETCL /RITES/Railway Adviser/RDSO/ Employer inspection.
- 1.4 The unit prices indicated under “Erection” in the Schedules are inclusive of the cost of erection and testing and also include all costs of administration of the contract, insurance premium, banker’s charges, cost of stamps/storage/ loading/unloading and handling of materials and also include the cost of any transport which the contractor may use for carriage of material between his depot and site of work. The unit prices also include cost of works and adjustments that may become necessary during or after the commissioning tests.
- 1.5 The Bill of Quantities (BOQ) shall be read in conjunction with the Instructions to Bidders, General Conditions of Contract, Particular Conditions of Contract, Works Requirements, Technical Specifications, Explanatory Notes, Payment Conditions, pre-bid clarifications and Addenda & Corrigenda if any

2. PAYMENT PROCEDURE FOR SCHEDULE A, B, C, D, E & G

- 2.1 On Account Payment Against Supply of Material of schedule A, schedule C & Schedule-G (Supply of Monopoles Only)

On Account Payment’ shall be made to the extent of **80% of** the accepted supply rate, after receipt of material at site and its acceptance by the Engineer against items under Schedule – A, Schedule-C and Schedule-G. for which direct supply rates are available.

On Account payment' will be subject to the following:

2.1.a No 'On Account payment' will be made on supply of concreting materials

2.1.b "On account payment" against schedule – A, schedule C & schedule - G shall only be considered after receipt of tower structural as per the approved bill of materials at Contractor's Depot/s, its account AI, proper storage and protection against loss, damage or deterioration

2.1.c All invoices shall be accompanied with the following for the purpose of arranging 'On Account Payment' against the Contract:

2.1.c.i Supplier's Challans.

2.1.c.ii Inspection certificate granted by the authorized approved agency/Purchaser's representative.

2.1.c.iii Certificate of receipt of material at Contractor's depot/s duly accepted by the Engineer.

2.1.c.iv Comprehensive Insurance Policy for supply and safe custody of material.

2.1.c.v Indemnity bond for any loss, damage or deterioration of material for equivalent amount towards materials supplied for which On Account Payment is claimed.

2.1.c.vi Quality assurance documents.

2.1.d On Account Payment for supply shall be made to the extent of **15%** of the accepted supply rate, after erection of equipment's/towers/conductor at site and its acceptance by the Engineer.

2.2 PROGRESS PAYMENTS FOR ERECTION Schedule B, D, E & G (Erection and Foundation Items)

2.2.a On completion of foundations, the Contractor shall receive payments to the extent of 95% of the accepted prices for foundations.

2.2.b For erection other items, the contractor shall receive payment to the extent of 95% of the accepted prices for erection.

2.3 PAYMENT ON PROVISIONAL ACCEPTANCE

On issue of Provisional Acceptance Certificate, the Contractor shall receive payment of balance 5% of the accepted price for supply and erection & ERS work.

3. PAYMENT PROCEDURE FOR Right of Way (ROW):

3.1 Resolving of issues related to Right of Way (ROW), if any, will be sole responsibility of the contractor. Though, RVNL will extend possible assistance, if required. Notwithstanding above, contractor will be responsible for sorting out ROW issues.

3.2 In the proposed transmission line work towers of different types are required to be erected of 132 KV & 200 KV transmission line. The payment for Forest clearance fee, Tree cutting compensation, Crop Compensation, Land compensation etc will be reimbursed on actual basis of total compensation paid by contractor to land owners for Transmission Line work,

after submission of documentary proof of payment duly signed by MSETCL/RVNL/PMC supervisor, land owner, contractor and concern department.

The actual amount will be reimbursed to contractor for payment made towards Forest clearance, Tree cutting compensation, Crop Compensation & Land compensation as per the rates fixed by the respective District authorities. The payment will be reimbursed to the contractor on actual basis after submission of documentary proof of actual payment made duly signed by state/revenue authority after evaluation of land compensation charges.

3.3 All the payments related with ROW issues such as State government fees, Court fee charges, arranging meetings with District authorities etc. will be paid by the contractor. This amount will also be reimbursed on submission of documentary proof supported by "Government Receipts" and/or receipts of "Authorized Government Bodies".

4. PAYMENT ON PROVISIONAL ACCEPTANCE

On issue of Provisional Acceptance Certificate and submission of the approved completion drawings for Materials and Works the Contractor shall receive balance payment differently for different schedules so as to make the payment against each schedule.

5. FINAL SETTLEMENT

On expiry of the defect liability period and issue of the Taking-over certificate by MSETCL of the entire transmission line and installations, the Performance security will be refunded or Bank Guarantee released to the contractor after adjustment of any dues payable by the contractor.

6. SURPLUS MATERIAL

The material found surplus beyond the quantity required for actual execution of the work and specified in the bid document as a requirement for spares, if any, will be the property of contractor and he has to take them back provided on account payment paid to him during execution of the contract has been fully adjusted against progress payment wherever required, otherwise balance ONA amount yet to be adjusted will be recovered from the contractor before they take back to the material for their use.

7. RECOVERIES FROM THE CONTRACTOR

All the recoveries for materials supplied and services rendered by the Purchaser to the Contractor and other refunds due from the Contractor shall ordinarily be made by deductions from payments due to the Contractor covering the value of supply and erection in the progress payment for erection, and from payment on provisional Acceptance.

8. TAXES AND DUTIES


8.1 While quoting the rates, Bidders shall consider the various provisions of the Central Goods and Service Tax Act 2017 (CGST) / Integrated Goods and Service Tax Act 2017 IGST / Union territory Goods and Service Tax Act (UTGST) / Respective states State Goods and Service Act (SGST) also, as notified by central / state government and as amended from time to time and all taxes, duties and levies applicable to the contract. Bidders shall also ensure full benefit of Input Tax Credit (ITC) likely to be admissible to them is duly considered while quoting rates.

8.2 The successful bidder who is liable to be registered under CGST/IGST/UTGST/SGST Act shall submit GSTIN along with other details required under CGST/IGST/UTGST/SGST Act

to the employer within 28 days from date of award of the contract, without which no payment shall be released to the contractor. The contractor shall be responsible for deposition of applicable GST to the concerned authority. In case the successful bidder is not liable to be registered under CGST/IGST/UTGST/SGST Act, the employer shall deduct the applicable GST from his/their bills under Reverse Charge Mechanism (RCM) and deposit the same to the concerned authority.

8.3 Inspection and testing charges through the nominated agencies will be deemed to be included in the accepted rates, unless otherwise specified in the Bill of Quantities or Technical Specifications.

9. PRICE VARIATION: Price Variation Clause is applicable

RAIL VIKAS NIGAM LIMITED								
Summary Sheet of Bill of Quantities								
E tender No				IFB No: RVNL/NGP/YTL-NED/MOD TL/PKG-3C				
 रेल विकास निगम लिमिटेड Rail Vikas Nigam Limited				Supply, Erection, Testing and Commissioning of 220 KV and 132 KV Transmission Lines modification/diversion/shifting works for Package-IIIC section between Km:169 to Km.190 which are infringing the Yavatmal-Nanded New Broad Gauge Line in the state of Maharashtra, India				
S. No.	Bill No.	Description of Schedule	Estimated Cost as per SBOQ rates (in Rs.) with 18% GST	Updation % over SBOQ Rates	Estimated cost put to tender after updation of rates	Rate quoted by Contractor		Price in Rs.
						Percentage in Figures (over column 6)	Mention whether Percentage quoted in column 7 is above/below/at par over estimated rates	In Figures
1	2	3	4	5	6	7	8	9
1	Schedule-A	220 KV (D/C, S/C & M/C) Transmission Line Supply Items	15,03,30,938.80	0.00%	15,03,30,938.80			
2	Schedule-B	220 KV (D/C, S/C & M/C) Transmission Line Erection Items	10,92,39,216.44	0.00%	10,92,39,216.44			
3	Schedule-C	132 KV (D/C) Transmission Line Supply Items	1,74,30,174.50	0.00%	1,74,30,174.50			
4	Schedule-D	132 KV (D/C) Transmission Line Erection Items	62,58,955.39	0.00%	62,58,955.39			
5	Schedule-E	ERS Hiring and Erection items for 132 KV & 220 KV	5,47,52,759.94	0.00%	5,47,52,759.94			
6	Schedule-F	Site Facilities	17,08,486.36	0.00%	17,08,486.36			
7	Schedule-G	Supply, Foundation and Erection of Monopole towers	9,42,13,745.00	0.00%	9,42,13,745.00			
		Total in Rs.	43,39,34,276.44	0.00%	43,39,34,276.44			

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						Percentage in Figures (over column 6)	Mention whether Percentage quoted in column 7 is above/below/at par over estimated rates	In Figures
1	2	3	4	5	6	7	8	9
Note 1:								
	Please refer to ITB 14 while filling the rates in the summary sheet.							
(b)	Please mention in column 8 whether the percentage rate mentioned in columns 7 are above or below or at par over the estimated rates.							
(c)	Bidder should ensure that the rates are filled with due care and caution so as not to lead to any omission or discrepancy or ambiguity.							
Note 2:								
(a)	While quoting their rates, Bidders shall consider the various provisions of The Central Goods and Services Tax Act, 2017(CGST)/ Integrated Goods and Services Tax Act, 2017(IGST)/ Union Territory Goods and Services Tax Act, 2017 (UTGST)/ respective state's State Goods and Services Tax Act (SGST) also, as notified by Central/State Govt & as amended from time to time and all taxes, duties, and levies applicable to the contract.Bidders shall also ensure that full benefit of Input Tax Credit (ITC) likely to be admissible to them is duly considered while quoting rates.							
(b)	The successful bidder who is liable to be registered under CGST/IGST/UTGST/SGST Act shall submit GSTIN along with other details required under CGST/IGST/UTGST/SGST Act to the Employer within 28 days from the date of the award of contract, without which no payment shall be released to the contractor. The contractor shall be responsible for deposition of applicable GST to the concerned authority. In case the successful bidder is not liable to be registered under CGST/IGST/UTGST/SGST Act, the Employer shall deduct the applicable GST from his/their bills under reverse charge mechanism (RCM) and deposit the same to the concernedauthority.							
Note 3: Column 5 to be updated by RVNL officials only.								

Supply, Erection, Testing and Commissioning of 220 KV and 132 KV Transmission Lines modification/diversion/shifting works for Package-IIIC section between Km:169 to Km.190 which are infringing the Yavatmal-Nanded New Broad Gauge Line in the state of Maharashtra, India					
SCHEDULE-A					
220 KV (D/C, S/C & M/C) Transmission Line Supply Items					
S. N.	Description	Unit	Unit Rate	Quantity	Amount in Rs
1	Fabrication, Galvanising, Supply at site store of 220 kV D/C, MC towers (Viz. 2 ⁰ , 15 ⁰ , 30 ⁰ , 60 ⁰) of normal type, its extensions, including special towers for all type of crossings, with set of stubs, Superstructure, step bolts, U-bolts, D'Shackles, Chain links etc, with all other tower accessories, complete in all respect as per approved design & drawings provided by the Purchaser.	MT	115606.52	650.00	75144238.00
2	Supply at site store of Galvanised Bolts & Nuts with Spring Washers, Plain washers for 220kV Line towers/Structures/Accessories	MT	191179.1	24.00	4588298.40
	Supply of Tower accessories				
3	a) Danger Board	EA	347.4	60	20844.00
4	b) Number Plate	EA	289.14	60	17348.40
5	c) Phase plates (set of RYB)	EA	463.18	120	55581.60
6	d) Circuit Plate (Set of C1,C2)	EA	480.04	60	28802.40
7	e) Anti-climbing devices with Barbed wire.	EA	5681.68	60	340900.80
8	f) Bird guard	EA	783.11		0.00
	Insulators and hardware:				
9	a) 220 kV 70KN (N) Porcelain insulator	EA	931.3	1600	1490080.00
10	a) 220 kV 120KN (N) Porcelain insulator	EA	1104.68	10080	11135174.40
	Hardware suitable for 0.4 ACSR Zebra conductor.				
11	SSN/SSA	EA	3947.53	120	473703.60
12	DSN/DSA	EA	8479.42	10	84794.20
13	STN/STA	EA	4382.75	270	1183342.50
14	DTN/DTA	EA	11011.16	300	3303348.00
	Supply of Conductor & Accessories				
15	a) 0.4 Zebra ACSR, copper equivalent conductor including 1% extra for sag, jumpering and wastage	kms	447507.61	110	49225837.10
	Accessories for 0.4 ACSR Zebra conductor				
16	a) Mid Span Joints	EA	1254.02	100	125402.00
17	b) Repair Sleeves	EA	401.14	50	20057.00
18	c) P. A. rods	EA	2283.05	123	280815.15
19	d) Vibration dampers.	EA	999.26	800	799408.00
	Supply of Earthwire & Accessories:				
20	7/3.15 mm GI Earth wire	kms	70534.9	20	1410698.00
21	Suspension Clamp For 7/3.15 mm G.I Earthwire	EA	940.72	10	9407.20
22	Tension Clamp for 7/3.15 mm GI Earth wire	EA	973.14	130	126508.20
23	Mid Span Joint for 7/3.15 mm GI Earth wire	EA	248.87	10	2488.70
24	Copper Earth Bonds	EA	953.53	130	123958.90
	Supply of OPGW Cable				
25	48C (DWSM) OPGW Cable	KM	237004.49	1.2	284405.39
26	2 Way Joint Box for 48C OPGW	EA	13112.02	1	13112.02
27	Vibration Damper for OPGW	EA	884.65	12	10615.80
28	Down Lead Clamp for OPGW	EA	459.78	4	1839.12
29	Double tension Assembly with JB for 48C OPGW	SET	9976.64	1	9976.64
30	Double tension Assembly without JB for 48C OPGW	SET	9976.64	2	19953.28
	TOTAL IN RS. (SCHEDULE-A)				150330938.80

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SCHEDULE-B					
220 KV (D/C, S/C & M/C) Transmission Line Erection Items					
S. N.	Description	Unit	Quantity	Unit Rate	Amount in Rs
1	Detailed survey including tower spotting and tower profile . Detailed Survey with GPS/Total Station /Digital Theodolite etc..... In all respect & submission of KML files.	Kms	5	21533.38	1,07,666.90
2	Check survey to carry out the checks as per approved tower profiles, with Digital Theodolite/total station/GPS etc. and location marking by fixing three pegs in alignment for suspension tower and by fixing five pegs in bisection for angle tower, including bush cutting along the centre line of alignment and repace marking if necessary etc. complete. Check survey including revision of profiles if required.	Kms	20	9104.72	1,82,094.40
3	Excavation of trial pits of Standard dimension of 1mtr*1mtr width upto 3 mtrs depth at 1km interval or where ever there is abnormal change in topography and taking observation of soil strata for classification of foundation and backfilling the trial pits after vetting by Department officials.	Per Pit	60	5959	3,57,540.00
	Excavation of pits for tower footings in earthsoil of all types including removing of excavated material beyond tower limits up to 50 mtrs. Lead and all lifts, shoring, shuttering, dewatering, preparation of bed for foundation and back filling after casting and curing of foundations with ramming etc. complete as per drawing & direction of Engr. in-charge.				
6	Normal soil	Cu M	500	260.85	1,30,425.00
7	Hard Murrum/Soft Rock	Cu M	500	540.02	2,70,010.00
8	B C Soil/Submurged soil	Cu M	33000.00	439.44	1,45,01,520.00
9	Dry fissured rock	Cu M	4600.00	1318.32	60,64,272.00
10	Hard rock by chiseling.	Cu M	100	1702.5	1,70,250.00
	Stub Setting in all type of soil with the help of Stub template/PROP setting including transportation if required to the desired location,fixing the stub in position as per the alignment,jacking,fixing and leveling the templete and the stub as directed by Engr. In charge. 220 KV DC Tower				
11	2 Degree	Per Loc		7515.01	-
12	2 Degree +3 mtr	Per Loc	6	8164.54	48,987.24
13	2 Degree +9 mtr	Per Loc	1	9463.6	9,463.60
14	15 Degree	Per Loc	1	8165.34	8,165.34
15	15 Degree +3 mtr	Per Loc	1	8814.88	8,814.88
16	15 Degree +6 mtr	Per Loc		9464.41	-
17	15 Degree +9 mtr	Per Loc		10113.94	-
18	30 Degree	Per Loc	4	9466.02	37,864.08
19	30 Degree +3 mtr	Per Loc	2	10115.55	20,231.10
20	30 Degree +6 mtr	Per Loc	1	10765.08	10,765.08
21	30 Degree +9 mtr	Per Loc		11414.61	-
22	60 Degree	Per Loc	9	10116.35	91,047.15
23	60 Degree +3 mtr	Per Loc	2	10765.89	21,531.78
24	60 Degree +6 mtr	Per Loc	3	11415.42	34,246.26
25	60 Degree +9 mtr	Per Loc	1	12064.95	12,064.95
26	Special Tower (Exceeding +9 Mtr extension)	Per Loc	10	13368.04	1,33,680.40
27	Horizontal Tower	Per Loc		7515.01	-
	Stub Setting in all type of soil with the help of Stub template/PROP setting including transportation if required to the desired location,fixing the stub in position as per the alignment,jacking,fixing and leveling the templete and the stub as directed by Engr. In charge. 220 KV MC Tower				
28	2 Degree	Per Loc		8020.82	-
29	2 Degree +3 mtr	Per Loc		8670.36	-
30	2 Degree +6 mtr	Per Loc		9319.89	-
31	2 Degree +9 mtr	Per Loc		9969.42	-
32	15 Degree	Per Loc		8671.16	-
33	30 Degree	Per Loc		11922.85	-
34	30 Degree +3 mtr	Per Loc	5	12572.37	62,861.85
35	30 Degree +6 mtr	Per Loc	2	13221.91	26,443.82
36	30 Degree +9 mtr	Per Loc	1	13871.44	13,871.44
37	60 Degree	Per Loc		11922.85	-
38	60 Degree +3 mtr	Per Loc	1	12572.37	12,572.37
39	60 Degree +6 mtr	Per Loc	1	13221.9	13,221.90
40	60 Degree +9 mtr	Per Loc		13871.44	-
41	Special Tower (Exceeding +9 Mtr extension)	Per Loc	4	11922.85	47,691.40
42	Horizontal Tower	Per Loc		6720.15	-

S. N.	Description	Unit	Quantity	Unit Rate	Amount in Rs
	Providing and casting in-situ cement concrete of trap metal of size 20 to 40 mm as applicable, Form boxes, fishing, coping and curing for 21 days complete as per drawing and direction of Engr. in-charge in the following grades.				-
43	a) 1:3:6 (M-10)	Cu M	395	8295.78	32,76,833.10
44	b) 1:1.5:3 (M-20)	Cu M	4700	10007.14	4,70,33,558.00
45	1:2:4 (M-15)	Cu M	50	9284.01	4,64,200.50
46	Casting in situ CC (M-30)	Cu M	400	10196.26	40,78,504.00
47	Providing and fixing of steel reinforcement in concrete foundation including supply of TMT bars of various sizes and binding wire, cutting, bending, hooking, binding with binding wire and/or tack welding etc. complete as per drawing and as per direction of Engr. In-charge.	MT	140	114040.14	1,59,65,619.60
48	Dewatering of Excavated Pits and Preparation of Pit For Concreting	Per HP/ 8 hrs	50	296.74	14,837.00
49	Earthing of towers with pipe type earthing (with supply of earthing material) including excavation of pits/trenches, laying of earthing pipe, strips, flats etc including supply of heavy duty GI pipe and GI strip/flat/nut and bolts and provision of salt and coke as per drawing including back filling, complete in all respect as per direction of Engr. In-charge.	Nos.	45	7186.2	3,23,379.00
50	Earthing of towers with Counter Poise type earthing(with supply of earthing material) including excavation of pits/trenches, laying of earthwire and fitting plates to tower legs including supply of all materials (viz. GSS wire, lugs, nuts and bolts etc) as per the drawing and back filling, complete in all respect as per direction of Engr. In-charge.	EA	15	16056.1	2,40,841.50
51	Complete erection of DC/MC towers (including special towers) with its extensions for 220kV Lines (as per requirement) with fixing of Bolts & Nuts, Tightening, punching and fittings including attachments (like step bolts, ladders, platforms, 'U' bolts, shackles, hangers, strain plates etc) and application of Zinc rich primer and two coats of enamel paints on welded portion (Excluding stubs) ,including transportation of materials from site stores to work site.	MT	650.00	9429.89	61,29,428.50
	Excavation for foundation of revetment wall/protection wall in all type of soil, sand, gravels, soft murum. Soft murum with boulders, normal soil including shoring, shuttering wherever necessary & disposing of the excavated stuff as directed upto 50mtrs.				
52	Normal soil/Sand/Gravel/Soft murum	Cu M	30	260.85	7,825.50
53	BC/Submerged soil	Cu M	50	439.44	21,972.00
54	Soft rock/Hard murum	Cu M		540.02	-
55	Dry Fissured Rock (DFR)	Cu M	50	1318.32	65,916.00
56	Hard Rock by chiselling	CuM	10	1702.5	17,025.00
57	Providing & casting in situ cement concrete of 1:2:4 of trap metal for coping of retaining wall including cost of the cement, sand, metal, water, dewatering, form work, compaction & curing etc. complete in all respect.	Cu M	50	9138.68	4,56,934.00
58	Providing & casting in situ cement concrete of 1:3:6 of trap metal for coping of retaining wall including cost of the cement, sand, metal, water and form work, compaction & curing etc. complete in all respect.	Cu M	10	8150.46	81,504.60
59	Providing & constructing of UCR masonry of trap stone in cement mortar 1:6 in super structure including racking out joints on the inside as no plastering to be done from inside, scaffolding, dewatering, compacting, curing etc. complete in all respects as per the drawings to be furnished by the MSETCL.All the material such as trap stones,cement,sand,metal,water etc,to be provided by the contractor as his own cost including following activities. Providing and A.C Pipes of 75mm diameter for weep holes & headers of average 0.9 mtr in 3 rows at a distance of 1 mtr from centre to centre in alternate row as directed. (including cost of all the material). Tuck pointing of exposed face with 1:3 cement motar (including cost of all the material). Providing and filling in plinth for retaining wall with approved soil or Murum in 15cm to 20cm layers including waterring,compacting, complete as directed by Engineer -in-Charge (Including cost of all the material)	Cu M	100	3585.89	3,58,589.00

S. N.	Description	Unit	Quantity	Unit Rate	Amount in Rs
60	Stringing of conductors on S/C, D/C, M/C,H/Z towers including transportation of conductor and required material from site store to site locations, laying, paving, jointing, rough sagging, final sagging, clipping, fixing of accessories, hoisting of insulators, jumpering etc. on tower complete in all respect including tree cutting if required as per the direction of Engineer incharge.(which includes the works involved in the crossing of LT,HT,.viz dismantling and restringing of conductors)				
61	220 kV S/C (with 0.4 ACSR/AAAC) on D/C	Kms	1.5	75122.31	1,12,683.47
62	220 kV D/C (with 0.4 ACSR/AAAC) on D/C	Kms	12	118434.53	14,21,214.36
63	220 kV D/C (with 0.4 ACSR/AAAC) on M/C	Kms	10	157454.75	15,74,547.50
64	220 kV M/C (with 0.4 ACSR/AAAC) on M/C	Kms	2	270108.5	5,40,217.00
65	Stringing of 7/3.15 mm G.I Earthwire including transporation of earthwire and required material from site store to site locations,Laying,Fixing hardware,Fixing Accssories,paaving out earth wire,Jointing,tesioning,Strining and clamping etc	km	20	14863.53	2,97,270.60
66	Destringing of old earth wire of any Size	Per RMT	2000	35.57	71,140.00
67	Electric Tack welding (Half Roundwelding) to GI Nut & Bolts of tower from thread ends (Two spot to be welded to each Nut & Bolt near threaded end) and painting the welded portion with two coats of zinc rich paint upto 132/220 KV DC . Two section of each tower	Per tower	47	6358.85	2,98,865.95
68	Electric tack welding(half round welding) to GI Nuts & Bolts of tower from thread ends (Two spots to be welded to each Nut & Bolts near thread end) and painting the welded portion with two coats of Zinc rich paint upto 220 KV MC.Two sections of each tower.	Per tower	13	7659.53	99,573.89
69	Destringing of 0.4 ACSR/AAC Zebra conductor on 220kv S/C on D/C line including transporation of conductor &required material from site to store as per direction	Kms	1.5	60097.85	90,146.78
70	Destringing of 0.4 ACSR/AAC Zebra conductor on 220kv D/C on D/C line including transporation of conductor &required material from site to store as per direction	Kms	7	94745.54	6,63,218.78
71	Destringing of 0.4 ACSR/AAC Zebra conductor on 220kv D/C on M/C line including transporation of conductor &required material from site to store as per direction	Kms	7	125963.8	8,81,746.60
72	Dismantling of 132Kv/220kv/400kv/Horizontal Tower, Conductor, other accessories etc., including transporation to store as per direction	MT	200	7543.91	15,08,782.00
73	Removal of stubs upto 1.5 mtr	Per Tower	40	10217.52	4,08,700.80
74	Providing and fixing of Backstay at the locations during stringing whenever neccessary and removal of the same after stringing.				-
	220 kV Tower	Per Stay	26	5196.25	1,35,102.50
75	Stacking of 220 /132/33 KV Tower, Gantries, Support Structures, M.S. Material, Hardware, Insulators tower material, other material as per Bill of Material, directed by the site engineer/ representative, including material tagging, marking, painting etc. as per site engineer.	MT	200	280.07	56,014.00
	OPGW Cable				
76	Destringing Earth wire and Stringing of OPGW on Live along with all hardware and accessories etc.,	KM	1.21	120431.39	1,45,721.98
	TOTAL IN RS. (SCHEDULE-B)				10,92,39,216.44

Supply, Erection, Testing and Commissioning of 220 KV and 132 KV Transmission Lines modification/diversion/shifting works for Package-IIIC section between Km:169 to Km.190 which are infringing the Yavatmal-Nanded New Broad Gauge Line in the state of Maharashtra, India

SCHEDULE-C

132 KV (D/C) Transmission Line Supply Items

SN	Description	Unit	Quantity	Unit Rate	Amount in Rs
1	Fabrication, Galvanising, Supply at site store of 220 kV/132kV D/C, MC towers (Viz. 2°, 15°, 30°, 60°) of normal type, its extensions, including special towers for all type of crossings, with set of stubs, Superstructure, templates, step bolts, U-bolts, D'Shackles, Chain links etc, with all other tower accessories April 2025ies, complete in all respect as per approved design & drawings provided by the Purchaser.	MT	80.00	1,15,606.52	92,48,521.60
2	Supply at site store of Galvanised Bolts & Nuts with Spring Washers, Plain washers for 220kV/132kV Line towers/Structures/Accessories	MT	2.52	1,91,179.10	4,81,771.33
	Supply of Tower Accessories			-	
3	a) Danger Board	EA	9	347.40	3,126.60
4	b) Number Plate	EA	9	289.14	2,602.26
5	c) Phase plates (set of RYB)	EA	18	463.18	8,337.24
6	d) Circuit Plate(Set of C1,C2)	EA	9	480.04	4,320.36
7	e) Anti-climbing devices with Barbed wire.	EA	9	5,681.68	51,135.12
	Insulators and hardware:			-	
	Disc Insulators (Normal)			-	
8	Disc Insulator 70KN (Normal)	EA	243	931.30	2,26,305.90
9	Disc Insulator 120KN (Normal)	EA	2160	1,104.68	23,86,108.80
	Hardware suitable for 0.2 ACSR Panther conductor.			-	
10	a) SSN for 0.2 ACSR Panther conductor	EA	27	3,828.82	1,03,378.14
11	c) STN for 0.2 ACSR Panther conductor	EA		4,460.82	-
12	d) DTN for 0.2 ACSR Panther conductor	EA	108	9,953.86	10,75,016.88
	Supply of Conductor & Accessories			-	
13	0.2 Panther ACSR, copper equivalent conductor including 1% extra for sag, jumpering and wastage (Including Wire for ERS Works)	Kms	14.71	2,38,623.41	35,10,150.36

SN	Description	Unit	Quantity	Unit Rate	Amount in Rs
	Accessories for 0.2 Panther			-	
14	a) Mid Span Joints	EA		1,101.19	-
15	b) Repair Sleeves	EA		374.08	-
16	c) P. A. rods	EA	9	1,613.28	14,519.52
17	d) Vibration dampers.	EA	108	912.17	98,514.36
	Supply of Earthwire & Accessories:				
18	7/3.15 mm GI Earth wire	kms	2.7	70,534.90	1,90,444.23
19	Suspension Clamp For 7/3.15 mm G.I Earthwire	EA		940.72	-
20	Tension Clamp for 7/3.15 mm GI Earth wire	EA	9	973.14	8,758.26
21	Mid Span Joint for 7/3.15 mm GI Earth wire	EA		248.87	-
22	Copper Earth Bonds	EA	18	953.53	17,163.54
	TOTAL IN RS. (SCHEDULE-C)				1,74,30,174.50

**Supply, Erection, Testing and Commissioning of 220 KV and 132 KV Transmission Lines
modification/diversion/shifting works for Package-IIIC section between Km:169 to Km.190 which are
infringing the Yavatmal-Nanded New Broad Gauge Line in the state of Maharashtra, India**

SCHEDULE-D

132 KV (D/C) Transmission Line Erection Items

SN	Description	Unit	Quantity	Unit rate	Amount in Rs
	Survey				
1	Check survey to carry out the checks as per approved tower profiles, with Digital Theodolite/total station/GPS etc. and location marking by fixing three pegs in alignment for suspension tower and by fixing five pegs in bisection for angle tower, including bush cutting along the centre line of alignment and repege marking if necessary etc. complete. Check survey including revision of profiles if required.	Kms	2.4	9,104.72	21,851.33
2	Excavation of pits for tower footings in earth soil of all types, sand gravel and normal soil including removing of excavated material beyond tower locations upto 50 M lead and all lifts, shoring, shuttering, preparing the bed for foundations and necessary back filling ramming after stub setting, compacting, finishing and curing complete in all respect as per drawing & direction of Engr. In-charge.				
A	Normal Soil/Sand/Gravel/Soft Murum	CuM	20	260.85	5,217.00
B	Black cotton soil/Submerged soil	CuM	1250	439.44	5,49,300.00
C	Soft rock/Hard Murum	CuM	80	540.02	43,201.60
D	Dry Fissured Rock	CuM	150	1,318.32	1,97,748.00
E	Hard rock by Chiseling	CuM	20	1,702.50	34,050.00
3	Concreting of foundation: Providing and casting in situ cement concrete of trap metal of size 20 to 40 mm as applicable including cost of cement, sand, metal and water, frame work, finishing, compacting , coping and curing for 21 days complete as per drawing and direction of Engr.In-charge in the following grades-				
A	M 20 (1:1.5:3) with graded metal for foundation	CuM	190	10,007.14	19,01,356.60
B	M 10 (1:3:6) with graded metal for	CuM	20	8,295.78	1,65,915.60
4	Providing and fixing in position Steel Reinforcement in concrete foundation including supply of TMT bars with epoxy coating/Meta cam of various diameters for R.C.C. work like raft, footing of column etc. as per drawing and direction which will be furnished by the ownner including cutting, bending , hooking the bars, binding with binding wire or tackwelding etc. complete as directed.(Steel to be provided by contractor)	MT	11	1,14,040.14	12,54,441.54
5	Protection of Tower footing by uncoursed rubble stone .				

SN	Description	Unit	Quantity	Unit rate	Amount in Rs
	Excavation for foundation of revetment wall/protection wall in all type of soil, sand, gravels, soft murum. Soft murum with boulders, normal soil including shoring, shuttering wherever necessary & disposing of the excavated stuff as directed upto				
A	Normal Soil/Sand/Gravel/Soft Murum	CuM		260.85	-
B	Soft rock/Hrad Murum	CuM		439.44	-
6	Providing & casting in situ cement concrete of 1:2:4 of trap metal for coping of retaining wall including cost of the cement, sand, metal, water, dewatering, form work, compaction & curing etc. complete in all respect.	CuM		9,138.67	-
7	Providing & casting in situ cement concrete of 1:3:6 of trap metal for coping of retaining wall including cost of the cement, sand, metal, water and form work, compaction & curing etc. complete in all respect.	CuM		8,150.46	-
8	Providing & constructing of UCR masonry of trap stone in cement mortar 1:6 in super structure including racking out joints on the inside as no plastering to be done from inside, scaffolding, dewatering, compacting, curing etc. complete in all respects as per the drawings to be furnished by the MSETCL. All the material such as trap stones, cement, sand, metal, water etc. to be provided by the contractor as his own cost including following activities.	CuM		3,585.89	-
9	Tower earthing				
A	Pipe type earthing: Normal earthing including excavation of pits/ trenches, laying of earthing pipe, strips, flats, etc supplying and laying salt and soft coke as directed and as per the drawing to be furnished by the owner and back filling, complete in all respects.				
A(1)	Inclusive of G.I. pipe and GI strip / Flat & Nuts and bolts	EA	5	7,186.20	35,931.00
B	Counter Poise type Earthing: Including excavation of pits/ trenches, laying of earth wire and fitting plates/ lugs to tower legs including supply of all materials (Viz. GI wire, lugs, nuts and bolts etc) and back filling, complete in all respect as per drawing to be furnished by the owner.				
B (1)	Inclusive of G.I. Wire,lugs,nuts & bolts etc.	EA	4	16,056.10	64,224.40

SN	Description	Unit	Quantity	Unit rate	Amount in Rs
10	Complete erection of DC/MC/Horizontal tower (Including special towers) with its extensions for EHV Lines (as per requirement) with fixing of bolts and nuts, tightening, punching and fitting including attachments (like step bolts, ladders, platforms, "U" bolts, shackles, hangers, strain plates etc) and including transportation of materials from site stores to work sites, tightening and punching of Bolts and Nuts complete in all respect, punching of bolts, fixing of danger plates, fixing of number plates, fixing of phase plates, fixing of anticlimbing device, fixing of circuit plate etc.	MT	79	9,429.89	7,44,961.31
11	Electric Tack Welding (half round welding) to GI Nuts and Bolts of tower from thread ends (Two spots to be welded to each nut & Bolts near thread end) and painting the welded portion with two coats of zinc rich paint upto 220kV DC. Two Section of each	Per Tower	9	6,358.85	57,229.65
12	132kV DC Tower: Stub setting in all type of soils with the help of template/ PROP including transportation if required to the desired location, fixing the stubs in position as per the alignment, fixing and leveling the template and the stub as directed.				
A	60 Degree	Per Tower Loc	1	8,020.82	8,020.82
B	60 Degree +3 Extension	Per Tower Loc		8,670.36	-
C	60 Degree +6 Extension	Per Tower Loc	4	9,319.89	37,279.56
D	60 Degree +9 Extension	Per Tower Loc		9,969.42	-
E	Special Tower (Exceeding +9 Mtr extension)	Per Tower Loc	4	10,947.34	43,789.36
13	Stringing of 0.2 ACSR Panther Conductor on 132kV D/C on D/C line for crossing of EHV Power Lines, Railway, National Highway and River/Creek Crossing including transportation of conductor & required material from site store to site location	Km	2.46	2,02,859.37	4,99,034.05

SN	Description	Unit	Quantity	Unit rate	Amount in Rs
14	Destrining of 0.2 ACSR Panther Conductor on 132kV D/C on D/C line for crossing of EHV Power Lines, Railway,National Highway and River/Creek Crossing including transportation of conductor & required material from site to store as per direction	Km	1.6	1,62,287.49	2,59,659.98
15	Stringing of 7/3.15 mm G.I Earthwire including transporation of earthwire and required material from site store to site locations,Laying,Fixing hardware,Fixing Accssories,paaving out earth wire,Jointing,tesioning,Stringing and clamping etc	Km	2.3	14,863.53	34,186.12
16	Destrining of old earth wire of any Size	Per RMT	1500	35.57	53,355.00
17	Dismantling of 132 KV Horizontal tower including transportation to store as per direction	MT	14.361	7,543.91	1,08,338.09
18	Removal of Stub upto 1.5mtrs	Per Tower	5	10,217.52	51,087.60
19	Providing and fixing of Back stay at locations during stringing whenever necessary and removal of the same after stringing for 132Kv TOWER .	Per STAY	12	3,897.19	46,766.28
20	Stacking of 220 /132/33 KV Tower, Gantries, Support Structures, M.S. Material, Hardware, Insulators tower material, other material as per Bill of Material, directed by the site engineer/ representative, including material tagging, marking, painting etc. as per site engineer.	MT	150	280.07	42,010.50
	TOTAL IN RS. (SCHEDULE-D)				62,58,955.39

Supply, Erection, Testing and Commissioning of 220 KV and 132 KV Transmission Lines modification/diversion/shifting works for Package-IIIC section between Km:169 to Km.190 which are infringing the Yavatmal-Nanded New Broad Gauge Line in the state of Maharashtra, India

SCHEDULE-E

ERS Hiring and Erection items for 132 KV & 220 KV

Sr. No.	Particulars	Unit	Qty	Unit rate	Amount (Rs.)
1	Erection & Dismantling of ERS Tower Allied Services:- Erection of Stay and attaching to ERS tower Making arrangement for ERS (works include survey (ERS spot fixing), Mobilization of gang, Transportation of T&P, Excavation of pits (for stay), concreting of pits (for stay), Erection of stays, pre-installation assembly of ERS Structure, Installation of ERS Structure) Making arrangement for dismantling of ERS (works includes Dismantling of stay, pits, Back filling of stay pits, dismantling of concreting of stays, Dismantling of ERS Structure, Dismantling of ERS System. Stringing of conductor on ERS Tower De-Stringing of conductor on ERS Tower Transportation of ERS Tower material to Work site (to & fro) including loading unloading of ERS. Loading of Material by Crane Un-Loading of Material by Crane	Per tower	46	690300.00	31753800.00
2	Rental Charges for ERS Towers with all accessories and without transportation	Per ERS Tower Set	46	499977.39	22998959.94
	TOTAL IN RS. (SCHEDULE-E)				54752759.94

Note for Sl.No.2:

(1) ROW for ERS towers is in the scope of contractor as per terms and conditions of the contract

(2) ERS Tower erection shall be carried out with prior approval of RVNL. Decision of RVNL is final regarding number of ERS towers to be erected.

(3) Rate for Rental charges for ERS towers is inclusive of all associated accessories for stringing of Conductor

Supply, Erection, Testing and Commissioning of 220 KV and 132 KV Transmission Lines modification/diversion/shifting works for Package-IIIC section between Km:169 to Km.190 which are infringing the Yavatmal-Nanded New Broad Gauge Line in the state of Maharashtra, India

SCHEDULE-F

SITE FACILITIES

SOR ITEM	Description	Unit	Quantity	Rate	Total Amount
				Supply	
9003	Providing Road Vehicle mentioned below for the use of Engineer/Employer as per the Conditions mentioned in Clause 3.4.3, i.e 3.4.3.1 to 3.4.3.3 of Chapter 3 (Site Facilities for the Employer and the Engineer) of Section 5 Work's Requirement) of Tender Documents.				
9003 b	BOLERO, SCORPIO, ERTIGA, MARAZZO or similar	Vehicle months	18	90467.02	1628406.36
9003 d	Extra for running and maintenance of every additional km over and above 4000 kms as specified in item 9003 (b)	Per Km	4000	20.02	80080.00
	TOTAL IN RS. (SCHEDULE-F)				17,08,486.36

Supply, Erection, Testing and Commissioning of 220 KV and 132 KV Transmission Lines modification/diversion/shifting works for Package-IIIC section between Km:169 to Km.190 which are infringing the Yavatmal-Nanded New Broad Gauge Line in the state of Maharashtra, India					
SCHEDULE-G					
220 KV MONOPOLE ITEMS					
S. N.	Description	Unit	Unit rate	Quantity	Amount in Rs
A	Supply of Monopole Tower				
1	220kV M/C Monopole Tower M/C D+3 with x-arms including all structural components of the pole, anchor bolts, anchor plates, template etc with all accessories as per MSETCL's approved profile and Tower schedule	EA	14286298	1	1,42,86,298.00
2	220kV M/C Monopole Tower M/C D+12 with x-arms including all structural components of the pole, anchor bolts, anchor plates, template etc with all accessories as per MSETCL's approved profile and Tower schedule	EA	16182400	2	3,23,64,800.00
B	Erection of MonoPole Tower				
3	220kV M/C Monopole Tower M/C D+3 with x-arms and accessories	EA	2986326	1	29,86,326.00
4	220kV M/C Monopole Tower M/C D+12 with x-arms and accessories	EA	3432965	2	68,65,930.00
C	Casting of Monopole Tower Foundation (Caisson Foundation type) complete including excavation of soil in all types of soil, concreting, steel reinforcement, shuttering etc.,				
5	220kV M/C Monopole Tower M/C D+3	EA	11241511	1	1,12,41,511.00
6	220kV M/C Monopole Tower M/C D+12	EA	13234440	2	2,64,68,880.00
	TOTAL IN RS. (SCHEDULE-G)				9,42,13,745.00
	Note: 1) Monopole tower Design and foundation design approval from CPRI/MSETCL/Agency approved by MSETCL is in scope of Contractor. No Separate payment for design approval will be made				
	2) Caisson foundation is optional and to be decided based on approvals from CPRI/MSETCL/Agency approved by MSETCL, for conventional foundation type, scope is mentioned in Schedule-B				