

TENDER SPECIFICATION

BHEL: PSSR: SCT: 1873

FOR

Development of Storage Yard with internal Roads & Drains, Precast Concrete Sleepers, Fencing, Gate and Construction of Mess Building, Foundation of Storage Shed – 4 Nos. & Office Shed- 2 Nos. etc.

at

2 x 1000 MWe Kudankulam Nuclear Power Plant, Radhapuram Taluk, Tirunelveli Dist., Tamilnadu.

VOLUME-II

PRICE BID



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

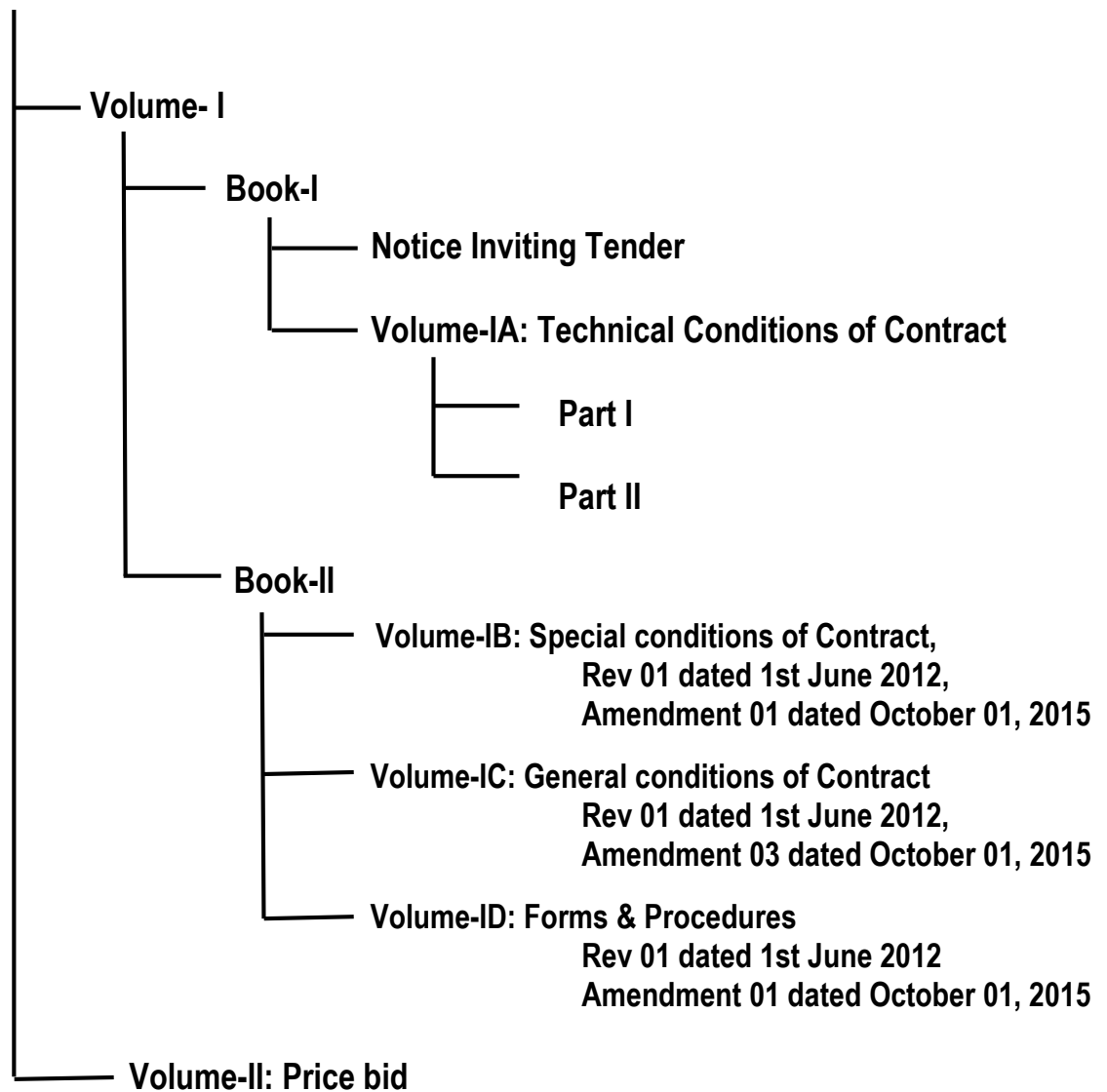
Power Sector – Southern Region

690, Anna Salai, Nandanam, Chennai – 600 035.

PRICE BID

TENDER SPECIFICATION CONSISTS OF

Techno-Commercial Bid



PRICE BID

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PRICE BID

PART-A-INSTRUCTIONS TO BIDDERS:

1. The 'Total amount' mentioned in Part-B of the Price Bid corresponds to the entire Bill of Quantities (BOQ) given in Part -C of the Price Bid.
2. Bidders shall quote 'Total Amount' in the format for Price Bid available in the e-procurement portal.

Bidders may also quote 'Total Amount' in the format given in Part -B of this document (Optional).

Any other entry elsewhere in the price bid shall be treated as Null and Void.
3. BHEL has pre-fixed the weightages for the amount of individual items of Bill of Quantity with respect to the 'Total Amount' in Part-C.
4. Based on the pre-fixed weightages, the amount for the individual items of the Bill of Quantity shall be arrived at. This amount shall be rounded off to the nearest rupee.
5. Based on the quantities of individual item and the amount arrived in SI No: 4 above, unit rate of individual items shall be derived. This unit rate shall be rounded off to four decimal places.
6. Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per SI No.5 above.

Part B: Format to quote Total Amount

**Tender Specification BHEL:PSSR:SCT:1873 for Yard Development
at 2 X 1000 MWe Kudankulam Nuclear Power Plant Unit # 3 & 4 - TG & SWS Package**

Total Amount for the entire Bill of Quantities(BOQ) given in Part C

In Figures

In words

Note :

Bidders to quote Total Amount in this format given above, which shall be taken into account for evaluation and awarding and hence, shall be complete in all respect for the full scope defined in specification and in accordance with all terms & conditions of tender.

Date

SIGNATURE OF BIDDER WITH SEAL

Part C : Bill of Quantities**Tender Specification BHEL:PSSR:SCT:1873 for Yard Development****at 2 X 1000 MWe Kudankulam Nuclear Power Plant Unit # 3 & 4 - TG & SWS Package**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1.0	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	Sqm	80,680	.0279493
2.0	Earthwork excavation in all kinds of soils including ash (except hard rock) by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30cm depth, 1.5m in width as well as 10sqm on plan) including getting out and depositing within an initial lead of 50 m and lift upto 1.5m for foundations, drains, sewers etc., Rate to include baling, strutting, shoring, sectioning the sub grade to proper level, grade, watering & consolidating to receive the concrete bed all as per standard specifications.	Cu.M	2,918	.0146421
3.0	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 300 mm consolidated thickness with approved good quality murram (murram is a borrowed material to be arranged by the bidder) and compacted as specified including supplying murram, royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer.	Cu.M	1,000	.0283501
4.0	Back filling around foundations in plinths, trenches, drains etc to proper grade and level with selected good soil from compulsorily excavated earth or earth supplied by BHEL/Customer, within a lead of 1 Km free from shingle, salts, organic materials, roots, sod or any other foreign substance including re-excavating loose thickness, watering and ramming in layers of 15cm thickness by manual/ mechanical means, dressing etc complete.	Cu.M	8,381	.050794
5.0	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 earthwith lead upto 50 metres.	Sqm	14,200	.0614151

Part C : Bill of Quantities**Tender Specification BHEL:PSSR:SCT:1873 for Yard Development****at 2 X 1000 MWe Kudankulam Nuclear Power Plant Unit # 3 & 4 - TG & SWS Package**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
6.0	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 300 mm consolidated thickness with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying murram, royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer.	Cum	100	.0019413
7.0	Supplying and filling in plinth with fine aggregate i.e manufactured crushed stone sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	604	.0325494
8.0	Providing and laying PCC of mix 1:4:8 using 20mm size hard broken granite stone jelly including ramming,levelling, curing etc., for flooring, and side drains including providing necessary slopes etc., complete as per standard specifications at heights.	Cu.M	257	.0410558
9.0	Plain Cement Concrete of grade M10/1:3:6 using 20mm size hard broken granite stone jelly as levelling course, under water retaining structures, equipment foundations, under foundations/floors etc all complete.	Cu.M	99	.0170978
10.0	Providing and laying PCC; 100 mm thick; mix 1:2:4 using 20mm size hard broken granite stone jelly including ramming,levelling, curing etc., for flooring and foundations including providing necessary slopes etc., complete as per standard specifications at heights.	Cu.M	383	.0717418
11.0	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement of grade 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cu.M	178	.0358359
12.0	Providing and laying R C C of mix M25, using 20mm down size hard broken granite stone jelly for all types of RCC works at all heights including finishing, curing etc. complete, but excluding centering, shuttering, cost of reinforcement fabrication all as per standard specifications. Rate to include for providing necessary slope in the concrete as directed by Engineer in charge.	Cum	196	.0432506

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
13.0	Providing and laying specified grade reinforced cement concrete as per IS:456, IS 3370 & IS 10262-2009 using graded aggregate for Concrete in water retaining/conveying structures including addition of suitable plastisizer cum waterproofing cement additives confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades. Watertightness is to be ensured including structural grouting if required.	--		
a)	M25 Grade	Cum	14	.0032449
14.0	Fairface form work with good quality water proof ply wood of required thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	Sq.M	965	.0075846
15.0	Providing, straightening, cutting, bending, placing in position at any level, binding in position of tor steel reinforcements confirming of grade Fe-500 confirming to IS:1786 including cost of binding wire, labour, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer	MT	18	.0414717
16.0	Supply, Laying, spreading and compacting stone aggregate 63-45MM SIZE along with required screening of size 13.2mm & binding materials of specified sizes to WBM specifications including spreading in uniform thickness, hand picking, rolling with 3 wheeled road/vibratory roller 8-10 tonne in stages to proper grade and camber applying and brooming requisite type of screening/binding material to fill up interstices of coarse aggregate watering and compacting to the required density all complete for leads & lifts as per the instructions of engineer in charge.	Cu.M	4,260	.2580955

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
17.0	Providing 2.4 m high fencing with precast RCC post of 12.5x12.5 cm cross section of 1:1.5:3 (1 cement: 1.5 fine sand: 3 graded stone aggregate 20 mm nominal size) placed every 2.5 m center to center embedded in cement concrete blocks 35x35x45 cm of 1:4:8 (1 cement: 4 fine sand: 8 graded stone aggregate 40 mm nominal size), every 15th post last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with 14 horizontal lines with suitable hooks for every lines at every post for proper anchorage to post and two diagonals inter woven with horizontal wires of barbed wire 9.38 Kg per 100 m (min) between the two posts and fixed with GI staples, turn buckles etc., complete. Rate to include cost of fencing and struts, labour charges etc., complete as per standard specifications. (Agency must take an approval for the pre cast manufacturing unit from BHEL.)	Rmt.	2,400	.0497087
18.0	Supplying, fabricating steel gate upto 10.0 m wide as shown in the drawing transporting components to erection site and erection of fabricated steel work including all handling, leading, assembling, hoisting, erection in position and site welding/fastening, bolts wherever required as per drawing and specification. Rate to include providing PCC 1:4:8 for supporting the pillars, cost of raw steel, fabrication, erection, all consumables cement, labour charges etc., complete including synthetic enamel painting two coats over one coat of red oxide primer. (For the smaller gate proportionate rate shall be worked out on Sq.M basis)	Sq.M	72	.0069508
19.0	Providing and laying non pressure NP2 class(light duty) RCC pipes with collars jointed with stiff of mixture of CM 1: 2 including testing of joints etc., complete.	--		
a)	250 mm dia RCC pipe.	Rmt.	60	.001249
b)	450 mm dia RCC pipe	Rmt.	84	.003228
20.0	Providing brick work in C.M 1 : 6 in foundation and superstructure using clay bricks as per standard specifications. Rate to include cost of scaffolding, labour, curing etc., complete.	Cum	267	.0390655
21.0	Providing plastering with CM 1 : 6, 15mm thickness all as per standard specifications, including rendering smooth, rounding of corners etc., complete.	Sqm	1,737	.0145656

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
22.0	Providing and laying damp-proof course 40 mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size)	Sqm	320	.0030718
23.0	Supplying and painting distember two coats over a priming coat using best quality oil bound washable distember of approved make and colour. Rate to include cost of cleaning and preparation of the surface, applying putty, labour, materials etc., all complete.	Sqm	1,523	.0064486
24.0	Supply of Pre-cast RCC concrete sleepers of size 150 x 200 x 1500mm as per enclosed drawing concrete mix of 1:2:4 grade (with 20mm down aggregate) inclusive of form work, mixing, casting, curing, reinforcement-4nos 10mm dia & stirrups 11nos-6mm dia and lifting facility and handling (loading, transportation & unloading) of cast blocks to handover to BHEL storage yard. Rate shall be inclusive of cost of material like cement, aggregate, reinforcement steel, loading, transportation & unloading at BHEL Stores, consumable, labour etc.(Agency must take an approval for the pre cast manufacturing unit from BHEL.)	Nos	4,000	.0988209
25.0	Providing Vitrified floor tiles matt finish of size 600x600mm (min-8mm) - of 1st quality conforming to IS:15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, to be laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including pointing the joints with white cement and matching pigment etc all complete.	Sqm	110	.0045544
26.0	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters : 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws. Rate to include cost of labour, painting one priming coat and two coats of ready mixed synthetic enamel paint of approved make and colour.	Sqm	10	.0008344
27.0	Supplying and fixing of steel windows and ventilators with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision with outer frame angle 30x30x5 mm and flat of size 25x2 mm and covered with fully glass including cost of all materials, fabrication charges, over one coat of red oxide paint, all taxes, lead lift etc complete as directed by engineer in charge	Sqm	12	.0005643

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
28.0	Providing and fixing wash basin of size 550x400 mm with CI brackets with 15 mm CP brass pillar caps, 32 mm CP brass waste of standard pattern including painting of fittings and brackets, cutting and making good the walls wherever required	Nos	3	.0002356
29.0	Supplying and fixing in position 15mm nominal size down type brass bib cock of approved make and quality (leader, dripless, or orient) as per standard specifications. Rate to include cost of bib cock, jointing materials, labour for carrying, fixing, and testing etc., complete.	Nos	3	.000025
30.0	Supplying at site of work & fixing in position of 100X75mm NAHANI trap with CI gratings as per standard specifications. Rate to include cost of all materials, labour for fixing, testing etc., complete.	Nos	3	.0000751
31.0	Providing and fixing Chlorinated Polyvinyl Chloride pipes having thermal stability for hot and cold water supply including all CPVC plain and brass threaded fittings including fixing the pipe with clamps all complete	--		
a)	32 mm dia	RM	220	.0016896
32.0	Supplying and fixing sintex water tank at site of work for storing water. Rate to include cost of tank and other incidental charges etc., complete.	--		
a)	1000 Litres capacity.	Nos	1	.0002348
b)	2000 Litres capacity.	Nos	1	.0004051
c	5000 Litres capacity.	Nos	2	.0020256
33.0	Constructing soak pit 1.20X1.20X1.20m filled with brickbats including S.W. drain pipe 100mm diameter and 1.20m long complete as per standard design.	Nos	1	.000072

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
34.0	Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 Fine sand : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design: Inside dimensions 600x 850 mm and 45 cm deep for pipe line with three or more inlets : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Nos	2	.0004459
35.0	Construction of a septic tank of size 6.00 x 2.40 x 2.70 metre and a cess pool of 3.00 metre dia as per drawing. Rate to include cost of Excavation,PCC,Brickwork,RCC works, Reinforcement,SW pipes, AC pipes,cowl,filling with aggregates cover slab,testing of the septic tank etc., complete as per drawing. (drawing for Tendering purpose attached.) Quote is lumpsum	Nos	3	.0056523
36.0	Supplying medium duty Galvanised Iron pipes 20 mm dia of the following sizes at site of work, laying to proper line and level in ground or jointing and fixing on walls & floors for water supply pipe lines with all necessary specials, unions and appurtenances, testing as per standard specifications, making necessary earthwork in ground, holes, chases etc. on floor & wall and making good all damages and finishing to match with the existing work, refilling the trenches with excavated earth and filling chases & grooves in walls and all other incidental charges etc. complete. Rate to include cost of GI pipes, specials and all other works.	RM	150	.0011756

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
37.0	Supplying at site of work and laying UPVC pipes 150 mm dia of the following sizes in trenches and jointing with CM 1:2 and testing with water as per standard specifications. Rate to include cost of pipes, specials, all jointing materials like hemp yarn, sand, cement, conveyance of water, tools & plants for testing, labour and all incidental charges etc. complete & includes earthwork excavation for trenches and back filling.	RM	150	.0023194
38.0	Supplying raw steel, fabricating steel work and transporting to erection site and erection of fabricated steel work including all handling conveying, loading, assembling, hoisting, erecting in position and site welding and / or bolting wherever required for tubular roof truss, parking shed, etc., including applying a primer coat of approved steel primer complete as per standard, standard, specifications & instructions of engineer. Rate to include cost of all materials, leads, lifts, all labour charges etc.	MT	1	.0019326
39.0	Providing corrugated G.S. sheet roofing (0.63 mm thick with zinc coating not less than 275 gm/ m ²) including vertical / curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (up to any pitch in horizontal/ vertical or curved surfaces), excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	Sqm	150	.0027919
40.0	Supplying and installing waterless urinals at site inclusive of plumbing required if any as per the instruction of enginner incharge	No	10	.0044934
41.0	Supply, fabrication and fixing of embedments, inserts, pipe sleeves, angle pieces, anchor bolts of various diameters, plates of dimensions as required etc. including scaffolding, setting in position, transportation from BHEL site stores to work spot etc. all complete.	Kgs	1,200	.0023577
42.0	Supply and fixing of following Light fitting ,exhaust fan of make philips, Crompton Greaves, Bajaj only.	--		
a)	1X20/ 22 w 4 feet LED type battren type fitting	No	22	.0009204
b)	300 mm sweep exhaust fan	No	2	.0000983

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
43.0	Supply and wiring of light, fan points , 5A plug points using flush type anchor roma modular switches, sockets,switch boxes,1.5 sq.mm copper wire for all phase , neutral and earth , PVC pipes, bend , tee ,clams etc .	Point	35	.0002789
44.0	Supply and wiring of 15A plug ponits using madular anchor roma swtches , sockets,switch boxes,2.5 sq.mm copper wire for phase , neutral and 1.5 sq.mm copper wire for earth , PVC pipes, bend , tee ,clams etc . 15 a points are individully wired frm PDB .	Point	6	.0000798
45.0	Supply and wiring of AC ponits using 4.0 sq.mm copper wire for phase , neutral and 2.5 sq.mm copper wire for earth , PVC pipes, bend , tee ,clams etc . AC points are individully wired from PDB .	Point	4	.0000744
--	Note: wiring for lights,fans, sockets , AC points are equally distributed in all three phases.Each phase wiring circuits in one PVC pipe and same will be 50-60% occupation of wires. Clubing of two phases in in PVC conduit are not permtted.	--		
46.0	Supply and fixing of 20A Modular AC box plug and sockets with 25A SP MCB of MDS/ HAVELLS/ LEGRAND make only.	No	4	.0000511
47.0	Supply and fixing of metal clad double door type 7 segent distribution board of 63A TPN MCB as incoming with 3 nos 63A DP 30ma ELCB/ RCCB and 18 nos 16A /20A SPMCB are out going with intrnal wiring and neutral links of branded make MDS, LEGRAND, STANDARD and HAVELLS only (For Lights , fans , 5A , 15 A sockets and AC points)	No	1	.0003371
48.0	Supply and Erection of 3M long 50mm dia 3.6 mm thick medium class GI funnal type earth electrode with filling of bentonite earthing powder as per standard, four side brick work chamber with cement plastering and removable type RCC/ cast iron cover plate. scope includes supply of required bentonite erathing powder, cement , brick, sand, RCC/cast iron cover plate.	No	2	.0002657
49.0	Supply and fixing of 10 SWG copper wire for double earthing of PDB	Mtr	50	.0000531
50.0	Supply fixing of 2T capacity, with min 3 star Split airconditioners of inverter type copper coil of make Voltas/ Blue star/ Daikin make only including ancillary works testing and commissioning as per manufacturers guidelines and specification.	No	4	.005739

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
51.0	Supplying and fixing C.I. cover for manholes :	--		
a)	500 mm diameter C.I. cover (medium duty) the weight of the cover to be not less than 58 kg	No	1	.0000884
TOTAL Weightage				0.9999994