

BILL OF QUANTITY AND PRICE SCHEDULE**Name of Project : SUBSTATION EXTENSION PACKAGE-SS02 FOR 765kV FATEHGARH-2 SUBSTATION****Name of Work : CIVIL WORKS OF SWITCHYARD**

S.No.	Description of Item	Unit	QUANTITY	UNIT RATE (Rs.)	AMOUNT (Rs.)
1(a)	Earthwork in excavation by mechanical means (Hydraulic excavator) / manual means including dewatering as necessary of rain water/subsoil seepage water and disposal of excavated earth upto 100m and lift upto 3.5m, disposed earth to be levelled and neatly dressed. All kinds of soil.	cum	7175	119.70	858847.50
1(b)	Earthwork in excavation by mechanical means (Hydraulic excavator) / manual means including dewatering as necessary of rain water/subsoil seepage water and disposal of excavated earth upto 100m and lift upto 3.5m, disposed earth to be levelled and neatly dressed. Ordinary rock	cum	360	210.00	75600.00
1(c)	Earthwork in excavation by mechanical means (Hydraulic excavator) / manual means including dewatering as necessary of rain water/subsoil seepage water and disposal of excavated earth upto 100m and lift upto 3.5m, disposed earth to be levelled and neatly dressed. Hard rock (blasting prohibited)	cum	360	588.10	211716.00
2	Filling available excavated earth (including rock) in trenches, plinth, sides of foundations, etc., in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead upto 100m and lift upto 3.5m.	cum	4810	119.50	574795.00
3	Supplying and filling in plinth with local sand under floors/foundations including watering, ramming, consolidating and dressing complete.	cum	5	770.27	3851.35
4	Carriage & disposal of surplus excavated earth/rock beyond initial lead by mechanical means not necessarily all the times on pucca roads, including loading, unloading, dressing of excavated material, etc., complete as per specifications -. Lead upto 1 km.	cum	3080	93.40	287672.00
5(a)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level. 1:2:4 (1 cement : 2coarse sand : 4 graded stone aggregate 20mm nominal size)	cum	80	4896.61	391728.80
5(b)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level. 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size)	cum	5	4194.67	20973.35
5(c)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level. 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)	cum	361	3941.11	1422740.71

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5(d)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level. 1:5:10 (1 cement : 5 coarse sand : 10 brick aggregate) with a layer of cement slurry of mix 1:6 (1 cement : 6 Fine Sand) over PCC layer as per Technical Specification. Note : The contractor has option to use stone aggregate in place of brick aggregate without any financial implication on BHEL)	cum	5	3303.50	16517.50
6	Extra for providing and mixing water proofing material 'Impermo' or equivalent in cement concrete work in the proportion recommended by the manufacturer.	per 50 kg cement	20	39.64	792.80
7(a)	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work including road, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge."(Note :- Cement content considered in this item is @ 330 kg/cum."Excess/ less cement used as per design mix is payable/recoverable separately). All works upto plinth level	cum	1850	5593.05	10347142.50
7(b)	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge."(Note :- Cement content considered in this item is @ 330 kg/cum."Excess/ less cement used as per design mix is payable/recoverable separately). All works above plinth level upto floor V level.	cum	296	6356.45	1881509.20
7(c)	Add for using extra cement in the items of design mix over and above the specefied cement content therein	quintal	430	507.13	218065.90
8	Extra for finishing of concrete (in road pavement) with screed board vibrator, vacuum dewatering process and finally finished by floating, brooming with wire brush etc complete.	cum	131	179.70	23540.70
9(a)	Centering and shuttering including strutting, propping, etc., and removal of form for: Foundations, footings, bases of columns, etc., for mass concrete.	sqm	1350	175.19	236506.50

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S.No.	Description of Item	Unit	QUANTITY	UNIT RATE (Rs.)	AMOUNT (Rs.)
9(b)	Centering and shuttering including strutting, propping, etc., and removal of form for: RCC walls at all levels (any thickness).	sqm	1900	350.78	666482.00
9(c)	Centering and shuttering including strutting, propping, etc., and removal of form for: Lintels, beams, plinth beams and cantilevers.	sqm	120	316.56	37987.20
9(d)	Centering and shuttering including strutting, propping, etc., and removal of form for: Columns, Pillars, Piers, Posts and Struts.	sqm	2180	431.68	941062.40
9(e)	Centering and shuttering including strutting, propping, etc., and removal of form for: Suspended floors, roofs, landings, balconies and access platform	sqm	10	392.93	3929.30
10(a)	Steel reinforcement -Cold twisted bars /TMT- Fe 500- Excluding supply but including straightening, cutting, bending, binding, (i/c cost of binding wire), placing in position, etc., all labour & material, complete. (Note: Reinf, steel shall be supplied by BHEL. Unloading, storing, watch & ward, handling and Testing of material as per PGCIL FQP shall be in bidders scope)	kg	185665	9.90	1838083.50
10(b)	Steel reinforcement -Cold twisted bars /TMT- Fe 500 (To be procured from SAIL, TISCO, IISCO and RINL only) Including supply, straightening, cutting, bending, binding, (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	kg	18567	47.14	875248.38
11	Brickwork with F.P.S. bricks of class designation 75 in foundation and plinth in: Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	2	4297.89	8595.78
12	Brickwork with F.P.S. bricks of class designation 75 in superstructure above plinth level to floor V level in all shapes and sizes in: Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	5	5087.52	25437.60
13	12 mm cement plaster of mix: 1:6 (1 cement : 6 coarse sand)	sqm	5	146.98	734.90
14	6 mm cement plaster to all ceilings of mix: 1:3 (1 cement : 3 Fine sand)	sqm	5	131.47	657.35
15	Neat cement punning	sqm	10	39.55	395.50
16	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade: Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture.	sqm	10	71.16	711.60
17	Structural steelwork welded in built up sections like edge protection angles, pipes, insert plates with lugs & framed work including providing, cutting, hoisting, fixing in position/ embedding in concrete and applying a priming coat of approved steel primer all complete.	kg	7080	48.79	345433.20

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S.No.	Description of Item	Unit	QUANTITY	UNIT RATE (Rs.)	AMOUNT (Rs.)
18	Steelwork welded in built up sections/framed work including providing, cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc., as required. In covering of floors/trenches of control room building with chequered plates, stringers, treads, landings, etc., of staircases involving use of chequered plates, wherever required, all complete.	kg	4200	53.83	226086.00
19	Steelwork welded in built up sections/framed work including providing, cutting, hoisting, fixing in position and applying approved primer etc., as required. In gratings, frames, ladders, stair railings, gates (including pipes), rails, ISMB, ISMC and similar works.	kg	38000	74.16	2818080.00
20	Applying priming coat - With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works.	sqm	10	27.04	270.40
21(a)	Providing,laying and fixing non pressure NP2 class (light duty) RCC pipes with collars jointed with stiff mixtureof cement mortar in portion of 1:2 (1cement:2fine sand) including trenching,backfilling etc.as per drawing and specification all complete excluding concrete and reinforcement. 150mm dia	RM	10	299.55	2995.50
21(b)	Providing,laying and fixing non pressure NP2 class (light duty) RCC pipes with collars jointed with stiff mixtureof cement mortar in portion of 1:2 (1cement:2fine sand) including trenching,backfilling etc.as per drawing and specification all complete excluding concrete and reinforcement. 250mm dia	RM	20	429.98	8599.60
22(a)	Providing and laying Medium duty hume pipe (NP3) as per drawing and specification all complete excluding concrete and reinforcement. 100mm dia	RM	10	333.80	3338.00
22(b)	Providing and laying Medium duty hume pipe (NP3) as per drawing and specification all complete excluding concrete and reinforcement. 250mm dia	RM	10	834.60	8346.00
22(c)	Providing and laying Medium duty hume pipe (NP3) as per drawing and specification all complete excluding concrete and reinforcement. 300mm dia	RM	10	1001.50	10015.00
22(d)	Providing and laying Medium duty hume pipe (NP3) as per drawing and specification all complete excluding concrete and reinforcement. 450mm dia	RM	5	1532.90	7664.50
23	Providing and fixing in culvert/road crossing/building PVC pipes conforming to IS : 12818 including jointing with seal in complete 150mm diameter	RM	10	261.50	2615.00

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S.No.	Description of Item	Unit	QUANTITY	UNIT RATE (Rs.)	AMOUNT (Rs.)
24(a)	Supplying and erection of approved make dewatering pumps including all cable and pipe connections alongwith auto starter and necessary shed all complete as per customer's specification and instruction of engineer in charge 0.5 HP	Nos	1	8569.70	8569.70
24(b)	Supplying and erection of approved make dewatering pumps including all cable and pipe connections alongwith auto starter and necessary shed all complete as per customer's specification and instruction of engineer in charge 2.0 HP	Nos	1	25000.00	25000.00
25	Supplying & fixing (all dia & length) foundation bolts in position with help of proper templates (to be supplied by contractor) including nuts, washers and template all complete as per drawings & directions of Engr-in-Charge. Weight of the template shall not be measured for payment purpose.	Kg	1740	51.60	89784.00
26	Extra over Item above for providing galvanised bolts (Mass of zinc coating = 610gms/sqm), nuts & washer .	kg	1740	5.40	9396.00
27	Fixing (all dia & length) foundation bolts in position with help of proper templates including nuts, washers and template (to be supplied by contractor) all complete as per drawings & directions of Engr-in-Charge. Weight of the template shall not be measured for payment purpose.	Kg	17380	6.80	118184.00
28	Providing & fixing in position precast cement concrete trench covers or perforated covers wherever necessary at various elevations in all kinds of work including moulding, formwork, mixing, laying out, compacting and curing, storing, transportation, erection without damage, setting in position with cement and sand mortar, grouting etc all as per specs, drawings and directions of Engr-in-Charge but excluding the cost of reinforcement, inserts, edge angles, etc. Grade of concrete shall be M25	Cum	15	5712.80	85692.00
29	Grouting of block outs, pockets, foundations, bolts holes and underside of base plates with cement, sand aggregate (of size 6 mm and down) grout 1:1:2 with non-shrink additive and shall be of strength not less than M30 including placing, curing, cleaning, surface preparation, testing, etc. complete with labour, materials, equipment, handling, testing, etc. all complete as per specifications, drawings and instructions of the Engineer.	cum	11	11246.70	123713.70
30	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth,dressing to camber and consolidating with road roller including making good the undulations etc and re-rolling the sub grade and disposal of surplus earth lead upto 50 metres.	sqm	365	81.50	29747.50
31 (a)	Suppling and stacking at site 90 mm to 45 mm size stone aggregate	cum	50	1214.75	60737.50

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S.No.	Description of Item	Unit	QUANTITY	UNIT RATE (Rs.)	AMOUNT (Rs.)
31 (b)	Suppling and stacking at site 63 mm to 45 mm size stone aggregate	cum	40	1317.20	52688.00
31 (c)	Suppling and stacking at site 53 mm to 22.5 mm size stone aggregate	cum	40	1401.26	56050.40
31 (d)	Suppling and stacking at site Stone screening 13.2 mm nominal size (type A)	cum	20	1367.67	27353.40
31 (e)	Suppling and stacking at site Stone screening 11.2 mm nominal size (type B)	cum	10	1328.28	13282.80
31 (f)	Suppling and stacking at site moorum	cum	10	534.85	5348.50
32	Laying spreading and compacting stone aggregate of specified sizes to WBM specifications including spreading in uniform thickness, hand picking, rolling with 3 wheeled road/vibratory roller 8-10tonne in stages to proper grade and camber, applying and brooming requisite type of screening/binding material to fill up interstices of coarse aggregate water and compacting to the required density (payment for stone aggregate, screenings, kankar, moorum and red bajri etc., to be made separately)	cum	115	421.88	48516.20
33	Providing and laying polythene sheet of 125 microns between the PCC and RCC slab all complete as per direction of Engineer in charge.	sqm	365	14.50	5292.50
34	Supplying & installation of bitumen impregnated fibre board confirming to IS 1838 as joint filler including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete as per specification, drawing and as directed by engineer. (20 mm wide joints)	Sqm	25	817.20	20430.00
35	SUPplying and filling in position hot applied bitumen sealing compound (Grade A) of specified thick confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints, sealant primer etc all complete as per specification, drawing and as directed by Engineer.	RM	55	10.60	583.00
36	Supplying and filling stone (40mm size) over grating for transformer/reactor foundation.	cum	72	1463.50	105372.00
37	Finishing walls with water proofing cement paint of required shade New work (Two or more coats applied @ 3.84 kg/10 sqm)	sqm	925	53.39	49385.75
38	Demolishing cement concrete Nominal mix 1:4:8 or leaner mix (i/c equivalent design mix) manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge.	cum	5	584.40	2922.00
39	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and foundation bolts and disposal of unservicable material within the substation boundary as per direction of site-in-charge.	cum	10	1381.80	13818.00
40	Antiweed treatment in switchyard area including micro leveling, dressing,consolidating subgrade with half ton roller etc as per Technical Specification.	Sqm	14000	11.60	162400.00

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S.No.	Description of Item	Unit	QUANTITY	UNIT RATE (Rs.)	AMOUNT (Rs.)
41	Supplying and spreading stone aggregate in switchyard as per drawing all complete as per Technical Specification Clause 4.0 of specification C/ENGG/SPEC/CIVIL/REV -11A but excluding antiweed treatment and PCC.	Sqm	14000	146.30	2048200.00
42	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	Sqm	10	78.07	780.70
43	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade New work (two or more coats) over and including priming coat with cement primer.(Work to be carried as per relevant IS codes.)	Sqm	10	87.21	872.10
44	Supplying and filling good earth including watering, ramming, consolidating and dressing complete including royalty etc.	cum	10	315.90	3159.00
Total Amount in Rs. (excluding GST)					275,72,047.27

BILL OF QUANTITY AND PRICE SCHEDULE

Name of Project : SUBSTATION EXTENSION PACKAGE-SS02 FOR 765kV FATEHGARH-2

Name of Work : UNDER GROUND EARTHING AND ELECTRODES

S. No	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
1	Unloading, storing and laying of 40 mm dia MS Rods at a depth of 600 mm measured from the top of Finished Ground Level as per requirement including following works: - excavation of trenches - laying of MS rod - welding of rods (As per Standard Earthing Details) - any other work necessary to complete the laying of earthmat (40 mm dia MS rod will be supplied by BHEL)	MT	5	6,552.12	32,760.61
2	Unloading, storing and laying of 40 mm dia MS Rods Risers by bringing risers out from the existing earthmat just below gravel level near the equipment foundations as per requirement including following works: - excavation of trenches - laying of MS rod - welding of rods (As per standard Earthing details) - cutting and re-connection existing main earthmat for areas where new equipment foundations will be constructed. - backfilling of soil for bringing out pig tail risers of 40 dia MS rod 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 (40 mm dia MS rod will be supplied by BHEL)	MT	67	6,552.12	4,38,992.16
3	Installation of Pipe Electrode(to be driven - 3.0 Mtr) as per Annexure 1 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.	12	8,457.59	1,01,491.10
4	Installing of 40 mm diameter Rod Electrode with test pit (LM, Tower with Peak, CVT, LA) as per Annexure 1 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 (40 mm dia MS rod will be supplied by BHEL)	Nos.	22	4,059.86	89,317.02
5	Fabrication & laying of Auxiliary Mat of 40 mm Dia MS Rods at a depth of 300 mm from top of FGL including excavation & backfilling as per Annexure 1 (40 Diameter MS rod will be supplied by BHEL)	Nos.	48	2,339.06	1,12,274.83
Total Amount in Rs. (excluding GST)					7,74,835.73

ANNEXURE-III

BILL OF QUANTITIES CUM PRICE SCHEDULE

Name of Project :Execution & handing over of civil works of switchyard for substation extension package SS02 at 765 kV Fatehgarh -02 substation in Rajasthan					
Name of Work: Construction of Stores					
Sl No.	Description	Unit	Qty.	Unit Rate (Rs.)	Amount (Rs.)
1	Open stores of size 200 Sqm (As per specification enclosed with tender documents).	Sqm	200	488	97,600
2	Covered Store of Size 100 Sqm (As per Specification enclosed with tender documents).	No.	1	7,66,633	7,66,633
Total Amount (Rs.)-Excluding GST					8,64,233
Notes:					
1	The quoted rate is inclusive of all materials, tools & plants etc. required for above works.				
2	Decision regarding store location and execution of above items shall be taken by site in charge as per site requirement.				
3	Size of open store may vary as per site requirement and the same shall be measured on prorated basis				
4	Requirement of closed store may be changed based on site requirement and may also be deleted.				

ANNEXURE-IV

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

PRICE SCHEDULE FORMAT

SUB: TENDER FOR "EXECUTION & HANDING OVER OF CIVIL WORKS OF SWITCHYARD FOR SUBSTATION EXTENSION PACKAGE SS02 AT 765 KV FATEHGARH -02 SUBSTATION IN RAJASTHAN".

TENDER NO.:- TBSM/FATEHGARH/ PKG-SS02/ CIVIL/TENDER

DATE: 18.02.2020

(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 (Annexure-I, II & III) of subject tender. 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
(Summary of Prices)

Execution & handing over of civil works of switchyard for substation extension package SS02 at 765 kV Fatehgarh -02 substation in Rajasthan

Sl No.	Description	Amount (Rs.)
1.a	Total amount as per the rates in BOQ for "Execution & handing over of civil works of switchyard for substation extension package SS02 at 765 kV Fatehgarh -02 substation in Rajasthan" (Annexure-I)	275,72,047.27
1.b	Total amount as per the rates in BOQ for "Underground Earthing & Electrodes" (Annexure-II)	7,74,835.73
1.c	Total amount as per the rates in BOQ for construction of stores (Annexure-III)	8,64,233
1	Total Amount - Excluding GST (Annexure-I + Annexure-II + Annexure-III)	292,11,116.00
2	Value of percentage above/below/at par (As indicated in Price Schedule Format, Annexure-IV) applicable to the total amount of subject work (Sl. no. 1 above)% above/below/ at par
3	Total amount after consideration of percentage above/below/ at par.	