

Gandhinagar Municipal Corporation (GMC)			
Name of Work :- Construction of Fire Station At Various Place in Khoraj, Sughad and Vavol For Gmc At Gandhinagar.			
Specification Index			
Item No.	Item Description	Unit	Specification No as per General technical Specification Booklet
1	Earthwork in cutting in all sorts of soil and soft murrum including conveying and spreading the stuff, embankment as and where directed within 200meters from the end of the cutting with all required lead and lift.(C) Above 400 Meters upto 500 Meters.	C.M.	separate sheet attached
2	Excavation for foundation upto 1.5m. Depth including sorting out and stacking of useful materials and disposing of the excavated stuff up to 50 mt. lead : (A) Loose Or Soft Soil	C.M.	General Technical Specifications Booklet Section-4 Item no:4.0.0.(A) Page No-21
3	Excavation for foundation for depth from 1.5 m to 3.0 m including sorting out and stacking of useful materials and disposing off the excavated stuff upto 50 Meter lead.(A)Loose or soft soil	C.M.	General Technical Specifications Booklet Section-4 Item no:4.0.0.1.(A) Page No-25
4	Excavation for foundation for depth from 3.0 m to 5.0 m including sorting out and stacking of useful materials and disposing off the excavated stuff upto 50 Meter lead.(A) Loose or soft soil	C.M.	it no 0,it code 04003A General Technical Specification Booklet
5	Boring holes 2.1 m deep in ordinary soil (for cast in situ piles) and getting out the soil and disposal of the surplus excavated soil as directed within a lead of 50 Meter for following diameter of pipes. (iii) 250 mm : Auger	C.M.	it no4.27,it code 04010A + it no 4.28 it code 04011A General Technical Specification Booklet
6	Providing and laying cement concrete 1:2:4 (1- Cement : 2- Coarse sand : 4- graded stone aggregates 20 mm nominal size) and curing complete excluding cost of formwork in (A) Foundation and Plinth	C.M.	it no 5.3.13 ,it code 05010BA General Technical Specification Booklet
7	Providing and laying cement concrete 1: 2:4 (1 cement : 2coarse sand :4 graded stone aggregates 20 mm nominal size) and curing complete including cost of formwork but excluding reinforcement for reinforced concrete work in: (A)Foundation footing, base of columns & mass concrete.	C.M.	it no 5.3.13 ,it code 05010BA General Technical Specification Booklet
8	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in :(A) foundation, footing, base of columns and mass concrete	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
9	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : Auger	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
10	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : (B) Columns, pillar posts and struts up to plinth level	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55

11	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : (C) Beams up to plinth Lvl.	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
12	Providing and laying controlled cement concrete work M200 and curing complete including the cost of form work but excluding reinforcement for reinforced concrete work in : Plinth slab ((C) Slabs (Grade Slab) upto floor two level.)	C.M.	it no5.8.3,it code 05024AA + it no 9.1 it code 09001G1A General Technical Specification Booklet
13	Labour charges for giving Trimix treatment to Concrete surface including necessary steel channel formwork and required tools and machinery including preparing joint with concrete cutter machine as required and directed.	S.M.	
14	Providing and laying controlled cement concrete work M200 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : (C) Coping upto floor two level.	C.M.	it no5.8.3,it code 05024AA + it no 9.1 it code 09001G1A General Technical Specification Booklet
15	Providing TMT Bar FE-500/500D reinforcement for R.C.C. work including bending, binding and placing in position comp. upto floor two level.	kg	ATTACHED SEPARATELY
16	Brick work using common burnt clay building bricks having crushing strength not less than 35 kg./Sq.Cm. in foundation and plinth in Cement Mortar 1:6 (1- Cement : 6 -fine sand)(B) Conventional	C.M.	General Technical Specifications Booklet Item No.6.13.(B) Page No-44
17	Filling available excavated earth (excluding rock) in trenches plinth, sides of foundations etc. in layers not exceeding 20 cm. in depth consolidating each deposited layer by ramming and watering)	C.M.	General Technical Specifications Booklet Section-4 Item no:4.12. Page No-27
18	Filling in foundation and plinth with murrum or selected soil in layer of 20 cm thickness including watering ramming and consolidating including lead of murrum from 3 km etc complete.	C.M.	General Technical Specifications Booklet Section-1 Item no:4.0.04 Page No-28
19	Providing and laying 20 mm thick water proof cement plaster using water proofing powder 1Kg/1bag of cement for all floors on brick / concrete wall work using water proofing materials in C M 1: 4 (1 cement 4 coarsse sand) including finishing with a floating coat of neat cement slurry etc complete for all floor.	S.M	separate sheet attached
20	Carring out plinth treatment to post construction / existing structure by spraying chemical solution for termite control treatment including labour and material consistment with I.S.I specification. Using Chlordene and Chiorpurfiles 20 EC. As Per 6131_paret-II Consentration Weight one percent is recommended i.e one litre 20 EC chemical emulsion with 19 liter give 1 % concentration inclusive of one litre chemical emulsion appication at the rate of 5 Litre chemical / Sqm of surface is recommended as per I.S	S.M.	it no 0 it code22007 General Technical Specifications Booklet

21	Constructing Under Ground water tank with Providing and laying controlled cement concrete M250 mix for R.C.C. work including reinforcement, boxing, centering,vibrating, curing and mixed with approved water proofing cement compound or "CEMWET" or "PIDICRETE LW" integral water proofing admixture as water proofing agent to be mixed with 50 kgs. bags shall be as recommended by the manufacture of the water proofing material, concrete work for top, bottom slab & side pardi for under ground water tank item incl. Necessary excavation & refilling the available earth, 15 cm thk 1:2:4 for bedding of concrete, 20 mm thk. water proofing cement plaster in C.M. 1:3 with smooth finishing & Glazes tile Dedo, vata, watering etc. Comp. to all face of tank . including locking arrangement outlet, inlet, overflow and washout outlet pipe arrangement as necessary & C.I. Cover 0.60 x 0.45 weight not less then 35 kg with locking arrngment. etc. comp as per structural drawing Including Steel & as directed by Eng-in-charge.	lit	ATTACHED SEPARATELY
22	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work UP TO FLOOR TWO LEVEL : A1)COLUMN At Ground Floor Level	0.00	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
23	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : (B) Columns : At All Floor	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
24	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : (C) Beam: at Ground floor slab (up to floor two level) Ground Floor	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
25	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : (C) Beam: at All Floor	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
26	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : (D) Slab: At Ground floor	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
27	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : (D) Slab: At All Floor	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
28	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : (E) Lintels: At Ground Floor	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
29	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : (E) Lintels: At All Floor	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55

30	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : Chhajja : (F) Chhajjas: At Ground Floor	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
31	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : (F) Chhajjas: At All Floor	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
32	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : (G) Staircases at Ground Floor (upto floor two level.) Ground Floor	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
33	Providing and laying controlled cement concrete work M250 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : (G) Staircases at All Floor	C.M.	General Technical Specifications Booklet Item No.5.8.3 + Item No.9.1 Page No- 40+55
34	Providing and laying controlled cement concrete work M200 and curing complete including the cost of form work but excluding reinforcement of reinforced concrete work in : Coping At All floor	C.M.	it no5.8.3,it code 05024AA + it no 9.1 it code 09001G1A General Technical Specification Booklet
35	Providing ISI Mark TMT FE-500 bar reinforcement for R.C.C. work including bending and placing in position comp. upto floor two level : At All Floor	kg	ATTACHED SEPARATELY
36	Providing ISI Mark TMT FE-500 bar reinforcement for R.C.C. work including bending and placing in position comp. upto floor two level : At All Floor	kg	ATTACHED SEPARATELY
37	Providing and laying block masonry using 230 mm thick AAC block [autoclaved aerated concrete block] having crushing strength 3-5 N/mm ² , using readymade premix tensile adhesive mixture etc complete as directed by Engr Incharge : (At Ground Floor)	C.M.	ATTACHED SEPARATELY
38	Providing and laying block masonry using 230 mm thick AAC block [autoclaved aerated concrete block] having crushing strength 3-5 N/mm ² , using readymade premix tensile adhesive mixture etc complete as directed by Engr Incharge : At All Floor	C.M.	ATTACHED SEPARATELY
39	Providing and laying block masonry using 100 mm thick AAC block [autoclaved aerated concrete block] having crushing strength 3-5 N/mm ² , using readymade premix tensile adhesive mixture etc complete as directed by Engr Incharge. At Ground Floor	S.M.	ATTACHED SEPARATELY
40	Providing and laying block masonry using 100 mm thick AAC block [autoclaved aerated concrete block] having crushing strength 3-5 N/mm ² , using readymade premix tensile adhesive mixture etc complete as directed by Engr Incharge : At All Floor	S.M.	ATTACHED SEPARATELY
41	Providing 15mm thick cement plaster in single coat on Rough (Similar)side of single or half brick walls for interior plastering upto floor two level and finished even and smooth in (ii) Cement mortar 1:4 (1-cement :4-sand) : (A) for wall and similar surfaces (At Ground Floor)	S.M	General Technical Specifications Booklet Item No.17.61(II) Provide 15mm thickness instead of 20mm . Page No-106

42	Providing 15mm thick cement plaster in single coat on Rough (Similar)side of single or half brick walls for interior plastering upto floor two level and finished even and smooth in (ii) Cement mortar 1:4 (1-cement :4-sand): (A) for wall and similar surfaces (At All Floor)	S.M	General Technical Specifications Booklet Item No.17.61(II) Provide 15mm thickness instead of 20mm . Page No-106
43	Providing 10mm thick cement plaster in single coat on brick/concrete walls for interior plastering upto floor two level and finished even and smooth in (ii) Cement mortar 1:4 (1-cement :4-sand) : (B) for ceilings and soffits of stairs (At Ground Floor)	S.M	General Technical Specifications Booklet Item no:17.58 Page No-105
44	Providing 10mm thick cement plaster in single coat on brick/concrete walls for interior plastering upto floor two level and finished even and smooth in (ii) Cement mortar 1:4 (1-cement :4-sand) : (B) for ceilings and soffits of stairs At All Floor	S.M	General Technical Specifications Booklet Item no:17.58 Page No-105
45	20mm thick sand faced cement plaster on walls upto height 10 metres above ground level consisting of 12mm thick backing coat of C.M. 1:3 (1-cement : 3-sand) and 8mm thick finishing coat of C.M. 1:1 (1-cement : 1-sand) etc. complete (All Floor)	S.M	General Technical Specifications Booklet section-17 Item No.17.95.Page No-107
46	Providing throating or plaster drip and moulding to R.C.C. Chajja etc.comp	R.M	ATTACHED SEPARATELY
47	Providing and applying 20mm. thick cement plaster patta of c.m. 1:3 (1cement : 3 sand) etc. comp :All Floors	R.M	ATTACHED SEPARATELY
48	Prov.20mm deep finished groove ..etc.comp	R.M	ATTACHED SEPARATELY
49	Providing cement vata (10 cm x 10 cm size) quarter round in cement mortar 1:1 including neat cement finishing, watering etc. complete	R.M	General Technical Specifications Booklet section-17 Item No.17.015.Page No-120
50	Providing & laying "36 x 36" Vitrified 8 mm thick tile flooring over 20 mm (average) base of cement mortar 1:6 (1 cement : 6 coarse sand) or L.M 1:1.5 laid on new surface or fixing on existing flooring by adhesive material including dismantling of existing flooring and jointed with colour cement slurry including finished with flushpointing & cleaning the surface etc. completefor light shade : All floors	S.M	ATTACHED SEPARATELY
51	Providing and laying light shade vitrified tiles 8 mm to 10 mm thick in skirting , risers of steps and dedo on 10 mm thick cement plaster 1:3 (1 Cement : 3 Coarse Sand) & jointed with white cement Slurry : At all Floors	S.M	ATTACHED SEPARATELY
52	P & L 24" x 24" vitrified 8 mm thick tile flooring over 20 mm (average) base of cement mortar 1:6 (1 cement: 6 coarse sand) on new surface or fixing on existing flooring by adhesive material including dismantling of existing flooring and jointed with color cement slurry including finised with flush pointing & cleaning the surface etc. complete for antiskit : At all Floors	S.M	ATTACHED SEPARATELY
53	Providing & Laying 600x600 Matt Vitrified tiles 8 to 10mm thick in flooring over 20 mm (average) base of cement mortar 1:6 (1 cement: 6 coarse sand) on new surface or fixing on existing flooring by adhesive material including dismantling of existing flooring and jointed with color cement slurry including finised with flush pointing & cleaning the surface etc. complete as per approve & selection by architect/engineer in charge.	S.M	ATTACHED SEPARATELY

54	Providing & laying 600mm x 600mm Matt Vitrified tiles of 8 to 10mm thick in skirting, riser of steps & dedo laid on bed of 10 mm (Average) base of cement mortar 1:3 (1 Cement : 3 Coarse sand) thick & jointed with white cement slurry etc. complete as per approval & selection by architect/engineer in charge.	S.M	ATTACHED SEPARATELY
55	Providing and laying polished Kota stone slab flooring over 20mm (Average) thick base of cement mortar 1:6 (1-cement : 6-coarse sand) or L.M. 1:1.5 (1-Lime putty :1.5 - coarse sand) laid over and jointed with grey cement slurry mixed with pigment to match the shade of slab including rubbing and polishing etc. complete. (A) 25mm thick : At all Floors	S.M	ATTACHED SEPARATELY
56	Providing and laying polished kota stone slab 25mm thick in risers of steps, skirting Dedo and pillars laid on 10mm thick cement mortar 1:3 (1- Cement : 3 coarse sand) and jointed with gray cement slurry mixed with pigment to match the shade of slab including rubbing and polishing etc. complete : At all Floors	S.M	ATTACHED SEPARATELY
57	Providing and laying Granite slab (18 mm thick) one side polished flooring over 20 mm (average) base of cement mortar 1:6 (1 cement : 6 coarse sand) or L.M 1:1.5 laid and jointed with grey cement slurry including rubbing and polishing complete : At all Floors	S.M	ATTACHED SEPARATELY
58	Providing and laying polished granite stone slab 18 mm thick in risers of steps, dedo and pillars laid on 10 mm thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with gray cement slurry including rubbing & polishing etc. Complete : At all Floors	S.M	ATTACHED SEPARATELY
59	Providing and fixing 35 mm thick solid core flush door of approved make both side lamination using 1mm thick approved laminate sheets with 6mm thick Lipping/border patti around flush shutter including fixing SS hinges, 6 no. - hold fast of size 40 x 6mm flat 300 mm long, wedges, keys, nails, catch screw, lever latches, handle (10 cm), aldop (20 cms), stoppers (20 cms), etc and cutting/ drilling of necessary holes in masonry/ concrete and grouting of holdfasts with (1:2:4) cement concrete all as per drawing, specification and direction of the Engineer, all materials, tools, plant and labour complete c. (All fixtures & fittings shall be stainless steel of approved quality). approved by architect/Engineer Incharge : At all Floors	S.M	ATTACHED SEPARATELY

60	Providing and fixing window having extruded Aluminium colour anodized Section Frame main Outer Size 63.5mm x 38.1mm x 1.95mm(of Jindal Section No. 4605 @ Wt. of 1.094 Kg./Mt.) Horizontal Two track member size 61.85mm x 31.75mm x 1.20mm(of Jindal Section No. 8687, @ Wt. 0.695Kg./Mt.) Vertical Member of size 61.85mm x 31.75mm x 1.30mm (of Jindal Section No. 8758, @ Wt. 0.659 Kg./Mt.) with sliding shutters of Horizontal member size 40mm x 18mm x 1.29mm(of Jindal Section No. 8947 @ Wt. of 0.456 Kg./Mt.) Vertical Member of size 40mm x 15mm x 1.29mm (of Jindal Section No. 8948 @ Wt. of 0.457 Kg./Mt.) with 5mm thick transparent bronze colour tinted float glass with powder coated Aluminium fittings & fixtures & transparent silicon sealant glass fixing to frame as per detail etc. complete.	S.M	ATTACHED SEPARATELY
61	Providing and fixing window having extruded aluminum Colour anodized section frame main outer size 95mm x 24mm x 1.17mm (of Jindal Section no:2459 @ wt.of 0.738 Kg/mt), horizontal Three track member size 92mm x 31.75mm x 1.30mm (of Jindal Section no:8688,@ Wt.1.07 Kg/mt), vertical member of size 92mm x 31.75mm x 1.50mm (of Jindal Section no:8933,@ Wt. 1.06 Kg/mt) with sliding shutters of horizontal member size 40mmx18mm x1.29mm (of Jindal Section no:8947@ wt.of 0.456 Kg/mt), vertical member of size 40mm x 18mm x 1.29 mm (of Jindal Section no:8949 @ wt.of 0.456Kg/mt/ with 5 mm thick transparent bronze colour tinted float glass with powder coated aluminum fittings and fixtures and transparent silicon sealant glass fixing to frame as per details etc : At all Floors	S.M	ATTACHED SEPARATELY
62	Pro.& Fixing standard extruded of alluminium section of size 63mm x 38.10mm x 1.2 mm(of jindal Section No.2434, @ Wt 0.643 kg/Rmt) with colour anodized alluminium frame for Ventilation with 5 mm thick frosted glass as detail etc complete for Ventilation : At all Floors	S.M	ATTACHED SEPARATELY
63	Providing and fixing fully fixed stainless grill using 50mm x 8mm (SS 304) stainless steel flats vertical 50mm X 8 mm stainless steel lats horizontal,16 mm diameter round stainless steel bar at 120 mm center to center fixed to S.S.flats necessary S.S screws and other S.S fittings etc.complete.	S.M	ATTACHED SEPARATELY
64	Providing and fixing M.S. grills of required pattern to marble/granite frames of window etc. with M.s. flats at required spacing and frames around, square or round bars fixed with round headed bolts and nuts or by screws, including oil painting with one coat of primer of approved quality and brand & two coats of synthetic enamel oil paint etc. complete as per detail drawing and as directed by Engineer in charge : At all Floors	kg	ATTACHED SEPARATELY
65	Applying two coats of Birla or Asian acrylic lapy (putty) & two coats of primer of approved brand and manufacture on new wall surface to give an even shade including thoroughly brushing the surface free from mortar dropping and other foreign matter and sand papered smooth : All floors	S.M	ATTACHED SEPARATELY

66	Wall painting (two coats) with plastic emulsion paint of approved brand and manufacture on undecorated wall surface to give an even shade including throughly brushing the surface free from mortar droppings and other foreign matter and sand papered smooth : (A) for wall and similar surfaces (All floors)	S.M	ATTACHED SEPARATELY
67	Wall painting (two coats) with plastic emulsion paint of approved brand and manufacture on undecorated wall surface to give an even shade including throughly brushing the surface free from mortar droppings and other foreign matter and sand papered smooth : (A) for wall and similar surfaces (All floors)	S.M	ATTACHED SEPARATELY
68	Finishing wall with weather proof exterior emulsion paint on wall surface (two coats) to give an required shape even shade after thoroughly brushing the surface to remove all dirt, and remains of loose powdered materials.etc complete	S.M	ATTACHED SEPARATELY
69	Providing & applying single coat of textured at external surface at all floor levels with three coats of weather proof exterior emulsion paint of approved standard brands at outer side of the building on RCC or Masonary walls. Rate to include for all labour, materials, staging, scaffolding, cleaing, curing etc. application of texture after throughly brushing th`e surface to give an even shade free from mortar dropping/other foreign matter etc. complete. application of textures & paints must be as per company's standard instructions. Texture and colour selection as per approved by engineer in charge. All Type Textured	S.M	ATTACHED SEPARATELY
70	Painting two coats (including priming coat) on new steel & other metal surfaces with enamel paint brushing interior to give an even shade including cleaning the surface of all dirt , dust & other foreign matter.	S.M	ATTACHED SEPARATELY
71	Steel work, welded in built up sections framed work including cutting, hoisting, fixing in position and applying a priming coat of red lead paint. (A)In beams and joists, channels angles Tees, flats, with connecting plates or angle cleats as in main and cross beams. Hip and jack rafters, purlins conneted to common rafters and the like	Quinte I	ATTACHED SEPARATELY
72	Providing and laying and fixing 25 mm thick expansion joint by hydro cell semi rigid UV resistance with high performance laminated closed cell polythene foam joint filler in sheet foam as directed, etc. complete : All floors	S.M	ATTACHED SEPARATELY
73	Providing and fixing 25 cm Wide & 3mm thick exterior composite panel on existing expansion joint horizontally & vertically with all material, hardware, acessories & fittings etc completed (All floors)	S.M	ATTACHED SEPARATELY
74	Providing cinder filling in sunken floors including watering, consolidating, ramming complete.	Cu.Mt.	ATTACHED SEPARATELY
75	Providing and fixing 150 mm wide, approved quality chicken wire mesh at junction of brick work and RCC work or two dissimilar surfaces, at all heights fixed by nails, rowal plugs or tag by cement mortar 1:3 before applying the plaster, including curing, scaffolding all complete as directed.	S.M	ATTACHED SEPARATELY

76	Providing and fixing Stainless Steel railing having 50 mm x16G ASIS 304 Grade dia hollow stainless steel pipe as hand rail and 32x32 mmx16G ASIS 304 Grade sq. hollow stainless steel pipe with combination of 10 cm long 16 mmx16G ASIS 304 Grade dia pipe as vertical supports 16 mm x16G ASIS 304 Grade dia hollow stainless steel pipes as intermediate members running through stainless steel 30 mm dia solid runners having threaded screw to fix the runner with vertical support including cutting bending welding & fabrication the structure as per drawing including finishing etc complete	S.M	ATTACHED SEPARATELY
77	The glazing has to be done. The main frames both verticals and horizontals have to be pipes of 64mm x 38 mm of 2.9 mm thick and sub frame of size 25mm x 50mm 1.6mm thick all colour anodized of 15 microns. The glass shall be sheet glass selected quality 6mm thk silver grey or. equivalent The glass shall be stuck to the sub-frame with Norton or equivalent tape as spacer and Dow Corning 995 as silicon. The silicon manufacture has approve the same. Later the grooves shall be filled with Dow Corning 789. The hardware used shall be aluminum or hot - dip galvanized. Water penetration testing has to be done on site.	S.M	ATTACHED SEPARATELY
78	Aluminium Composite panelling to drop-fin and front column, etc: Supply & fixing of Aluminium Composite Panel (ACP), 3 mm thick in required colours for interiors/exterior consisting of two layers of aluminium skins of 0.25 mm thick sandwiching a thermo plastic core in continuous lamination process with PVDF coating for interior/exterior grades ensuring long colour and no fungal attacks. Base frame work with aluminium sections of 65mm X 25mm shall be fixed over the brick work and the above aluminium panels shall be fixed to the frame work as cladding with material:- silicone dowcorring 789 weather silicone in 995 dow corring. It includes cost of labour, materials, accessories, adhesives, scaffolding, wastages, transport, taxes, fixing into a neat finish in aesthetic point of view, without any undulations in facias all complete as per drawing and Instruction of engineer in-charge.	S.M	ATTACHED SEPARATELY
79	Providing & Fixing Cubicle System of MODLE TYPE - TITAN SS SERIES of Cubicle size 1000mm (W) X 1550mm (D) X 1980mm (H) having 12 mm thick Compact Laminate HPL Boards of Single Color with Door Size : 1750mm (H) X 610mm (W) & Overall Height Of Cubicle 1980mm (Including bottom Gap of 150mm) including Accessories of Standard – Merino Make Stainless Steel - 304 Grade)- SS “U” Channel, SS “F” channel, SS Top Rail, SS Coat Hook , SS Privacy Thumb turn c/w Occupancy Indicator, SS Door Knob, SS Hinges with Cover, SS Adjustable Foot - 316 Grade, Rubber Lining for Groove, S.S.Screws 304 G & P.V.C Wall Plugs etc. complete approved by architect/Engineer Incharge.	No.	ATTACHED SEPARATELY

80	Providing and laying broken chine mosaic flooring for terrace using 12 mm to 20 mm broken pieces of glazed tiles to be laid over cement mortar 1:3 to plain or slope and to be tempered to bring mortar creme out upto surface using white cement including rounding off junctions and extending them upto 15 cm along the wall,clearing with water and oxalic acid etc. as directed.	S.M	ATTACHED SEPARATELY
81	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc. consisting of following operations. (a) Applying and grouting a slurry coat of neat cement using 2.75 kg/ sqm of cement admixed with proprietary water proofing compound conforming to IS : 2645 over the R.C.C. slab including cleaning the surface before treatment. (b) Laying cement concrete using broken bricks\brick bats 25 mm to 100 mm size with 50 % of cement motar 1:5 (1 Cement : 5 Coarse sand) admixed with proper water proofing compound confirming to IS : 2645 over 20 mm thick layer of cement mortar of mix 1: 5 (1 cement : 5 Coarse sand) admixed with proprietary water proofing compound confirming to IS : 2645 to required slope and treating similarly the adjoining walls upto 300 m height including rounding of junction of walls and slabs. (C) after two days of proper curing applying a second coat of cement slurry admixed with proprietary water proofing compound conforming to IS:2645 (d) finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement : 4 coarse sand) admixed withproprietary water proofing compound conforming to IS:	S.M	ATTACHED SEPARATELY
82	Providing & fixing wash down water closet European type W.C. pan with integral 'P' or 'S' trap incl jointing the trap with soil pipe in cement motar 1:1 (1cement : 1fine sand) having following additional accessories : (A) vitrious china pattern- I in white colour,(a) G.I. inlet connection for flush pipe with W.C. pan,(b) plastic seat & cover for wash down water closet with c.p brass hinges and rubbers buffers of colour match to the E.W.C.pan on All floor	No	General Technical Specifications Booklet Item No.23.112.(A)(I) Page No-146
83	Providing and fixing washbasin with single hole for pillar trap at all floor level with C.I. or M.S. Brackets painted white including cutting holes and making good the same including (A) Vitreous china flat back wash basin 550mm x 400mm size in white colour (a) providing and fixing C.P. brass waste for wash basin or sink(A) 32mm (b) providing and fixing M.I.fisher union for wash basin or sink(A) 32mm (c) piller tap,capstan head, screw down high pressurewith screw shanks and back nuts for 15mm dia. for all floor (d)brass screw down stop tap (e)Rubber plug for sink or washbasin (f) chromium plated bottle trap with necessary coupling of approved quality for wash basin (All floor)	No	it no 23.127 it codee 23018 General Technical Specifications Book
84	Providing & fixing 600 mm. x 450 mm. mirror of superior glass at all floor levels, mounted on 6 mm. th. A.C. sheet or plywood sheet & fixed to wooden plugs with C.P. brass screws and washers etc. for all floor	No	it no 23.143 it code23024 General Technical Specifications Book .

85	Providing and fixing Urinal or approved quality including connecting the Urinal with waste pipe , tap etc. complete : (A) White earthenware flat back or corner type size 430mm x 260mm x 350mm.	No	General Technical Specifications Booklet Item No.23.124.(A) Page No-152
86	Providing and fixing PVC SWR Nanhi trap IS 14735 for drain -100 mm diameter with jali of the following nominal diameter of self cleaning design with C.I sceed down or hinged grating including the cost of cutting and making good the wall (All floor)	No	General Technical Specifications Booklet Item No.23.87 Page No-146 (Provide pvc instead of c.i)
87	Providing and fixing to wall ceiling and floor 10.0 kg/cm ² working pressure polythelene pipes of the following outside dia. low density complete with special flage compression type fitting, wall clips etc. including making good the wall ceiling floor : (F) 75 mm dia	No	General Technical Specifications Booklet Item No.23.8 (provide 110 mm dia.) Page No-154(provide 10 kg/cm ² instead of 6 kg/cm ²
88	Providing and fixing to wall ceiling and floor 10.0 kg/cm ² working pressure polythelene pipes of the following outside dia. low density complete with special flage compression type fitting, wall clips etc. including making good the wall ceiling floor (G) 110 mm dia	No	General Technical Specifications Booklet Item No.23.8 Page no-154(provide 10 kg/cm ² instead of 6 kg/cm ²
89	(F) 75 mm dia	No	General Technical Specifications Booklet Item No.23.8 (provide 110 mm dia.) Page No-154(provide 10 kg/cm ² instead of 6 kg/cm ²
90	Providing and fixing S.W. Gully trap with C.I. grating brick masonry chamber and water tight C.I. cover with frame of 300mm. x 300mm. size with standard weight (i) square mouth trap(A) 100mm x 100 mm size- P-type	No	General Technical Specifications Booklet Section-24 Item No.24.19(1) Page no-156
91	Constructing brick masonry for under ground C.I. inspection chamber and bends with bricks having crushing strength not less than 35 kg/cm ² in c:m 1 :5 C.I. cover with frame 445mm x 610mm internal dimension total weight of cover with frame to be not less than 38 kg.(wt. or cover 23 kg. and wt of frame 15 kg.) R.C.C. top slab with 1:2:4(1 cement :2 course sand : 4 grade stone aggregate 20mm size) foundation concrete 1: 5: 10 inside plaster 15 mm thick with cement mortar 1: 3 finished smooth with a floating coat of neat cement on walls and bed concrete etc. comp. (i) inside dimension 455mm X 610mmX 450mm deep	No	ATTACHED SEPARATELY
92	Providing,& laying(to level or slopes) and joining R.C.C NP2 CLASS pipe in C.M 1:1 of following nominal internal diameter with collars and butt ends prepared for collar joints including testing of pipes and joints etc. Complete : (B) 150 mm dia.	R.M	ATTACHED SEPARATELY
93	Providing and laying and jointing in tube line and level 15 mm dia U.P.V.C. Pipe (SCH -40) including fitting make or equivalent as approved by engineer In charge. Pipe shall be fixed on the wall with the help of clamp at every two meter C/C or shall be concealed as directed including necessary fitting etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials : (A) 15mm. dia.	R.M	ATTACHED SEPARATELY

94	Providing and laying and jointing in tube line and level 25 mm dia U.P.V.C. Pipe (SCH -40) including fitting make or equivalent as approved by engineer In charge. Pipe shall be fixed on the wall with the help of clamp at every two meter C/C or shall be concealed as directed including necessary fitting etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials : (c) 25mm. dia.	R.M	ATTACHED SEPARATELY
95	Providing and laying and jointing in tube line and level 40 mm dia U.P.V.C. Pipe (SCH -40) including fitting of PRINCE/ SUPREME/ ASTRAL/ FINOLEX make or equivalent as approved by engineer In charge. Pipe shall be fixed on the wall with the help of clamp at every two meter C/C or shall be concealed as directed including necessary fitting etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials : (e) 40mm. dia.	R.M	ATTACHED SEPARATELY
96	Providing and fixing C.P brass screw down bib tap at all floor level polished bright etc. comp.	No	General Technical Specifications Booklet Section-23 Item no:23.92 page no- 150
97	Providing and fixing gun metal check or non return full way wheel valve at floor levels,etc. complete : (E) 40mm. dia.	No	General Technical Specifications Booklet Section-23 Item no:23.99 page no- 153
98	Providing and fixing chromium plated brass half turn flushcock at all floor level, of approved quality incl. fixing in pipe line etc. comp : (ii) 25mm. dia.	No	General Technical Specifications Booklet Section-23 Item no:23.00.1 page no- 152
99	Providing and fixing abonite ball cock of approved quality as directed etc. comp : (A) 25mm. dia.	No	General Technical Specifications Booklet Section-23 Item no:23.005 page no-153
100	Providing and fixing 10.0 kg/cm ² working pressure polythelene pipes of the following outside dia. low density complete with special flange compression type fitting, wall clips etc. (B) 110 mm dia.	R.M	General Technical Specifications Booklet Item No.23.8 Page no- 154(provide 10 kg/cm ² instead of 6 kg/cm ²)
101	Providing & fixing G.I. Rain water spout of 50 mm dia & 30 cm length etc (all floor level)	No	it no 0 it code 23039 General Technical Specifications Book .
102	Providing and fixing in position P.V.C. cowl vent to pipes of prince, suprim, jain make etc. comp :100 mm dia	No	ATTACHED SEPARATELY
103	Providing erecting and fixing double coated Syntex or equivalent PVC (ISI) mark water tank of reqd capacity each with all necessary fitting and connection etc. comp on terrace.	lit	ATTACHED SEPARATELY
104	Lawn/Grass Supplying and planting of good quality nodes of specified grass for dibbling: It includes the cultivation of ground to a depth of 150mm, Planting (2"-3" apart) of grass as per drawing without disturbing the desired gradient and level, watering, maintaining (forking, mowing, weeding, fertilizer application, pest control etc.) it for a period of 3 months from the date of lawn dibbling/plantation. Doob grass(dibbling)	S.M.	Technical specification for landscape works & Irrigation works booklet

105	<p>Shrubs/Ground covers</p> <p>Supplying and planting healthy shrubs of different species of 450mm to 900 mm height: by using the soil/ manure (either carted or supplied), and watering it immediately. Maintaining(application of liquid manures/ growth regulators/ pesticides as per need, weeding and gap filling regularly so as to keep the plant healthy all the time) it for a period of 6 months from the date of plantation-Ixora Pink,Ixora Red, Ixora Yellow,Ixora White or as per selection of Engg. in charge/Architect.</p>	No	Technical specification for landscape works & Irrigation works booklet
106	<p>Trees</p> <p>Supply and planting of trees (1.5m to2.0m height): Digging a tree pits of size –0.9 mt. X0.9 mt. X1.0 mt., Supplying and filling of tree pit with dry paddy husk up to 100mm from bottom of the pit. providing and planting a tree sapling by using the soil/ manure (either carted or supplied), staking/ propping it with bamboo stick using jute string and watering it immediately. Making basin around (3' dia) and maintaining(application of liquid manures/ growth regulators/ pesticides as per need, weeding and gap filling regularly so as to keep the plant healthy all the time) it for a period of 3 months from the date of plantation.</p>	No	Technical specification for landscape works & Irrigation works booklet
107	Box cutting the road surface to proper slope & camber for making a base for road work including removing the excavated stuff, and depositing on the road side slopes as directed up to 50 Mt. Lead	C.M.	ATTACHED SEPARATELY
108	Rolling and Consolidating of soling including filling in depression which occurs during the process with power roller 8 tonne to 12 tonne. and compacting the bed as per specifications to core test 97% compacting complete in all respects to the entire satisfaction of the Engineer-in -charge.	S.M.	ATTACHED SEPARATELY
109	Providing and fixing pre- cast concrete kerb stone of gray cement based concrete block 30 cm length, 30 cm height and 15cm thick of 250 grade concret as per approved design and including excavation for fixing in proper line and level, fillig the joint with C: M 1:3 (1 Cement : 3 Fine Sand) etc. complete	S.M.	ATTACHED SEPARATELY
110	Providing, laying, spreading and consolidation graded stone aggregate to wet mix macadam 150mm compacted thick as per MORT & H specifications including premixing the material with water at OMC in mechanical plant carriage of mixed material by tippers to site, laying in uniform layers with paver in sub base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density	C.M.	ATTACHED SEPARATELY

111	Providing & laying of specified compacted thickness Granular sub base (GSB) in specified grading in table 400-1 of the specification MORT&H and compactor to the required density with 8 - 10 tonne vibratory roller with plain drum or heavy pneumatic tyred roller of minimum 200 to 300 KN weight in all seasons as per MORT&H , maintaining the required slope & grade during the operation as approved by the engineer in charge & watering to the proper moisture content and sprinkled with the help of truck mounted water tank fitted with suitable arrangement .(fully saturated having CBR value greater or equal to 30) compacted thickness of 150 mm consisting of Machine crust stone aggregate as per grading 1 in table 400-1 of the specification MORT&H fifth Revision	C.M.	ATTACHED SEPARATELY
112	Providing and fixing pre-cast Rubber Dye / steel Dye inter locking concrete block 60mm thick with grade of concrete M300 pneumatic compressed / vibrated mechanically and as per approved design Confirming to IS 15658 : 2006 including 35 mm Sand layer for levelling and filling the joint with sand in proper line and level as per guidlines of IRC : SP 63-2018 etc. Complete.	S.M.	ATTACHED SEPARATELY
113	Dry Lean Cement Concrete Sub- base (Construction of dry lean cement concrete Sub- base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600- 1, cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 tonnes vibratory roller, finishing and curing.)	C.M.	ATTACHED SEPARATELY
114	Cement Concrete Pavement: Providing and Laying of un-reinforced, dowel jointed, M40 pavement cement concrete pavement over a prepared sub base with 53 grade cement with coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing Compound, finishing to lines.	C.M.	ATTACHED SEPARATELY
115	Supplying of crushed stone aggregates, chippings etc. of hard stone of following nominal size free of disintegrated pieces deleterious and oraganic mater and grading as per I.R.C. Code.(iii) 25mm	C.M.	ATTACHED SEPARATELY
116	Supplying of crushed stone aggregates, chippings etc. of hard stone of following nominal size free of disintegrated pieces deleterious and oraganic mater and grading as per I.R.C. Code.(ii) 40mm	C.M.	ATTACHED SEPARATELY

117	Spreading the stone aggregate including filling the interstices to required camber and gradient (excluding spreading of Blindage)(iii) 25mm to 50mm size crushed stone	C.M.	ATTACHED SEPARATELY
118	Drilling 300 mm dia pilot bore at above site in all strata by mud flush direct rotary rig/reverse rotary rig. From 0.00 mt to 220 mt .	R.M.	separate sheet attached Tube well detail specification
119	Reaming of 300 mm dia bore hole including assembling , jointing lowering housing casing strainer pipes and gravel and assemble item with gravel packing and clay packing 500 mm dia hole for 200 mm dia pipe	R.M.	separate sheet attached Tube well detail specification
120	Reaming of 250 mm dia bore hole including assembling , jointing lowering housing casing strainer pipes and gravel and assemble item with gravel packing and clay packing 550 mm dia hole for 200 mm dia pipe	R.M.	separate sheet attached Tube well detail specification
121	Supply of clay ball having Size of 25 mm to 50 mm	C.M.	separate sheet attached Tube well detail specification
122	Supply of gravel of Selected Size 4 mm to 10 mm	C.M.	separate sheet attached Tube well detail specification
123	Supply of Cement	M.T.	separate sheet attached Tube well detail specification
124	Cement Sealling	Job	separate sheet attached Tube well detail specification
125	Lowring of drop line & air line : Lowring 100 mm dia. Dropline and 32 mm GI air line for devlopment of each water bering zone coming across the full depth of tube well for each zone	Job	separate sheet attached Tube well detail specification
126	Lowring of drop line & air line : Lowring 200 mm dia. Dropline (Blind & Slotted pipe) and 32 mm GI air line for devlopment of each water bering zone coming across the full depth of tube well for each zone	R.M.	separate sheet attached Tube well detail specification
127	Supply and delivery of PVC blind pipe 200 mm dia as per IS: 12818	R.M.	separate sheet attached Tube well detail specification
128	Supply and delivery of PVC slotted pipe 200 mm dia as per IS: 12818	R.M.	separate sheet attached Tube well detail specification
129	Supply of (A) M.S. bore clamp -for 300 mm dia. Pipe	No.	separate sheet attached Tube well detail specification
130	Supply of (B) M.S. bore Plug-for 250 mm dia. Pipe	No.	separate sheet attached Tube well detail specification
131	Supply of (C)M.S. bail plug.-for 300 mm dia. Pipe	No.	separate sheet attached Tube well detail specification
132	Supply of (D) Steel bent plats -for 300 mm dia. Pipe size-200 X 150 X 6 mm.	No.	separate sheet attached Tube well detail specification
133	Development of tube well : Development of tube well zonewise with 1100 CFM / 300 PSI + Air Compressor up to avalibility of sand free discharge . The air Compressor should run minimum for Six of up to avalibility of Sand free discharge .	L.S.	separate sheet attached Tube well detail specification
134	Electrologing test for tub well .	Job	separate sheet attached Tube well detail specification

135	Supply of ERW 250 mm dia. Blank pipe IS 3589 (7 mm thick.)	R.M.	separate sheet attached Tube well detail specification
136	Supply of ERW 250 mm dai. V wire Strainer pipe heavy duty slot size 1.00 mm	R.M.	separate sheet attached Tube well detail specification
0	Supply of bore material for 250 mm dia. Pipe	0.00	separate sheet attached Tube well detail specification
137	(A) M.S. bore clamp	No.	separate sheet attached Tube well detail specification
138	(B) M.S. bore Plug	No.	separate sheet attached Tube well detail specification
139	(C)M.S. bail plug.	No.	separate sheet attached Tube well detail specification
140	(D) Steel bent plats	No.	separate sheet attached Tube well detail specification
141	Providing Electric moter driven submersible pump set 3PHASE Capacity about 7.5hp having 135 LPM discharge @ 120 mt. head sutibal for 100 mm dai. Delivery pipe catagery 2.2	No.	separate sheet attached Tube well detail specification
142	Providing & fixing control penal bord sutibal for above submersible pump set-D. O. L. up to 7.5 HP	No.	separate sheet attached Tube well detail specification
143	Providing & fixing PVC insulated round submersible cable 1R x 3 C x 6.0 sq.mm.	Rmt	separate sheet attached Tube well detail specification
144	Manufacture, Supply and Delivery of 80 mm Nominal dia UPVC Column Pipes including PVC Socket (Coupler), Density of Pipe 1.38 to 1.43 Gm per Cm3 , OD : 87.5 TO 88.2MM, Wall Thickness End : 9.8mm to 11.9mm, Berral : 7.3mm to 9.0mm, Length: 3 Mtrs.	Rmt	separate sheet attached Tube well detail specification
145	Providing and supplying in standard length ISI mark high density Polyethylene H.D.P.E. Pipes suitable for potable water as per IS Specification no. 4984/1995 including all local and central taxes, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to the dept. stores etc. comp. 110 dia.10kg/cm2 pressure	Rmt	separate sheet attached Tube well detail specification
146	Providing, laying and jointing in true line and level 160 diametre U.P.V.C (Type B) conforming to IS 13592-1992 with one end plain and other end socketed with rubber ring, & fittings conforming to ISI 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant.	R.M.	ATTACHED SEPARATELY
147	Providing and supplying in standard length ISI mark rigid unplasticised PVC pipes suitable for potable water with ring fit joint including cost of rings, as per IS specification no. 4985/1988 including all local and central taxes, transportation,freightcharges,octroi,inspection charges, loading, unloading, conveyance to the departmental stores and including cost of jointing material etc. complete.Test Pressure 10 Kg/cm2 (160mm dia. pipe)	R.M.	ATTACHED SEPARATELY

148	Providing and supplying in standard length ISI mark rigid unplasticised PVC pipes suitable for potable water with ring fit joint including cost of rings, as per IS specification no. 4985/1988 including all local and central taxes, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to the departmental stores and including cost of jointing material etc. complete. Test Pressure 10 Kg/cm ² (200mm dia. pipe)	R.M.	ATTACHED SEPARATELY
149	Lowering, laying, fixing and jointing PVC/uPVC/cPVC pipes and specials of following class and diameter including cost of conveyance from stores to site of works including cost of labour, material, cement solvent, giving satisfactory hydraulic testing as per ISI code (160mm dia. pipe)	R.M.	Tube well Detail specification Separate sheet attached
150	Lowering, laying, fixing and jointing PVC/uPVC/cPVC pipes and specials of following class and diameter including cost of conveyance from stores to site of works including cost of labour, material, cement solvent, giving satisfactory hydraulic testing as per ISI code (200mm dia. pipe)	R.M.	Tube well Detail specification Separate sheet attached
151	WOODEN PARTITION Providing and fixing of full height solid sandwich partitions (AS PER DRAWINGS) using 50 x 50 mm aluminium pipe for framing (minimum grid size of 600 mm x 600mm), 12mm ply (both sides) of brand greenply ecotech mr, century sainik mr, srg etc, teak wood beading patti etc. making of rebates and including all hardware items, groove (if shown) 50 MM TK, 24 kg density insulation if required, with all materials, hardware, ss or powdercoated screws, labour, lead and wastage, scaffolding etc. complete. And Finished with different materials, and complete the work satisfactorily as per instruction of architect or Engineer-in charge.	Sq. Mt	ATTACHED SEPARATELY
152	ABOVE CEILING PARTITION Providing and fixing of above ceiling partitions (AS PER DRAWINGS) using 75 mm x 50 mm x 1 mm aluminium pipe for framing, with ghana wood infill etc. including all hardware item, with all material, labour, lead, scaffolding and wastage etc. and complete the work satisfactorily as per instruction of architect or Engineer-in charge.	Sq. Mt	ATTACHED SEPARATELY
153	GLASS PARTITION WITH FILMWORK Providing and fixing of full height glass partitions (AS PER DRAWINGS) using patch fitting / U-channels, 12mm clear toughened glass, film work as per drawing including all hardware items, silicon, etc with all material, labour, cutouts, edge polish, lead and wastage etc. and complete the work satisfactorily as per instruction of architect or Engineer-in charge.	Sq. Mt	ATTACHED SEPARATELY
154	MIRROR FINISH (5mm thick Looking Mirror) Providing and fitting of mirror/glass (as per drawing & approved shade) of brand ais, modiguard, etc on ply panelling / on tile cladding including all material, labour and hardware, cutouts, edge polishes, waste of materials and complete the work satisfactorily as per instruction of architect or Engineer-in charge.	Sq. Mt	ATTACHED SEPARATELY

155	<p>WOODEN PANELLING</p> <p>Providing and making of ply panelling on Wall & columns using 12mm ply, aluminium pipe for (2" x 1") framing(minimum grid size of 600 mmx 600mm), Ghana bidding patti (1 1/2" x 3/4")including all material, labour and hardware complete,including scaffolding as per instruction of architect. And Finished with different materials,polish work as per instructions,and complete the work satisfactorily as per instruction of architect or Engineer-in charge.</p>	Sq. Mt	ATTACHED SEPARATELY
156	<p>LAMINATE FINISH</p> <p>Providing and fitting of 1 mm laminate (as per drawing & selection) of brand greenlam,merinolam,century etc on ply partition with 25 mm x 20 mm teakwood beading patti design on top as per drawing,and 3mm x 3mm grooves if shown, all material, adhesives,polish work,labour and hardware, waste of materials,polish work as per instructions, complete as per instruction of architect.[Basic Rate of Laminate : 2000rs./sheet (8' x 4')] and complete the work satisfactorily as per instruction of architect or Engineer-in charge.</p>	Sq. Mt	ATTACHED SEPARATELY
157	<p>GYPSON CEILING</p> <p>Supplying and Fixing of Suspended ceiling system components which includes Single Layer Boarding with 12.5mm thick USG Boral Standard Plasterboard This includes of USG Boral Thundersteel Perimeter Channel (0.50mm thick having one flange of 20mm and another flange of 30mm and a web of 28mm) screw fixed to brick wall/partition with the help of approved screws at 600mm centers. Then suspending of USG Boral Thundersteel Intermediate channel (45mm x 0.90mm thick with two flanges of 15mm each) from the soffit at 1220mm centers with of USG Boral Thundersteel Ceiling Angle (25x10mmx0.50mm thick) fixed to RCC Slab with of USG Boral Soffit Cleat (37x27x25x1.6mm thick) and 8mm dia 40mm long Anchor Fastener @ 600mm Centers, respectively. USG Boral Thundersteel Ceiling Section (having web of 51 mm and two flanges of 27mm each) are then fixed to the of USG Boral Thundersteel Intermediate channel with the help of connecting clip (2.6mm Dia) and in perpendicular direction to the USG Boral Thundersteel intermediate channel at 457mm centers. USG Boral Thundersteel profiles are rolled with AZ Steel (150 GSM & 310 MPa Yield Strength) having base metal conforming to IS 513:2016 as per IS 15961:2017/ AS 1397:2001).12.5mm thick</p>	Sq. Mt	ATTACHED SEPARATELY

158	<p>SOLID DOORS FOR WOODEN PARTITION(75 MM TK) Providing and fixing of 75 mm solid doors (AS PER DRAWINGS) using 50 x 50 mm aluminium pipe for framing, 12mm ply (both sides)of brand greenply ecotech mr,century sainik mr,srg etc, including glass slit as per drawing 50 mm teak wood beading patti at the framing etc. making of rebates and including all hardware items,mortise door lock (ENOX EMH-SS-019)with entire set including cylinder,heavy duty conceal door closer of brand enox (ENOX ITS-3870-EN 2-5),ozone,dorma,and groove (if shown) with all materials, labour, lead and wastage,polish work as per instructions etc. complete. And Finished with different materials,and complete the work satisfactorily as per instruction of architect or Engineer-in charge.</p>	Sq. Mt	ATTACHED SEPARATELY
159	<p>S.S 304 GRADE DUSTBIN Providing & Supplying of S.S 304 GRADE . Dustbin of brand SATYAKI,pigeon etc,having size of 10 In. Diameter & 14" Height etc. complete as per selection & directed by the Architect and approved by the Engineer in Charge.(BASIC RATE OF DUSTBIN IS RS 1550/-)</p>	No.	ATTACHED SEPARATELY
160	<p>POP PUNNING Providing and fixing of POP Punning and finished by company approved gypsum, taping, lapi, including scaffolding etc. and including grooves as shown in drawing And including satin paint complete with all material, labour with all lead, lift and transport.and complete the work satisfactorily as per instruction of architect or Engineer-in charge.</p>	Sq. Mt	ATTACHED SEPARATELY
161	<p>FIX CHAIR FOR TRAINNING HALL Providing and fixing of SHABAKHAND CHAIR of brand vista model make amber , merryfair etc.or as per selection in leather with tilt up frame on frontal pivot the handle top will e dicasted metal welded precisely seat will be in complete dicasted frame and edgending back will be static as per model covering whole body high the bottom portion will be connected with fastners to the floor leather upholstery will be 1200 per metre size width 585*940 with center support of 100 mm sideways as well as back in 90 microns epoxy powder coating,including all components,fixing,fastners,groutinng work, material, labour,and hardwares, waste of materials etc and complete the work satisfactorily as per instruction of architect or Engineer-in charge.(basic rate of chair is 13000/-)</p>	No.	ATTACHED SEPARATELY
162	<p>LOGO Providing and fixing of 10 mm clear Acrylic cut work and fixing 3mm acrylic on top of brand Ptglass,astari etc,3M vinyl with 5 years warranty on fading with all laser and cnc work,including all material, labour,25 mm ss studs for mounting and other hardwares, waste of materials etc and complete the work satisfactorily as per instruction of architect or Engineer-in charge.</p>	Sq. Mt	ATTACHED SEPARATELY

163	<p>ROLLER CURTAIN</p> <p>Providing and fixing of approved quality roller blinds using phifer fabric of premium grade, with roller tube, bottom bar leveller made of extruded aluminium alloy an Idler, Insert Type- Brackets, PVC chain etc. all complete at all floor and heights as per approved specification. Roller Tube Control, Clutch, Idler Side by side or single Roller Tube of extruded Aluminium 38mm inner dia - 41mm outer dia minimum wall thickness of 1.6mm. Roller blind - roller blind fabric should be made up of 35% FibreGlass, 65% PVC, it should have specific low emissivity treatment and lead free with Greenguard gold certification. It should have 3% to 5% openness, fabric thickness should be 0.43 mm, mesh weight approx 400 gms/ sqmtr. It should cut UV rays, with antimicrobial properties preferably with Microban. The fabric should be Flame retardant and Lead Free. It should be GreenGuard certified with Gold Standard for low chemical emissions for indoor use. (Basic rate of Roller blinds- 85 rs/sq.ft.)including all accessories, material, labour,installation etc..and complete the work satisfactorily as per instruction of architect or Engineer-in charge..</p>	Sq. Mt	ATTACHED SEPARATELY
164	<p>STORAGE UNIT WITH LAMINATE FINISH</p> <p>Providing and Making of Storages (AS PER DRAWINGS) using ply of brand of brand greenply ecotech mr,century sainik mr,srg etc,(thickness as specified)/ sag wood and finished by 1 mm Laminate outside as per selection of brand greenlam,merinolam,formica or 6mm HDF as per drawing, 1mm tk laminate (inside),water pu polish (as shown), drawers, shelves etc. with all hardware, nylon leveler foot rubber, handles,hinges, locks , magnet and other accessories with all material, installation,labour, lead and wastage,polish work as per instructions etc. and complete the work satisfactorily as per instruction of architect or Engineer-in charge.(Basic rate of Inside Laminate : 18 rs./sq.ft. & Outside Laminate : 53 rs./sq.ft.)</p>	Sq. Mt	ATTACHED SEPARATELY
165	<p>GANG CHAIR - 3 SEATER</p> <p>Providing and fixing 3-seater gang sitter with moulded foam, with Aluminium casting and metal waterfall seats, PU 10mm thick pads on seat & back (chargeable), P.C. frame & with perforation. as per architects selection,and complete the work satisfactorily as per instruction of architect or Engineer-in charge.BRANDS : COHUMAN , FEATERLITE , HAYWORTH(BASIC RATE OF GANG CHAIR 14000)</p>	No.	ATTACHED SEPARATELY
166	<p>CENTER TABLE (0.60 X 0.60)</p> <p>Providing and fixing corner table of brand as per architects selection,and complete the work satisfactorily as per instruction of architect or Engineer-in charge.(basic rate per piece is 7000/-)</p>	No.	ATTACHED SEPARATELY

167	<p>SINGLE BAY TABLE WITH OUT MODESTY PANNEL (1.20 mt x 0.60 mt)</p> <p>Providing and fixing of single bay office table of size 1.20 x 0.60 mt and side storage with drawers and shutters of width 0.45 mt as per drawings,modesty pannel and instructions provided,using ply of brand greenply ecotech mr,century sainik mr,srg etc,or aluminium pipe for framing and finishing it with 1 mm unicore laminate and 1mm laminate of brand greenlam or selected by the architect(basic rate of unicore laminate is 3000 per sheet and other 1mm laminate is 2000 per sheet, of size 8'0 x 4'0)including all material, installation,m.s fabrication work with powder coating,labour and hardware,drawer channels,hinges,handles,keyboard trolley,cpu trolley,cable manager,cable trunking system etc waste of materials,polish work as per instructions etc and complete the work satisfactorily as per instruction of architect or Engineer-in charge.BRANDS :;UNIMAPLE,FEATHERLITE,COHUMAN.</p>	No.	ATTACHED SEPARATELY
168	<p>"L" TYPE TABLE FOR STAFF (1.80 mt X 0.60 mt)</p> <p>Providing and fixing of L-TYPE office table of size 1.80 x 0.60 mt and side storage with drawers and shutters of width 0.60 mt as per drawings,modesty pannel, and instructions provided,using ply of brand greenply ecotech mr,century sainik mr,srg etc,or aluminium pipe for framing and finishing it with 1 mm unicore laminate and 1mm laminate of brand greenlam or selected by the architect(basic rate of unicore laminate is 3000 per sheet and other 1mm laminate is 2000 per sheet, of size 8'0 x 4'0)including all material, installation, m.s fabrication work with powder coating with powder coating,labour and hardware,drawer channels, nylon leveler foot rubber,hinges,handles,keyboard trolley,cpu trolley,cable manager,cable trunking system etc,, waste of materials,polish work as per instructions etc and complete the work satisfactorily as per instruction of architect or Engineer-in charge.BRANDS :;UNIMAPLE,FEATHERLITE,COHUMAN.</p>	No.	ATTACHED SEPARATELY
169	<p>HIGH BACK CHAIR-TYPE A (ALL CABIN & MEETING HALL)</p> <p>Providing and fixing of high back office chair, with bifma class IV gas lift. Zen HB Chair, G.F. Nylon structure with wire mesh on back high density cushion on seat adjustable arms with PU pads synchro tilt with multi locking mechanism and seat slider gaslift for height adjustment prong aluminium base with 60 mm castors. as per selection and complete the work satisfactorily as per instruction of architect or Engineer-in charge.Basic rate of chair is 7790/- per chair. BRANDS : Zen,COHUMAN, BRISTOL, COMO.</p>	No.	ATTACHED SEPARATELY

170	<p>MID BACK CHAIR-TYPE D(ALL VISITOR , STAFF & MEETING HALL)</p> <p>Providing and fixing of mid back office chair of good quality Curved fiber and nylon body with adjustable lumbar support, Reinforced mesh & knee tilting mechanism, 4 way adjustable arms, 5 prong nylon base as per selection and complete the work satisfactorily as per instruction of architect or Engineer-in charge. Basic rate of chair is 2975/- per chair BRANDS : BRISTOL, COHUMAN STORM FIX CHAIR</p>	No.	ATTACHED SEPARATELY
171	<p>METAL RACKS</p> <p>Providing and fixing of storage rack of angle slotted type of size 2000 x 36"900 x 18" 460 with 6 shelves(20 swg) ,including all hardware,colours,powder coating, channels, etc.and complete the work satisfactorily as per instruction of architect or Engineer-in charge.</p>	NO.	ATTACHED SEPARATELY
172	<p>LOCKERS</p> <p>Providing and fixing HPL LOCKERS with locking system of brand merinolam, Size of Column : 380mm (W) X 450mm (D) X 1800mm (H) with 100mm Base</p> <p>Size of Locker : 380mm (W) X 450mm (D)X 300mm (H)</p> <p>Accessories: Standard – Merino Make Aluminum, Stainless Steel - 304 Grade accessories) as per drawing, HPL as per is 2046 & en-438 manufactured under high pressure >5 mpa & temperature >120 cc with bunch of craft paper impregnated with thermo setting phenolic resin & decorative paper made of alpha cellulose fiber impregnated with thermo setting malamine resin which provide superior scratch,abrasing heat,chemical,impact,graffiti & moisture resistance along with anti bacterial properties. With hardware & accessories from besco , all screws,hinges, coat hook And anti noise rubber pads including all material, labour and hardware, waste of materials and complete the work satisfactorily as per instruction of architect or Engineer-in charge. (basic rate of one locker is 3500)</p>	NO.	ATTACHED SEPARATELY
173	<p>STOOL CHAIR</p> <p>Providing and supplying stool chairs of stainless steel with height adjustable seating option for doctors and patients per selection and complete the work satisfactorily as per instruction of architect or Engineer-in charge. Basic rate of chair is 2000/- per chair</p>	No.	ATTACHED SEPARATELY
174	<p>PAINTING - 24"X24"</p> <p>Providing and fixing of painting as per selection and complete the work satisfactorily as per instruction of architect or Engineer-in charge. Basic rate of chair is 3000/- per painting</p>	No.	ATTACHED SEPARATELY
175	<p>PAINTING - 36"X36"</p> <p>Providing and fixing of painting as per selection and complete the work satisfactorily as per instruction of architect or Engineer-in charge. Basic rate of chair is 4500/- per painting</p>	No.	ATTACHED SEPARATELY

176	WALL CLOCK Providing and fixing of 12 to 16 inch dia wallclocks of brand quartz or as per selection and complete the work satisfactorily as per instruction of architect or Engineer-in charge.(basic rate of wall clock including gst is rs 750/-per piece)	No.	ATTACHED SEPARATELY
177	OUTDOOR FLOOR MAT Providing and fixing outdoor floor matt of brand comforts or as per selection and complete the work satisfactorily as per instruction of architect or Engineer-in charge.(basic size of matt is 1.80 x 1.20 mt)	No.	ATTACHED SEPARATELY
178	INDOOR FLOOR MAT Providing and fixing indoor floor matt of brand my floor or as per selection and complete the work satisfactorily as per instruction of architect or Engineer-in charge.(basic size of matt is 1.20 x 0.60 mt)	No.	ATTACHED SEPARATELY
179	PVC DUSTBIN Providing & Supplying of 8 to 10 in dia and 12 to 15 inc ht P.V.C. Dustbin of brand cello,pigeon etc. complete as per selection & directed by the Architect and approved by the Engineer in Charge.(BASIC RATE OF DUSTBIN IS RS 850/-)	No.	ATTACHED SEPARATELY
180	HANDING LIGHT Providing & fixing of HANGING LIGHT with box type aluminium housing ,frosted acrylic at bottom, end caps,hanging strings etc as per selection with 40 watt Tranquil led strips & driver suggested & as directed by EIC/Consultant.and complete the work satisfactorily as per instruction of architect or Engineer-in charge.(MODEL NO -RL024 OF BRAND RANGE LITE OR EQUIVALENT)	NOS	ATTACHED SEPARATELY
181	DECORATIVE WALL LIGHT Providing & fixing of DECORATIVE WALL LIGHT as per selection with lamp & driver suggested & as directed by EIC/Consultant.and complete the work satisfactorily as per instruction of architect or Engineer-in charge.(MODEL NO : RL2012 SQ OF BRAND RANGE LITE OR EQUIVALENT)	NOS	ATTACHED SEPARATELY
182	S.S NAME PLATE SMALL Providing and fixing of 2MM TK S.S 316 GRADE matt finish NAME PLATE with cut work and fixing 3mm acrylic on top or behind of brand Ptglass,astari etc,with all laser and cnc work,and wooden finish back board ,including all material,SCAFFOLDING labour,15 mm ss studs for mounting and other hardwares, waste of materials etc and complete the work satisfactorily as per instruction of architect or Engineer-in charge.(BASIC SIZE OF NAME PLATE 150 MM X 900 MM)	NOS	ATTACHED SEPARATELY
183	SOFT BOARD Providing and fixing of soft board of size 1 x 1.8 Quartet White Frame Cork Board, Bulletin Display Board, Pin Board, Lightweight Board for offices with backing of wood with complete installation and mounting with other hardwares, waste of materials etc and complete the work satisfactorily as per instruction of architect or Engineer-in charge.	SQMT	ATTACHED SEPARATELY

184	<p>DOUBLE DOOR SIZE (APPROX SIZE OF 2.17X2.45) WITH FIXED GLASS TOP (APPROX SIZE OF 2.17 X 0.75 to 1.05)</p> <p>Providing and fixing of 12 mm tk toughened GLASS DOORS using Dorma BTS 75 V Glass Door PKG EN 1-4 (Top Patch-1, Bottom patch-1, Floor Spring-1, Corner Lock-1); Dorma XI-C 4003 A Patch fitting for overpanel and sidelight; Dorma XI-C 4004 A Connector for overpanel and Sidelight; Dorma XI-C 4006 Central Connector; Dorma XI-C 4008 Side Connector; Dorma XI-C 3000 H Type Handle 400x22 CTC 300 AND AS PER DRAWING including all accessories,locks, material, silicone,labour,installation, Hole & slote charges etc. and complete the work satisfactorily as per instruction of architect or Engineer-in charge.</p>	NO	ATTACHED SEPARATELY
185	<p>INFORMATION DESK - ENTRANCE LOBBY</p> <p>Providing and fixing of INFORMATION DESK as per drawings and instructions provided,using ply of brand greenply ecotech mr,century sainik mr,srg etc,aluminium pipe for framing and finishing it with 6 MM CORIAN of brand granium,Tranquil,dupont and 1 mm unicore laminate of brand greenlam or selected by the architect(basic rate of unicore laminate is 3000 per sheet of size 8'0 x 4'0)including all material,ms fabrication work ,glass work, installation, labour and hardware, polish work as per instructions,waste of materials etc and complete the work satisfactorily as per instruction of architect or Engineer-in charge.</p>	No.	ATTACHED SEPARATELY
186	<p>CONFERENCE ROOM TABLE</p> <p>Providing and fixing of CONFERENCE ROOM table including side storage as per drawings and instructions provided, using ply of brand greenply ecotech mr, century sainik mr, srg etc., aluminium pipe for framing and finishing it with 12 or 6 MM CORIAN work including all cnc work of brand granium,Tranquil,dupont ,and 1mm unicore laminate and 1mm laminate of brand greenlam or selected by the architect (basic rate of unicore laminate is 3000 per sheet and other 1mm laminate is 2000 per sheet, of size 8'0 x 4'0) including all material, installation,m.s fabrication work with powder coating, glass work as per design,labour and hardware, waste of materials,polish work as per instructions etc. and complete the work satisfactorily as per instruction of Architect or Engineer-in charge. (APPROX RUNNING LENGTH OF TABLE IS UP TO 22 MT.)</p>	No.	ATTACHED SEPARATELY
187	<p>SOFA - 2-SEATER (AUDI)</p> <p>Providing and fixing 2-seater sofa,as per drawings or selection using base WHITE ASH WOOD for framing with molded foam,and high density fom warwick brand rexine(as per architects selection) in sofa upholstery and ss204 grade corner legs with 5 years warranty and instructions provided, and ,and complete the work satisfactorily as per instruction of architect or Engineer-in charge.(appox lenght of sofa is 4'6") BASIC RATE 4500/RN FT. BRANDS : SHEARLING , SEDUS , NATUZZI</p>	No.	ATTACHED SEPARATELY

188	<p>SOFA - 3-SEATER(AUDI)</p> <p>Providing and fixing 3-seater sofa,as per drawings or selection using base WHITE ASH WOOD for framing with molded foam,and high density fom warwick brand rexine(as per architects selection) in sofa upholstery and ss204 grade corner legs with 5 years warranty and instructions provided, and ,and complete the work satisfactorily as per instruction of architect or Engineer-in charge..(appox lenght of sofa is 6'6") BASIC RATE 4500/RN FT.BRANDS : SHEARLING , SEDUS , NATUZZI</p>	No.	ATTACHED SEPARATELY
189	<p>SOFA - 1-SEATER(BANLAN)</p> <p>Providing and fixing 1-seater sofa,as per drawings or selection using base WHITE ASH WOOD for framing with molded foam,and high density fom warwick brand rexine(as per architects selection) in sofa upholstery and ss204 grade corner legs with 5 years warranty and instructions provided, and ,and complete the work satisfactorily as per instruction of architect or Engineer-in charge.(appox lenght of sofa is 3'6") BASIC RATE 7500/RN FT.</p>	No.	ATTACHED SEPARATELY
190	<p>SINGLE BED (SIZE:36"x78"x18")</p> <p>Providing & fixing Single bed (size:36"x78"x18") made out from 40x25x18swg .pipe with 1"x1"x18swg .center support with powder coated,corner and center support will hold the 18mm ply . The head board shall hold the weight of appx. 120kg and properly welded without any visible sign.The bottam has to have heavy duty bushing with levelers in HD pvc.All metal has to be in CRC and removing of rust mechanically, passivation, dephosphating, degreas and derusted through special paints which are certified and passed through seven tank process.All material shall be epoxy powder coated upto minimum 60 micron.The bottam also has to be powder coated</p>	No.	ATTACHED SEPARATELY
191	<p>PLANTER WITH REAL PLANTS</p> <p>Providing and fixing 13 inch dia planter/pots of frp or plastic including drain tray with real indoor plants as per selection,including 3 feet ht plants of brand seasonal dekor or as per selection and complete the work satisfactorily as per instruction of architect or Engineer-in charge.(BASIC RATE OF POT IS RS 1880/-)</p>	No.	ATTACHED SEPARATELY
192	<p>CORE CUTTING</p> <p>Providing and fixing of core cutting upto 50 to 150 mm dia core in rcc members(beams) or walls for concealing A/C piping or electric conduting ,carried out using cutter machine.Fillinging of zari up to first coat of plastering,finishing with colour/ putty work ,with all material, labour, lead,scaffolding and wastage etc and complete the work satisfactorily as per instruction of architect or Engineer-in charge.</p>	NOS	ATTACHED SEPARATELY

193	Point wiring for Light / Bell with 2-1.5 sq.mm & earth wire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires up to 10 mtr length , in below type of pipe erected with 6A Modular type switch / bell push & accessories and earth continuity of following type, erected on PVC / Metallic/Wooden box, single mounting base frame covered with textured/metallic/white front plate modules erected on / in wall / ceiling as per pipe erected, with necessary Lamp holder/ceiling rose / H.D.Connector as directed. (f) with medium class Rigid PVC pipe and accessories erected concealed in wall/ceiling complete Cat. III	Pt.	Electrical Detail specification Separate sheet attached
194	Point wiring for Tissino / Modular secondary light point with 2-1.5 sq.mm & earth wire of 1.5 sq.mm (green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires, in below type of pipe to be erected complete with earth continuity and necessary connection with primary light with accessories erected on Metal / PVC / wooden box covered with 3 mm thick PC(Polycarbonate) / Acrylic sheet for open / concealed wiring. with necessary Lamp holder / ceiling rose / H.D.Connector as directed. (f) with medium class Rigid PVC pipe and accessories erected concealed in wall/ceiling complete Cat. III	Pt.	Electrical Detail specification Separate sheet attached
195	Point wiring for FAN with 2-1.5 sq.mm & earth wire of 1.5 sq.mm (Green) both are of .ISI marked 1.1 KV Grade FRLS PVC insulated multi strand copper wires up to 10 mtr length, in below type of pipe erected with 6A Modular type switch and hum free EME step type electronic fan regulator mounted and accessories with earth continuity of following type erected on PVC / Metallic/Wooden box, single mounting base frame covered with textured/metallic/white front plate modules erected on / in wall / ceiling as per pipe erected. with necessary ceiling rose / H.D.Connector as directed. (f) with medium class Rigid PVC pipe and accessories erected concealed in wall/ceiling complete Cat. III	Pt.	Electrical Detail specification Separate sheet attached
196	Providing and erecting Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected concealed in /flushed on wall/ceiling, with 1.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (A) With medium class Rigid PVC pipe and accessories (a) 2 wire 1.5 sq. mm	Mtr	Electrical Detail specification Separate sheet attached
197	Providing and erecting Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected concealed in /flushed on wall/ceiling, with 1.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (A) With medium class Rigid PVC pipe and accessories (b) 2 wire 2.5 sq. mm	Mtr	Electrical Detail specification Separate sheet attached

198	Point wiring for Two Way Controlled Light Point with 2-1.5 sq.mm & earth wire of 1.5 sq.mm (green) both are of .ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires erected in below type of pipe with 6A Modular type switches and following type of accessories erected on PVC / Metallic/Wooden box, single mounting base frame covered with textured / metallic/white front plate modules erected on / in wall / ceiling as per pipe erected. with necessary batten/angle holder or ceiling rose or H.D.Connector as directed.(f) with medium class Rigid PVC pipe and accessories erected concealed in wall/ceiling complete Cat. III	Pt.	Electrical Detail specification Separate sheet attached
199	Point wiring for Individual Plug with & earth wire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires up to 10 mtr length, in below type of pipe erected complete with Modular type switch & 5 pin Plug erected on PVC / Metallic/Wooden box covered with appropriate front plate modules erected on / in wall / ceiling as per pipe erected with following type of accessories.[I] For 6A Plug and 6 a switch with 2-1.5 sq.mm Cu. Wire from nearby switchboard/mcb db board.(f) with medium class Rigid PVC pipe and accessories erected concealed in wall/ceiling complete Cat. III	Pt.	Electrical Detail specification Separate sheet attached
200	Point wiring for Individual Plug with & earth wire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires up to 10 mtr length, in below type of pipe erected complete with Modular type switch & 5 pin Plug erected on PVC / Metallic/Wooden box covered with appropriate front plate modules erected on / in wall / ceiling as per pipe erected with following type of accessories.[II] For 16A Plug and 16 amp switch with 2-2.5 sq.mm Cu. Wire from mcb db board.(f) with medium class Rigid PVC pipe and accessories erected concealed in wall/ceiling complete Cat. III	Pt.	Electrical Detail specification Separate sheet attached
201	Point wiring for Individual Plug with & earth wire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multi strand copper wires up to 10 mtr length, in below type of pipe erected complete with Modular type switch & 5 pin Plug erected on PVC / Metallic/Wooden box covered with appropriate front plate modules erected on / in wall / ceiling as per pipe erected with following type of accessories. [III] For 16A Plug and 16 amp switch with 2-4 sq.mm Cu. Wire with 2.5 sq.mm (green) earthing wire from mcb d b board.(f) with medium class Rigid PVC pipe and accessories erected concealed in wall/ceiling complete Cat. III	Pt.	Electrical Detail specification Separate sheet attached
202	Point wiring for on board Looped Plug with 6A Modular type switch & 5 pin socket erected on PVC / Metallic/Wooden box, single mounting base frame covered with textured /metallic/white front plate modules erected on / in wall / ceiling with following type accessories Cat. III	Pt.	Electrical Detail specification Separate sheet attached

203	Providing and erecting ISI mark Medium class RIGID PVC PIPES of following size complete to be erected on/in wall or ceiling erected with necessary PVC fittings & Junction boxes fixed with adhesive solution & Clamps with following dia of pipes, in approved manner as directed.(a)20 mm	Mtr	Electrical Detail specification Separate sheet attached
204	Providing and erecting ISI mark Medium class RIGID PVC PIPES of following size complete to be erected on/in wall or ceiling erected with necessary PVC fittings & Junction boxes fixed with adhesive solution & Clamps with following dia of pipes, in approved manner as directed.(b) 25 mm	Mtr	Electrical Detail specification Separate sheet attached
205	Providing and erecting ISI mark Medium class RIGID PVC PIPES of following size complete to be erected on/in wall or ceiling erected with necessary PVC fittings & Junction boxes fixed with adhesive solution & Clamps with following dia of pipes, in approved manner as directed.(c) 32 mm	Mtr	Electrical Detail specification Separate sheet attached
206	Providing and fixing approved make Perforated C type cable tray. Made from pre- galvanized sheet steel. The cable tray should be bended as per IS 2062/1079 . with max 17.5% perforation with coupler plate / Fish plate and GI hardware like nut - bolt and washers etc. erected on existing support as per Specification and as per instruction of engineer in charge..(5) 300 X 50 X 1.5 mm Thick	Mtr	Electrical Detail specification Separate sheet attached
207	(3) 150 X 50 X 1.5 mm Thick	Mtr	Electrical Detail specification Separate sheet attached
208	Providing following type of Modular Type Accessories mounted with PVC / metallic/Wooden box, single mounting base frame covered with textured / metallic/white front plate , modules erected with necessary connections as per site situation directed by Engineer In charge.(3)Two pin RJ-11 Telephone socket with top [A] For One Gang Cat. III	Ea.	Electrical Detail specification Separate sheet attached
209	Providing following type of Modular Type Accessories mounted with PVC / metallic/Wooden box, single mounting base frame covered with textured / metallic/white front plate , modules erected with necessary connections as per site situation directed by Engineer In charge(8) Computer RJ-45 socket Cat. III	Ea.	Electrical Detail specification Separate sheet attached
210	Providing & erecting Switch board for Computer or electric apparatus consisting of following modular type accessories mounted with PVC / Metallic concealed/open box with single mounting base frame covered with textured/metallic /white front plate,modules erected with necessary connections as directed. 1 no. 6A/16A universal plug-switch combined.3 nos. 6A Switch 3 nos. 6A 5 pin Plug .For Modular Type Accessories Cat.III	Ea.	Electrical Detail specification Separate sheet attached
211	Supplying & erecting approved make LAN cable of following size in existing pipe as per direction[C] CAT - 6	Mtr	Electrical Detail specification Separate sheet attached

212	<p>SITC of 24 x 10/100/1000BASE-T ports 4 x Gigabit RJ45/SFP Combo ports Advanced L2 switching and security features L2+ Static Routing Optional “standard mode” or “surveillance mode” management user interface [Approved by Competent Authority i.e. not Below the rank of Executive Engineer]</p>	Ea.	Electrical Detail specification Separate sheet attached
213	<p>SITC of 8 x 10/100/1000BASE-T PoE ports 2 x Gigabit SFP ports Advanced L2 switching and security features L2+ Static Routing Optional “standard mode” or “surveillance mode” management user interface 65W PoE budget [Approved by Competent Authority i.e. not Below the rank of Executive Engineer]</p>	Ea.	Electrical Detail specification Separate sheet attached
214	<p>Supplying & erecting approved make Telephone Cable electrolytic copper conductor PE insulation twisted in two pairs, & wrapped with FRLS PVC tape & sheathed with FRLS PVC or HFFR outer Jacket suitable for telephone wiring & confirming to C-DOT erected in existing pipe. of following size of conductors & nos.of pairs. With necessary connections.[A] Conductor Size 0.5 mm (a) Unarmoured (2) Two Pairs</p>	Mtr	Electrical Detail specification Separate sheet attached
215	<p>SITC of Digital / PCM / TDM EPABX System having SMT design, system with flexible universal slots. Inbuilt Auto attendant facility, Minimum 15 Nos. conference, Analog extension line, Calling GSM, E&M line, PRI / EI & VOIP program me through Analog telephone digital key from Ethernet, public address cord, shall have unrestricted simultaneous dialing facility, QSIG protocol on PRI, 95 / STD / ISD / Local-Locking, Class of Service, Quick Dial-Single Digit dialing of any two external number, Once only ring device, Chairman / Secretary - Do not disturb Facility, Power Down Mode, Hot Line, Hot Outward Dialing, Day Night Mode, Auto Call Back, Barge-in, Call Pick Up & Call Transfer, Call transfer while Ringing with Voice Guide System, (DISA), Caller ID (CLI), CLI Base ECF, CLI Base routing Internet Ready Port, External Music Port, Call Budgeting, Call Most Calculation (ASMDR), DID Direct Inverse Dialing, External Music Input, Fax Homing, Global Directory Printing with following capacities [[Approved by Competent Authority i.e. not Below the rank of Executive Engineer]][B] No of Extension 24, No of Junctions 9, 8 Port IP Resource in-built, 4 Port Web base Video Conferencing, No of expandable ports : 96, Operators Console - 01 Compatible : ISDN</p>	Ea.	Electrical Detail specification Separate sheet attached
216	<p>Providing and erecting IP Phone with display with all IP system supported [[Approved by Competent Authority i.e. not Below the rank of Executive Engineer]</p>	Ea.	Electrical Detail specification Separate sheet attached
217	<p>Supplying & erecting push button type telephone instrument having speaker phone Caller ID & hands free dialing system & 30 memories with display system Single line [[Approved by Competent Authority i.e. not Below the rank of Executive Engineer]</p>	Ea.	Electrical Detail specification Separate sheet attached

218	<p>Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA/ aluminium die cast powder coated and high U.V. & corrosion resistance with diffuser with company mark/name 160V to 270V, Power Factor more than 0.95, THD < 15%, CCT 3000 K to 6500K, Luminaire efficacy > 85 lumens/watt ,LED</p> <p>LED driver efficiency > 85 % (fitting required LM-79 & LM-80 Certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) (A) Tube Light with integral driver (iv) 22-24 Watts, Surge - 2KV,IP-20, conventional 4 feet Cat-III</p>	Ea.	Electrical Detail specification Separate sheet attached
219	<p>Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA/aluminium pressure die cast powder coated and high U.V. & corrosion resistance with diffuser housed in aluminium casted body with company mark/name 160V to 270V,Power Factor more than 0.9, THD < 15 %, CCT 3000 K to 6500K, Luminaire efficacy > 85 lumens/watt , LED driver efficiency > 85 % (fitting required LM-79 & LM-80 Certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) (A) Square/ Circular shaped Surface/Recessed Mount Downlight with provision for spring loaded mounting clips complete.IP20 (ii) 11-15 watts, Surge-2 KV Cat-III</p>	Ea.	Electrical Detail specification Separate sheet attached
220	<p>Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA/aluminium pressure die cast powder coated and high U.V. & corrosion resistance with diffuser housed in aluminium casted body with company mark/name 160V to 270V,Power Factor more than 0.9, THD < 15 %, CCT 3000 K to 6500K, Luminaire efficacy > 85 lumens/watt , LED driver efficiency > 85 % (fitting required LM-79 & LM-80 Certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) (A) Square/ Circular shaped Surface/Recessed Mount Downlight with provision for spring loaded mounting clips complete.IP20 (iii) 16-20 watts, Surge-2 KV Cat-III</p>	Ea.	Electrical Detail specification Separate sheet attached

221	<p>Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA/aluminium pressure die cast powder coated and high U.V. & corrosion resistance with diffuser housed in aluminium casted body with company mark/name 160V to 270V, Power Factor more than 0.9, THD < 15 %, CCT 3000 K to 6500K, Luminaire efficacy > 85 lumens/watt, LED driver efficiency > 85 % (fitting required LM-79 & LM-80 Certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings. The Engineer incharge may select any wattage capacity between the ranges shown.) (A) Square/ Circular shaped Surface/ Recessed Mount Downlight with provision for spring loaded mounting clips complete. IP20 (iv) 22-24 watts, Surge-2 KV Cat-III</p>	Ea.	Electrical Detail specification Separate sheet attached
222	<p>Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA/aluminium pressure die cast powder coated and high U.V. & corrosion resistance with diffuser housed in aluminium casted body with company mark/name 160V to 270V, Power Factor more than 0.9, THD < 15 %, CCT 3000 K to 6500K, Luminaire efficacy > 85 lumens/watt, LED driver efficiency > 85 % (fitting required LM-79 & LM-80 Certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings. The Engineer incharge may select any wattage capacity between the ranges shown.) (B) LED Panel Light with provision for Plane front frame with translucent cover fixed to housing complete. IP20 (vi) 36 watts, 24" x 24", Surge- 2KV Cat-III</p>	Ea.	Electrical Detail specification Separate sheet attached
223	<p>Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA/aluminium pressure die cast powder coated and high U.V. & corrosion resistance with diffuser housed in aluminium casted body with company mark/name 160V to 270V, Power Factor more than 0.9, THD < 15 %, CCT 3000 K to 6500K, Luminaire efficacy > 85 lumens/watt, LED driver efficiency > 85 % (fitting required LM-79 & LM-80 Certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings. The Engineer incharge may select any wattage capacity between the ranges shown.) (I) Adjustable spot light with COB led having aluminium reflector of following wattage (iv) 30 Watts Cat-III</p>	Ea.	Electrical Detail specification Separate sheet attached

224	<p>Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA/aluminium pressure die cast powder coated and high U.V. & corrosion resistance with diffuser housed in aluminium casted body with company mark/name</p> <p>160V to 270V, Power Factor more than 0.9, THD < 15 %, CCT 3000 K to 6500K, Luminaire efficacy > 85 lumens/watt, LED driver efficiency > 85 % (fitting required LM-79 & LM-80 Certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings. The Engineer in charge may select any wattage capacity between the ranges shown.) (I) Adjustable spot light with COB led having aluminium reflector of following wattage (iii) 15 Watts Cat-III</p>	Ea.	Electrical Detail specification Separate sheet attached
225	<p>Supplying Installation, Testing and Commissioning of LED RGB/RGBWW/ RGBNW/ RGBA/RGBW suitable for exterior use having IP68 rating (as per site requirement). Flexible light strip of 5 mtr standard length with 12-15 Watt per meter. Luminaire shall be</p> <p>capable of producing dynamic colour changing light for with 16 million colours by DMX/Ethernet based control. Minimum System lumens 450 lumens/meter and System Lumen Efficacy > 30lm/w. Luminaire light beam spread - 100-110°, The Strip should have IP 68 protection and is offered IP 68 rated connectors to join the LED Strips in continuity. The luminaire must be offered with Aluminium channel for mounting the strip lights. The product should be complete with all accessories and Driver. Lifetime of complete luminaire (LED, Driver, Electrical & control circuitry) shall be at least 70:50000 burning hours at 50°C. Luminaire shall be conforming to BIS (IS 10322) with duly R Number marked. Luminaire shall be complete with replaceable driver and capable of operating at line voltage without any separate power supply from 24 V DC, Fixture shall be suitable to operate at an ambient temperature range of -10°C to +50°C. The successful bidder shall submit the following certifications /reports for approval before supply of materials:</p>	Ea.	Electrical Detail specification Separate sheet attached
226	<p>Providing & erecting Approved make Power Saving 50 Watt Ceiling Fan with double ball bearing ISI mark with Condenser 230 volt A.C. 50 Hz 1200 mm sweep complete having 3 blades with aluminium blades with, canopy & 30 cm. down rod erected with earthing. (Make shall be approved by Engineer in charge))</p>	Ea.	Electrical Detail specification Separate sheet attached
227	<p>Supplying & erecting fan hook box of 10 mm M.S. round bar bounded to the RCC bars up to 50mm length each side and pierced through a 16 Gauge M.S. box / Heavy Duty PVC box complete erected concealed in Ceiling with necessary finishing.</p>	Ea.	Electrical Detail specification Separate sheet attached
228	<p>Supplying and erecting 19 / 20 mm. nominal bore Medium Class M.S. Pipe down rod erected duly painted for fan complete with proper insulation without leakage and earthing.</p>	Mtr.	Electrical Detail specification Separate sheet attached

229	Supplying & erecting approved make low noise decorative exhaust fan having square frame ABS body with inbuilt lowers & square frame.250mm with 1350 RPM Cat.II	Ea.	Electrical Detail specification Separate sheet attached
230	Providing & erecting water cooler having storage capacity 150 Ltr. & cooling capacity 150 Ltr.per hour @ an ambient temp of 45° C. The outlet temp. of the water should drop by 15°C within a hour, The water cooler should be comprising of hermetically sealed compressor, fan motor, condensing unit, water tank surrounded by evaporating, coil, thermostats, relay etc.complete with necessary inlet & outlet connection. The body of water cooler will be made from Stainless Steel.	Ea.	Electrical Detail specification Separate sheet attached
231	Supplying & erecting 5 stage single reverse osmosis water purification system with M.S. powder coated frame, prefilter housing with 'O' ring presediment filter GAC filter, carbon filter suitable buster DC pump capacity 80 psi, mention with 40 psi inline type post carbon filter auto low & high pressure switches with following size of storage tank & LPH capacity & erected as directed [C] 50 Ltr / Hr with 150 psi 2 nos booster pump	Ea.	Electrical Detail specification Separate sheet attached
232	SITC of 3LCD Lamp based projector having wxga (1280x800) or better resolution with minimum white brightness of 3800 lumens and color brightness of 3800 lumens. The projector should have minimum 1HDMI,1VGA input. Having contrast ratio of 15000:1 or more. the projector should have auto vertical key stone correction of +/- 30 degree and Manual Horizontal of +/- 30 degree. the projector should have optical lens, throw ratio 1.30-1.56:1. Zoom Factor of 1.2. Lens focus Manual having focal length 16.9mm to 20.28mm. projector should have features like AV mute slide, quick corner and split function and should support wireless functionality with inbuilt wifi or wifi dongle. [Approved by Competent Authority i.e. not Below the rank of Executive Engineer]	Ea.	Electrical Detail specification Separate sheet attached
233	Supply, Installation Testing & Commissioning 15 Mtr. HDMI Interface Cable as per the detailed Specifications supports transmission of 4K Signals as per the detailed Specifications	Ea.	Electrical Detail specification Separate sheet attached
234	SITC of universal Projector mounting kit, with necessary grouting, fasteners etc. with adjustable height and suitable for all types of projectors. [Approved by Competent Authority i.e. not Below the rank of Executive Engineer]	Ea.	Electrical Detail specification Separate sheet attached
235	SITC of 84 inch Self Lock MW (6 x 4) Instalock Slow Retraction Screen, Aspect Ratio-4:3 [Approved by Competent Authority i.e. not Below the rank of Executive Engineer]	Ea.	Electrical Detail specification Separate sheet attached
236	Supplying, installing, testing & commissioning of digital pure sine wave INVERTOR of approved make single phase 230v complete with overload relay & necessary protection with following size of batteries, erected with battery terminal wire, copper lead wire to be connected to load with 10 Amp., 10 kA MCB.[F] 2000 VA with battery 12V x 2, 150 AH load up to 1250 W	Ea.	Electrical Detail specification Separate sheet attached

237	Supplying and erecting approved make online Un-interruptible Power Supply system comprising flat cum-boost charger with IGBT base rectifier & Inverter & sealed maintenance free SMF batteries. The charger having operating capacity for input 160-270V AC & inverter having output 230V,50 Hz Ac with 0.8 load power factor with battery, over/under voltage output with over load & short circuit protection equipment. The system housed in CRC sheet duly powder coated paint with following power backup.with MS painted batteries stand, 10% Overload capacity for momentary load. (C) 3 KVA with 1Hr Backup	Ea.	Electrical Detail specification Separate sheet attached
238	Supplying & erecting Amplifier having following specification: Power Output :250W (RMS) (300W Max.) inputs : 6 Misc. & 2 Aux. frequency Response :50-1500HZ I3db Tone Controls :Cut & Boost type LED Meter :5 LED Arrays The amplifier suitable to operate 240V A.C.& 24volt D.C. (Battery) with automatic changeover from AC to Battery operation, duly protected by wrong Battery Polarity connections. [[Approved by Competent Authority i.e. not Below the rank of Executive Engineer]	Ea	Electrical Detail specification Separate sheet attached
239	SITC of Gooseneck microphone Unidirectional condenser microphone Flexible stem Phantom powered by amplifier On/off sliding switch with priority contact Supplied with fixed 2 m (78 in) cable and lockable DIN connector [Approved by Competent Authority i.e. not Below the rank of Executive Engineer]	Ea.	Electrical Detail specification Separate sheet attached
240	Providing and erecting cordless microphone with UHF Diversity handheld wireless microphone/caller wireless complete with receiver and transmitter unit,Cardiod ,polar pattern,dynamic microphone,LCD display for battery and frequency status and information ,32 preset channels,with compatible groups of 8 channels,14 hrs.battery life,frequency response 80Hz to 18KHz.,RF sensitivity <1.0 Uv,image rejection > 55 dB,dynamic range >95 dB and receiver having 32 channels,S/N ratio>100 dBA,Dynamic range>95 dB,distortion<1% [[Approved by Competent Authority i.e. not Below the rank of Executive Engineer]	Ea.	Electrical Detail specification Separate sheet attached
241	SITC of Ceiling loudspeaker 20W, metal [Approved by Competent Authority i.e. not Below the rank of Executive Engineer]	Ea	Electrical Detail specification Separate sheet attached
242	providing and erecting Miniature circuit breaker single pole 0.5A to 2A system and having breaking capacity 10 KA to be erected in existing box. confirming to IS 8828/1996 with ISI Mark Cat.III	Ea.	Electrical Detail specification Separate sheet attached

243	Providing and erecting Miniature circuit breaker single pole 6A to 25A suitable to operate on 240 V A.C. system and having breaking capacity 10 KA to be erected in existing box. confirming to IS 8828/1996 with ISI Mark Cat.III	Ea.	Electrical Detail specification Separate sheet attached
244	Providing & erecting 415 V MCB Four Pole for Motor & Inductive Load (C Curve) having 10KA breaking capacity & confirms to IS :8828 in existing box having following capacity (c)63 Amp Cat.III	Ea.	Electrical Detail specification Separate sheet attached
245	Providing & erecting 415 V MCB Four Pole for Motor & Inductive Load (C Curve) having 10KA breaking capacity & confirms to IS :8828 in existing box having following capacity (b)40 Amp. Cat.III	Ea.	Electrical Detail specification Separate sheet attached
246	Providing & erecting 415V MCB Four Pole Switch for Lighting Load (B curve) having 10KA breaking capacity & confirms to IS :8828 in existing box having following capacity (b)40 Amp. Cat.III	Ea.	Electrical Detail specification Separate sheet attached
247	Providing & erecting 415 V MCB Four Pole for Motor & Inductive Load (C Curve) having 10KA breaking capacity & confirms to IS :8828 in existing box having following capacity (a) 6 to 32 Amp. Cat.III	Ea.	Electrical Detail specification Separate sheet attached
248	Providing & erecting 415V MCB Four Pole Switch for Lighting Load (B curve) having 10KA breaking capacity & confirms to IS :8828 in existing box having following capacity (a) 6 to 32 Amp. Cat.III	Ea.	Electrical Detail specification Separate sheet attached
249	Providing & erecting 240 V MCB double pole switch for lighting Load (B Curve) having 10 KA breaking capacity & confirms to IS : 8828 in existing box having following capacity(A) 6 to 32 Amp. . Cat.III	Ea.	Electrical Detail specification Separate sheet attached
250	Providing & erecting 240 V MCB double pole switch for motor & inductive load (C Curve) having 10 KA breaking capacity & confirms to IS : 8828 in existing box having following capacity (A) 6 to 32 Amp. Cat. III	Ea.	Electrical Detail specification Separate sheet attached
251	Providing and erecting Approved make RCCBs conforming to IS: 12640 and having sensitivity of 30 mA and Short Circuit withstand capacity of 10 KA and suitable for operation on 3 phase and neutral 415V,50Hz. having characteristic of quick action & tripping with all advance feature & do not incorporate any electronic component for following Max. rating erected as directed.(iii) 63 Amps. FP Cat. III	Ea.	Electrical Detail specification Separate sheet attached
252	providing and erecting Approved make RCCBs conforming to IS: 12640 and having sensitivity of 30 mA and Short Circuit withstand capacity of 10 KA and suitable for operation on single phase 240 V,50Hz. having characteristic of quick action & tripping with all advance feature & do not incorporate any electronic component. for following Max. rating erected as directed (iii) 63 Amps. DP Cat. III	Ea.	Electrical Detail specification Separate sheet attached

253	providing and erecting Approved make RCCBs conforming to IS: 12640 and having sensitivity of 30 mA and Short Circuit withstand capacity of 10 KA and suitable for operation on single phase 240 V,50Hz. having characteristic of quick action & tripping with all advance feature & do not incorporate any electronic component. for following Max. rating erected as directed (ii) 40Amps. DP Cat. III	Ea.	Electrical Detail specification Separate sheet attached
254	Providing and erecting Sheet Steel powder coated MCB distribution board - flush / surface mounted fitted with busbar, neutral link, earth bar and DIN rail, Conforms to IS 8623-1 & 3, IEC 61439-1 & 3 without MCB to house appropriate nos. of MCBs.(The DBs should be used of same company of MCB to be used) suitable for (B) three phase incoming and single phase horizontal type outgoing Per phase isolation type (PPI) (b) sheet steel double door (i)4 way	Ea	Electrical Detail specification Separate sheet attached
255	Providing and erecting Sheet Steel powder coated MCB distribution board - flush / surface mounted fitted with busbar, neutral link, earth bar and DIN rail, Conforms to IS 8623-1 & 3, IEC 61439-1 & 3 without MCB to house appropriate nos. of MCBs.(The DBs should be used of same company of MCB to be used) suitable for (B) three phase incoming and single phase horizontal type outgoing Per phase isolation type (PPI) (b) sheet steel double door (iii)8 way	Ea	Electrical Detail specification Separate sheet attached
256	Providing and erecting Sheet Steel powder coated MCB distribution board - flush / surface mounted fitted with busbar, neutral link, earth bar and DIN rail, Conforms to IS 8623-1 & 3, IEC 61439-1 & 3 without MCB to house appropriate nos. of MCBs.(The DBs should be used of same company of MCB to be used) suitable for (B) three phase incoming and single phase horizontal type outgoing Per phase isolation type (PPI) (b) sheet steel double door (iv)12 way	Ea	Electrical Detail specification Separate sheet attached
257	Providing and erecting Sheet Steel powder coated MCB distribution board - flush / surface mounted fitted with busbar, neutral link, earth bar and DIN rail, Conforms to IS 8623-1 & 3, IEC 61439-1 & 3 without MCB to house appropriate nos. of MCBs.(The DBs should be used of same company of MCB to be used) suitable for (A) single phase incoming and horizontal single phase outgoing (b) sheet steel double door (IP-43) (i)4 way	Ea	Electrical Detail specification Separate sheet attached
258	Providing and erecting Sheet Steel powder coated Vertical MCB distribution board (VTPN) - flush / surface mounted double door (IP54) fitted with insulated copper busbar, isolated neutral link, earth bar and DIN rail, confirming to IS 13032 and BS 5486-1986,IP-54 suitable for 63/100 AMP TPN MCCB + RCCB as incomer and three phase outgoing as per following .(The DBs should be used of same company of MCB to be used) (C)8 way outgoing	Ea	Electrical Detail specification Separate sheet attached

259	Providing and erecting Sheet Steel powder coated MCB distribution board - flush / surface mounted fitted with busbar, neutral link, earth bar and DIN rail, Conforms to IS 8623-1 & 3, IEC 61439-1 & 3 without MCB to house appropriate nos. of MCBs.(The DBs should be used of same company of MCB to be used) suitable for (A) single phase incoming and horizontal single phase outgoing (b) sheet steel double door (IP-43) (iv)12 way	Ea	Electrical Detail specification Separate sheet attached
260	Supplying & erecting approved make RCCB + MCB (Electro magnetic type only) working on residual current device having 10 KA short circuit breaking capacity and 30 mAmp. Sensitivity & 30 mili sec. tripping time conforming to IS 12640 test knob facility trip free mechanism operating for rated leakage at nominal ten volt, complete erected including all materials lugs screws etc. completed. [a] 6A / 10A / 16A / 20A / 25A 2 pole single phase Cat. II	Ea	Electrical Detail specification Separate sheet attached
261	Providing & erecting weather proof, dust & vermin proof, floor mounted front operated indoor type cubical panel board necessary IP42 and above protection as per approval from engineer incharge made from 14 SWG thick CRC M.S. sheet for outer body & doors, 16 SWG thick CRC M.S.sheet for internal partitions with necessary accesories , supporting angles/ flats channel including cutting, bending, drilling, welding, riveting with internal partitions & cable alley as per requirements & instruction of engineer-in-charge with erection of supplied switch gears, BUSBARS, suitable size of inter connecting PVC copper wire / copperaluminium strips, rubber grommets, rib, bakelite control fuses/MCB for measuring instruments, earth bus & earth bolts, foundation flange - boltsbase Plates, sufficient nos. of hinged doors, handles with locking arrangement and rubber gasket,heavy duty end terminal connection,danger notice board,necessary ventilation,earthing strip complete. The Panel shall be painted with epoxy powder coating.(The rates excludes the cost of switchgears, bus bars, inter connecting mains & Copper Aluminium strips, meters, Fuses etc. The dimension shall be measured excluding base beams) The panel shall be supplied with following approved manufacturers with followingsize(B) The standard companies switch gear shall be	Sq Mtr	Electrical Detail specification Separate sheet attached
262	Providing & erecting weather proof, dust & vermin proof, floor mounted front operated outdoor type double door cubical panel board necessary IP-54 and above protection as per approval from engineer incharge made from 14 SWG thick CRC M.S. sheet for outer body & doors, 16 SWG thick CRC M.S.sheet for internal partitions with necessary accesories , supporting angles/ flats channel including cutting, bending, drilling, welding, riveting with internal partitions & cable alley as per requirements & instruction of engineer-in-charge with erection of	0.00	Electrical Detail specification Separate sheet attached

0	supplied switch gears, BUSBARS, suitable size of inter connecting PVC copper wire / copper-aluminium strips, rubber grommets, rib, bakelite control fuses/MCB for measuring instruments, earth bus & earth bolts, foundation flange - bolts-base Plates, sufficient nos. of hinged doors, handles with locking arrangement and rubber gasket, heavy duty end terminal connection, danger notice board, necessary ventilation, earthing strip complete. The Panel shall be painted with epoxy powder coating (The rates excludes the cost of switchgears, bus bars, inter connecting mains & Copper Aluminium strips, meters, Fuses etc. The dimension shall be measured excluding base beams) The panel shall be supplied with following approved manufacturers with following size.. (B) The standard companies switch gear shall be used and only manufacturers at CPRI approved factory (ii) with 550 mm. Depth	Sq Mtr	Electrical Detail specification Separate sheet attached
263	Supplying & erecting approved make Four Pole 415V Motorised Automatic transfer switch including controller with UV/OV, phase sequence, single phasing and frequency protection interior for panel mounting with operating mechanism A.C.23A duty confirming to IS for (H) 400A Cat-III	Ea.	Electrical Detail specification Separate sheet attached
264	Supplying and erecting triple pole & neutral 440V/ 500V panel mounting Aluminium Busbars with four equal Nos. of bus having current density not more than 0.8 Amp. / sq.mm (Rated current / cross section area) duly wrapped with colour insulating tape for phase sequence of following current carrying capacity, erected with necessary bus bar supports /insulators, main cable socket to each busbar, erected in existing cubical panel with necessary connections.(A) Suitable for 100 Amp. Capacity	Rn.Mtr	Electrical Detail specification Separate sheet attached
265	(B) Suitable for 200 Amp. Capacity	Rn.Mtr	Electrical Detail specification Separate sheet attached
266	(C) Suitable for 300 Amp. Capacity	Rn.Mtr	Electrical Detail specification Separate sheet attached
267	(D) Suitable for 400 Amp. Capacity	Rn.Mtr	Electrical Detail specification Separate sheet attached
268	providing and erecting Approved make Earth fault Relay suitable to mount with inter connection suitable to following size of moulded case circuit breaker having CT ratio & MCCB rating as following along with shunt trip 220V AC. with all internal connections & complete erected in existing M.S.housing.. (3) 250 A -400 A , CT Ratio 1/400	Ea.	Electrical Detail specification Separate sheet attached
269	Providing and erecting Approved make Four pole moulded case circuit breaker having breaking capacity ICU of 25 KA. at 415 V, having normal current rating up to 25 A to 100A. with Fixed thermal & magnetic release suitable to work on A.C. supply 50 c/s. with all internal connections, spreader tinned copper & complete erected in existing 16 G.M.S. housing. ICS=100% of ICU only Cat III (15 NOS 100A MCCB + 7 NOS 63A MCCB)	Ea.	Electrical Detail specification Separate sheet attached

270	Providing and erecting Approved make Four pole moulded case circuit breaker having breaking capacity ICU of 35 KA. at 415 V. having normal current rating 125A. with Fixed thermal & magnetic release suitable to work on A.C.supply 50 c/s. with all internal connections, spreader tinned copper & complete erected in existing 16 G.M.S. housing. ICS=100% of ICU only Cat III	Ea.	Electrical Detail specification Separate sheet attached
271	Providing and erecting Approved make Four pole moulded case circuit breaker having breaking capacity ICU of 35 KA. and above at 415 V . having normal current rating 250A. with variable thermal & magnetic release suitable to work on A.C.supply 50 c/s. with all internal connections, spreader tinned copper & complete erected in existing 16 G.M.S. housing. ICS=100% of ICU only Cat III	Ea.	Electrical Detail specification Separate sheet attached
272	Providing and erecting Approved make Four pole moulded case circuit breaker having breaking capacity ICU of 50 KA and above at 415 V having Normal current rating 400A. with variable Thermal & magnetic release suitable to work on A.C.supply 50 c/s. With all internal connections, spreader tinned copper & complete erected in existing 16 G.M.S. housing. ICS=100% of ICU only Cat III	Ea.	Electrical Detail specification Separate sheet attached
273	Providing and erecting Two way Centre off Four pole MCB Change Over Switch (IS 13947-3 / IEC 60947-3) in existing box. (a) for 25 Amp Cat. III	Ea.	Electrical Detail specification Separate sheet attached
274	Providing and erecting Two way Centre off Double pole MCB Change Over Switch (IS 13947-3 / IEC 60947-3) in existing box.(b) for 40 Amp. Cat. III	Ea.	Electrical Detail specification Separate sheet attached
275	Supplying & erecting power contactor ,AC3 duty for time switch complete erected as per direction Cat III (D) 4 pole 440V 40 Amp.	Ea.	Electrical Detail specification Separate sheet attached
276	Supplying & erecting approved make Digital time switch having lithium cell 6 years operative and operate battery backup 1 channel day clock with 14 memory programme, suitable to operate on 240V + 5%, 16A with, floating contacts Minimum switching setup time 1 minimum & LCD display. Also comprised permanent ON/OFF switching. Programming switches & housed in fire proof thermoplastic enclosure & transparent cover erected as required with necessary connection erected as directed.	Ea.	Electrical Detail specification Separate sheet attached
277	Providing and erecting following additional parts for panel mounting MCCBs (A)Extended operating rotary handle with pad lock with three position trip,off,on suitable for 25A to 250 A panel mounting cat-III	Ea.	Electrical Detail specification Separate sheet attached
278	Providing and erecting following additional parts for panel mounting MCCBs (B)Extended operating rotary handle with pad lock with three position trip,off,on suitable for 400A to 630 A panel mounting cat-III	Ea.	Electrical Detail specification Separate sheet attached

279	Providing and erecting multifunctional meter suitable for application of Power monitoring and showing measurement of following Voltage, Frequency, Apparent energy, Apparent power, Active and reactive energy, Active and reactive power, Average voltage Vavg, Peak demand power PM, QM, SM, Demand power P, Q, S, Apparent power S, S1, S2, S3, Unbalance current, Power factor and displacement PF (signed, four quadrant), Calculated neutral current, Active, reactive, apparent energy (signed, four quadrant), Active power P, P1, P2, P3, Voltage U21, U32, U13, V1, V2, V3, Phase currents, Average current lag, Peak demand currents, Reactive power Q, Q1, Q2, Q3, Demand current I1, I2, I3, [Us] rated supply voltage 40...300 V AC 45...65 Hz, 40...300 V DC, Network frequency 50 Hz, Type of network 3P, Display type 7 segments LED, Display colour Red, Messages display capacity 3 fields of 4 characters, Display digits 12 digit(s) - 14.2 mm in height	Ea.	Electrical Detail specification Separate sheet attached
280	Providing and erecting metallic vitrified danger notice board as per language suggested by engineer incharge for MEDIUM VOLTAGE installation to be erected as per IS-2551.	Ea	Electrical Detail specification Separate sheet attached
281	Providing & erecting High Voltage Danger Notice Board sticker as per language suggested by engineer incharge of standard size- as per IS 2551	Ea	Electrical Detail specification Separate sheet attached
282	Providing and erecting Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected in / on wall / ceiling with 2.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size(A) with medium class Rigid PVC pipe and accessories.(a) 2 wire 4 sq. mm	Mtr	Electrical Detail specification Separate sheet attached
283	Providing and erecting Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected in / on wall / ceiling with 2.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size(A) with medium class Rigid PVC pipe and accessories.(h) 4 wire 6 sq. mm	Mtr	Electrical Detail specification Separate sheet attached
284	Supplying & erecting Flexible PVC insulated multistrand multicore 1.1 KV grade ISI marked Copper Wires of following Size to be erected as directed. e) 1.50 Sq.mm 3 core round PVC sheathed	Mtr.	Electrical Detail specification Separate sheet attached
285	Providing and erecting XLPE(IS:7098)(I)-88 ISI armoured cable multistrand Aluminium conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe of following size of cables (J) 3 1/2 core 300 Sq.mm (150 Sq. mm 1/2 core)	Mtr	Electrical Detail specification Separate sheet attached
286	Providing and erecting XLPE(IS:7098)(I)-88 ISI armoured cable multistrand Aluminium conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe of following size of cables (I) 3 1/2 core 240 Sq. mm(120 Sq. mm 1/2 core)	Mtr	Electrical Detail specification Separate sheet attached

287	Providing and erecting XLPE(IS:7098)(I)-88 ISI armoured cable multistrand Aluminium conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe of following size of cables (E) 3 1/2 core 95 Sq. mm (50 Sq. mm 1/2 core)	Mtr	Electrical Detail specification Separate sheet attached
288	Providing and erecting XLPE(IS:7098)(I)-88 ISI armoured cable multistrand Copper conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe at road crossing or floor of following size of cables.(A) 4 core 10 Sq. mm	Mtr	Electrical Detail specification Separate sheet attached
289	Providing and erecting XLPE(IS:7098)(I)-88 ISI armoured cable multistrand / Solid Copper conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe at road crossing or floor of following size of cables. (C) 4 core 6 Sq. mm	Mtr	Electrical Detail specification Separate sheet attached
290	Providing and erecting XLPE(IS:7098)(I)-88 ISI armoured cable multistrand / Solid Copper conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe at road crossing or floor of following size of cables. (B) 4 core 4 Sq. mm	Mtr	Electrical Detail specification Separate sheet attached
291	Providing and erecting XLPE(IS:7098)(I)-88 ISI armoured cable multistrand Copper conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe at road crossing or floor of following size of cable.(A) 3 core 2.5Sq. Mm	Mtr	Electrical Detail specification Separate sheet attached
292	Providing and, fixing heavy duty flange type brass cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables.(A) 2 to 4 core 2.5 / 4 Sq. mm	Ea.	Electrical Detail specification Separate sheet attached
293	Providing and, fixing heavy duty flange type brass cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables. (B) 2 to 4 core 6 Sq. mm	Ea.	Electrical Detail specification Separate sheet attached
294	Providing and, fixing heavy duty flange type brass cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables. (C) 2 to 4 core 10 Sq. mm	Ea.	Electrical Detail specification Separate sheet attached
295	Providing and, fixing heavy duty flange type brass double compression type cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables.(I) 3 & 1/2 core 300 Sq. mm	Ea.	Electrical Detail specification Separate sheet attached
296	Providing and, fixing heavy duty flange type brass double compression type cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables. (H) 3 & 1/2 core 240 Sq. mm	Ea.	Electrical Detail specification Separate sheet attached
297	Providing and, fixing heavy duty flange type brass double compression type cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables .(D) 3 & 1/2 core 95 Sq. mm	Ea.	Electrical Detail specification Separate sheet attached

298	Solder less crimping type Aluminium lugs conforming to IS suitable for cable of following size evenly crimped with high pressure tool & connected to switchgear terminals with brass/cadmium plated nut bolts in an approved manner.(K) 300 Sq.mm.	Ea.	Electrical Detail specification Separate sheet attached
299	Solder less crimping type Aluminium lugs conforming to IS suitable for cable of following size evenly crimped with high pressure tool & connected to switchgear terminals with brass/cadmium plated nut bolts in an approved manner.(H) 150 Sq.mm.	Ea.	Electrical Detail specification Separate sheet attached
300	Solder less crimping type Aluminium lugs conforming to IS suitable for cable of following size evenly crimped with high pressure tool & connected to switchgear terminals with brass/cadmium plated nut bolts in an approved manner.(J) 240 Sq.mm.	Ea.	Electrical Detail specification Separate sheet attached
301	Solder less crimping type Aluminium lugs conforming to IS suitable for cable of following size evenly crimped with high pressure tool & connected to switchgear terminals with brass/cadmium plated nut bolts in an approved manner. (G) 120 Sq.mm.	Ea.	Electrical Detail specification Separate sheet attached
302	Solder less crimping type Aluminium lugs conforming to IS suitable for cable of following size evenly crimped with high pressure tool & connected to switchgear terminals with brass/cadmium plated nut bolts in an approved manner. (F) 95 Sq.mm.	Ea.	Electrical Detail specification Separate sheet attached
303	Solder less crimping type Aluminium lugs conforming to IS suitable for cable of following size evenly crimped with high pressure tool & connected to switchgear terminals with brass/cadmium plated nut bolts in an approved manner. (D)35/50 Sq.mm.	Ea.	Electrical Detail specification Separate sheet attached
304	Solder less crimping type Copper lugs conforming to IS suitable for cable of following size evenly crimped with high pressure tool & connected to switchgear terminals with brass/cadmium plated nut bolts in an approved manner. (A) 1.5/2.5 to 6 Sq.mm	Ea.	Electrical Detail specification Separate sheet attached
305	Solder less crimping type Copper lugs conforming to IS suitable for cable of following size evenly crimped with high pressure tool & connected to switchgear terminals with brass/cadmium plated nut bolts in an approved manner. (B) 10 Sq.mm	Ea.	Electrical Detail specification Separate sheet attached
306	Providing and erecting Mains with ISI marked, 1.5KV grade electrolyte multi stranded, annealed copper conductor with heat resistant PVC insulated conforms to IS 694, IEC - 227 erected in existing pipe of following size (Specifically for control panel, relays, power switchgears, motor starters & control wiring) with required size of copper lugs, nuts and bolts if required.(a) One wire 1.00 sq. mm	Mtr.	Electrical Detail specification Separate sheet attached
307	(b) One wire 1.50 sq. mm	Mtr.	Electrical Detail specification Separate sheet attached
308	(c) One wire 2.50 sq. mm	Mtr.	Electrical Detail specification Separate sheet attached
309	(d) One wire 4.00 sq. mm	Mtr.	Electrical Detail specification Separate sheet attached
310	(e) One wire 6.00 sq. mm	Mtr.	Electrical Detail specification Separate sheet attached
311	(f) One wire 10.00 sq. mm	Mtr.	Electrical Detail specification Separate sheet attached

312	Supplying and drawing of cable Fire Retardant PVC insulated copper conductor cable in the existing surface / recessed steel conduit of following pairs, cores and size including connections and interconnections etc. as required. speaker cable Single pair, 2-core, 1.5 sqmm	Mtr	Electrical Detail specification Separate sheet attached
313	Making trench in soft soil of suitable width of 90 cm deep for laying cable or locating the fault all over the run and back filling the same and making the surface as normal ground.	Mtr.	Electrical Detail specification Separate sheet attached
314	Providing & laying approved make Double walled corrugated pipes (DWC) of polyethylene(conforming to IS 14930 II)with necessary connecting accessories of same material at required depth in existing trench for laying of cable. below ground / road surface for enclosing cable (A)50 mm outer dia.	Mtr.	Electrical Detail specification Separate sheet attached
315	Providing and erecting ISI marked PVC insulated PVC Sheathed Flat flexible Submersible copper cable approved make of following Size. (C) 3 Core x 4 Sq. mm	Mtr.	Electrical Detail specification Separate sheet attached
316	Providing & laying. R.C.C. Hume pipe for cable to be laid 90 cm. below ground across the road crossing or on floor with necessary material in an approved manner and making the ground as per original(E)150 mm dia	Mtr.	Electrical Detail specification Separate sheet attached
317	Supplying & erecting earth pit of minimum bore dia.150mm size approved make Earthing Electrode consisting Pipe-in-Pipe Technology as per IS 3043-1987 made of corrosion free hot dipped G.I.Pipes having Outer pipe dia of 50mm having 80-200 Micron galvanising, Inner pipe dia of 25 mm having 200- 250 Micron galvanising, connection terminal dia of 12mm with constant ohmic value surrounded by highly conductive compound with high charge dissipation suitable for following type of applications with chamber and heavy duty cover.(approved make OEM has to submit test certificate) & having back filling compound of (B) Inner chemical (CCM Compound)- Resistivity:- 0.2 • / meter testing as per IEC 62561-2017, Voltage drop:- < 1 volt at no load & dry form, Sulphar content:- <2%(C) Back fill Compound :- Earthing compound should be capable to retainmoisture for long time Necessary test report must be submitted.(c) For Electrical Installation covering Transformer Neutrals, Lightning arrester Earthing, A.C.Plant & Sensitive Computer System(like Automation, SCADA) i.e independent (b)For Electrical installation up to 11 KV in normal soil. Length of Pipe : 2.00 mtrs Back filling Compound :1 no. Bag of 25 Kg	Ea.	Electrical Detail specification Separate sheet attached

318	Supplying & erecting earth pit of minimum bore dia.150mm size approved make Earthing Electrode consisting Pipe-in-Pipe Technology as per IS 3043-1987 made of corrosion free hot dipped G.I.Pipes having Outer pipe dia of 50mm having 80-200 Micron galvanising, Inner pipe dia of 25 mm having 200- 250 Micron galvanising, connection terminal dia of 12mm with constant ohmic value surrounded by highly conductive compound with high charge dissipation suitable for following type of applications with chamber and heavy duty cover.(approved make OEM has to submit test certificate) & having back filling compound of (B) Inner chemical (CCM Compound)- Resistivity:- 0.2 • / meter testing as per IEC 62561-2017, Voltage drop:- < 1 volt at no load & dry form, Sulphar content:- <2%(C) Back fill Compound :- Earthing compound should be capable to retainmoisture for long time Necessary test report must be submitted.(c) For Electrical Installation covering Transformer Neutrals, Lightning arrester Earthing, A.C.Plant & Sensitive Computer System(like Automation, SCADA) i.e independent (c) For Electrical Installation covering Transformer Neutrals, Lightning arrester Earthing, A.C.Plant & Sensitive Computer System(like Automation, SCADA) i.e independent Earthing in normal soil. Length of Pipe : 3.00 mtrs Back filling	Ea.	Electrical Detail specification Separate sheet attached
319	Providing and erecting Pipe type earthing having 150 cms.long and 2.5 cms. dia. galvanised iron pipe with coupling and buch buried in specially prepared earth pit complete with necessary 8 SWG earth wire. - to be used for each Street Light	Ea.	Electrical Detail specification Separate sheet attached
320	For using salt and charcoal / coke as required for pipe type earthing.	Ea.	Electrical Detail specification Separate sheet attached
321	Providing one bag of 25 Kg. Additional Back Filling Compound (BFC) suitable for safe earthing device.	Ea.	Electrical Detail specification Separate sheet attached
322	Providing and erecting required size Copper strip for earthing of H.T. OCB / ACB/ Transformer, LT panel board, Motors etc. using copper clamp.	Kg	Electrical Detail specification Separate sheet attached
323	Providing and erecting required size HOT deep Galvanised iron strip for earthing of H.T. , OCB/ ACB/ Transformer LT panel board, Motors etc. using proper clamp.	Kg	Electrical Detail specification Separate sheet attached
324	Providing pair of rubber hand gloves suitable for working on 11 KV/22 KV supply.	Ea	Electrical Detail specification Separate sheet attached
325	Providing printed instruction chart both in English and Gujarati and duly framed with front glasses, for treatment of person suffering from Electric shock	Ea	Electrical Detail specification Separate sheet attached
326	providng and erecting Approved make. energy meter 3 phase 4 wire unbalanced load 500 V.50A / 100A complete erected as directed with necessary earth wire. Cat. III	Ea	Electrical Detail specification Separate sheet attached
327	providng and erecting Suitable set of CTS for 100A Energy Meter	Ea	Electrical Detail specification Separate sheet attached
328	Supplying rubber matting of following thickness as per IS:15652/IEC 61111 (b)4mm (LT PANEL, DG SET)	Sq. Mtr	Electrical Detail specification Separate sheet attached
329	Supplying and erecting approved make set of indicator lamps of LED type lamp, lens cover, Bakelite holder complete erected with necessary connections.	Ea.	Electrical Detail specification Separate sheet attached

330	Providing & erecting open well horizontal mono block pump set with cast iron body, complete for three phase submersible motor having.[C] For 3 HP 3 phase open well horizontal mono block pump set suitable for 85 LPM to 270 LPM @ 11 mtr to 33 mtr head suitable for 50/65 mm dia delivery pipe Cat.II	Ea.	Electrical Detail specification Separate sheet attached
331	S.I.T.C. of single phase submersible pump set suitable for 100 mm size or more dia bore well having motor capacity and discharge as under with necessary panel box. Lifting and Lowering taken extra. (b) Motor rating 1.5 HP (16 stage) pump having capacity of 50 LPM at 60 mtr head suitable for 32 mm dia. delivery pipe Cat.II	Ea.	Electrical Detail specification Separate sheet attached
332	Supplying and erecting Direct On-line Electronics Starter with 2-5/4-10/8-14/10-16 Amp. Rating relay (variable current setting) directly operated in totally insulated elegant enclosure and 18 Amp. Rating power relay with start - stop button for single phase operation up to 3 HP as per complete erected on P.W. Block with following features. Low voltage cut off below 140 V High voltage cut off above 280 V Overload protection Indicating LEDs for motor on lv, hv & overload tripping. [Cat.II]	Ea.	Electrical Detail specification Separate sheet attached
333	Supplying and erecting Direct on line starter with 30 Amp. (resistive @ 230v) power relay and with 2 to 5/ 4 to 10 / 8 to 20 amp. Range C.T. Operated electronic overload relay in engineering grade plastic enclosure for 3 ph 415v 50 HZ A.C. motor up to 7.5 HP with high voltage protection (above 480 v) and under voltage protection (below 330 v) current sensing single phasing protection. Reverse phasing protection, inverse current characteristic overload protection with indication for On, OL, HV,LV SPP in a single unit with feather touch start / stop push button, high temperature with standing Bakelite terminals complete erected on P.W. Block with necessary connection. [Cat.II]	Ea.	Electrical Detail specification Separate sheet attached
334	Supplying & erecting approved make Automatic liquid level controller 6A.as per instruction of Engineer in charge on site complete with wiring connection with existing wires , with copper conductor from pump to upper and lower tank.(Size Not less than 1.5 Sq MM) from pump to upper and lower tank with ISI marked Rigid PVC Pipe.	Ea	Electrical Detail specification Separate sheet attached
335	Supplying Electrically operated siren on single phase 220-250V AC 50HZ supply , RPM 2800,Horizon/verticle single mount having sound output level more than 100DB with IP 55 protection . Diametrical audible range of (i)5km	Ea.	Electrical Detail specification Separate sheet attached
336	Providing cement concrete foundation &. with plastering for horizontal siren motor mounting stand of size 60 x 60 x 25 cms. With foundation nuts & bolts of required size, to be fixed at 4 places with each plate of tower, with necessary hard rubber sheet packing 1.2cms. thick.	Ea.	Electrical Detail specification Separate sheet attached

337	Providing & erecting M.S. Protection roof stand having 3.3 mtr. height made from M.S. angle iron section of 35 mm x35 mm x5 mm with foundation on each six legs. 6 Nos. legs are supported by 25 mm x 25 mm x 5 mm cross M.S. angles with each other rigidly fixed with nuts, bolts also fixed horizontally on siren tower. The main roof & cap made from M.S. sheet of 14 G(2.00 mm) duly welded with standing angles as per drawing. The necessary holes in the top plates of the main roof shell be provided. The whole structure duly painted with one coat of red oxide and two coats of enamelled paint (as per Drawing.)	Ea.	Electrical Detail specification Separate sheet attached
338	Supplying & erecting approved make motor control cubical panel (Direct - on - line) made from 16 G. CRCA sheet duly epoxy powder painted inside and outside with hinged doors and locking, arrangement consisting of suitable size of ON- OFF isolator (AC - 3/23duty) main fuses, single phasing preventer, indicating lamps for R- Y - B phases, overload relay, Automatic water level controller, Ammeter, Voltmeter each with two way selector switch incoming, wires duly socket crimped, main contactor & overload relay, start - stop push buttons, to be erected on angle iron frame grouted on wall as directed. The isolator, overload relay & contactors will be of L & T, Siemens or BCH make only. (B) DOL for 7.5 H.P.	Ea.	Electrical Detail specification Separate sheet attached
339	Supplying and erecting horizontal / vertical mounting type storage water heater with copper container housed in M.S./S.S./ABS body insulated with glass wool/puff complete with heating elements,adjustable thermostats 300C to 850C, indicating lamp, safety valve, fusible plug, etc.complete erected with coach bolts, nuts. washers & cementation (E)50 Ltr. with 2 KW. heating element Premium Category	Ea.	Electrical Detail specification Separate sheet attached
340	Supplying and erecting approved make Octagonal pole made from HR sheet steel. The pole should be made as per IS. and shall be coated with hot dip galvanizing as per IS 2629/2633/4759, suitable suspend local wind speed with integral Junction box consist of terminal plate of min 6mm Hylam sheet, standard profile 35mmX7.5mm Din-Rail for MCB Mounting, stud type terminal and arrangement for cable termination to be erected With Suitable foundation (Included) as per details given by manufacturer considering site requirement. (G) 8 Mtr. Long 70 mm Top X 155 mm bottom dia, 3 mm thickness with 260mmX260mmX16mm base plate, 4-M20 Bolts and 600mm long with necessary G.I. J Bolts Approx Pole weight 84 kg	Ea.	Electrical Detail specification Separate sheet attached

341	Providing and erecting Street Light pole bracket comprising main B Class MS pipe of 4.2 cm/require outside dia. complete with suitable B Class M.S. sleeve tubing of approx. 45cms.length and suitable for 76.5 mm /80mm / required size of pole top having sufficient fasteners for fixing the brackets and having spread of 1.5.mtr. length with 110 deg.with vertical plane & suitable welded stays, reducer and with check nuts complete painted with one coat of Red oxide / PU base primer and two coats of Aluminium / PU paint. paint with following nos of arms [A] Single Arm Bracket 1.5 Mtr	Ea	Electrical Detail specification Separate sheet attached
342	Supplying and erecting B class galvanised iron pipe 32 mm outside dia 45 cm long duly welded on 20 cm x 20 cm x 3 mm thick M.S. base plate, erected on wall or corner for mounting street light luminaire with necessary hardware materials duly painted.	Ea	Electrical Detail specification Separate sheet attached
343	Supplying & erecting approved make SMC press moulded composite FRP . loop-in, loopout approx. 2mm thick box complete with Bakelite connector strip 5way(3P+N+E),DIN rail for mounting mob & hinged doors as per requirement having locking arrangements with mounting clamp with nuts, bolts & washers suitable for erection on pole with cable clamps& earth bolt of following size of box.(a) 300mm x 200mm x 100mm [deep]	Ea	Electrical Detail specification Separate sheet attached
344	Providing and erecting iron clad cable route marker duly marked with ELE.CABLE of size 23 cm.X 12 cm. Flushed with ground in cement foundation as directed by Engineer in charge.	Ea	Electrical Detail specification Separate sheet attached
345	Supplying and erecting B class Galvanized iron pipe having smooth finished bore of the pipe on both ends erected nuts and bolts along the pole / wall shaping the pipe as per site requirement. Pipe dia as following.(a) 25 mm dia	Mtr.	Electrical Detail specification Separate sheet attached
346	Supplying and erecting LED street light / Flood light fittings with High power White LEDs wattage of 1Watt and above assembled on single MCPCB, efficiency more than 130 lm/w and corrosion free High pressure die cast aluminum housing with smooth finish powder coated and heat sink extruded aluminium with diffuser and Polycarbonate optics/ lenses with company mark/name engraved or embossed 120 to 300 V,Power Factor more than 0.95, THD < 10 %, CCT 3000 K to 5700K, Uniformity ratio >0.45, Luminaire efficacy> 100 lumens/watt . LED driver efficiency > 85 %.CREE /OSRAM / PHILIPS Lumileds / NICHIA / SEOUL/ BridgeLux (U.S.A.) make LED used for luminaire. (fittings required LM-79 & LM-80 certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) (A) Street Light (IP-65), Surge protection - 4KV integral and 10 kv non integral ,Light must have 440VAC line supply protection. It should withstand 48 hours for 440VAC line supply.(ii) above 48 to 60 Watts Cat-III	Ea	Electrical Detail specification Separate sheet attached

347	Supplying and erecting LED street light / Flood light fittings with High power White LEDs wattage of 3 Watt and above assembled on single MCPCB, efficiency more than 130 lm/w and corrosion free High pressure die cast aluminum housing with smooth finish powder coated and heat sink extruded aluminium with diffuser and Polycarbonate optics/ lenses, with toughened glass with company mark/name engraved or embossed 160 to 270 V,Power Factor more than 0.95, THD < 10 %, CCT 3000 K to 5700K,Uniformity ratio >0.45, Luminaire efficacy> 100 lumens/watt . LED driver efficiency > 85 %.(fittings required LM-79 & LM-80 certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) (B) Flood Light (IP-65), Surge protection -4KV integral and ,Light must have 440VAC line supply with over-voltage protection.(vii) above 200 to 250 watts Cat-III	Ea	Electrical Detail specification Separate sheet attached
348	(b) LED Bollard fittings of minimum height 600 mm & dia.100mm having polycarbonate clear/milky diffuser mounted on 3mm thick aluminium finished powder coated pipe with base plate 160x160mm with erection by M8x75mm fastner with required RCC foundation.IP65 for 9 to 20 watt ,surge-4kv- cat-III	Ea	Electrical Detail specification Separate sheet attached
349	Supplying & erecting approved make Digital time switch having lithium cell 6 years operative and operate battery backup 1 channel day clock with 14 memory programme, suitable to operate on 240V + 5%, 16A with, floating contacts Minimum switching setup time 1 minimum & LCD display. Also comprised permanent ON/OFF switching. Programming switches & housed in fire proof thermoplastic enclosure & transparent cover erected as required with necessary connection erected as directed.	Ea	Electrical Detail specification Separate sheet attached
350	Supply of Fibreglass Platform Step (A Type) Ladder - 18 FT having following specifications : It should have large fully serrated platform 15" wide 20" deep which locks ladder , Aluminium feet with thick rubber tread, top rail guard to serve as a railing, two pairs of gusset support at the bottom step and All gussets are heavy duty steel. Capacity : 300 lbs.	Ea.	Electrical Detail specification Separate sheet attached

351	Supplying and erecting, commissioning and testing of Diesel Generating set confirming to IS: 4722:1968 & BS:5514 having continuous rating, 3 phase, 415 volts, 50 cycles A.C. supply comprising of a totally enclosed air/water cooled diesel engine with multi-cylinders developing suitable BHP not less than following capacity at 1500 RPM with 10% overload for one hour in 24 hours with standard accessories like fly wheel, lubricating oil cooler, "A" class governor, heavy duty fuel wheel and lubricating oil filter, oil bath air filler, lubricating oil pressure gauge, end exhaust manifold, standard set of tools with adjustable spanners, screw drivers, cylinder head to cover, joint cylinder head to exhaust, element lube oil filter, 12 / 24 volts electric starting equipment complete with standard heavy duty battery, dynamo, cut-outs, ammeter, necessary wiring, pressure gauge, starter etc and heavy duty Residential type exhaust silencer (With DEF System) and vertical hot air duct both	Each	Electrical Detail specification Separate sheet attached
0	logged with asbestos rope, save oil trays, exhaust piping of required length, standard wall/floor mounted fuel with level indicator and piping and drip proof alternator, self excited, self regulated, screen protected, with excitation system, capable of delivering the rated system output at 415 volts, 3 phase, 0.8 PF, 50 Hz, 4 wire, running at 1500 RPM, conforming to IS-4722-1968 with voltage regulation +/- 5% of rated voltage from no load to full load. Both the engine and alternator fitted on a common fabricated steel base plate with antivibration mounting engine and alternator both connected to each other by flexible flange coupling and with floor/wall mounted control panel box comprising of voltmeter ammeter, selector switches, ACB / MCCB / MCB of adequate capacity,	0.00	Electrical Detail specification Separate sheet attached
0	indicator lamps duly wired with HRC fuses. The alternator & control panel shall be connected with provided suitable capacity armoured cable and complete with Acoustic enclosure (canopy) made out of 16 SWG CRCA Sheet, sound absorbing material Rockwool of 64 density & 100 mm thick conforming to IS:8183 / PU Foam of 40 Density - at least 40 mm. The resin bonded rockwool covered from inside the canopy by perforated sheet with 3/4 mm holes, sound level not more than 75 dB at a distance of 1 mtr, as per PVCT norms.DG set should have in built fuel tank capacity of minimum 8 hrs of continous running capacity on full load . Erection, commissioning and satisfactory testing as per requirement with first filling of fuel (minimum up to the 80% of fuel tank capacity), oil, etc. with guarantee / Warrantee of complete system for Two years. & with obtaining all necessary certificate from Electrical Inspector. The Capacity and Ratings of DG sets are as below. (As per new CPCB4+ Emission norms Engine With - Turbo Charger, EGR (Exhaust Gas Recirculation), CRS (Common Rail Fuel System), DOC (Diesel Oxidation Catalyst), SCR (Selective Catalytic Reduction), Integrated wiring harness connected to ECU .)	0.00	Electrical Detail specification Separate sheet attached

0	(I) Continuous Rating of 62.5 KVA ,BHP not less than 76 BHP	0.00	Electrical Detail specification Separate sheet attached
352	<p>Providing & erecting approved make AMF control panel suitable for following size of 3 phase, 415 V., 50 cycles, A.C. diesel generating set complete of scope as detailed below:</p> <p>1) Power module: A pair of electromechanically interlocked contactors (for mains & generator) Overload relay for generator contactor Neutral contactor for mains and generator Power socket for connections.</p> <p>2) Control and metering module: Line voltage monitor. Generator voltage monitor Ammeter 3 items attempt start facility. Air circuit breakers/MCB/MCCB of suitable rating for auto/manual operation. Auto/manual switch. Emergency stop push buttons. Manual start push button. frequency meter. Engine hour meter. Two earthing studs.</p>	Each	Electrical Detail specification Separate sheet attached
0	<p>3) Protection module: The engine shutdown in the unlikely event of Low lube oil pressure High cylinder head temperature. V belt failure.</p> <p>4) Indicators with alarm Load on generator.</p> <p>5) Indicators Load on mains Engine fails to start . Emergency stop battery charger.</p> <p>The AMF Panel of following capacity (C) ATS Panel for 50 / 62.5 KVA 3 phase DG Set</p>	0.00	Electrical Detail specification Separate sheet attached
353	Providing and erecting Inverter based approved make Cassette type split air-conditioning unit consisting of condensing unit with fan motor, hermetically sealed scroll/rotary compressor with accessories etc. duly connected separately erected evaporating unit and blower motor with its accessories by Eco friendly Green gas charging & Internal copper wiring & Remote control (3 star and above of current year) with necessary core cutting.(C) for 3 ton capacity- 1/3Phase	Each	Electrical Detail specification Separate sheet attached
354	Providing and erecting Inverter based approved make Cassette type split air-conditioning unit consisting of condensing unit with fan motor, hermetically sealed scroll/rotary compressor with accessories etc. duly connected separately erected evaporating unit and blower motor with its accessories by Eco friendly Green gas charging & Internal copper wiring & Remote control (3 star and above of current year) with necessary core cutting.(D) for 4 ton capacity- 1/3Phase	Each	Electrical Detail specification Separate sheet attached
355	Supply, Installation, testing and commissioning including vaccumiazation and Nitrogen testing of following nominal sizes of soft/hard drawn copper refrigerant piping for VRV system, complete with fittings, with suitable adjustable ring type hanger supports, jointing/brazing including accessories, insulated with XPLE Class-0 tubular insulation/with Class-0 closed cell elastometric nitrile rubber tubular sleeves sections of specified thickness as given below for Suction and Liquid lines, all accessories as per specifications etc with necessary refrigerant joint as required :(E) 19 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm with 19 mm thick insulation	Mtr.	Electrical Detail specification Separate sheet attached

356	Rigid UPVC drain pipe of 10 Kg/cm ² . rating with 9 mm thick.nitrile rubber insulation.(A) 50 mm dia.	Rmt.	Electrical Detail specification Separate sheet attached
357	Rigid UPVC drain pipe of 10 Kg/cm ² . rating with 9 mm thick.nitrile rubber insulation.(D) 25 mm dia.	Rmt.	Electrical Detail specification Separate sheet attached
358	<p>[1] GEAR LESS LIFT DRIVE (MRL) comprising of High Starting torque Lift 3 phase 440 V A. C. Permanent Magnet Synchronous motor of proper rating with high efficiency shall be used.[2] Micro processor based / PLC, ACVVVF, vector control drive with encoder feedback closed loop system shall be used for lift car and door operation which shall be full collective selective operation hall call demand response, UP/DOWN hall stops, Main, Up/ Down Contactor with overload and phase reversal relay and safety controls.[3] Car with M S platform with bracings of adequate size and to sustain the impact load cabin + passenger with safety factor of fire for steel and side panels of Stainless steel of sheet of grade 304 duty. Car ceiling will be S.S. finishes with aesthetic appearance with LED ceiling lights. Car flooring shall be of s/s 304 chaker plate design suggested of engineer in charge. of engineer in charge. Car doors shall be of stainless steel grade 304, hairline finish with centre opening / telescopic automatic doors. Car panel will also be S.S. 304 finished with emergency stop device, mechanical door safety device, facility of auto/ attended mode. All car panel buttons and all floor switches must be with brail language as per lift act. [4] All landing doors must be fire rated for 2 hour shall be fully automatic centre opening/ telescopic opening made of hairline finish steel grade of 304 with key holes and infrared curtains with Unlocking facility from outside [5] Appropriate battery operated emergency light in the car along with alarm switch shall be provided. Also, Emergency Light & Fan should start immediately without any Time Delay as soon as power fails.[6] Digital scrolling indicator system for up-down arrow along with floor position indicator shall be provided inside the car and at all floors.</p> <p>[7] Full height infra red curtain with multiple cross / crossing light beams shall be provided.</p> <p>[8] Automatic Rescue Device (ARD) shall be provided accordingly of passenger capacity with Manual Rescue Operation (Manual Cranking Facility).</p> <p>[9] Audio visual indication in the lift car showing over loading shall be provided such that doors kept open till excess load is removed. [10] Spring buffers/PU Buffers shall be provided.</p> <p>[11] Car fan as per passenger capacity with automatic sleep timer shall be provided. [12] Voice annunciator with suitable music shall be provided in lift car.</p> <p>[13] Self diagnostics system for operational and safety parameters shall be provided in control panel.</p> <p>[14] Mechanical over speed governor with governor calibration as per actual site parameters and submission of calibration certificate submission, door key holes in the floor doors, fireman switch shall be provided.</p> <p>[15] Lift machine hoisting arrangement in the lift machine room and monkey ladder for lift pit should be provided by the lift agency, along with the other steel structure works, foundations for the machine etc...[16] In the hoist way fascia plate shall be provided without any extra cost, where ever required as / if directed by engineer in charge.[17] Permanent wiring with necessary safety devices like RCCB in all circuit, Over Voltage Under Voltage protection and THD eliminator in circuit for lift machine room and lift well with proper numbers of light points, with fixtures, exhaust fan and plug points shall be provided by the agency. Only 3 phase Power Supply shall be made available by department in lift machine room. Necessary Earthing as per Lift Act/Rules shall be arranged by Lift Agency.</p> <p>[18] Any civil/ electrical works for additional and alteration in lift shaft and machine room related to erection of lift shall be made by lift agency without any extra cost. (granite/marble fixing around all landing door openings are not in lift agency's scope.)[19] Agency has to provide all working drawings and documents and liaison services for obtaining all necessary permission from lift inspector and other authorities.</p> <p>[20] acrylic transparent licence/display A4 size holder in lift car</p> <p>[20A] As per statutory requirement of Govt. Of Gujarat lift & escalator act 2000, lift agency has to provide</p> <ol style="list-style-type: none"> 1. Car top safety barricade 2. Push & talk communication system. 3. Fireman's switch operation at Ground Floor. 4. carrying out third party lift inspection during/after lift erection and provide report by third party authorized by concern licensing authority.5.agency has to provide third party insurance upto completion of free maintenance period and submit the document for the same.[21] Car Panel Operating Buttons with floor position indicator/buttons must be of Auto Glow type clearly visible when view from inside cabin. [22] For Physically Handicapped person Full Length Handrails of hairline finish steel grade of 304 should be provided at appropriate height on the Rear & Side Wall Panels in Lift Car. [23] With Necessary KVA rating voltage controlled Stabilizer suitable for your controller, drive and all equipments of lift. [24] Necessary rating of DP Elcb and FP Elcb required for lift is in scope of work which rating is suggested by CEICED Department (electrical Inspector) (Note : Rs. 1,50,000/- is deducted for Machine Rooms) <p>8 / 10 Passengers, Ground plus 2 upper floor with Rated Speed of 1.0 m/sec., (B) With General Specification attached herewith. Cat.III (Note : RS 1,50,000/- Reduced as Lift Machine Room is there.)</p>	Each	Electrical Detail specification Separate sheet attached

359	<p>Supplying Installation Testing and Commissioning of 4MP IP IR Dome Camera having followingspecifications and features etc :-</p> <p>1) Signal System: PAL/NTSC, Signal to Noise Ratio: >50 dB,Camera should display Camera title, Date &Time in live & recorded video2)Image Sensor: 1/2.8" or better progressive ScanCMOS to get color image even at nightcondition(Minimum Illumination: 0.006 Lux@ F1.4,AGC ON, 0 lux with IR or better) True Day & NightHigh Performance Mechanical IR cut filter with autoswitch, Integrated IR Source (Auto, Manual)- Inbuilt IRLED's with effective distance upto 50 meter or betterand 30 meter for colour view in night, Imaging: 1/3s to1/30000s electronic shutter support, Auto Gain Control, White Balance- Auto, Back Light Compensation,Multi zone Privacy Masking, HLC, DigitalWatermarking.</p> <p>3) Compression (Minimum): Video:- H.265 or better,Audio:- G.711U/A, G.711Mu, G.726, AAC, G.7234) Wide Dynamic Range:- WDR (120dB or more)5) Digital Noise Reduction:- DNR (3D) On/Off6) Video Streaming & Frame Rates :- Triple streaming, configurable Main stream: 4MP (2560×1440)25/30fps, Sub streams minimum: 720P@25/30 fps7) Image Setting: Rotate Mode, saturation, brightness,contrast, sharpness adjustable through client softwareor web browser, Edge Analytics:</p>	Each	Electrical Detail specification Separate sheet attached
0	0	0.00	
360	<p>Supplying Installation Testing and Commissioning of 4MP IP IR Outdoor Bullet Camera having followingspecifications and features etc :- 1) Signal System: PAL/NTSC, Signal to Noise Ratio: >50 dB,Camera should display Camera title, Date &Time in live & recorded video2)Image Sensor: 1/2.8" or better progressive ScanCMOS get color image even at nightcondition(Minimum Illumination: 0.006 Lux@ F1.4,AGC ON, 0 lux with IR or better) True Day & NightHigh Performance Mechanical IR cut filter with autoswitch, Integrated IR Source (Auto, Manual)- Inbuilt IRLED's with effective distance upto 50 meter or betterand 30 meter for colour view in night, Imaging: 1/3s to1/30000s electronic shutter support, Auto Gain Control, White Balance- Auto, Back Light Compensation,Multi zone Privacy Masking, HLC, DigitalWatermarking.3) Compression (Minimum): Video:- H.265 or better,Audio:- G.711U/A, G.711Mu, G.726, AAC, G.7234) Wide Dynamic Range:- WDR (120dB or more)5) Digital Noise Reduction:- DNR (3D) On/Off6) Video Streaming & Frame Rates :- Triple streaming, configurable Main stream: 4MP (2560×1440)25/30fpsSub streams minimum: 720P@25/30 fps7) Image Setting: Rotate Mode, saturation, brightness,contrast, sharpness adjustable through client softwareor web browser, Edge Analytics: Tripwire, Intrusion,Motion Detection8) Cyber Security: AES 256-bit Encryption,Configuration encryption, trusted execution, Digest,security logs, account lockout, video encryption,IP/MAC filtering, HTTPS, trusted upgrade9) Onboard Storage: Camera should support built-inMicro SD/ SDHC/ SDXC Card slot upto 512 GB. Itshould be supplied with minimum 128GB memoryCard.10) Recording Management: Format SD, overwrite,storage management, video to NAS device,11) Alarm Trigger : Motion/tampering detection;network disconnection detection; IP conflict detection;memory card state detection; memory space detection12)Network Protocol: SFTP, IPv6, IPv4, DNS,RTCP,NTP, RTP, HTTP, HTTPS, SNMP TCP/IP, PPPoE,NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS,unicast,13) System Capability: ONVIF, Camera shall supportopen source VMS14) Ethernet: 1 RJ 45 10/100 Ethernet port15) Audio : It should support 1 x Built-In Mic and 1/1Alarm In/ Out for External Mic. and Speakers as persite requirement.16) Power Input: The camera should supportsimultaneous dual power input—12 VDC (via poweradapter) and PoE (802.3af)—to ensure continuousoperation in the event of a failure in one power source.17) Power Requirement: 12VDC/24 VDC/PoE(802.3af)/ePoE18) Housing/ Enclosure:- IP67 weather proof, IK10,Metallic body19) Operating Condition:- Ambient Temperature:- (-)05°C to 50°C, humidity 95% (max) (non-condensing)20) IR life: 40000 hours or higher21) Video Bit rate: 32 KBPS - 8 MBPS or better22) Standards: BIS with ER, STQC Certified, CE, FCCand RoHS space detection12)Network Protocol: SFTP, IPv6, IPv4, DNS,RTCP,NTP, RTP, HTTP, HTTPS, SNMP TCP/IP, PPPoE,NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS,unicast,13) System Capability: ONVIF, Camera shall supportopen source VMS14) Ethernet: 1 RJ 45 10/100 Ethernet port15) Audio : It</p>	Each	Electrical Detail specification Separate sheet attached

	<p>Camera shall support (open source vms14) Ethernet: 1 x RJ 45 10/100 Ethernet port (15) Audio : It should support 1 x Built-In Mic and 1/1 Alarm In/ Out for External Mic. and Speakers as per site requirement.16) Power Input: The camera should support simultaneous dual power input—12 VDC (via power adapter) and PoE (802.3af)—to ensure continuous operation in the event of a failure in one power source.17) Power Requirement: 12VDC/24 VDC/PoE(802.3af)/ePoE18) Housing/ Enclosure: : IP67 weather proof, IK10,Metallic body19) Operating Condition:- Ambient Temperature:- (-)05°C to 50°C, humidity 95% (max) (non-condensing)20) IR life: 40000 hours or higher21) Video Bit rate: 32 KBPS - 8 MBPS or better22) Standards: BIS with ER, STQC Certified, CE, FCC and RoHS 4MP @ 25/30fps@1440P (2560 x 1440) Outdoor Bullet Camera with 2.8/ 3.6/6/8/12 mm fixed lens (as per site requirement)</p>		
361	<p>1) Network Video Recorder Embedded/ Installed OS(Linux) along with Camera Licenses for number of channels of NVR to record per NVR and to provide live view, storage and simultaneously Multi-channel playback of all IP, IR camera or more and must be ONVIF with minimum support of 256Mbps incoming Bandwidth.2) NVR should support H.265 or better, H.264,MJPEG, MPEG4 support3) Must support 1 channel Input, 1 channel Output,RCA for Two-way Talk4) Intelligent auto power on when power resumes after power outage.5) Storage: It should support minimum 2 SATA Slots with 20TB capacity/ Slot.6) Connectivity Interface : 1 Nos. x 10/100/1000 Mbps Ethernet Ports, 1x RS485, 1x RS2327) Backup Interface : It should have 2 Nos x USB port (1x USB3.0, 1x USB2.0)8) Video Output Ports: 1x HDMI and 1 VGA9) Alarm Ports: It should have 4/1 Ch In/ Out ports to connect various type of external sensors and output devices like hooter/ Siren etc.10) Email & SMS Alert options: Option for SMS/ Email Alerts to minimum 5 designated mobile number for power failure, HDD failure, vandalism, tampering, network disconnection and panic11) Web & Mobile Application: Web, Mobile app (For iPhone, iPad, Android Phone) for alerts and viewing.12) Protocols: HTTP, HTTPS, TCP/IP, IPv4, UDP,NTP, DHCP, DNS, SMTP, UPnP, DDNS, Alarm Server, IP Search, Multicast, Auto Registration, ONVIF(Profile T, Profile S, Profile G), CGI, SDK and OEM Cloud for remote monitoring without any public IP need.13) Standards: CE, FCC, RoHS and BIS Certified14) Power Supply : Should support 12VDC, 4Amp or AC100-240V, 50/60Hz Power supply.15) Operating Condition : Ambient Temperature (- 5°C to 50°C), humidity 90% (max) (non-condensing)16) The VMS, NVR application shall support all the features & functionalities of the offered cameras.17) VMS should consist of Base license and Channel Licenses. VMS should be provided with camera Licenses, with no dependency of VMS licenses by binding with the MAC address of the cameras to achieve the functionality.18) The NVR OEM shall be responsible for providing a mobile application compatible with both Android and iOS devices, enabling remote monitoring and playback of cameras/NVR footage.</p> <p>19) The OEM must provide its own DDNS server hosted in India, eliminating the need for a public IP address for remote monitoring over the Internet.20) Must support Resolution: 7680x4320 (8K),3840*2160, 1920x1080, 1280x1024,1280x720,1024x76821) Must support recording resolution upto 32MP22) Must support Continuous, Alarm, Motion, Instant,Panic Recording Mode23) When alarm recording is enabled and an event occurs, you can click the alarm icon on monitoring page to view the alert details. The snapshot function is supported on monitoring and playback page24) The Network Video Recorder (NVR) shall be configured to send email whenever a system message is created or an alarm event occurs. The email server shall be a valid SMTP server. Each recipient email address shall be configured to receive any combination of critical, warning, or informational messages or alarm notifications. When an alarm occurs, the email message includes the NVR name, time of alarm and a list of camera that is configured to record upon alarm25) It should support Network Support: HTTP, TCP/IP,SMTP, DHCP, DNS, DDNS, FTP, NTP, UPnP, Multi IP Setting. Convert multiple recording files to one avi/MP4 file.26) General AI Based Search: Search Pictures by channel, time, event type, target classification (Fall Detection, People Approach Detection, People No.Exception Detection, People Staying Detection, Violence Detection.27) Alarm Notifications based on: Motion detection, video tampering, video loss, scene changing, PIR alarm, Camera external alarm, Face detection, face recognition, perimeter protection (intrusion and tripwire), ANPR, people counting, stereo analysis, crowd distribution, heat map, Disk Full, Storage Error, IP Conflict and abnormal behavior of fan28) Alarm Notification should be linked with Recording, snapshots, Camera external alarm output, buzzer, logs, presets and email.</p> <p>29) Built-In Artificial Intelligence: NVR should have built-in AI :- 2 Channel face detection and recognition, - Minimum 4 Channel perimeter protection, - Minimum 8 Channel Smart Motion Detection30) Face Recognition Database Capacity: It should support total Blacklist and Whitelist capacity of Minimum 20,000 Faces or more with Face Detection speed of 12 face images/sec.31) Face & Human Attributes Search: Search Pictures/Video by Gender, age group, glasses, expressions, face mask, beard, Top color, top type, hat, bag, age, gender and umbrella.32) ANPR Capability: It should support ANPR Camera with License plate, plate color, vehicle body, vehicle model, vehicle logo, calling, seatbelt, vehicle registration location etc vehicle attributes.33) Alarm Notifications based on: Motion detection, video tampering, video loss, scene changing, PIR alarm, Camera external alarm, Face detection, face recognition, perimeter protection (intrusion and tripwire), ANPR, people counting, stereo analysis, crowd distribution, heat map, Disk Full, Storage Error, IP Conflict and abnormal behavior of fan34) Alarm Notification should be linked with Recording, snapshots, Camera external alarm output, buzzer, logs, presets and email.</p>	Each	Electrical Detail specification Separate sheet attached

362	<p>Supplying Installation Testing and Commissioning of following Channel Network Video Recorder (NVR) with camera licenses to record for all channels having specifications and features etc as mentioned below :</p> <ol style="list-style-type: none"> 1) Network Video Recorder Embedded/ Installed OS(Linux) along with Camera Licenses to record per NVR and to provide a live view, storage and simultaneously Multi-channel playback of all IP camera or more and must be ONVIF with minimum support of 384 Mbps incoming Bandwidth. 2) NVR should support video compressions : H.265 or better, H.264, MJPEG. 3) Must support 1 channel RCA Input, 2 channel RCA Output for Two-way Talk with G.711u/A, G.711u, PCM, G.726 audio compressions. 4) Intelligent auto power on when power resumes after power outage. 5) Storage: It should support minimum 8 SATA Slots with 20TB capacity/ Slot and RAID support of RAID 0/1/5/6/10. 6) Connectivity Interface : 2 Nos. x 10/100/1000 Mbps Ethernet Ports, 1x RS485, 1x RS232, 1x eSATA Port. 7) Backup Interface : It should have 4 Nos x USB port (2x USB3.0, 2x USB2.0). 8) Video Output Ports: 2x HDMI and 2 VGA. 9) Alarm Ports: It should have 16/8 Ch In/ Out ports to connect various type of external sensors and output devices like hooter/ Siren etc. 10) Email & SMS Alert options: Option for SMS/Email Alerts to minimum 5 designated mobile number for power failure, HDD failure, vandalism, tampering, network disconnection and panic. 11) Web & Mobile Application: Web, Mobile app (For iPhone, iPad, Android Phone) for alerts and viewing. 12) Protocols: HTTP, HTTPS, TCP/IP, IPv4/IPv6, UDP, DHCP, DNS, SMTP, UPnP, IP Filter, PPPoE, FTP, DDNS, Alarm Server, IP Search, Multicast, Auto Registration, ONVIF (Profile T, Profile S, Profile G), CGI, SDK and OEM Cloud for remote monitoring without any public IP need. 13) Standards: CE, FCC, RoHS, BIS Certified. 14) Power Supply : Should support AC100-240V, 50/60Hz Power supply. 15) Operating Condition : -5°C to 50°C, humidity 90%(max) (non-condensing). 16) The VMS application shall support all the features & functionalities of the offered cameras. 17) VMS should consist Licenses for all channels to record Cameras with General, motion detection, intelligent, alarm and POS recording modes. VMS should be provided with Camera Licenses , with no dependency of VMS licenses by binding with the MAC address of the cameras to achieve the functionality. 18) The NVR OEM shall be responsible for providing a mobile application compatible with both Android and iOS devices, enabling remote monitoring and playback of cameras/NVR footage. 19) The OEM must provide its own DDNS server hosted in India, eliminating the need for a public IP address for remote monitoring over the Internet. 20) Must support Continuous, Alarm, Motion, Instant, Panic Recording Mode. 21) It should support Resolution: 32MP; 24MP; 16MP; 12MP; 8MP; 5MP; 4MP; 1080p; 720p; D1; CIF; QCIF. 22) When alarm recording is enabled and an event occurs, you can click the alarm icon on monitoring page to view the alert details. The snapshot function is supported on monitoring and playback page. 23) The Network Video Recorder (NVR) shall be configured to send email whenever a system message is created or an alarm event occurs. The email server shall be a valid SMTP server. Each recipient email address shall be configured to receive any combination of critical, warning, or informational messages or alarm notifications. When an alarm occurs, the email message includes the NVR name, time of alarm and a list of camera that is configured to record upon alarm. 24) It should have Web and GUI interface. 25) Built-In Artificial Intelligence: NVR should have built-in AI :- 2 Channel face detection and recognition, - Minimum 4 Channel perimeter protection, - Minimum 8 Channel Smart Motion Detection 26) Face Recognition Database Capacity: It should support total Blacklist and Whitelist capacity of Minimum 20,000 Faces or more with Face Detection speed of 12 face images/sec and facility to add Name, gender, birthday, address, credential type, credential No., countries & regions and state to each face image. 27) Face & Human Attributes Search: Search Pictures/ Video by Gender, age group, glasses, expressions, face mask, beard, Top color, top type, hat, bag, age, gender and umbrella. 28) ANPR Capability: It should support ANPR Camera with License plate, plate color, vehicle body, vehicle model, vehicle logo, calling, seatbelt, vehicle registration location etc vehicle attributes. 29) Alarm Notifications based on: Motion detection, video tampering, video loss, scene changing, PIR alarm, Camera external alarm, Face detection, face recognition, perimeter protection (intrusion and tripwire), ANPR, people counting, stereo analysis, crowd distribution, heat map, Disk Full, Storage Error, IP Conflict and abnormal behavior of fan, cybersecurity exception. 30) Alarm Notification should be linked with Recording, snapshots, Camera external alarm output, buzzer, logs, presets and email. 31) General AI Based Search: Search Pictures by channel, time, event type, target classification (Fall Detection, People Approach Detection, People No. Exception Detection, People Staying Detection, Violence Detection). 32) Smart playback function: Should support smart search for the selected area in the video and smart playback to improve the playback efficiency. 33) VCA (Video Content Analytic): Should support multiple video content analytics based on camera analytics. 34) Analytics by NVR: Perimeter protection and face recognition 32 Channel Network Video Recorder (NVR) having display split :- Main screen: 1/4/8/9/16/25/32(36), 2nd screen: 1/4/8/9/16 	Each	Electrical Detail specification Separate sheet attached
363	<p>Supplying, Installation, Testing and commissioning of CAT6 Copper Information Outlet (IO) with face plate of color as per site requirement, should have ETL/UL verification program certificate for compliance with ANSI/TIA-568.2-D. All copper Cable and Components should be from same OEM to maintain compatibility and interoperability etc. complete as required. (Camera Back etc.)</p>	Each	Electrical Detail specification Separate sheet attached
364	<p>Supplying, Installation, Testing and Commissioning of following capacity Surveillance grade Hard Disk with upto 256MB/s Transfer Rate, 256 MB Cache, 7200RPM Disk Speed, 3.5 inch form factor, SATA Interface, BSMI, ICES-003/NNB-003, CE, FCC, KC, Maghreb, RCM, UKCA, VCCI, CB-Scheme, TUV, UL Certifications.</p> <p>6TB (Terabytes)</p>	Each	Electrical Detail specification Separate sheet attached

365	<p>SITC of 24 x 10/100/1000BASE-T PoE ports 4 x Gigabit RJ45/SFP Combo ports Advanced L2 switching and security features L2+ Static Routing Optional “standard mode” or “surveillance mode” management user interface 193 W PoE budget [Approved by Competent Authority i.e. not Below the rank of Executive Engineer]</p>	Each	Electrical Detail specification Separate sheet attached
366	<p>Supplying and fixing of following size Wall Mount Rack having Fixed Structure with 0.8mm CRCA Sheet, completely knocked-down condition (CKD) Shape, Vertical Mounting Rail 1.6 mm with 'U' Marking, Minimum 2 cable entry/exit provision at Top and bottom with rubber protection, Front 5mm Toughened Glass with lock, wall mounting kit, Powder coated Color- RAL- 7035, complied with UL & RoHS, 2 x 6 sockets 16A power distribution units, 3 numbers closed cable organizer, Hardware mounting screw packet of 20 x 1 number, etc. complete as required. 9U Rack</p>	Each	Electrical Detail specification Separate sheet attached
367	<p>Supplying & erecting approved make LAN cable of following size in existing pipe as per direction [C] CAT - 6</p>	Mtr	Electrical Detail specification Separate sheet attached
368	<p>Providing and erecting ISI mark Medium class RIGID PVC PIPES of following size complete to be erected on/in wall or ceiling erected with necessary PVC fittings & Junction boxes fixed with adhesive solution & Clamps with following dia of pipes, in approved manner as directed (b) 25 mm</p>	Mtr.	Electrical Detail specification Separate sheet attached
369	<p>Supply, Installation Testing & Commissioning 15 Mtr. HDMI Interface Cable as per the detailed Specifications supports transmission of 4K Signals as per the detailed Specifications</p>	Ea.	Electrical Detail specification Separate sheet attached
370	<p>Supplying, Installation, Testing and Commissioning of following size LED display (LED monitor) industrial grade with 3840x2160 resolution or better, USB playback, bluetooth and miracast connectivity, 4X HDMI 2.0, DP 1.2, HDR 10/10+, brightness: 500-nits or better, Video wall mode should be available, contrast ratio: 1200:1, OPS slot, viewing angle (H/V): 170°/ 170°, response time less than 12ms, Display control shall be on monitor screen and programmable with remote (remote shall be supplied with system), Key Board, Optical Mouse, etc. as required. 55 inch or larger</p>	Each	Electrical Detail specification Separate sheet attached

371	Supply, Installation, Testing & Commissioning of following size of Grid Tied Solar Power Plant with Solar Panels (ALMM approved): Frame Material : Anodized Aluminum alloy Frame With Twin Wall Profile, Front Cover : High Transmission Low-Iron Tempered Glass (AR Coated), High efficiency and positive power tolerance Pmax: 0/+5, Module Efficiency should be approx. 19.5%-22%, Normal operating temperature 45°C, Junction Box with Waterproof IP67 & MC4 Compatible and Enclosed with Bypass diodes, 100% Electroluminescence test to ensure error free Modules, Thep. temp. co-efficient of the PV module shall equal or better than - 0.45%/degree C. Solar PV modules of minimum fill factor 75% to be used. Unit Production:- More than 4.5 Unit /kw /day (Actual)(1Year Avg) With 10 year Product warranty and 25 year Linear Power Warranty includes all mechanical and electrical parameters of the Solar panel. Modules must be complied to the DCR(Domestic content requirements). The Ration of AC to DC is 5:6 for the Installation capacity which are given in AC KW. Solar Inverter: MPPT Range: 80-1000 V , Max efficiency: 97.5% - 98.9%, O/p Frequency: 50/60Hz, Operating Altitude (m) ≤4000, O/p Power Factor: ~1, O/P THDi: <3%, Operating Temperture Range: -25~60°C, Integrated protection	PER KW	Electrical Detail specification Separate sheet attached
0	0	0.00	
0	0	0.00	
372	Providing & erecting Automatic solar panel cleaning system for solar power projects which includes necessary plumbing work (UPVC pipes and accessories) from source of water to project site (upto 30 meters),Suitable size of sub mercible/ open well motor, necessary wiring for motor and sprinkler system with safety, timer circuit for automatically on/off the sprinkler system, necessary size oand number of nozzles/JET (minimum 1 Nozzle/Jet per module). (D) 21KW-50KW Cleaning System	PER KW	Electrical Detail specification Separate sheet attached
373	Providing , erecting , fabricating the M.S. structure as per requirement on site incorporating proper size of M.S. angles,square,round, flats, bars, channels, sections complete with cutting, welding, grinding & finishing duly painted with one coat of red oxide with erection on site as per direction of engineer in charge with necessary grouting, cementing, plastering & finishing complete.	Kg	Electrical Detail specification Separate sheet attached

374	<p>(a) Supplying, installation, testing and commissioning of Electric driven Main Fire Pump conforming to IS 12469: 2019 suitable for automatic operation and consisting of following, complete in all respects, as required : (b) Horizontal type, multistage, centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical seal as required. (c) Suitable HP Squirrel cage induction motor, TEFC, synchronous speed 1500 RPM, suitable for operation on 415 volts, 3 phase 50 Hz, AC supply with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-12615: 2018. (d) M.S. fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required. (e) Suitable cement concrete foundation duly plastered with anti vibration pads 1620 lpm at 56 m Head</p>	Each	Tech. Specs for Fire System Separate sheet attached
375	<p>(a) Supplying, installation, testing and commissioning of diesel engine driven main fire pump conforming to IS 12469: 2019 suitable for automatic operation and consisting of following, complete in all respects, as required : (Diesel Driven Pump) (b) Horizontal type, multistage, centrifugal pump of cast of iron body and bronze impeller with stainless steel shaft, mechanical seal as required. (c) Suitable HP, 1500 RPM water cooled with radiator, diesel engine conforming to relevant IS standard complete with auto starting mechanism, 12/24 volts electric starting equipment, diesel tank, exhaust pipe extended upto 10 m outside pump house duly insulated with 50 mm thick glass wool with 1.0 mm thick aluminium sheet cladding, residential silencer, instruments and protection as per standard specification, stop solenoid for auto stop in the event of fault with audio indications, painted with post office red colour etc. as required. (d) M.S fabricated, common base plate, coupling, coupling guard, foundation bolts etc. as required. (e) Suitable cement concrete foundation duly plastered and with anti vibration pads. 1620 lpm at 56 m Head</p>	each	Tech. Specs for Fire System Separate sheet attached
376	<p>(a) Supplying, installation, testing and commissioning of electric driven pressurisation pump conforming to IS 12469: 2019 suitable for automatic operation and consisting of following, complete in all respects, as required : (Jockey Pump) (b) Horizontal type, multistage, centrifugal pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal as required. (c) Suitable HP squirrel cage induction motor TEFC type suitable for operation on 415 volts, 3 phase 50 Hz AC supply with IP 55 class of protection for enclosure, horizontal foot mounted type with Class 'F' insulation, conforming to IS-12615: 2018. (d) M.S. fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required. (e) Suitable cement concrete foundation duly plastered and with anti vibration pads. 180 lpm at 56 m Head</p>	each	Tech. Specs for Fire System Separate sheet attached

377	(a) Supplying, installation, testing and commissioning of electric driven terrace pump conforming to IS 12469: 2019 suitable for automatic operation and consisting of following, complete in all respects, as required: (Terrace Pump) (b) Horizontal type, multistage, centrifugal, split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical seal as required. (c) Suitable HP squirrel cage induction motor TEFC type suitable for operation on 415 volts, 3 phase, 50 Hz, AC supply with IP55 class of protection for enclosure, horizontal foot mounted type with Class 'F' insulation, conforming to IS-12615: 2018. (d) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required. (e) Suitable cement concrete foundation duly plastered and with anti vibration pads. 450 lpm 35 m Head	Each	Tech. Specs for Fire System Separate sheet attached
378	Supplying & erecting approved make motor control cubical panel [Star delta] made from 16G CRCA sheet duly epoxy powder painted inside and outside with hinged doors and locking with suitable size of ON - OFF isolator (AC 3 / 23 duty) main fuses. Digital volt and current meter (in a single unit) with micro controller based control unit and current sensing single phasing preventer electronic overload protection, over voltage (Programmable) protection and under voltage (Programmable) protection, prod less dry run protection programming facility for setting of all parameter like overload current, high voltage limit, low voltage limit, dry run limit with digital indication on seven segment LED display for any fault like over load, high voltage, low voltage, dry running single crimped, electronic star delta timer, feather touch start / stop push buttons to be erected on angle iron frame. Grouted on wall the contactors will be of L & T, Siemens, BCH make only) (D) S/D up to 15 HP	Each	Tech. Specs for Fire System Separate sheet attached
379	Supplying & erecting approved make Four Pole 415V change over switch interior for panel mounting with operating mechanism A.C. 23 duty conforming to IS for (A) 32-40A Cat-III	Each	Tech. Specs for Fire System Separate sheet attached
0	Fire Pump Control Panel- Auto/Manual Type.		

380	<p>INCOMING 250A, 50kA 4 Pole MCCB, Ics=100% Icu rating Digital Voltmeter 0-500V with selector switch Digital Ammeter (0-250 A) with selector switch & CTs etc. LED type RYB phase indicating lamps, ON, OFF, trip indicating lamps Set of Copper Bus Bar 300A OUTGOING (Note : All outgoing feeders for pumps should have digital Ammeter with selector switches, and LED type ON, OFF, trip indicating lamps) Main Fire Pump 125 A, 50kA TPN MCCB, Ics=100% Icu, with fully automatic Star/Delta starter suitable for 60 HP pump with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation. Jockey Pump 63 A, 50kA TPN MCCB, Ics=100% Icu, with suitable HP fully automatic Star/Delta starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation. Diesel Engine Control Control for diesel engine comprising - Automatic/Manual selector switch & 3 attempts starting device, timers and relays as required, push buttons, start/stop in manual mode Indicating lamp for high/ Low Lub.</p> <p>Oil pressure, High Water Temp and Engine on indication Battery charger suitable for 12V/24 V DC with boost and trickle selector switch, 0-30 V DC volt meter, and 0-20 A DC Ammeter All standard relays and accessories for automatic operation of diesel engine System Controller Designing, Supply, Installation, Testing and commissioning of system controller to control operation of main electric fire pump, diesel pump, Pressurization pump, Terrace pump in sequence as per specification consisting of relays, timers. Sensors, annunciation window for fault indication, complete as per specification</p>	No.	Tech. Specs for Fire System Separate sheet attached
381	<p>Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS1239/Class -II of IS: 3589 including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gasket etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required : 25 mm dia</p>	Mtr.	Tech. Specs for Fire System Separate sheet attached
382	<p>Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS1239/Class -II of IS: 3589 including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gasket etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required : 32 mm dia</p>	Mtr.	Tech. Specs for Fire System Separate sheet attached

383	Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS1239/Class -II of IS: 3589 including Welding, fittingslike elbows, tees, flanges, tapers, nuts bolts, gasketsetc. and fixing the pipe on the wall/ceiling withsuitable clamp/support frame and painting with twoor more coats of synthetic enamel paint of requiredshade complete as required : 65 mm dia	Mtr.	Tech. Specs for Fire System Separate sheet attached
384	Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS1239/Class -II of IS: 3589 including Welding, fittingslike elbows, tees, flanges, tapers, nuts bolts, gasketsetc. and fixing the pipe on the wall/ceiling withsuitable clamp/support frame and painting with twoor more coats of synthetic enamel paint of requiredshade complete as required : 100 mm dia	Mtr.	Tech. Specs for Fire System Separate sheet attached
385	Supplying and fixing single headed internal hydrantvalve with instantaneous Gunmetal/Stainless Steel coupling of 63 mm dia with cast iron wheel ISI marked conforming to IS 5290 (Type -A) with blankGunmetal/Stainless Steel cap and chain as required: Single headed Stainless steel	Each	Tech. Specs for Fire System Separate sheet attached
386	Providing laying, testing & commissioning of 'C' class heavy duty MS Pipe conforming to IS1239/Class -II of IS: 3589 i/c fittings like elbows,tees, flanges, tapers, nuts bolts, gaskets etc. inground including welding, excavation & providingcement concrete blocks as supports, anticorrosivetreatment with coaltar/asphalt tape as per IS 10221,refilling the trench etc. of following sizes complete asrequired. 150 mm. Dia	Meter	Tech. Specs for Fire System Separate sheet attached
387	Supplying, fixing, testing and commissioning of butterfly valve of PN 1.6 rating with bronze/gunmetalseat duly ISI marked complete with nuts, bolts,washers, gaskets conforming to IS 13095 of following sizes as required : 65 mm dia	Each	Tech. Specs for Fire System Separate sheet attached
388	Supplying, fixing, testing and commissioning of Butterfly Valve of PN 1.6 rating with bronze/gunmetalseat duly ISI marked complete with nuts, bolts,washers, gaskets conforming to IS 13095 of following sizes as required : 100 mm dia	Each	Tech. Specs for Fire System Separate sheet attached
389	Supplying, fixing, testing & commissioning of double flanged Sluice Valve of rating PN 1.6 with non risingspindle, bronze/gun metal seat, ISI markedcomplete with nuts, bolts, washers, gaskets andconforming to IS 780 of following sizes as required : 100mm dia	Each	Tech. Specs for Fire System Separate sheet attached
390	Providing, installation, testing and commissioning of non-return valve of following sizes confirming to IS:5312 complete with rubber gasket, GI bolts, nuts,washers etc.as required : 100mm dia	Each	Tech. Specs for Fire System Separate sheet attached
391	Providing, installation, testing and commissioning of stainless steel Y-strainer fabricated out of 1.6 mm thick stainless steel, Grade 304, sheet with 3 mmdia holes with stainless steel flange. 100mm dia	Each	Tech. Specs for Fire System Separate sheet attached

392	Providing, fixing, testing & commissioning of installation control valve of cast iron body, brass/bronze working parts comprising of watermotor alarm, bronze seat clapper, clapper arm and hydraulically driven mechanical gong bell to sound continuous alarm when the wet riser/sprinkler system activates, pressure gauges, emergency releases, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required size, flanges, orifice plate, gasket etc of following sizes as required: 100mm dia	Each	Tech. Specs for Fire System Separate sheet attached
393	Supplying and fixing 63 mm dia, 15 m long RRL hose pipe with 63 mm dia male and female couplings duly bound with GI wire, rivets etc. conforming to IS 636 (type-A) as required : Gun Metal	Each	Tech. Specs for Fire System Separate sheet attached
394	Supplying and fixing first-aid Hose Reel with MS construction spray painted in post office red, conforming to IS 884 complete with the following as required. (a) 20 mm nominal internal dia water hose thermoplastic (Textile reinforced) type -2 as per IS:12585 (b) 20 mm nominal internal dia gun metal globe valve & nozzle. (c) Drum and brackets for fixing the equipments on wall. (d) Connections from riser with 25 mm dia stop gun metal valve & M.S. Pipe and socket. 30 m	Each	Tech. Specs for Fire System Separate sheet attached
395	Supplying and fixing of fire brigade connection of cast iron body with gun metal male instantaneous inlet Couplings complete with cap and chain as reqd. for suitable dia MS pipe connection conforming to IS 904 as required: 2 way-100 mm dia M.S. Pipe	Each	Tech. Specs for Fire System Separate sheet attached
396	Supplying and fixing Air Vessel made of 250 mm dia, 8 mm thick MS sheet, 1200 mm in height with air release valve on top and flanged connection to riser, drain arrangement with 25 mm dia gun metal wheel valve with required accessories, pressure gauge and painting with synthetic enamel paint of approved shade as required.	Each	Tech. Specs for Fire System Separate sheet attached
397	Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 °C with required accessories : Upright Sprinkler	Each	Tech. Specs for Fire System Separate sheet attached
398	Providing & fixing of pressure switch in M.S. pipe line including connection etc. as required.	Each	Tech. Specs for Fire System Separate sheet attached
399	Providing & fixing flow switch in following sizes M.S. pipe including connection etc as required. 150mm dia	Each	Tech. Specs for Fire System Separate sheet attached
400	Supplying, installation, testing & commissioning of manual call boxes of MS construction in surface/recess with stainless steel chain & hammer assembly complete with glass and push button etc. as required.	Each	Tech. Specs for Fire System Separate sheet attached
401	Supplying, installation, testing & commissioning response indicator on surface/recess MS box having two LEDs metallic cover complete with all connections etc. as required.	Each	Tech. Specs for Fire System Separate sheet attached

402	Supplying, installation, testing & commissioning fire alarm sounder with facility to make announcement, mounted in M.S. box (16 SWG) with hinged cover plate & suitable for operation with amplifier i/c line matching transformer etc. complete as required.	Each	Tech. Specs for Fire System Separate sheet attached
403	Supplying and fixing orifice plate made out of 6 mm thick stainless steel (Grade 304) with orifice of required size to be fitted between flange & landing valve of external and internal hydrants to reduce pressure at the outlet to the level of 3.5 kg/cm ² complete as required.	Each	Tech. Specs for Fire System Separate sheet attached

404	Supplying, installation, testing and commissioning of microprocessor based intelligent addressable main fire alarmpanel, central processing unit with the following loopmodules and capable of supporting not less than 240devices (including detectors) and minimum 120 detectors perloop and loop length up to 2 km, network communicationcard, minimum 320 character graphics/ LCD display withtouch screen or other keypad and minimum 4000 eventshistory log in the non volatile memory (EPROM), powersupply unit (230 ± 5 % V, 50 hz), 48 hrs back-up with 24 voltsealed maintenance free batteries with automatic charger. The panel shall have facility to connect printer to printout logand facility to have seamless integration with analog/digitalvoice evacuation system (which is part of the schedule ofwork under SH: PA System) and shall be complete with allaccessories . The panel shall be compatible for IBMS systemwith open protocol BACnet/ Modbus over IP complete as perspecifications. Ten Loop Panel.	Set	Tech. Specs for Fire System Separate sheet attached
405	Supplying, installation, testing & commissioning of smokedetector with builtin LED and mounting base complete withall connections etc. as required.	Each	Tech. Specs for Fire System Separate sheet attached
406	Supplying, installation, testing & commissioning of intelligent addressable thermal detector with rate of rise cum fixedtemperature thermistor complete with base as required.	Each	Tech. Specs for Fire System Separate sheet attached
407	Supplying & laying of 2x1.5 sqmm fire alarm armoured cable, 600/1000V rated with annealed copper conductor having XLPE insulation, steel wire armouring & FRLS/HFFR outer sheath complete as required.	Mtr.	Tech. Specs for Fire System Separate sheet attached
408	Supply, Installation and Testing of: Fire Hose Cabinet (Hose Box) suitable to accommodate 02 no. of 15 m long fire hoses and 01 no. of nozzle. With Lock-n-key facility. Wall Mounting Design. MOC: 16 Gauge MS Box with Powder Coating Standard: - As per Guidelines. UOM:-Price Per Each No. Size:- Suitable for 02 nos. of 15 m long hoses.	No.	Tech. Specs for Fire System Separate sheet attached
409	Charges for doing liasioning work for obtaining the necessary clearances from the Electrical/Fire inspector / competent Authorities for the total Electrical installation, co-ordinating with various agencies. All necessary drawings, calculations, test certificates, etc. as required by these authorities shall be prepared and furnished by the EPC Vendor. Anymodification/ rectification as required by these authorities shall be carriedout by the EPC Vendor at free of cost. The fees required to be paid to these authorities for inspection shall be borne by Owner on production of documentary evidences.	Job	Tech. Specs for Fire System Separate sheet attached
410	Supplying & erecting carbon dioxide (CO2) fire extinguisher user of following capacity with necessary clamps made from 50 x 6 mm M.S. Flat with nut & bolts grouted in wall complete. [A] For 4.5 Kg Capacity	Each	Tech. Specs for Fire System Separate sheet attached
411	Supplying & erecting ABC powder type 'Ceasefire' type Fire extinguisher as per IS 13849 or 1 Kg capacity with necessary clamp for erection on wall.	Each	Tech. Specs for Fire System Separate sheet attached