

**ANNEXURE-I**  
**BILL OF QUANTITY CUM PRICE SCHEDULE**

Name of Project

400KV SUB-STATION EXTN AT JAMSHEDPUR

Name of Work

CIVIL WORKS FOR SWITCHYARD

| S.No. | Description of Item                                                                                                                                                                                                                                                                                                                                                                                                            | Quantity | Unit | Unit Rate (Rs.) | Amount (Rs.) |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|-----------------|--------------|
| 1     | Earthwork in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30cm in depth 1.5m in width as well as 10sqm on plan) 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.                                                                               |          |      |                 |              |
| (a)   | All kinds of soil.                                                                                                                                                                                                                                                                                                                                                                                                             | 695      | cum  | 155.6           | 108142       |
| (b)   | Ordinary rock                                                                                                                                                                                                                                                                                                                                                                                                                  | 10       | cum  | 244.6           | 2446         |
| (c)   | Hard rock (blasting prohibited)                                                                                                                                                                                                                                                                                                                                                                                                | 10       | cum  | 618.1           | 6181         |
| 2     | Earthwork in excavation by mechanical means (Hydraulic excavator)/manual means in foundation trenches or drains (not exceeding 1.5m in width as well as 10sqm on plan) including dewatering as necessary of rain water/subsoil seepage water and dressing of sides and ramming of bottoms, lift upto 3.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 100m. |          |      |                 |              |
| (a)   | All kinds of soil.                                                                                                                                                                                                                                                                                                                                                                                                             | 225      | cum  | 157.5           | 35437.5      |
| (b)   | Ordinary rock                                                                                                                                                                                                                                                                                                                                                                                                                  | 10       | cum  | 263.5           | 2635         |
| (c)   | Hard rock (blasting prohibited)                                                                                                                                                                                                                                                                                                                                                                                                | 10       | cum  | 620.55          | 6205.5       |
| 3     | 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.                                                                                                                                                                                      | 480      | cum  | 112.4           | 53952        |
| 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 -.                                                                                                                                                                                |          |      |                 |              |
| (a)   | Lead upto 1 km.                                                                                                                                                                                                                                                                                                                                                                                                                | 350      | cum  | 99.44           | 34804        |
| (b)   | Lead upto 3 km.                                                                                                                                                                                                                                                                                                                                                                                                                | 10       | cum  | 127.01          | 1270.1       |
| (c)   | Lead upto 5 km.                                                                                                                                                                                                                                                                                                                                                                                                                | 10       | cum  | 153.07          | 1530.7       |
| 5     | Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.                                                                                                                                                                                                                                                                               |          |      |                 |              |
| (a)   | 1:2:4 (1 cement : 2coarse sand : 4 graded stone aggregate 20mm nominal size)                                                                                                                                                                                                                                                                                                                                                   | 276      | cum  | 5466.3          | 1508698.8    |
| (b)   | 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size)                                                                                                                                                                                                                                                                                                                                                  | 5        | cum  | 4672.5          | 23362.5      |
| (c)   | 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)                                                                                                                                                                                                                                                                                                                                                  | 53       | cum  | 4301.15         | 227960.95    |
| (d)   | 1:5:10(1 cement : 5 coarse sand : 10 graded brick aggregate 40mm nominal size)                                                                                                                                                                                                                                                                                                                                                 | 157      | cum  | 3721.65         | 584299.05    |
| 6     | Providing and laying in position 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size) reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level :                                                                                                                                                                       |          |      |                 |              |
| (a)   | All works upto plinth level                                                                                                                                                                                                                                                                                                                                                                                                    | 270      | cum  | 6230.2          | 1682154      |
| (b)   | All works above plinth level upto floor V level                                                                                                                                                                                                                                                                                                                                                                                | 15       | cum  | 7074.3          | 106114.5     |
| 7     | Centering and shuttering including strutting, propping, etc., and removal of form for:                                                                                                                                                                                                                                                                                                                                         |          |      |                 |              |
| (a)   | Foundations, footings, bases of columns, etc., for mass concrete.                                                                                                                                                                                                                                                                                                                                                              | 395      | sqm  | 196.45          | 77597.75     |
| (b)   | RCC walls at all levels (any thickness).                                                                                                                                                                                                                                                                                                                                                                                       | 1115     | sqm  | 360.8           | 402292       |
| (c)   | Columns, Pillars, Piers, Posts and Struts .                                                                                                                                                                                                                                                                                                                                                                                    | 440      | sqm  | 453.35          | 199474       |
| 8     | Steel reinforcement -Cold twisted bars /TMT- Fe 500 (To be procured from SAIL,TISCO, IISCO and RINL only)                                                                                                                                                                                                                                                                                                                      |          |      |                 |              |
| (a)   | Including supply and straightening, cutting,bending, binding, (i/c cost of binding wire), placing in position, etc., all labour & material, complete.                                                                                                                                                                                                                                                                          | 13000    | kg   | 68.1            | 885300       |
| 9     | Brickwork with F.P.S.bricks of class designation 75 in foundation and plinth in:                                                                                                                                                                                                                                                                                                                                               |          |      |                 |              |
|       | Cement mortar 1:6 (1 cement : 6 coarse sand)                                                                                                                                                                                                                                                                                                                                                                                   | 5        | cum  | 4677.25         | 23386.25     |

**BILL OF QUANTITY CUM PRICE SCHEDULE**

Name of Project

400KV SUB-STATION EXTN AT JAMSHEDPUR

Name of Work

CIVIL WORKS FOR SWITCHYARD

| S.No. | Description of Item                                                                                                                                                                                                                                                                                                               | Quantity | Unit | Unit Rate (Rs.) | Amount (Rs.) |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|-----------------|--------------|
| 10    | 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)                                                                                                                                                                                                                                                                                      | 5        | cum  | 5426.15         | 27130.75     |
| 11    | Structural steelwork welded in built up sections like edge protection angles, pipes, insert plates with lugs & framed work and grating including providing, cutting, hoisting, fixing in position/ embedding in concrete and applying a priming coat of approved steel primer all complete.                                       | 2900     | kg   | 67.7            | 196330       |
| 12    | 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.                                                                                                                       |          |      |                 |              |
| (a)   | 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.                                                                                                                               | 200      | kg   | 75.3            | 15060        |
| (b)   | In gratings, frames, ladders, stair railings, gates (including pipes), rails, ISMB, ISMC and similar works.                                                                                                                                                                                                                       | 5900     | kg   | 90.1            | 531590       |
| 13    | Applying priming coat                                                                                                                                                                                                                                                                                                             |          |      |                 |              |
| (a)   | With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works.                                                                                                                                                                                                          | 5        | sqm  | 27              | 135          |
| 14    | Antiweed treatment in switchyard area including micro leveling, dressing etc as per Technical Specification.                                                                                                                                                                                                                      | 3000     | Sqm  | 18.38           | 55140        |
| 15    | Supplying and spreading stone in switchyard as per drawing and specification all complete but excluding micro leveling, dressing & antiweed treatment as per Technical Specification.                                                                                                                                             | 10       | Sqm  | 109.73          | 1097.3       |
| 16    | Removal, cleaning & washing of existing stone and relaying of stone in switchyard including supply of extra matching gravel but excluding micro leveling, dressing & antiweed treatment as per Technical Specification.                                                                                                           | 3000     | Sqm  | 73.5            | 220500       |
| 17    | Supplying and erection of 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.                                                                                                                 |          |      |                 |              |
| (a)   | 0.5 HP                                                                                                                                                                                                                                                                                                                            | 1        | Nos  | 17010           | 17010        |
| 18    | 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. | 205      | sqm  | 81.29           | 16664.45     |
| 19    | Suppling and stacking at site                                                                                                                                                                                                                                                                                                     |          |      |                 |              |
| (a)   | 90 mm to 45 mm size stone aggregate                                                                                                                                                                                                                                                                                               | 20       | cum  | 1310.45         | 26209        |
| (b)   | 63 mm to 45 mm size stone aggregate                                                                                                                                                                                                                                                                                               | 20       | cum  | 1348.2          | 26964        |
| (c)   | 53 mm to 22.5 mm size stone aggregate                                                                                                                                                                                                                                                                                             | 20       | cum  | 1354            | 27080        |
| (d)   | Stone screening 13.2 mm nominal size (type A)                                                                                                                                                                                                                                                                                     | 8        | cum  | 1558.15         | 12465.2      |
| (e)   | Stone screening 11.2 mm nominal size (type B)                                                                                                                                                                                                                                                                                     | 4        | cum  | 1471            | 5884         |
| (f)   | moorum                                                                                                                                                                                                                                                                                                                            | 8        | cum  | 646.35          | 5170.8       |
| 20    | Laying WBM with specified size of stone aggregates, screening and moorum/ blinding materials including screening, sorting, spreading to template and consolidation with power road roller of 8 to 10 tonne capacity etc., complete. (Payment will be made for compacted layers only ).                                            |          |      |                 |              |
| (a)   | Subbase with stone aggregate 90mm to 45mm including stone screening 13.2mm size and moorum/blinding material.                                                                                                                                                                                                                     | 16       | cum  | 425.05          | 6800.8       |
| (b)   | Base course with stone aggregate 63mm to 45mm including stone screening 13.2mm sizeand moorum/blinding material.                                                                                                                                                                                                                  | 16       | cum  | 425.05          | 6800.8       |
| (c )  | Base course with stone aggregate 53mm to 22.4 mm including stone screening 11.2mm size and moorum/blinding material.                                                                                                                                                                                                              | 16       | cum  | 425.05          | 6800.8       |
| 21    | Supplying and filling stone (40mm size) over grating for transformer/reactor foundation.                                                                                                                                                                                                                                          | 40       | cum  | 1097.3          | 43892        |

**BILL OF QUANTITY CUM PRICE SCHEDULE**

Name of Project

400KV SUB-STATION EXTN AT JAMSHEDPUR

Name of Work

CIVIL WORKS FOR SWITCHYARD

| S.No. | Description of Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Quantity | Unit | Unit Rate (Rs.) | Amount (Rs.)      |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|-----------------|-------------------|
| 22    | Supplying & fixing (all dia & length) foundation bolts in position with help of proper templates including nuts, washers and template all complete as per drawings & directions of Engr-in-Charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 50       | Kg   | 98.25           | 4912.5            |
| 23    | Extra over Item above for providing galvanised bolts (Mass of zinc coating = 610gms/sqm), nuts & washer .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 50       | kg   | 5.25            | 262.5             |
| 24    | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 150      | Kg   | 6.83            | 1024.5            |
| 25    | 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.                                                                                                                                                                                                                                                                                                       |          |      |                 |                   |
|       | 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2        | Cum  | 6195            | 12390             |
| 26    | 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.                                                                                                                                                                                                                                                                                                                                 | 1        | cum  | 10500           | 10500             |
| 27    | Dismantling of RCC Foundations including necessary excavation, stacking of steel bars and disposal of unserviceable material within the substation boundary as per direction of site-in-charge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 50       | cum  | 1374.5          | 68725             |
| 28    | Strengthening/Modification of existing reactor foundations as per technical specifications and Drg including Dismantling and re-fixing of grating and grating supports, removal and re-laying of gravel in reactor pit, cleaning of mud/debris, dismantling/ chipping of old concrete, scrapping, cleaning, application of necessary adhesives and straightening reinforcement from RCC including welding wherever necessary, stacking unconsumed serviceable and unserviceable material separately and disposal of unserviceable material within the substation boundary, as per the direction of Site-in charge, but excluding excavation, PCC, RCC, Reinforcement steel, Shuttering and Misc. steel etc., which shall be paid separately under respective item, for the following : |          |      |                 |                   |
| (a)   | Exisitng foundation of 50 MVAR Shunt Reactor to suit new 125 MVAR Shunt Reactor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1        | lot  | 45630           | 45630             |
|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |      |                 | <b>7365413.00</b> |