

**BILL OF QUANTITY CUM PRICE SCHEDULE (Annexure-I)**  
**CIVIL WORK FOR EXTENSION OF 765/400kV S/S AT BARA IN ALLAHABAD U.P**

R0  
17.04.19

S.N	Item	Quantity	Unit	Unit Rate	Amount
1	Earth work in excavation by mechanical means (hydraulic excavator)/manual means over areas (exceeding 30cm in depth, 1.5m width as well as 10sqm on plan) including getting out and disposal of excavated earth lead upto 50m and lift upto 1.5m as directed by Engineer in charge.				
a	Ordinary rock	550	cum	221.05	121578
b	Hard rock (requiring blasting)	100	cum	389.50	38950
c	Hard rock (blasting prohibited)	1100	cum	619.80	681780
2	Excavation in foundation in <b>ordinary soil</b> (Loam Clay or Sand) including lift upto 1.5m and lead upto 30m & including backfilling, watering, ramming (compaction) of excavated earth into the trenches or into the space between the building and sides of the foundation work.	250	cum	127.20	31800
3	<b>Add to Earth work item (SI No. 1 to 2)</b> for every additional 1.5M lift or part thereof within the switchyard area	1200	cum	19.20	23040
4	<b>Sand filling in plinth</b> including supply of necessary quantity of sand from outside the UPPCL premises including watering, dressing etc. rate to include cost of all materials, labour and T&P etc. required for proper completion of work	500	cum	884.00	442000
5	<b>Clearing jungle</b> including cutting of rank vegetation grass, bush, wood, tree and sapling of girth up to 30 cm measured at height of 1.0 m above ground level and removal of rubbish up to a distance 50 m out side the periphery of UPPCL Area.	5000	sqm	5.60	28000
6	<b>Earth filling</b> under floors and substation area including cost of earth when obtained from outside UPPCL area including its carriage, watering and compacting in to 20 cm layers and dressing of earth etc. complete.	1500	cum	322.40	483600
7	Concrete with 4 cm gauge 1st class brick ballast class 150mm coarse sand and cement in proportion of <b>12:6:1</b> in foundation and under floors including supply of all materials, labour & T&P etc. complete	20	cum	4309.60	86192
8	Concrete with 4 cm gauge class-1 brick ballast (class 150mm) coarse sand (F.M. 1.8 to 2.5) & cement in proportion of <b>8:4:1</b> in foundation & under floors including supply of all materials, labour & T&P etc. complete.	145	cum	4635.20	672104
9	Concrete with 4 cm gauge stone ballast, coarse sand (F.M. 1.8 to 2.5) and cement in proportion of <b>8:4:1</b> foundation & under floors including supply of all materials, labour & T&P etc. complete.	225	cum	5876.80	1322280
10	Concreting of <b>40mm thick RCC trench cover</b> in MS frame work (to be fabricated under other items of work) with CC 1:1.5:3 in cement, Coarse sand with 2 cm gauge graded hard stone ballast with 3 mm thick floating coat of neat cement finish on top of cover complete with supply of all material labour T&P etc. required for proper completion of work complete excluding cost of frame.	75	sqm	320.00	24000
11	Cement concrete with 2 cm gauge approved hard stone ballast, coarse sand (F.M. 1.8 to 2.5) and cement in proportion of <b>4:2:1</b> including supply of all materials, labour, side shuttering if required and T&P etc. required for proper completion of work.	10	cum	6286.40	62864
12	Cement concrete with 2 cm gauge approved hard stone ballast, coarse sand (F.M. 1.8 to 2.5) and cement in proportion of <b>3:1.5:1</b> including supply of all materials, labour, side shuttering if required and T&P etc. required for proper completion of work.	20	cum	7060.80	141216
13	RCC work with cement approved coarse sand (F.M. 1.8 to 2.5) and 2 cm gauge graded approved hard stone ballast like granite, quartzite etc from Dalla, Jhansi or other quarries and approved coarse sand in proportion <b>1:1.5:3</b> in <b>slab</b> excluding supply of reinforcement & its bending but including its fixing and binding the same with binding wire, including cost of all other materials labour and T&P.	10	cum	9379.20	93792
14	Supplying and filling stone ballasts in chilling tank complete including supply of all materials, labour and tools etc. required for proper completion. (Voided 30 % shall be deducted during measurement).	50	cum	1898.40	94920
15	RCC work with cement approved coarse sand (F.M. 1.8 to 2.5) and 2 cm gauge graded approved hard stone ballast like granite, quartzite etc from Dalla, Jhansi or other quarries and approved coarse sand in proportion <b>1:1.5:3</b> in <b>lighter beams i.e. having span upto 6m</b> , excluding supply of reinforcement & its bending but including its fixing and binding the same with binding wire, including cost of all other materials labour and T&P.	10	cum	10160.00	101600
16	RCC work with cement approved coarse sand (F.M. 1.8 to 2.5) and 2 cm gauge graded approved hard stone ballast like granite, quartzite etc from Dalla, Jhansi or other quarries in proportion <b>1:1.5:3</b> in <b>raft foundation and footings</b> excluding supply of reinforcement & its bending but including its fixing and binding the same with binding wire, including cost of all other materials labour and T&P.	800	cum	7784.00	6227200
17	Same as above item no. 16 in <b>RCC pile capping, gantry walls/column foundations and RCC pedestals</b> but in the proportion <b>1:1.5:3</b> .	20	cum	8034.40	160688
18	Same as above item no. 16 but in <b>R.C.C. Beam slab, walls, and R.C.C. column</b> (above FGL)	400	cum	10327.20	4130880
19	<b>First class brick</b> (class-150) work in 1:6 cement and coarse sand (F.M. 1.8 to 2.5) mortar in <b>foundation and plinth</b> including supply of all materials, labour & T&P etc. required for proper completion of work.	150	cum	4612.00	691800
20	Same as item no. 19 but in <b>superstructure</b> , thickness of wall not to be less than 1 brick (230mm) thick including supply of all materials, labour & T&P etc. required for proper completion of work.	90	cum	5109.60	459864
21	<b>First class brick work</b> (class 150) in 1:4 cement and coarse sand (FM 1.8 to 2.5) mortar in <b>foundation and plinth</b> including cost of all materials, labour and T&P etc. required for proper completion of work	250	cum	4739.20	1184800

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S.N	Item	Quantity	Unit	Unit Rate	Amount
22	Same as item no. 21 but in <b>superstructure</b> , thickness of wall not to be less than 1 brick (230mm) thick including supply of all materials, labour and T&P etc. required for proper completion of work.	70	cum	5236.80	366576
23	<b>Mild Steel or Iron work</b> in heavy sizes such as trusses built up gates, door frames, record, racks roof work gates, gratings, structure for supporting grating, plates, inserts and embedments etc. wrought to required form including holes rivetting or welding where necessary and also fixing in proper position and alignment including priming, cost of all materials supplied by contractor.	68	MT	61240.80	4164374
24	Steel reinforcement - Cold twisted bars/TMT- Fe 500 (To be procured from SAIL, TISCO, JINDAL STEEL and RINL only)				
a	Including supply, straightening, cutting and bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	5	MT	54353.60	271768
b	Excluding supply but including straightening, cutting, bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete including unloading & storage. (Reinforcement steel shall be supplied by BHEL free of cost)	55	MT	15698.40	863412
25	Fixing and grouting bolts upto 28mm to 56mm dia in proper alignment level and set out with help of a template complete including supply of all labour & T&P etc. required for proper completion of the work. (labour rates only).	50	No.	44.80	2240
26	Fixing and grouting GI Anchor bolt upto 25mm dia. in proper alignment level and set out with the help of a template including supply of all labour T&P etc. reqd. for proper completion of the work.	550	No.	34.40	18920
27	Providing M.S. Frames work for R.C.C. Trench covers and edging with M.S. Angles including cutting, bending, welding and priming of <b>MS Angle</b> & cutting and welding of MS bars for reinforcement & lifting hooks as per approved design. The rate is including cost of all labour, material etc. as required for proper completion of the work.	10	MT	58054.40	580544
28	<b>Fixing and grouting of trench edging</b> in proper level and alignment including cost of all labour and T&P etc required for proper completion of the work but excluding cost of C.C	150	RM	9.60	1440
29	Grouting of 90/105 lbs M.S. rail including cost of all materials, labour & T&P for fixing of rail in proper alignment, level and position in transformer plinth foundation etc. as per direction of Eng I/C. (Rail to be supplied by the dept.) (labour rates only).	20	RM	396.00	7920
30	S/F in position 90 lbs <b>M.S. Rail</b> for transformer plinth including cost of all labour, material and T&P etc. required for proper completion of the work.	70	RM	2796.00	195720
31	S/F in position 105 lbs <b>M.S. Rail</b> for transformer plinth including cost of all labour, material and T&P etc. required for proper completion of the work.	300	RM	3183.20	954960
32	Grouting of vertical or inclined post of pale/chain/security fencing in true level, alignment and in plumb or inclination as required, including cost of all labour, materials and T&P required for proper completion of work. (Post and concrete for grouting shall be measured separately)	20	No.	38.40	768
33	S/F 50x50mm, 8 gauge <b>G.I. chain link fencing</b> 1.8 M high including fixing to vertical posts, horizontal runners with 10mm dia. 40mm long bolts, nuts and washers complete with all material, labour and T&P etc. required for proper completion of work. Chain link of 8 gauge shall be galvanized by hot dipped method as per relevant IS Code. (Excluding cost of vertical posts and horizontal runners)	100	sqm	595.20	59520
34	Fixing of <b>cable trench racks</b> in proper position and alignment including cost of all labour, material and T&P etc. required for proper completion of the work (Labour rate only).	300	No.	7.20	2160
35	Fixing of template in position level and alignment for grouting of Anchor bolt in <b>main gantry</b> (labour rate only).	5	No.	181.60	908
36	Fixing of template in <b>Auxiliary Structure</b> for grouting of Anchor bolt in column of foundation. (labour rate only).	200	No.	115.20	23040
37	Fabrication of template for <b>main gantry foundation</b> including cost of all labour, and T&P etc. required for proper completion of the work. Steel shall be arranged by contractor free of cost. This template shall be property of contractor.	3	No.	676.00	2028
38	Same as above item no. 37 but for <b>auxiliary foundations</b> .	20	No.	340.00	6800
39	<b>12 mm thick plaster</b> with cement mortar consisting of 1 cement & 4 part of approved coarse sand of 2.5 fineness modulus over brick work minimum thickness not to be less than 10mm including supply of all materials, labour & T&P etc. required for proper completion of work.	700	sqm	167.20	117040
40	Providing (12x15) mm section groove in plaster including all material, labour and T&P etc. required for proper completion of the work.	300	RM	9.60	2880
41	<b>6 mm. thick plaster</b> with 1:3 cement & coarse sand including labour, materials & T&P etc. required for proper completion of the work.	1500	SQM	137.60	206400
42	Chamfering the edge of concrete in auxiliary structure, of size 25 mm wide in triangular section including all materials, labour & T&P etc complete.	50	RM	6.40	320
43	<b>3mm thick floating coat</b> of neat cement finish including supply of all materials, labour & T&P etc. required for proper completion of work. (cement consumption 0.044 bag/sqm).	700	SQM	14.40	10080
44	<b>2.5 cm thick 1:2:4 plain cement concrete floor</b> with cement approved coarse sand and 2cm graded stone ballast laid in panel finished with 3mm floating coat of neat cement as specified and removing any overlapping mortar at the joints of the panel if any and giving them a uniform finish including supply of all materials, labour and T&P etc. required for proper completion of work (Base CC shall be paid separately)	50	sqm	228.80	11440
45	Same as above item no. 44 but for 4 cm thick. (Base CC shall be paid separately)	50	sqm	378.40	18920
46	First class <b>brickson edge</b> floor laid dry, joints sand filled, including preparation of base to proper slope and its ramming including supply of all material, labour & T&P etc. required for proper completion of the work.	50	sqm	441.60	22080

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S.N	Item	Quantity	Unit	Unit Rate	Amount
47	Straight over burnt bricks on edge floor laid dry, joints and filled, including preparation of base to proper slope and its ramming including supply of all material labour & T&P etc. required for proper completion of the work.	50	sqm	446.40	22320
48	First class brick on edge floor-laid in cement mortar consisting of one part of cement and six parts of coarse sand and pointed with cement mortar 1:2 over and including all materials, labour, T&P etc. required for proper completion of work.	50	sqm	566.40	28320
49	Painting and varnishing on new wood, or new iron work with one coat of ready mixed priming paint and two coats of approved ready mixed paint (Luxol or equivalent brand or varnish) including supply of all materials, labour & T&P etc. required for proper completion of work.	1250	sqm	82.40	103000
50	Dismantling brick work or stone work in lime or cement mortar and including stacking of materials as directed by the Engineer-in-charge within a distance of 60 metres.	25	cum	372.80	9320
51	Dismantling reinforced cement concrete or reinforced brick work, including stacking of dismantled materials as directed by the Engineer-In-charge within a distance of 60 metres.	50	cum	834.40	41720
52	Laying cement concrete road slab consisting of 1 part cement 1½ part approved coarse sand and 3 part approved 20mm downgraded stone aggregate over prepared subgrade after its rectification and bringing it to proper camber and shape and making good to the satisfaction of E/I including cost of all materials, labour and T&P etc. required for proper completion of the work.	200	cum	6855.20	1371040
53	Filling of 20 mm. wide 100/150 mm. deep joint with coarse sand and saw dust mixed with hot bitumen etc. complete including supply of all materials, labour and T&P etc. required for proper completion of the work.	800	RM	36.00	28800
54	Providing and laying 300 mm non-pressure NP3 class RCC pipes with collars with stiff mixture of cement mortar in the proportion 1:2 (1-Cement, 2-Coarse sand) including testing of joints including cost of all material, labour, T&P etc. required for proper completion of the work.	30	RM	1149.60	34488
55	Providing and laying 600 mm non-pressure NP3 class RCC pipes with collars with stiff mixture of cement mortar in the proportion 1:2 (1-Cement, 2-Coarse sand) including testing of joints including cost of all material, labour, T&P etc. required for proper completion of the work.	45	RM	2557.60	115092
56	Placing of trench covers of all size in proper position including transportation from different places within the S/S area including supply of all materials, labour and T&P etc. required for proper completion of work.	200	No.	7.20	1440
57	Cartage of ballast, rock, kankar, coal grit or sand etc. including loading, unloading and spreading				
a	Upto 1st km	400	cum	98.40	39360
b	Upto 3rd km	800	cum	117.60	94080
58	Providing and laying stone aggregate in switch yard areas as per Technical specification SECTION VII Substation Civil Works-037806-41ES-1100 CLAUSE 3.4' all complete as per direction of Engineer in Charge. (The rate shall be inclusive of all materials, labour, loading, unloading but excluding micro leveling, dressing & anti weed treatment. PCC, if required, shall be paid separately under respective item.)	975	cum	1617.00	1576575
59	Same as above item 58 excluding Supply of stone aggregates, but including removal of existing laid gravel, stacking, washing and relaying but excluding micro leveling, dressing & anti weed treatment. PCC, if required, shall be paid separately under respective item.	1442	cum	807.90	1164992
60	Anti weed treatment in switch yard area including micro leveling, dressing etc as per Technical Specification	7850	sqm	12.80	100480
	<b>TOTAL (RS.)</b>				<b>29948233</b>

- NOTE:**
- Mode of measurement for civil works shall be as per customer technical specification.
  - The Rate of RCC/CC items includes the cost of form work ( Centering, shuttering and scaffolding) and no additional payment shall be made for form work
  - For excavation nothing extra shall be payable for slope, shoring, strutting etc. irrespective of whatever is provided. However the contractor shall maintain the required slope and working space as per the safety /statutory requirement and its cost is deemed to be included in the quoted rate. The overlapped portion in the case of adjacent foundation shall be paid once.

Annexure-II					
BILL OF QUANTITIES FOR UNDER GROUND EARTHING AND ELECTRODES REV.00					
Name of Project			Extension of 765/400kV S/S, Bara TPS (U.P.)		
Name of Work			Bill of Quantity for Under Ground Earthing and Electrodes		
S. No	Description	Unit	Qty.	Unit Rate	Total
1	Storing of 32 mm dia MS Rods and bringing out risers just below gravel level near the equipment foundations as per requirement including following works: - excavation of trenches - welding of rods (refer Drg No. C/ENG/STD/EARTHINGS, SH-2&3 Rev 00 for Welding details of rods) - backfilling of soil for bringing out pig tail risers of 32 dia MS rod (approximately 450) for equipments. Risers shall be raised from the existing earthmat (at 600 mm depth) to 150 mm above ground level to the nearest point of the equipment. This shall include all cutting, bending, welding, fixing, application of zinc rich paint on cutting surface, etc to the main earthmesh. - any other work necessary to complete the laying of earthmat (32 mm dia MS rod will be supplied by BHEL. Main earthmat is already existing at site with rod spacing approx. 6m)	MT	9.5	5,792.16	55,025.56
2	Fabrication & laying of Auxiliary Mat of 32 mm Dia MS Rods at a depth of 300 mm from top of FGL including excavation & backfilling as per Drg No. C/ENG/STD/EARTHINGS, SH-4 Rev 00. - any other work necessary to complete the laying of earthmat (32 Diameter MS rod will be supplied by BHEL)	Nos.	48	2,089.41	1,00,291.45
3	Installation of Pipe Electrode (to be driven - 3.0 Mtr) as per Drg. No. C/ENG/STD/EARTHINGS, SH-5 Rev 00 including following works: - excavation - installing the pipe electrode with alternate layers of Coke/charcoal and salt - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (GI Pipe, Nuts, Bolts & Washers and funnel with wire mesh will be supplied by BHEL)	Nos.	3	7,639.75	22,919.26
4	Installing of 32 mm diameter Rod Electrode with test pit as per Drg. No. C/ENG/STD/EARTHINGS, SH-6 Rev 00 including following works: - excavation - installing the rod electrode - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (32 mm dia MS rod will be supplied by BHEL)	Nos.	3	3,559.60	10,678.80
5	Installing of 32 mm diameter Rod Electrode without test pit as per Drg. No. TB-4-377-316-010, SH-11 Rev 00 including following works: - excavation - installing the rod electrode - backfilling and compaction - any other work necessary to complete the work (32 mm dia MS rod will be supplied by BHEL)	Nos.	40	3,179.79	1,27,191.55
TOTAL AMOUNT				Total	3,16,106.61
NOTE:- 1) Overall quantity may vary by +/- 40%. However, individual quantity may vary upto any extent at contract stage.)					
2) 40mm dia MS rod is mentioned in the attached drawings. Kindly replace 40mm MS dia rod with 32mm MS dia rod.					

<b>Annexure-III</b> <b>BOQ for Covered Store for Switchyard at 765/400kV Substation at Bara in Allahabad in Uttar Pradesh</b>		
Sl. No.	Description	Amount (Rs.)
1	1 Nos. covered store of 200 Sqm size as per standard specification of NIT.	12,63,430.00
	<b>Total Amount (Rs.)</b>	<b>12,63,430.00</b>

**ANNEXURE-IV**

**TRANSMISSION BUSINESS GROUP  
(SUB- CONTRACTS MANAGEMENT)  
TBG - NOIDA**

**PRICE SCHEDULE FORMAT**

**SUB: TENDER FOR "EXECUTION & HANDING OVER OF CIVIL WORKS FOR EXTENSION OF  
765/400KV SUBSTATION AT BARA IN ALLAHABAD IN UTTAR PRADESH".**

**TENDER NO.:- TBSM/BARA/CIVIL/TENDER/19-20, DATE: 30.04.2019**

(a) I/ We hereby agree to execute the above work at ----- % (in figure).....  
----- (in words) Above / Below/ At Par the rates of items given in BOQ  
(Annexure-I, II & III) of subject tender.

**NOTE:**

1. In this annexure the tenderer shall quote a percentage above/ below/At Par the rates shown in the Bill of Quantities Cum Price Schedule (Annexure-I, II & III) of subject tender for evaluation purpose. The percentage quoted shall be clearly written both in words and figures In case of discrepancy in rates in figure and words, the minimum will be taken into account by BHEL.
2. The quoted percentage will apply to the individual items uniformly.

Date:

Place

Signature of tenderer  
Name & Designation of authorized person(s) with seal

**ANNEXURE-V**

**EXECUTION & HANDING OVER OF CIVIL WORKS FOR EXTENSION OF 765/400KV SUBSTATION AT BARA IN ALLAHABAD IN UTTAR PRADESH**

**Tender Spec. no.:- TBSM/BARA/CIVIL/TENDER/19-20, Date 30.04.2019**

<b>SI No.</b>	<b>Description</b>	<b>Amount (Rs.)</b>
1	Total amount as per the rates in BOQ for " Execution & handing over of civil works for extension of 765/400kV Substation at Bara in Allahabad in Uttar Pradesh" (Annexure-I)	299,48,233.00
2	Total amount as per the rates in BOQ for Execution and Handing over of Earthing Works of Switchyard at 765/400kV Substation at Bara in Allahabad in Uttar Pradesh (Annexure-II)	3,16,106.61
3	Total Amount for 1 No. Covered Store of 200 Sqm size for Switchyard at 765/400kV Substation at Bara in Allahabad in Uttar Pradesh (Annexure-III)	12,63,430.00
4	<b>Total Amount for SI No. 1,2 &amp; 3</b>	<b>315,27,769.61</b>
5	Value of percentage above/below/at par (As indicated in Price Schedule Format, Annexure-II) applicable to the total amount of civil work (Sl. no. 1 above)	.....% above/below/ at par
6	<b>Total amount after consideration of percentage above/below/ at par.</b>	
	Total Amount in Words after consideration of percentage above/below/ at par:-	