

TENDER SPECIFICATION

BHEL: PSSR: SCT: 1958

FOR

Development of storage yard with internal roads & drains, precast concrete sleepers, fencing, gate and construction of foundation for Storage Shed - 2 Nos. & office shed - 1 no. etc. for 5th Stream Alumina Refinery Expansion at Damanjodi, Odisha of National Aluminum Company Limited

VOLUME –II PRICE BID

TECHNOCOMMERCIAL BID - Consists of Book- I & Book- II

Book- I Consists of

- Notice Inviting Tender
- Volume-IA: Technical Conditions of Contract

Book-II consists of

- Volume-IB: Special conditions of Contract,
Rev 01 dated 1st June 2012
Amendment 01 dated 1st October, 2015
- Volume-IC: General conditions of Contract
Rev 01 dated 1st June 2012,
Amendment 03 dated 1st October, 2015
- Volume-ID: Forms & Procedures
Rev 01 dated 1st June 2012
Amendment 01 dt 1st October, 2015

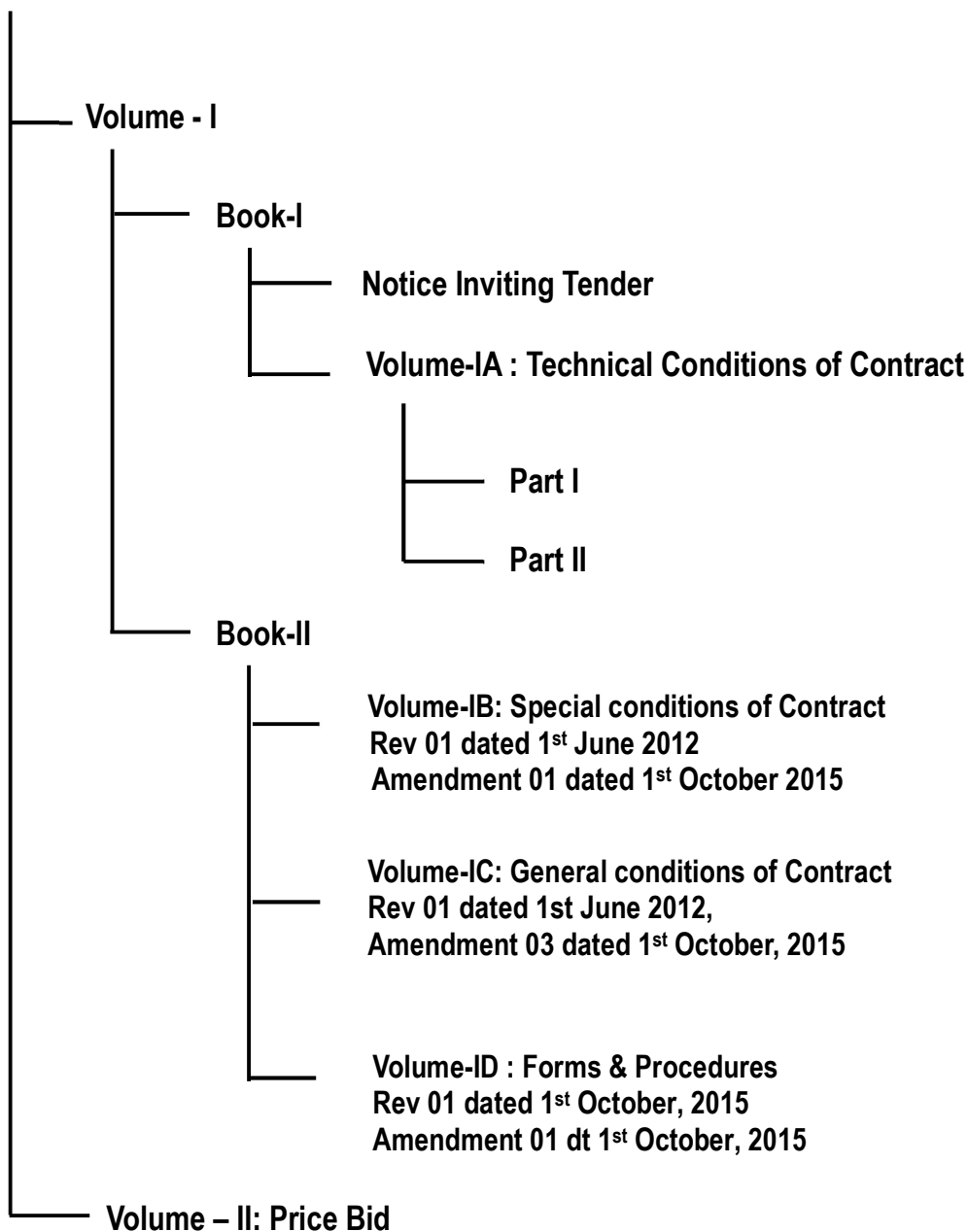


BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)
Power Sector – Southern Region
Tek Towers, No. 11, Old Mahabalipuram Road
Okkiyam Thoraipakkam, Chennai - 600097

TENDER SPECIFICATION CONSISTS OF

Tender Specification



PRICE BID

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Part B: Format for total amount (Enclosed as a separate Excel File in e-Procurement portal for the subject tender)	(separate Excel File)
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PRICE BID

PART-A-INSTRUCTIONS TO BIDDERS:

- 1) The lump sum price shall be quoted by the bidder for the entire scope of work as detailed in relevant chapters of Volume IA Technical Conditions of Contract.
- 2) Bidders shall quote 'Total Amount' in the format enclosed as a separate Excel File in e-Procurement portal for the subject tender and upload the same under 'Packet details -> Tender covers -> Finance '(Cover Type Description – Price Bid) and same shall be taken into account for evaluation and awarding and hence, shall be complete in all respect for the full scope of work defined in specification and in accordance with terms & conditions of the tender. Any other entry elsewhere in the price bid shall be treated as Null and Void. Quoting of rates in any other form/ formats will not be entertained.
- 3) The above mentioned 'Total amount' is for the entire Bill of Quantity (BOQ) given in Part-C of the Price Bid.

Part C : Bill of Quantities**Tender Specification BHEL:PSSR:SCT:1958 for Yard Development
at NALCO Damanjodi 18.5 MW BTG**

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	15,000	.0111029
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	895	.0096037
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	500	.0303134
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	2,301	.0298222
5.0	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	.0041514

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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
6.0	Supplying and filling in plinth with fine aggregate i.e manufactured crushed stone sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	302	.0348036
7.0	Providing and laying PCC of grade M7.5/1:4:8 using 40mm 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	119	.0406535
8.0	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	48	.0177278
9.0	Providing and laying PCC of grade M15/1:2:4 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	190	.0761091
10.0	Providing and laying in position reinforced cement concrete of grade M15/1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), excluding the cost of centering, shuttering, finishing and reinforcement.	Cu.M	100	.0430535
11.0	Providing and laying in position reinforced cement concrete of grade M20/1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), excluding the cost of centering, shuttering, finishing and reinforcement.	Cu.M	20	.0091086
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	18	.0084941
13.0	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	455	.0076477

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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
14.0	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	9	.0443436
15.0	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	7,450	.068908
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	1,118	.1448514
17.0	Providing 2.4 m high fencing with angle Steel post of 65 x 65 x 6 mm painted with synthetic enamel paint (as per IS :2932) 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 20mm nominal size), every 15th post last but one end post and corner post shall be strutted on both sides and end post on oneside only and provided with G.I. chain link fabric fencing of required width in mesh size 75x 75 mm made of G.I. wire of dia 3mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required as per the direction of Engineer-in-charge, complete. Rate to include cost of steel post, earth work, concrete, chain link fencing and struts labour charges etc. complete as per standard specifications.	Rmt.	700	.1308766

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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
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 1:3:6 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	36	.0080552
19.0	Design & supply of trapezoidal cross section Pre-cast RCC concrete sleepers of top breadth = 150mm, bottom breadth = 300mm, depth = 200mm & length= 1000mm as per enclosed drawing concrete M20 grade (with 20mm down aggregate) inclusive of form work, mixing, casting, curing, min. reinforcement-4nos 10mm dia & min. stirrups 9nos-8mm dia and lifting facility and handling (loading, transportation & unloading) of cast blocks to handover to BHEL storage yard. Rate shall be inclusive of design & cost of material like cement, aggregate, reinforcement steel, loading, transportation & unloading at BHEL Stores, consumable, labour etc.(Agency must take 1. Approval for the pre cast manufacturing unit from BHEL & 2. Submit design of RCC sleeper vetted by civil design agency/consultant of good reputation /Civil engineering department of reputed engineering college to BHEL site)	Nos	1,500	.0858924
20.0	Providing brick work in C.M 1 : 6 in foundation and superstructure using clay bricks/ fly ash bricks as per standard specifications. Rate to include cost of scaffolding, labour, curing etc., complete.	Cum	160	.0500623
21.0	Providing plastering with CM 1 : 6, 15mm thickness all as per standard specifications, including rendering smooth, rounding of corners etc., complete.	Sqm	1,030	.0184698
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	40	.0008211
23.0	Supplying and painting distemper two coats over a priming coat using best quality oil bound washable distemper of approved make and colour. Rate to include cost of cleaning and preparation of the surface, applying putty, labour, materials etc., all complete.	Sqm	923	.0083571

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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
24.0	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	.0097397
25.0	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	.0017843
26.0	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	.0013079
27.0	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	.0005039
28.0	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	.0000535
29.0	Providing and fixing in position of 15 mm dia nominal size screw down type chromium plates brass stop cocks of approved make and quality confirming to IS:8931 as per standard specification. Rate includes cost of jointing materials, sockets, union nut, testing, labours for carrying and fixing etc. complete.	each	1	.0000179
30.0	Providing and fixing in position of 25 mm dia gun metal gate valve, including all necessary fitting & fixture etc. complete as per standard specification.	each	5	.0001466

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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
31.0	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	.0001741
32.0	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)	20 mm dia	RM	20	.0003611
b)	32 mm dia	RM	200	.0056712
33.0	Providing and fixing G.I. Pipes complete with G.I. fittings and clamps, i/c making good the walls etc. concealed pipe, including painting with anti corrosive bitumastic paint, cutting chases and making good the wall :	--		
a	15 mm nominal bore.	RM	10	.0002641
34.0	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc.	--		
a	15 mm dia nominal bore	RM	10	.000144
b	25 mm nominal bore.	RM	10	.0002091
35.0	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	.0005645
b)	2000 Litres capacity.	Nos	1	.0011232
c	5000 Litres capacity.	Nos	2	.0056565
36.0	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.	--		

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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
a)	250 mm dia RCC pipe.	Rmt.	45	.0020033
b)	450 mm dia RCC pipe	Rmt.	42	.0034515
37.0	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	.0001539
38.0	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 burnt clay/ flyash bricks of class designation 7.5	Nos	1	.0004767
39.0	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	1	.0043669
40.0	Supplying at site of work and laying UPVC pipes 150 mm dia 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	.0053759

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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
41.0	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, watch tower, 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	9	.0456979
42.0	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade: providing Two or more coats on new work.	Sqm	50	.0003586
43.0	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	600	.0027324
44.0	Providing supplying and fixing false ceiling of anodized aluminum grid construction of main ceiling tees of size 25x38x1.8mm cross tees of size 25x25x1.8mm and wall angles of size 25x25x1.8mm forming a grid of 600x600mm panels with various members for fastenings and fittings to minute tolerances, suspended from the steel purlins / trusses with 6mm aluminum painted MS roads, J bolts, nuts, washers and all necessary hardware complete with perforated particle board ceiling tiles 12mm thick complete and as directed by engineer in charge.	Sqm	50	.0031364
45.0	Providing corrugated G.S. sheet roofing (0.63 mm thick with zinc coating not less than 275 gm/ sqm) 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	80	.0043077
46.0	Supplying and installing waterless urinals at site inclusive of plumbing required if any as per the instruction of enginner incharge	No	1	.0010414
47.0	Supply and fixing of following Light fitting ,exhaust fan of make philips, Crompton Greaves, Bajaj only.	--		

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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
a)	1X20/ 22 w 4 feet LED type battren type fitting	No	22	.0021333
b)	300 mm sweep exhaust fan	No	2	.0002278
48.0	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	.0006463
49.0	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	.0001849
50.0	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	.0001724
--	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.	--		
51.0	Supply and fixing of 20A Modular AC box plug and sockets with 25A SP MCB of MDS/ HAVELLS/ LEGRAND make only.	No	4	.0001185
52.0	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	.0007813
53.0	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	.0006158
54.0	Supply and fixing of 10 SWG copper wire for double earthing of PDB	Mtr	50	.0001231

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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
55.0	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	.0109421
TOTAL Weightage				0.9999986