



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TENDER CHANGE NOTE 02 (TCN – 02) DT:08-04-2008

WITH REFERENCE TO THE NIT, PUBLISHED IN THE WEB SITES FOR SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2X525 MAITHON RIGHT BANK TPP, DHANBAD, JHARKHAND. FOLLOWING CLARIFICATIONS BASED ON THE QUERIES OF BIDDERS MAY PLEASE BE NOTED AND COMPLIED WHILE SUBMITTING THE OFFER FOR THE SUBJECT JOB.

REF: TENDER DOCUMENT NO-PSER:SCT:MTN-E854:08

- 1) The clarifications against bidders' queries are furnished as per Annexure-I.
- 2) Drawing no. RE/PCC/27–DETAILS OF 9 MTRX400 KG SOLID PCC POLE.
- 3) The BOQ CUM RATE SCHEDULE,VOL-IIIA & IIIB has been revised. The same is enclosed herewith. You are requested to consider and quote as per the enclosed VOL-IIIA,R-1 and VOL-IIIB,R-2. The Earlier BOQ Cum Rate Schedule, VOL-IIIA,R-0 and VOL-IIIB, R-0 stands deleted and bidders are requested not to quote as per Vol-IIIA, R-0. and VOL-IIIB,R-0
- 4) Because of the above changes, the due date of submission of tender is extended up to 15/04/2008.

BIDDERS TO NOTE THAT ALL TCNS WILL FORM PART OF TECHNICAL SPECIFICATION & SPECIAL CONDITION OF CONTRACT OF TENDER DOCUMENT.

ALL OTHER TERMS & CONDITIONS OF THE TENDER SHALL REMAIN UNCHANGED.

BIDDERS ARE REQUESTED TO SUBMIT OFFER BY THE ABOVE DUE DATE.

DGM (SCT)

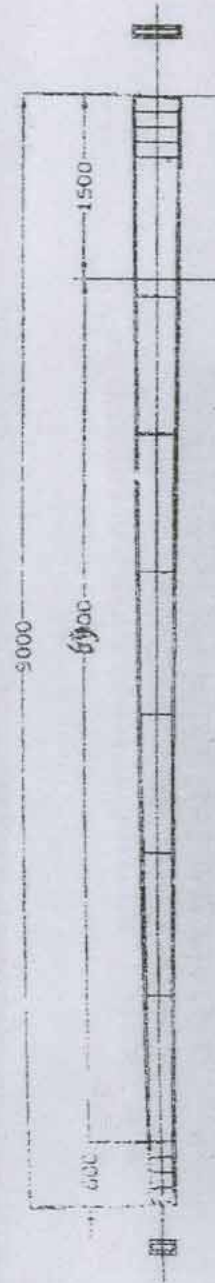
		TENDER NO-PSER:SCT:MTN-E854:08 - TCN-02		ANNEXURE- I
BIDDER'S QUERIES AND BHEL'S CLARIFICATION				
SL. NO	REFERENCE CLAUSE OF TENDER DOCUMENT	EXISTING PROVISION	BIDDER's QUERY	BHEL's CLARIFICATION
1	01a (SEC A)	PCC Pole 9Mtr long (w/l 200 Kg)	PCC Pole 9Mtr long (w/l 200 Kg) is not conforming to SEB specification . PCC pole 9Mtr long (w/l 400 Kg) is only approved as per SEB section . A copy of Drawing is enclosed. Kildly confirm . In case PCC pole of 9 Mtr long (w/l 400), the size as per drawing will be TOP 230 mmx 100 mm Bottom410 mm x 100 mm . Please confirm.	Acceptable. Specification modified in BOQ CUM RATE SCHEDULE-Rev-01 attached in TCN-02. The drawing no. R.E/PCC/27 submitted may please considered as part of this TCN-02
2	a3	11 KV PIN Insulator (10 KN) with large Steel Head	The drawing supplied by you does not match as it specifies " with small steel head GI PIN". Please clarify . Please not that manufacturers may not be interested for such a small quantity of Pin Insulator with large steel head.	BHEL's specification shall hold good.
3	18	CC Spun Pipe of 300 mm dia.	Please provide the Type- whether NP-2 or other.	CC Spun Pipe of 300 mm dia shall be NP2.
4	20 Sec-B(i)	Termination of 3.5 Cx 240/200 Sq.mm Al. Arm Cable.	Please provide the details.e.g, Make of double compressor cable gland etc. Generally both ends of a cable are treated as 2 (two) termination. But as per your specification it is to betreated as one(single) termination. Kindly clarify	One termination means one end termination. Cable glands shall be of Comet/Jenson/UML or equivalent make.
5	28	Providing and fixing Galvanised high tensile spring steel wire of 12 SWG as per IE Rules	Galvanised high tensile spring steel wire is not available. Instead of galvanised GI wire of 12 SWG can be supplied. Please confirm.	Galvanised GI wire of 12 SWG is acceptable in place of Galvanised high Tensile Spring Steel Wire.
6	Vol-II-SCC. Sl.no.4 , page 6/11	Time Schedule	It is observed that supply of certain materials by BHEL approved vendors(Appendix-I) may involve more than 3 months of delivery period . Kindly extend the delivery period by at least one more month.	The Entire work of Erection, Testing & Commissioning of the equipment under the scope of contract [under BOQ SECTION - B] shall have to be done in phased manner & completed within a time period of 5(Five) months from date of LOI. Supply of Equipment [i.e BOQ SECTION-A] under the scope shall be done in phased manner and completed at least 3(three) months from date of LOI. Detail Bar Chart [for Supply & Erection] for all activities shall be prepared and agreed at site to match above schedule.
7	01b	VOL-III, Rate Schedule(Supply), Rev-0, Page 1&2	Supply of Rail pole, 45kg/M, 12.8 M long	This scope of supply of rail poles indicated under slno.1b of BOQ-A(Supply) stands deleted from the scope of supply of bidders.
8	22		Supply of Structural Steel (IS) for fabrication	This scope i.e supply and fabrication of structural steel work is not withdrawn from the scope of work and shall remain unaltered. The steel shall be of SAIL/ RINL/SHYAM STEEL/JINDAL MAKE.

Note : The work of installation of lighting poles and fixing of luminaries /fixtures wire, etc in the open storage area is included in the scope of work . The luminaries /fixures etc required for this work shall be supplied by BHEL free of cost for this purpose. However, bidder shall include supply of 2.5 mm Sqr. PVC wire 5M long for such fittings in their scope for each pole/luminaries.The item has been detailed in the revised BOQ CUM PRICE SCHEDULE, REV-1 attached herewith in TCN-02 for the consideration of the bidders.

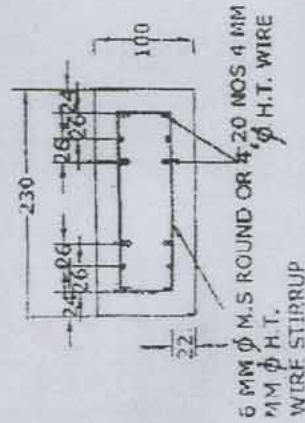
TRUE COPY OF DRG. NO. R.E/PCC/27.
DT 12.05.88 OF WEST BENGAL STATE
ELECTRICITY BOARD (R.E. HQ).

DETAILS OF 9 MTR X 400KG SOLID PCC POLE.

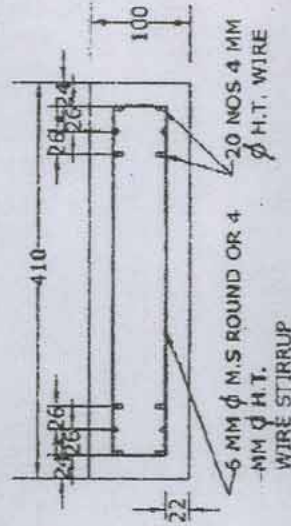
- NOTE:
1. Working load 400 kg acting at 600 mm below the top of the pole.
 2. Factor of safety = 2.0 as adopted by R.F.C
 3. Depth of planting below G.L. = 1500 mm.
 4. H.T. wire used 20 nos 4 mm ϕ having minimum U.T.S of 175 kg/mm². As per I.S. 1343 - 1980.
 5. Pretention to be applied 4 mm ϕ H.T. wire = 1758 kg. 20 mm thick capping with 1:2 cement mortar/3 coat black japan bitumen paint to be provided at the end of the pole.
 7. Grade of concrete = M 423.
 8. All dimensions are in mm.



SECTIONAL ELEVATION



SECTION AT TOP OF POLE



SECTION AT BOTTOM OF POLE

VOLUME-III	
PRICE/RATE SCHEDULE, REV-1	
JOB:	SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT, JHARKHAND
TENDER NO :- PSER:SCT:MTN-E854:08	
PREAMBLE	
01	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender as per NIT together with subsequent changes/ modifications etc thereto as applicable as on date of submission of price offer.
02	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions. Drawings enclosed with this document are only preliminary for giving some idea of the work involved
03	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
04	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc equipment, strengthening of roads/culverts/bridges etc including arranging all clearances etc required for carrying out different activities & tests, materials, levies, taxes & duties (except service Tax), transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the tender document and this schedule.
05	The quantities of the various items mentioned in this schedule of items are approximate, based on the preliminary information and may vary to any extent or be deleted altogether. The quoted rates shall remain firm and valid throughout the period of execution including extension, for reasons what-so-ever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation, remains within thirty percent (+/-) 30% of the awarded contract value as per LOI.
06	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing and leveling etc including fixing of grid pillars, benchmarks etc required for commencement of site activities. No separate payment will be made towards the same.
07	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English
08	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
09	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.
10	Summation of quoted prices all the price/rate schedules shall be considered for evaluation.
11	All works item wise shall be measured upon completion and paid for at the rates quoted & accepted.

VOLUME-III A			
PRICE/RATE SCHEDULE, REV-1			
JOB:	SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT, JHARKHAND		
TENDER NO. PSER:SCT:MTN- E 854:08			
ABSTRACT OF QUOTED PRICE			
Sl.no.	SECTION	DESCRIPTION	TOTAL AMOUNT AS PER QUOTED RATES (IN Rs.) (IN FIGURES AND IN WORDS)
1	Section -A	SUPPLY OF EQUIPMENT	
2	Section -B (i)	RECEIPT, HANDLING, ERECTION , TESTING, COMMISSIONING AND HANDING OVER	
3	Section -C	OPERATION AND MAITENANCE OF THE ERECTED & OTHER SYSTEMS FOR 2 MONTHS.	
	GRAND TOTAL PRICE OF SECTION -A & SSECTION -B (I)- (ALL INCLUSIVE TOTAL PRICE)		
NOTE:			
1	QUOTED OVER ALL PRICE ONLY WILL BE CONSIDERED FOR BID EVALUATION PURPOSE AND SECTION WISE RATES ARE BEING OBTAINED FOR FACILATATING PRORATA BILLING.		
2	SERVICE TAX (AS APPLICABLE) WILL BE REIMBURSED BY BHEL EXTRA AGAINST SUBMISSION OF DOCUMENTARY EVIDENCES TO THE SATISFACTION OF BHEL. HOWEVER, CONTRACTOR SHALL OBTAIN PRIOR APPROVAL OF BHEL IN WRITING BEFORE DEPOSITING THE SERVICE TAX TO THE AUTHORITIES . AS SUCH BIDDERS QUOTED RATES SHALL NOT BE INCLUSIVE OF SERVICE TAX AND NO SEPERATE SERVICE TAX ARE RERQUIRED TO BE QUOTED BY THE CONTRACTOR IN THE RATE SCHEDULES.		

VOLUME-III					
BOQ CUM RATE SCHEDULE (SUPPLY), REV-1					
JOB:	SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT,JHARKHAND				
	TENDER NO. PSER:SCT:MTN- E 854:08				
SUPPLY OF EQUIPMENT & MATERIAL (SECTION-A)					
Sl.No.	Description of Items	Qty	Unit	Unit Rate (In Rs.)	Total Amount (In Rs.) (In Figs & In Words)
01	Supply of PCC pole 9 M long (W/L - 400 kg) as per SEB Specification (Size as per drg. TOP-230mmx100mm & BOTTOM 410 mmx 100 mm	75	No		
02	7/4 mm STAY SET WITH TURN BUCKLE / BOW TIGHTENER/ BOW SET WITH TURN BUCKLES : Supply of stay set complete Galvanised with 19/20 mm dia x1.8 meter long stay rod, anchor plate size 45 cm x45 cm x7.5 mm thick, thimble, staty clamp, turn buckle,(20 mm x60 mm) /bow tightener, 7/4.00 mm dia. GI staty wire and strain insulator, clamps, hardware etc. as required	20	set		
03	Supply of 11 KV pin type insulators (10KN) & fittings as per relevant IS: 731, IS: 3188, IS: 2486(Part-I) as per specification, complete with large steel head GI pins, nuts, washer etc. as required Make - BHEL Banglore /WSI Chennai /Jayashree Insulator Halol/ Calcutta /Modern Insulator Abu Road	230	No		
04	Supply of 11 KV disc insulators (70KN) for 11 KV overhead line as per relevant IS: 731, IS: 3188, IS:2486(Part-I) as per specification with galvanised insulator fitting, ball and socket type and complete with galvanised strain clamps, bolts, nuts, washers etc. as required Make : BHEL Banglore /WSI Chennai /Jayashree Insulator Halol/ Calcutta /Modern Insulator Abu Road	140	No		
05	Supply of lightning arrester distribution class type non-linear resistor as per IS: 3070 type, suitable for 11 kv over head lines with rated voltage of 9 Kv (rms) with nominal discharge current rating of 5 KA and complete with galvanised bolts, nuts, washers, fitting etc. as required.	24	No		
06	Supply of 12 KV, rated current 100 Amps DO fuse assembly as per relevant IS complete with mounting base, harware, clamps insulators, operating rod, terminal connector including fuse rating suitable for 500 KVA, 250 KVA, 1000 KVA, etc.	8	set		
07	Supply of 11 KV out door type gang operated AB switch tripple pole 800 Amps rating , with 3 post pin insulators per phase, bi-metallic connector, suitable for horizontal or vertical position mounting with adequate length of G.I. Pipe for operating handle erected on extended square shaft. with necessary clamps, hardware etc.	2	set		
08	Supply of 11 KV out door type gang operated AB switch tripple pole 400 Amps rating , with 3 post pin insulators per phase, bi-metallic connector, suitable for horizontal or vertical position mounting with adequate length of G.I. Pipe for operating handle erected on extended square shaft. with necessary clamps, hardware etc.	6	set		
09	Supply of 11 KV out door type gang operated AB switch tripple pole 200 Amps rating , with 3 post pin insulators per phase, bimetallic connector, suitable for horizontal or vertical position mounting with adequate length of G.I. Pipe for operating handle erected on extended square shaft. with necessary clamps, hardware etc.	4	set		
10	Supplying of 15 mm G.I. Pipe (Gr.B) 3 meter long for protection of earth wire	200	metre		
11	Supply of GI strip size 50 x 6 mm for earthing	500	metre		
12	Supply of GI strip size 25 x 3 mm for earthing	500	metre		
13	Supply of earth electrode 40 mm dia. 3 Mtr long GI pipe (grade -B)	50	No		
14	Supply earth wire size 6.09 mm. Dia. GI wire	500	metre		

VOLUME-III A					
BOQ CUM RATE SCHEDULE (SUPPLY), REV-1					
JOB:	SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT, JHARKHAND				
	TENDER NO. PSER:SCT:MTN- E 854:08				
SUPPLY OF EQUIPMENT & MATERIAL (SECTION-A)					
SI.No.	Description of Items	Qty	Unit	Unit Rate (In Rs.)	Total Amount (In Rs.) (In Figs & In Words)
15	Supply of GI Earth Spike 1822 x 20 mm	20	No		
16	Supply of Overhead ACSR conductor 'Rabbit' as per specification [6/3.35 mm Al + 1/3.35 mm Steel]	4500	metre		
17	11 KV Heat shrinkable XLPE cable Joint (Out Door) : Supplying outdoor cable end termination with heat shrinkable jointing kit complete with accessories including lugs suitable for cable size three core x 150 sqmm. Aluminium conductor. Make - Raychem or equivalent.	4	No		
18	Supply of CC spun pipe of 300 mm dia.	10	metre		
19	Supply of GI pipe (Gr.B) 50 mm dia	20	metre		
20	Supply of GI pipe (Gr.B) 75 mm dia	20	metre		
21	Supply of 2.5mm Sqr. PVC wire for fixing of luminaries in open storage yard	150	metre		
22	Supply of HT danger notice plate of size 250 mm x 200 mm x 2 mm thk., made of mild steel plate painted with vitreous enamelled white on both side and inscription in Red colour on front side as required.	100	No		
23	Supply of Structural steel [IS] for fabrication	5	MT		
	GRAND TOTAL PRICE FOR SUPPLY OF EQUIPMENT				

VOLUME-III A					
BOQ CUM RATE SCHEDULE (ERECTION & COMMISSIONING), REV-1					
JOB: SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT, JHARKHAND					
TENDER NO. PSER:SCT:MTN- E 854:08					
ERECTION OF 11 KV OVER HEAD LINE , EQUIPMENTS & ACCESSORIES { SECTION B (i) }					
Sl. No.	Description of Items	Qty	Unit	Rate	Total Amount (In Rs) (In Figs & In Words)
01a.	Erection of PCC Poles :: Excavation (in all types of soil) including disposal of excess earth as per direction of engineer, for poles pit size 60 cms x 60 cms.x 1.5/1.8 Mtrs deep, erection of PCC poles [including supply & erection of anticlimbing devices] in true plumb, back filling the pit after erection with jhama brick bats of size 63 mm to 40 mm and down including watering, if necessary duly compacted in layers. The rate inclusive of excavation including disposal, supply of jhama bricks, labour, tools & tackles, etc all complete in the approved manner.	75	Nos.		
01b.	Erection of Rail Pole : Providing cement concrete foundation including excavation (In all types of soil) for poles pit size 60 cmsx60 cms.x 1.8/2 Mtrs deep in 1:3:6 cement concrete (1 cement, 3 coarse sand, 6 graded stone aggregate 40 mm nominal size) including form work , concrete foundation of 20mm thick all around the pole foundation and upto 20 cms above the ground level and tapered suitably into collar, hieght plinth duly plastered and with necessary curing and fishing, back filling etc. in the approved manner.	6	Nos.		
02	Erection of stay set complete with turn buckle, stay rod, anchor plate, thimble, staty clamp, bow tightener, staty wire and strain insulator, clamps , hardware etc. as required in cement concrete 1:3:6 (1 cement : 3 Coarse sand ; 6 Graded stone aggregate 40 mm nominal size) in foundation including excavation in all type of soil and back filling etc. as required including supply of cement & all other civil materials.	20	sets.		
03	Erection of a of 11 KV pin type insulators complete with large steel head GI pins, nuts, washer etc. as required	210	Nos.		
04	Erection of 11 KV disc insulators for 11 KV overhead line with galvanised insulator fitting, ball and socket type and complete with galvanised strain clamps, bolts, nuts, washers etc. as required	120	Nos.		
05	Erection of lightning arrester distribution class type, suitable for 11 kv over head lines complete with galvanised bolts, nuts, washers, fitting, etc. as required.	24	Nos.		
06	Installation of 11 KV DO fuse assembly complete with mounting base, harware , clamps insulators, operating rod, terminal connector, etc.	8	Sets		
07	Installation of 11 KV out door type gang operated AB switch tripple pole 200 / 400 / 800 Amps rating with 3 post pin insulators per phase, bimetallic connector mounted horizontal or vertical position on provided cross arm with adequate length of G.I. Pipe for operating handle erected on extended square shaft. The operating handle provided with lock & key at suitable height from ground level with necessary clamps, hardware etc.	10	Sets		
08	Installation of 15 mm G.I. Pipe 3 meter long for protection of earth wire lead to earth electrode with suitable clamping arrangment and hardware.	180	Mtrs.		
09	Supply & installation of Cradle type Cage gauard (along /across the road for 11 KV single circuit) shall run along the line made out of 6 SWG GI wire confirming to IS 2633 including netting, stretching and joining of cage including lacing by 10/12 SWG GI wire, binding by 14/16 SWG GI wire.	0.1	KM		

VOLUME-III A					
BOQ CUM RATE SCHEDULE (ERECTION & COMMISSIONING), REV-1					
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TENDER NO. PSER:SCT:MTN- E 854:08					
ERECTION OF 11 KV OVER HEAD LINE , EQUIPMENTS & ACCESSORIES { SECTION B (i) }					
Sl. No.	Description of Items	Qty	Unit	Rate	Total Amount (In Rs) (In Figs & In Words)
10	Installation [including welding, etc & supply of matching hardwares like nut, bolts, washers, etc] of GI strip size 50 x 6 mm for interconnecting the earth pits ion sub station, transformer netrual earthing etc.	450	Mtrs		
11	Installation of GI strip size 25 x 3 mm [including welding, etc & supply of matching hardwares like nut, bolts, washers, etc] for earthing AB swtich, DO fuse assembly etc,	450	Mtrs.		
12	Supply & making the earth pit as per IS 3043 including earth/massonary work, (size of electrode 50 mm dia. G.I. Pipe, 3 Meter long, class 'B'). Pit shall be filled with alternative layer of charcoal & salt. GI Pipe shall be with funnel with wire mesh for watering. Mansonry block C.I.cover coplete as per IS. All the earth pits are to be inter connectecd with GI strip of size 50x6 mm including all the material arranged by the contractor.	20	Nos.		
13	Installation of earth electrode 40 mm dia. 3 metre long GI pipe directly driven into earth including earth excavation if required..	50	Nos.		
14	Installation of earthwire 6.09 mm dia including supply of clamps, cleats, etc	450	metre		
15	Erection of Earth Spike	20	No		
16	Stringing ACSR conductor of size "Rabbit" conductor [6/3.35 mm Al + 1/3.35 mm Steel] for over head line with stringing binding with proper size of aluminium conductor, jumpering and suitable size of P.G. clamps for jumpering from overhead lines to lightning arrestors/ AB switch/ DO fuse assembly and transformer HT terminal as per the arrangement, etc. as required. [Rate inclusive of supply of accessories]	4200	Mtrs.		
17	Laying of 3 core x 150sqmm 11 kv grade XLPE HT cable which includes excavation of trench in all king of soil , laying of cable below ground providing sand layer below/ above the cable, brick lining both side and above the cable and back filling as per specification.	250	Mtrs		
18	11 KV Heat shrinkable XLPE cable Joint (Out Door):- Making cable end termination with heat shrinkable jointing kit complete with accessories including lugs suitable for cable size three core x 150 sqmm. Aluminium conductor.	4	sets		
19	Laying of 3-1/2 core x 240/300 sqmm 1.1 kv grade PVC LT cable which includes excavation of trench in all king of soil , laying below ground providing sand layer below/ above the cable, brick lining both side and above the cable and back filling as per specification.	1500	Mtrs		
20	Termination of 3-1/2 core x 240/300 sqmm Al armoured cable including glanding, drilling the hole in gland plate & making termination with double compression cable gland and copper lugs for 3-1/2 core x240/300 sqmm aluminium armoured cable (Both the end of cable shall be treated one termination)	40	Nos.		
21	Laying below ground in excavated trench (as per specification) of CC spun pipe of 300 mm dia. Wherever cable laid through pipe for road crossing purpose.	10	Mtrs.		
22	Installation of GI pipe 50 mm dia including clamps, hardware etc.	20	Mtrs.		
23	Installation of GI pipe 75 mm dia including clamps, hardware etc.	20	Mtrs.		

VOLUME-III A					
BOQ CUM RATE SCHEDULE (ERECTION & COMMISSIONING), REV-1					
JOB: SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT, JHARKHAND					
TENDER NO. PSER:SCT:MTN- E 854:08					
ERECTION OF 11 KV OVER HEAD LINE , EQUIPMENTS & ACCESSORIES { SECTION B (i) }					
Sl. No.	Description of Items	Qty	Unit	Rate	Total Amount (In Rs) (In Figs & In Words)
24	Fixing of HT danger notice plate on tubulat pole / DP structure of size 250 mm x 200 mm x 2 mm thk., made of mild steel plate painted with vitreous enamelled white on both side and inscription in Red colour on front side as required.	80	Nos.		
25	Installation, testing and commissioning of 11/0.433KV transformer including assembly of loose supplied accessories, oil filling, drying out /oil filtration etc.				
	a] 500 kva Transformer	6	Nos.		
26	Installation, testing and commissioning of LT distribution out door kiosk with all the provision as per specification.				
	a] Type - A (Incomer 800 Amps, Outgoing 400 Amps - 2 Nos., Outgoing 200 A - 1 No & Outgoing 100 Amps - 2 Nos.]	5	Nos.		
	b] Type - B (Incomer 400 Amps, Outgoing 250 Amps - 2 Nos., Outgoing 100 A - 1 No & Outgoing 63 Amps - 2 Nos.]	3	Nos.		
27	Fixing of luminaries/lights on rail/PCC poles with suitable fixtures/hardwares and wiring thereon in open storage (Necessary luminariaries,hardwares,wires etc. shall be supplied by BHEL free of cost)	30	Nos.		
28	Fabrication, installation of various structural members such as cross arms, top adaptors, etc for poles, straight line DP structure/ sub-station DP structure/ DP structure for Line Tap-Offs, bracings member , clamps, bracket for gaurd wire or any other fabrication if required and not specified elsewhere in the tender specification etc; including supply of required matching hardwares and painting of one coat of red oxide & two coats of aluminium paint. This also includes the fabrication of other items as required.	5	MT		
29	Providing and fixing G.I.chain link fencing (75 mm x 75 mm x 8g) of approved quality with galvanised C-clips to a grid of horizontal strands of galvanised high tensile spring steel wire of 12 SWG which have to be tensioned and fixed to the vertical post by means of galvanised special clips, bolts, nuts, etc. The fencing to be provided around the sub-station with minimum clearance as per Electricity rules and 2500mm minimum height with suitable steel structural posts (angle iron shall not be less than 65x65x10 mm) spaced at 2M centre to centre with 1:3:6 concrete foundation size 300x300x500 mm approx for stability of the fencing. Support shall be painted with primer and 2 coats of synthetic enamel. The fence shall be made lockable by providing 2 Nos. of suitable gates made of the same section/frame and chain link fencing. Rates are inclusive of supply of all materials including supply of cement & structural steel. Earthing of fencing as per IE rules.	400	sq m		
30	Filling including supply of area in side the fencing with 20mm gravel, 100mm thick bed.	350	sq m		

VOLUME-III A					
BOQ CUM RATE SCHEDULE (ERECTION & COMMISSIONING), REV-1					
JOB: SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT, JHARKHAND					
TENDER NO. PSER:SCT:MTN- E 854:08					
ERECTION OF 11 KV OVER HEAD LINE , EQUIPMENTS & ACCESSORIES { SECTION B (i) }					
Sl. No.	Description of Items	Qty	Unit	Rate	Total Amount (In Rs) (In Figs & In Words)
31	FOUNDATION FOR TRANSFORMERS AND ACDBs, etc				
a	EARTH WORK EXCAVATION UPTO 0 TO 2 M DEPTH IN ALL KINDS OF SOIL FOR FOUNDATION . SPREADING THE EARTH UNIFORMLY AROUND THE FENCING AREA FOR SITE DEVELOPMENT AS DIRECTED BY ENGINEER.	200	CuM		
b	PROVIDING AND LAYING OF PLAIN CEMENT CONCRETE OF MIX 1:4:8 USING 40MM & DOWN SIZE STONE AGGREGATE FOR FOUNDATION, INCLUDING SHUTTERING, CURING, CONSOLIDATION ETC. COMPLETE AS PER STANDARD SPECIFICATIONS AND AS DIRECTED BY ENGINEER. THE RATE INCLUSIVE OF SUPPLY OF CEMENT AND OTHER CIVIL MATERIALS.	15	CuM		
c	PROVIDING BRICK WORK IN CM 1:6 (MIN. STRENGTH 35KG/SQ.CM) FOR FOUNDATION, INCLUDING COST OF ALL MATERIALS, LABOUR, SCAFFOLDING, CURING ETC. COMPLETE AND AS DIRECTED BY ENGINEER	60	CuM		
d	PROVIDING & FILLING IN WITH SAND ETC. AND COMPACTION COMPLETE, AS PER STANDARD SPECIFICATION AND AS INSTRUCTED BY ENGINEER.	90	CuM		
e	PROVIDING AND LAYING RCC OF MIX 1:2:4 USING 20MM DOWN SIZE STONE AGGREGATE INCLUDING MECHANICAL MIXING, VIBRATION, CURING, FORM WORK AND POCKETS, ETC AS DIRECTED BY ENGINEER BUT EXCLUDING COST OF REINFORCEMENTS FOR FOUNDATION.	10	CuM		
f	PROVIDING AND PLASTERING 12 MM THK ON THE EXPOSED SURFACE WITH CEMENT MORTAR 1:6 OVER BRICKWORK AND CONCRETE SURFACES, INCLUDING PREPARING THE SURFACE, RAKING JOINTS, SCAFFOLDING, CURING, COST OF ALL MATERIALS, LABOUR ETC. COMPLETE.	145	sqM		
g	PROVIDING AND FIXING REINFORCEMENT OF INCLUDING CUTTING, BENDING AND FABRICATION OF REINFORCEMENT USING HIGH TENSILE TOR STEEL AS DIRECTED BY ENGINEER INCLUDING COST OF ALL LEADS, LIFT AND MATERIALS, LABOUR AND MS BINDING WIRE 18/20 GAUGE ETC. COMPLETE.	1	MT		
h	SUPPLY, FITTING & FIXING OF INSERTS/EMBEDMENTS LIKE CHANNEL, ANGLE, RAILS, PLATES, ETC ALL COMPLETE AND SECONDARY GROUTING (1:1:2) IF REQUIRED OVER THE RCC. THE RATE INCLUSIVE OF COST OF ALL MATERIALS	0.5	MT		
GRAND TOTAL PRICE FOR ERECTION, TESTING AND COMMISSIONING					

VOLUME-III A**BOQ CUM RATE SCHEDULE(OPERATION & MAINTENANCE), REV-1**

JOB: SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT, JHARKHAND

TENDER NO. PSER:SCT:MTN- E 854:08**OPERATION AND MAINTENANCE OF ERECTED SYSTEM OF 11 KV OVER HEAD LINE, EQUIPMENTS & ACCESSORIES AND AS DIRECTED BY BHEL.**

Sl. No.	Description of Items	Qty	Unit	Rate	Total Amount (In Rs) (In Figs & In Words)
01	OPERATION & MAINTENANCE OF 11 KV OVERHEAD LINES, TRANSFORMERS, SUB-STATIONS & ASSOCIATED EQUIPMENT AS ERECTED AND MAINTENANCE OF ELECTRICAL INSTALLATIONS OF BHEL LIKE OFFICE SHEDS, STORES SHEDS (CLOSED AND SEMI CLOSED), STORAGE YARD, ETC.AS PER INSTRUCTION OF BHEL. START OF O&M :: UPON SUCCESSFUL INSTALLATION AND COMMISSIONING OF THE SYSTEM (TO BE CERTIFIED BY CONSTRUCTION MANAGER, BHEL)	2	MONTHS		
	GRAND TOTAL OF SECTION - C				

VOLUME-IIIB	
PRICE/RATE SCHEDULE, REV-1	
JOB:	SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT, JHARKHAND
TENDER NO :- PSER:SCT:MTN-E854:08	
PREAMBLE	
01	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender as per NIT together with subsequent changes/ modifications etc thereto as applicable as on date of submission of price offer.
02	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions. Drawings enclosed with this document are only preliminary for giving some idea of the work involved
03	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
04	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc equipment, strengthening of roads/culverts/bridges etc including arranging all clearances etc required for carrying out different activities & tests, materials, levies, taxes & duties (except service Tax), transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the tender document and this schedule.
05	The quantities of the various items mentioned in this schedule of items are approximate, based on the preliminary information and may vary to any extent or to be deleted altogether. The quoted rates shall remain firm and valid for +/- 30% variation in quantities as indicated in relevant Annexure of weight schedule throughout the period of execution including extension, for reasons what-so-ever.
06	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing and leveling etc including fixing of grid pillars, benchmarks etc required for commencement of site activities. No separate payment will be made towards the same.
07	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English
08	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
09	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.
10	Summation of quoted prices all the price/rate schedules shall be considered for evaluation.
11	All works item wise shall be measured upon completion and paid for at the rates quoted & accepted.

VOLUME-IIIB**PRICE/RATE SCHEDULE, REV-1**

JOB: SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT, JHARKHAND

TENDER NO. PSER:SCT:MTN- E 854:08

ABSTRACT OF QUOTED PRICE

Sl.no.	SECTION	DESCRIPTION	TOTAL AMOUNT AS PER QUOTED RATES (IN Percent to Grand Total) (IN FIGURES AND IN WORDS)
1	Section -A	SUPPLY OF EQUIPMENT	
2	Section -B (i)	RECEIPT, HANDLING, ERECTION , TESTING, COMMISSIONING AND HANDING OVER	
3	Section -C(i)	OPERATION AND MAITENANCE OF THE ERECTED SYSTEM FOR 2 MONTHS.	
	GRAND TOTAL PRICE OF SECTION -A (+) SECTION -B (i) (+) SECTION-C - (ALL INCLUSIVE TOTAL PRICE)		100 %

NOTE:

1	QUOTED OVER ALL PRICE ONLY WILL BE CONSIDERED FOR BID EVALUATION PURPOSE AND SECTION WISE RATES ARE BEING OBTAINED FOR FACILATATING PRORATA BILLING.
2	SERVICE TAX (AS APPLICABLE) WILL BE REIMBURSED BY BHEL EXTRA AGAINST SUBMISSION OF DOCUMENTARY EVIDENCES TO THE SATISFACTION OF BHEL. HOWEVER, CONTRACTOR SHALL OBTAIN PRIOR APPROVAL OF BHEL IN WRITING BEFORE DEPOSITING THE SERVICE TAX TO THE AUTHORITIES . AS SUCH BIDDERS QUOTED RATES SHALL NOT BE INCLUSIVE OF SERVICE TAX AND NO SEPERATE SERVICE TAX ARE RERQUIRED TO BE QUOTED BY THE CONTRACTOR IN THE RATE SCHEDULES.

VOLUME-IIIB

BOQ CUM RATE SCHEDULE (SUPPLY), REV-1

JOB: SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT,JHARKHAND

TENDER NO. PSER:SCT:MTN- E 854:08

SUPPLY OF EQUIPMENT & MATERIAL (SECTION-A)

Sl.No.	Description of Items	Qty	Unit	Unit Rate (To be derived)	Total Amount (In Percent to grand Total) (In Figs & In Words)
01	Supply of PCC pole 9 M long (W/L - 400 kg) as per SEB Specification (Size as per drg. TOP-230mmx100mm & BOTTOM 410 mmx 100 mm)	75	No		
02	7/4 mm STAY SET WITH TURN BUCKLE / BOW TIGHTENER/ BOW SET WITH TURN BUCKLES : Supply of stay set complete Galvanised with 19/20 mm dia x1.8 meter long stay rod, anchor plate size 45 cm x45 cm x7.5 mm thick, thimble, staty clamp, turn buckle,(20 mm x60 mm) /bow tightener, 7/4.00 mm dia. GI staty wire and strain insulator, clamps, hardware etc. as required	20	set		
03	Supply of of 11 KV pin type insulators (10KN) & fittings as per relevant IS: 731, IS: 3188, IS: 2486(Part-I) as per specification, complete with large steel head GI pins, nuts, washer etc. as required Make - BHEL Banglore /WSI Chennai /Jayashree Insulator Halol/ Calcutta /Modern Insulator Abu Road	230	No		
04	Supply of 11 KV disc insulators (70KN) for 11 KV overhead line as per relevant IS: 731, IS: 3188, IS:2486(Part-I) as per specification with galvanised insulator fitting, ball and socket type and complete with galvanised strain clamps, bolts, nuts, washers etc. as required Make : BHEL Banglore /WSI Chennai /Jayashree Insulator Halol/ Calcutta /Modern Insulator Abu Road	140	No		
05	Supply of lightning arrester distribution class type non-linear resistor as per IS: 3070 type, suitable for 11 kv over head lines with rated voltage of 9 Kv (rms) with nominal discharge current rating of 5 KA and complete with galvanised bolts, nuts, washers, fitting etc. as required.	24	No		
06	Supply of 12 KV, rated current 100 Amps DO fuse assembly as per relevant IS complete with mounting base, harware, clamps insulators, operating rod, terminal connector including fuse rating suitable for 500 KVA, 250 KVA, 1000 KVA, etc.	8	set		
07	Supply of 11 KV out door type gang operated AB switch tripple pole 800 Amps rating , with 3 post pin insulators per phase, bimetallic connector, suitable for horizontal or vertical position mounting with adequate length of G.I. Pipe for operating handle erected on extended square shaft. with necessary clamps, hardware etc.	2	set		
08	Supply of 11 KV out door type gang operated AB switch tripple pole 400 Amps rating , with 3 post pin insulators per phase, bimetallic connector, suitable for horizontal or vertical position mounting with adequate length of G.I. Pipe for operating handle erected on extended square shaft. with necessary clamps, hardware etc.	6	set		
09	Supply of 11 KV out door type gang operated AB switch tripple pole 200 Amps rating , with 3 post pin insulators per phase, bimetallic connector, suitable for horizontal or vertical position mounting with adequate length of G.I. Pipe for operating handle erected on extended square shaft. with necessary clamps, hardware etc.	4	set		
10	Supplying of 15 mm G.I. Pipe (Gr.B) 3 meter long for protection of earth wire	200	metre		
11	Supply of GI strip size 50 x 6 mm for earthing	500	metre		
12	Supply of GI strip size 25 x 3 mm for earthing	500	metre		

VOLUME-IIIB					
BOQ CUM RATE SCHEDULE (SUPPLY), REV-1					
JOB:	SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT,JHARKHAND				
	TENDER NO. PSER:SCT:MTN- E 854:08				
SUPPLY OF EQUIPMENT & MATERIAL (SECTION-A)					
Sl.No.	Description of Items	Qty	Unit	Unit Rate (To be derived)	Total Amount (In Percent to grand Total) (In Figs & In Words)
13	Supply of earth electrode 40 mm dia. 3 Mtr long GI pipe (grade -B)	50	No		
14	Supply earth wire size 6.09 mm. Dia. GI wire	500	metre		
15	Supply of GI Earth Spike 1822 x 20 mm	20	No		
16	Supply of Overhead ACSR conductor 'Rabbit' as per specification [6/3.35 mm Al + 1/3.35 mm Steel]	4500	metre		
17	11 KV Heat shrinkable XLPE cable Joint (Out Door) : Supplying outdoor cable end termination with heat shrinkable jointing kit complete with accessories including lugs suitable for cable size three core x 150 sqmm. Aluminium conductor. Make - Raychem or equivalent.	4	No		
18	Supply of CC spun pipe of 300 mm dia.	10	metre		
19	Supply of GI pipe (Gr.B) 50 mm dia	20	metre		
20	Supply of GI pipe (Gr.B) 75 mm dia	20	metre		
21	Supply of 2.5mm Sqr. PVC wire for fixing of luminaries in open storage yard	150	metre		
22	Supply of HT danger notice plate of size 250 mm x 200 mm x 2 mm thk., made of mild steel plate painted with vitreous enamelled white on both side and inscription in Red colour on front side as required.	100	No		
23	Supply of Structural steel [IS] for fabrication	5	MT		
GRAND TOTAL PRICE FOR SUPPLY OF EQUIPMENT					100%

VOLUME-III B					
BOQ CUM RATE SCHEDULE(EREN& COMM MG), REV-1					
JOB:	SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT,JHARKHAND				
TENDER NO. PSER:SCT:MTN- E 854:08					
ERECTION OF 11 KV OVER HEAD LINE , EQUIPMENTS & ACCESSORIES { SECTION B (i) }					
Sl. No.	Description of Items	Qty	Unit	Unit Rate (To be derived)	Total Amount (In Percent of Grand Total) (In Figs & In Words)
01a.	Erection of PCC Poles :: Excavation (in all types of soil) including disposal of excess earth as per direction of engineer, for poles pit size 60 cms x 60 cms.x 1.5/1.8 Mtrs deep, erection of PCC poles [including supply & erection of anticlimbing devices] in true plumb, back filling the pit after erection with jhama brick bats of size 63 mm to 40 mm and down including watering, if necessary duly compacted in layers. The rate inclusive of excavation including disposal, supply of jhama bricks, labour, tools & tackles, etc all complete in the approved manner.	75	Nos.		
01b.	Erection of Rail Pole : Providing cement concrete foundation including excavation (In all types of soil) for poles pit size 60 cmsx60 cms.x 1.8/2 Mtrs deep in 1:3:6 cement concrete (1 cement, 3 coarse sand, 6 graded stone aggregate 40 mm nominal size) including form work , concrete foundation of 20mm thick all around the pole foundation and upto 20 cms above the ground level and tapered suitably into collar, hieght plinth duly plastered and with necessary curing and fishing, back filling etc. in the approved manner.	6	Nos.		
02	Erection of stay set complete with turn buckle, stay rod, anchor plate, thimble, staty clamp, bow tightener, staty wire and strain insulator, clamps , hardware etc. as required in cement concrete 1:3:6 (1 cement : 3 Coarse sand ; 6 Graded stone aggregate 40 mm nominal size) in foundation including excavation in all type of soil and back filling etc. as required including supply of cement & all other civil materials.	20	sets.		
03	Erection of a of 11 KV pin type insulators complete with large steel head GI pins, nuts, washer etc. as required	210	Nos.		
04	Erection of 11 KV disc insulators for 11 KV overhead line with galvanised insulator fitting, ball and socket type and complete with galvanised strain clamps, bolts, nuts, washers etc. as required	120	Nos.		
05	Erection of lightning arrester distribution class type, suitable for 11 kv over head lines complete with galvanised bolts, nuts, washers, fitting, etc. as required.	24	Nos.		
06	Installation of 11 KV DO fuse assembly complete with mounting base, harware , clamps insulators, operating rod, terminal connector, etc.	8	Sets		
07	Installation of 11 KV out door type gang operated AB switch tripple pole 200 / 400 / 800 Amps rating with 3 post pin insulators per phase, bimetallic connector mounted horizontal or vertical position on provided cross arm with adequate length of G.I. Pipe for operating handle erected on extended square shaft. The operating handle provided with lock & key at suitable height from ground level with necessary clamps, hardware etc.	10	Sets		
08	Installation of 15 mm G.I. Pipe 3 meter long for protection of earth wire lead to earth electrode with suitable clamping arrangment and hardware.	180	Mtrs.		

VOLUME-III B

BOQ CUM RATE SCHEDULE(EREN& COMMMG), REV-1

JOB: SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT,JHARKHAND

TENDER NO. PSER:SCT:MTN- E 854:08

ERECTION OF 11 KV OVER HEAD LINE , EQUIPMENTS & ACCESSORIES { SECTION B (i) }

Sl. No.	Description of Items	Qty	Unit	Unit Rate (To be derived)	Total Amount (In Percent of Grand Total) (In Figs & In Words)
09	Supply & installation of Cradle type Cage gauard (along /across the road for 11 KV single circuit) shall run along the line made out of 6 SWG GI wire confirming to IS 2633 including netting, stretching and joining of cage including lacing by 10/12 SWG GI wire, binding by 14/16 SWG GI wire.	0.1	KM		
10	Installation [including welding, etc & supply of matching hardwares like nut, bolts, washers, etc] of GI strip size 50 x 6 mm for interconnecting the earth pits ion sub station, transformer netrual earthing etc.	450	Mtrs		
11	Installation of GI strip size 25 x 3 mm [including welding, etc & supply of matching hardwares like nut, bolts, washers, etc] for earthing AB swtich, DO fuse assembly etc,	450	Mtrs.		
12	Supply & making the earth pit as per IS 3043 including earth/massonary work, (size of electrode 50 mm dia. G.I. Pipe, 3 Meter long, class 'B'). Pit shall be filled with alternative layer of charcoal & salt. GI Pipe shall be with funnel with wire mesh for watering. Mansonry block C.I.cover coplete as per IS. All the earth pits are to be inter connected with GI strip of size 50x6 mm including all the material arranged by the contractor.	20	Nos.		
13	Installation of earth electrode 40 mm dia. 3 metre long GI pipe directly driven into earth including earth excavation if required..	50	Nos.		
14	Installation of earthwire 6.09 mm dia including supply of clamps, cleats, etc	450	metre		
15	Erection of Earth Spike	20	No		
16	Stringing ACSR conductor of size "Rabbit" conductor [6/3.35 mm Al + 1/3.35 mm Steel] for over head line with stringing binding with proper size of aluminium conductor, jumpering and suitable size of P.G. clamps for jumpering from overhead lines to lightning arrestors/ AB switch/ DO fuse assembly and transformer HT terminal as per the arrangement, etc. as required. [Rate inclusive of supply of accessories]	4200	Mtrs.		
17	Laying of 3 core x 150sqmm 11 kv grade XLPE HT cable which includes excavation of trench in all king of soil , laying of cable below ground providing sand layer below/ above the cable, brick lining both side and above the cable and back filling as per specification.	250	Mtrs		
18	11 KV Heat shrinkable XLPE cable Joint (Out Door):- Making cable end termination with heat shrinkable jointing kit complete with accessories including lugs suitable for cable size three core x 150 sqmm. Aluminium conductor.	4	sets		
19	Laying of 3-1/2 core x 240/300 sqmm 1.1 kv grade PVC LT cable which includes excavation of trench in all king of soil , laying below ground providing sand layer below/ above the cable, brick lining both side and above the cable and back filling as per specification.	1500	Mtrs		

VOLUME-III B

BOQ CUM RATE SCHEDULE(EREN& COMMMG), REV-1

JOB: SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT,JHARKHAND

TENDER NO. PSER:SCT:MTN- E 854:08

ERECTION OF 11 KV OVER HEAD LINE , EQUIPMENTS & ACCESSORIES { SECTION B (i) }

Sl. No.	Description of Items	Qty	Unit	Unit Rate (To be derived)	Total Amount (In Percent of Grand Total) (In Figs & In Words)
20	Termination of 3-1/2 core x 240/300 sqmm Al armoured cable including glanding, drilling the hole in gland plate & making termination with double compression cable gland and copper lugs for 3-1/2 core x240/300 sqmm aluminium armoured cable (Both the end of cable shall be treated one termination)	40	Nos.		
21	Laying below ground in excavated trench (as per specification) of CC spun pipe of 300 mm dia. Wherever cable laid through pipe for road crossing purpose.	10	Mtrs.		
22	Installation of GI pipe 50 mm dia including clamps, hardware etc.	20	Mtrs.		
23	Installation of GI pipe 75 mm dia including clamps, hardware etc.	20	Mtrs.		
24	Fixing of HT danger notice plate on tubulat pole / DP structure of size 250 mm x 200 mm x 2 mm thk., made of mild steel plate painted with vitreous enamelled white on both side and inscription in Red colour on front side as required.	80	Nos.		
25	Installation, testing and commissioning of 11/0.433KV transformer including assembly of loose supplied accessories, oil filling, drying out /oil filtration etc.				
	a] 500 kva Transformer	6	Nos.		
26	Installation, testing and commissioning of LT distribution out door kiosk with all the provision as per specification.				
	a] Type - A (Incomer 800 Amps, Outgoing 400 Amps - 2 Nos., Outgoing 200 A - 1 No & Outgoing 100 Amps - 2 Nos.)	5	Nos.		
	b] Type - B (Incomer 400 Amps, Outgoing 250 Amps - 2 Nos., Outgoing 100 A - 1 No & Outgoing 63 Amps - 2 Nos.)	3	Nos.		
27	Fixing of luminaries/lights on rail/PCC poles with suitable fixtures/hardwares and wiring thereon in open storage (Necessary luminaries,hardwares,wires etc. shall be supplied by BHEL free of cost)	30	Nos.		
28	Fabrication, installation of various structural members such as cross arms, top adaptors, etc for poles, straight line DP structure/ sub-station DP structure/ DP structure for Line Tap-Offs, bracings member , clamps, bracket for gaurd wire or any other fabrication if required and not specified elsewhere in the tender specification etc; including supply of required matching hardwares and painting of one coat of red oxide & two coats of aluminium paint. This also includes the fabrication of other items as required.	5	MT		

VOLUME-IIIB

BOQ CUM RATE SCHEDULE(EREN& COMMMG), REV-1

JOB: SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT,JHARKHAND

TENDER NO. PSER:SCT:MTN- E 854:08

ERECTION OF 11 KV OVER HEAD LINE , EQUIPMENTS & ACCESSORIES { SECTION B (i) }

Sl. No.	Description of Items	Qty	Unit	Unit Rate (To be derived)	Total Amount (In Percent of Grand Total) (In Figs & In Words)
29	Providing and fixing G.I.chain link fencing (75 mm x 75 mm x 8g) of approved quality with galvanised C-clips to a grid of horizontal strands of galvanised high tensile spring steel wire of 12 SWG which have to be tensioned and fixed to the vertical post by means of galvanised special clips, bolts, nuts, etc. The fencing to be provided around the sub-station with minimum clearance as per Electricity rules and 2500mm minimum height with suitable steel structural posts (angle iron shall not be less than 65x65x10 mm) spaced at 2M centre to centre with 1:3:6 concrete foundation size 300x300x500 mm approx for stability of the fencing. Support shall be painted with primer and 2 coats of synthetic enamel. The fence shall be made lockable by providing 2 Nos. of suitable gates made of the same section/frame and chain link fencing. Rates are inclusive of supply of all materials including supply of cement & structural steel. Earthing of fencing as per IE rules.	400	sq m		
30	Filling including supply of area in side the fencing with 20mm gravel, 100mm thick bed.	350	sq m		

VOLUME-III B					
BOQ CUM RATE SCHEDULE(EREN& COMMMG), REV-1					
JOB:	SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD TO ERECTION SITE, ERECTION, TESTING AND COMMISSIONING OF EQUIPMENT AND SYSTEMS FOR CONSTRUCTION POWER DISTRIBUTION SYSTEM (11 KV OVERHEAD LINES, DISTRIBUTION TRANSFORMERS, LT KIOSKS ETC.) INCLUDING OBTAINING CLEARANCES FROM VARIOUS AUTHORITIES FOR 2x525 MW MAITHON RIGHT BANK PROJECT,JHARKHAND				
TENDER NO. PSER:SCT:MTN- E 854:08					
ERECTION OF 11 KV OVER HEAD LINE , EQUIPMENTS & ACCESSORIES { SECTION B (i) }					
Sl. No.	Description of Items	Qty	Unit	Unit Rate (To be derived)	Total Amount (In Percent of Grand Total) (In Figs & In Words)
31	FOUNDATION FOR TRANSFORMERS AND ACDBs, etc				
a	EARTH WORK EXCAVATION UPTO 0 TO 2 M DEPTH IN ALL KINDS OF SOIL FOR FOUNDATION . SPREADING THE EARTH UNIFORMLY AROUND THE FENCING AREA FOR SITE DEVELOPMENT AS DIRECTED BY ENGINEER.	200	CuM		
b	PROVIDING AND LAYING OF PLAIN CEMENT CONCRETE OF MIX 1:4:8 USING 40MM & DOWN SIZE STONE AGGREGATE FOR FOUNDATION, INCLUDING SHUTTERING, CURING, CONSOLIDATION ETC. COMPLETE AS PER STANDARD SPECIFICATIONS AND AS DIRECTED BY ENGINEER. THE RATE INCLUSIVE OF SUPPLY OF CEMENT AND OTHER CIVIL MATERIALS.	15	CuM		
c	PROVIDING BRICK WORK IN CM 1:6 (MIN. STRENGTH 35KG/SQ.CM) FOR FOUNDATION, INCLUDING COST OF ALL MATERIALS, LABOUR, SCAFFOLDING, CURING ETC. COMPLETE AND AS DIRECTED BY ENGINEER	60	CuM		
d	PROVIDING & FILLING IN WITH SAND ETC. AND COMPACTION COMPLETE,AS PER STANDARD SPECIFICATION AND AS INSTRUCTED BY ENGINEER.	90	CuM		
e	PROVIDING AND LAYING RCC OF MIX 1:2:4 USING 20MM DOWN SIZE STONE AGGREGATE INCLUDING MECHANICAL MIXING, VIBRATION, CURING, FORM WORK AND POCKETS, ETC AS DIRECTED BY ENGINEER BUT EXCLUDING COST OF REINFORCEMENTS FOR FOUNDATION.	10	CuM		
f	PROVIDING AND PLASTERING 12 MM THK ON THE EXPOSED SURFACE WITH CEMENT MORTAR 1:6 OVER BRICKWORK AND CONCRETE SURFACES, INCLUDING PREPARING THE SURFACE, RAKING JOINTS, SCAFFOLDING, CURING, COST OF ALL MATERIALS, LABOUR ETC. COMPLETE.	145	sqM		
g	PROVIDING AND FIXING REINFORCEMENT OF INCLUDING CUTTING, BENDING AND FABRICATION OF REINFORCEMENT USING HIGH TENSILE TOR STEEL AS DIRECTED BY ENGINEER INCLUDING COST OF ALL LEADS, LIFT AND MATERIALS, LABOUR AND MS BINDING WIRE 18/20 GAUGE ETC. COMPLETE.	1	MT		
h	SUPPLY, FITTING & FIXING OF INSERTS/EMBEDMENTS LIKE CHANNEL, ANGLE, RAILS, PLATES, ETC ALL COMPLETE AND SECONDARY GROUTING (1:1:2) IF REQUIRED OVER THE RCC. THE RATE INCLUSIVE OF COST OF ALL MATERIALS	0.5	MT		
GRAND TOTAL PRICE FOR ERECTION, TESTING AND COMMISSIONING					100 %

VOLUME-IIIB**BOQ CUM RATE SCHEDULE(OPERATION & MAINTENANCE), REV-1****JOB: SUPPLY, RECEIPT AT SITE, ALL HANDLING, TRANSPORTATION FROM STORE / STORE-YARD****TENDER NO. PSER:SCT:MTN- E 854:08****OPERATION AND MAINTENANCE OF ERECTED SYSTEM OF 11 KV OVER HEAD LINE,**

Sl. No.	Description of Items	Qty	Unit	Rate	Total Amount (In Rs) (In Figs & In Words)
01	OPERATION & MAINTENANCE OF 11 KV OVERHEAD LINES, TRANSFORMERS, SUB-STATIONS & ASSOCIATED EQUIPMENT AS ERECTED AND MAINTENANCE OF ELECTRICAL INSTALLATIONS OF BHEL LIKE OFFICE SHEDS, STORES SHEDS (CLOSED AND SEMI CLOSED), STORAGE YARD, ETC.AS PER INSTRUCTION OF BHEL. START OF O&M :: UPON SUCCESSFUL INSTALLATION AND COMMISSIONING OF THE SYSTEM (TO BE CERTIFIED BY CONSTRUCTION MANAGER, BHEL)	2	MONTHS		
GRAND TOTAL OF SECTION - C					100 %