

<b>PART - A</b>		
<b>SLICE II - CIVIL WORKS , PLUMBING, SANITARY , ROADS, FIRE FIGHTING AND ELECTRICAL WORKS</b>		
<b>SUMMARY - SCHEDULE OF QUANTITIES</b>		
<b>Sr. No.</b>	<b>DESCRIPTION</b>	<b>AMOUNT(Rs.)</b>
1	SITE DEVELOPMENT & EARTH WORK	
2	REINFORCED/ PLAIN CEMENT CONCRETE WORK	
3	MASONARY/BRICK WORK	
4	WALL FINISH	
5	WOOD WORKS	
6	STEEL WORKS	
7	ALUMINIUM WORK	
8	WATER PROOFING	
9	FLOORING WORK	
10	MISC. WORKS	
11	TUBEWELL	
12	PLUMBING WORK	
13	SANITARY WORK	
14	ROAD WORK	
15	HORTICULTURE	
16	FIRE FIGHTING WORK	
17	RAIN WATER HARVESTING	
18	BUILDING ELECTRICAL WORK	
19	STP	
20	SOLAR PANEL	
21	CCTV	
22	SIGNAGES WORK	
23	CANOPY WORK	
	TOTAL RS.	
	DISCOUNT IF ANY	
	<b>GRAND TOTAL(Rs.)</b>	

<b>CIVIL WORKS , PLUMBING, SANITARY , ROADS, FIRE FIGHTING AND ELECTRICAL WORKS</b>	
<b>BILL OF QUANTITIES</b>	
<b>S.No.</b>	<b>General Notes</b>
1	Rates mentioned in BOQ shall be inclusive of all taxes as of date including GST, Labour CESS etc. or any other tax as applicable in Jabalpur/MP.
2	Rates quoted in this BOQ shall be applicable to any height & any location even if not specified in any item, including steel ( H frame, Ledger system etc) scaffolding, curing, cleaning and rectification.
3	Details/ functions/ activities mentioned in preambles in each section are included in quoted rates and nothing extra shall be paid for it.
4	Watching and lighting arrangements, wherever necessary, whether ordered by the Employer/ Architects or otherwise is included in items.
5	This bill of quantities is to be read in conjunction with the drawings, specifications, terms & conditions etc.
6	The quantities given are approximate and can vary up to any extent. The contractor will not be entitled to claim any extra on account of this quantity variation. Billing will be on actual measurement as executed and approved.
7	Contractor has quoted the rates after visiting the site and after considering all local factors.
8	Rates are inclusive of Carting away debris / Cleaning / Security / statutory approval for disposal of debris etc.
9	Rates are quoted for finished items, wastage factor is on contractor part and measurement will be for finished item only.
10	The rates shall remain firm till the completion of the work and the contractor shall not be entitled to claim any escalation on any account till the completion of the project, in any respect.
11	Where ever applicable all the material samples should be got approved from engineer incharge for its quality, makes, colour, pattern etc before start of work /mass procurement of material.
12	Manufacturer test certificates/testing from lab and test results will be provided along with the sample for all the materials procured at site. Testing will be got done by the contractor at his own cost.
13	Excavation beyond given depth will be made up by the contractor with PCC 1:4:8 at his own cost and nothing extra will be paid on this account.
14	Curing, slurry, scaffolding, etc wherever applicable are included in item.
15	All concreting to be done as per Mix Design (to be got done by contractor at his own cost) and got approved by him by EIC/ Architect before hand.
16	For all concrete, Brick, stone, flooring and other works except plastering, sand used shall be coarse sand and for plastering, it would be 50% coarse + 50% fine, unless specified otherwise.
17	All surfaces to be plastered/tiled, hacking of surface after stripping of shuttering is included in items.
18	All cement related works shall be cured for 7 days or more as applicable as per specifications. The rate shall be also inclusive with Hassian cloth and any other form of curing as directed.
19	Protection of all kinds of floorings with POP and polythene sheet etc. is included in item rate and nothing extra shall be paid for this. The rate is also inclusive of removing and cleaning the same after completion of work.
20	Holes or pockets in the Brick work for Rain water pipes and other pipes shall be kept or the pipes shall be provided at the time of raising the masonry. These holes or Zarries should be made good after fixing of pipes and nothing extra shall be paid for the same.
21	Chiseling of brickwork, if required shall be done to flush the floor skirting with the wall. Nothing extra shall be paid on this account.
22	Grooves with cement finish up to 12 mm X 6 mm shall be formed in plaster at the junction of slab and beam and slab & brick work without any extra charge. Similar grooves shall be made in plaster at the junction of masonry and wood or steel door or steel window frames or at bottom of beams or chajja, slab projections as drip moulds without extra charge.
23	Septic tanks, Soak pits, Underground sumps, cable trenches of various sizes, chambers having sizes other than specified in BOQ will be measured under relevant items of work.
24	For landscaping work the cost of supply and replacement of good earth, organic manure are included in item rate.
25	Water and electricity for all the work including landscaping work shall be arranged by the contractor at his own cost.
26	Bailing out, pumping out, continuous dewatering or otherwise removing all water which may accumulate in the working areas from any or all causes whatsoever.
<b>Preambles for Different Works</b>	
<b>(A) Site Development &amp; Earth Works</b>	
i	Excavation either straight, inclined or curved in trenches, footings etc., including marking out, cutting and dressing sides and bottom to true dimensions and depositing excavated stuff beyond three metres clear of the edge of trench or mass excavations for basements or anywhere within the site as directed.
ii	Removal and disposal of all shrubs, roots, vegetation and trees upto 300mm girth from alignment of the buildings including loading, Transporting, unloading to approved municipal Dumping Ground or as approved by Engineer Incharge beyond 50m initial lead, for all leads including all lifts involved.
iii	Continuous Dewatering - Work for excavation shall include bailing, continuous dewatering or pumping out water which may accumulate in the excavation during the progress of work either from subsoil, seepage, springs, flooding, rain or any other cause and diverting surface flow if any by bunds or other means, pumping out water shall be done in such approved manner as to preclude the possibility of any damage to the foundation trenches, concrete, or masonry or any adjacent structure. The excavation shall be kept free from water :- i. When Concreting / reinforcement work / waterproofing work are in progress. ii. Till the client / Architect consider that Concrete/ Mortar is sufficiently set.
iv	All labour and material required for fencing and protection against risk of accident to open excavation etc. with necessary shoring, planking and strutting and for providing gangways with hand rails across open trenches etc., where necessary during the progress of the work.
v	Battering, benching, forming steps in the sides of foundations, and mass excavations where required and removal of slips and falls.
<b>(B) Plain/Reinforcement Cement Concrete Works</b>	
i	Making all drips, grooves, moulds, curved surfaces and chamfered edges etc., in concrete and /or plaster work as directed.
ii	Forming all expansion and/ or construction joints in RCC as directed.
iii	PVC or Concrete cover blocks shall be used for the reinforcement, will be as per IS standards and specifications , the cost of which is deemed to be included in the item rates of reinforcement.
iv	Installing a calibrated cube testing machine at site, getting it calibrated every 3 month and submitting test report to Architects.

v	Preparing test cubes, testing them at site and /or getting tested in an approved laboratory and any fees, costs etc. relating to them to borne by the contractor.
vi	Working up or hacking of concrete surface for providing keys for further concrete work including applying thick cement slurry or mortar as directed.
vii	Hoisting to all lifts, carrying to all leads, consolidating by rodding, vibrating, tamping, and curing. Shuttering to be made water tight with ply wood lined timber or by any other means.
viii	Design Mix for all concretes will be done by contractor from approved lab or consultant. The same should be approved from project incharge prior to start of concerting at site.
ix	Use of shuttering oil and cement slurry over shuttering before commencing barbinding and concreting respectively.
x	Providing dowel bars wherever necessary (cost of bars to be paid as reinforcement).
xi	Forming cutouts, openings, and concreting of same at a later stage as required.
xii	Maintaining of POUR CARDS showing approval of Employer/Engineer incharge/Architect cum PMC to concrete various components of R.C.C frame.
xiii	Admixtures in recommended proportions. (As per IS: 9103) to accelerate, retard setting of concrete improve workability without impairing strength and durability as per direction of Employer/ Architect.
xiv	Providing camber in the shuttering.
(C)	<b>Aluminium Works</b>
i	Contractor to submit the anodising/ powder coating , EPDM/ Neoprene gaskets test reports / certificates
ii	samples to be got approved before fabricating / fixing
iii	All exposed framing shall be free from scratches and other serious blemishes
iv	all aluminium sections/ profiles shall be protected by using masking tapes, which shall be removed as and when required during installation
v	all screws bolts, nuts abd washers to be used be only stainless steel of approved manufacturer
vi	the glass shall be free from flaws, specks or bubbles and shall have square corners and straight line
vii	the completed installation shall be free from vibration,wind whistless and noise due to thermal, structural movement and wind pressure
(D)	<b>Masonry Work</b>
i	Work in English bond or any other bond or design as directed by the Architects
ii	Work in square, round and rectangular pillars, flower troughs, under floor drains, making curved and tapered surfaces steps etc.
iii	Forming openings, chases, grooves etc.
iv	Embedding conduits, boxes, other fixture of any descriptions, hold fasts of doors, windows, glazings etc., no deduction shall be made for cavities so formed.
v	Making all drip courses, projected courses of any description, offsets, setbacks, corbels, architraves or any other feature of any description.
vi	Raking out joints, for plastering or pointing or finishing joints flush as directed.
vii	Bonding with R.C.C. work.
viii	Holes or pockets in the Brick work for Rain water pipes and other pipes shall be kept or the pipes shall be provided at the time of raising the masonry. These holes or Zarries should be made good after fixing of pipes and nothing extra shall be paid for the same.
ix	Work in narrow widths, small quantities etc.
x	Over lapping reinforcement and embedding reinforcement in adjoining walls in case of half brick masonry walls.
xi	Supplying moulds, taking briquettes, getting tested and any fees, costs etc., relating to the same.
xii	Providing 25mmx 300mm GI strips of 20 gauge for anchoring masonry with RCC columns/structural members.
xiii	Bricks to be tested for efflorescence, compressive strength and any other mandatory tests in the laboratory.
xiv	No holes for scaffolding will be permitted into the brickwork .
xv	Quoted Rates are for all heights, all depths, all levels, including basement to roof (mumty) & all leads and lifts, including curved , circular or any shape
(E)	<b>Wall Finish</b>
i	Making all drip courses, projected courses of any description, offsets, setbacks, corbels, architraves or any other feature of any description. Included in item
ii	Raking out joints in brickwork, for plastering or pointing flush as directed.
iii	Cleaning of Brickwork for efflorescence, chemical washing will be done as directed, free of cost.
iv	Base preperation, cracks, undulation or any other filling required with pop or putty are included in item.
v	All the painting work to be carried out as per IS standards & will be done with brushes only unless stated otherwise.
vi	Scaffolding for work will be arranged by the contractor (only steel scaffolding is allowed)
(F)	<b>Wood Work</b>
i	All the wood used should be well seasoned & free for knots, warping, twisting etc,any substandard material will be replaced free of cost.
ii	Antitermite treatment and protective paint is included in the rates.
iii	All the flush doors will be of water proof, termite proof quality
iv	All the fitting and fixtures will be of approved brand and quality
v	Providing and fixing door frames with Fastners or hold fast as approved are included in the rates
vi	Contractor to submit the anodising/ powder coating , EPDM/ Neoprene gaskets test reports / certificates
(G)	<b>Steel Works</b>
i	samples to be got approved before fabricating / fixing
ii	All exposed framing shall be free from scratches and other serious blemishes
iii	all aluminium sections/ profiles shall be protected by using masking tapes, which shall be removed as and when required during installation
iv	all screws bolts, nuts abd washers to be used be only stainless steel of approved manufacturer
v	the glass shall be free from flaws, specks or bubbles and shall have square corners and straight line
vi	the completed installation shall be free from vibration,wind whistless and noise due to thermal, structural movement and wind pressure
(H)	<b>Terrace Roof Slab Water Proofing</b>
i	Cleaning of surface and applying cement slurry @ 4.4 kg/sqm mixed with acrylic based water @1:1:1(cement:1 compound:1 water ) proofing compound .
ii	Cement mortar 1:3 mixed (1 cement: 3 coarse sand) mixed with acrylic based water proofing compound@ 0.2 kg per 50kg bag of cement , or as per manufacturer specification

iii	Brick bats with 15mm to 20mm joints, grouted and jointed with cement mortar 1:3 (1 cement: 3 mixed) with acrylic based water proofing compound.@ 0.2 kg per 50kg bag of cement , or as per manufacturer specification				
iv	Racking out of brick bat joints upto depth of 20mm				
v	Cement mortar plaster 1:4 (1 cement: 4 coarse sand) mixed with non-shrinkage, water proofing compound@ 0.2 kg/ bag of cement finish neat ,complete with grooves pattern 300x300 or as specified				
vi	treatment for vertical walls upto 300 mm height , gola / watta, junctions of pipes , sleeves, drain etc is part of item.				
(l)	<b>Floor Finish Work</b>				
i	line and level to be checked and confirm prior to start of work				
ii	All the samples for stones, marbles, tiles etc shall be got approved prior to start of work and procurement of material in bulk quantity				
iii	Makes, quality, color, shade of the materials to be used in the work , be got approved prior to start of work.				
iv	All the flooring ceramic tiles are anti skid , until specified otherwise.				
v	Clearing and curing of area for work to be done one day in advance. Cleaning of flooring or cladding will be done at site on the same day of work				
vi	all the joints will be neatly finished, with matching color pigment mixed with white cement even if not specified in the item				
vii	Protection of all kinds of floorings with POP and polythene sheet etc. is included in item rate and nothing extra shall be paid for this.				
viii	chase cutting for flush skirting is included in rates				
ix	finishing and plaster repairing after fixing skirting is included in rates				
x	cleaning of POP and polythylene sheet at the time of handing over , washing floor with Mild Acid solution if required .				
xi	Repairing of all damages shall be made good/ replaced before handing over .				
xii	tolerance in thickness of granite / marble will be +/- will be 1mm				
<b>S.No.</b>	<b>Item Discription</b>	<b>Unit</b>	<b>Quantity</b>	<b>Rate</b>	<b>Amount</b>
<b>1</b>	<b>SITE DEVELOPMENT AND EARTH WORK</b>				
i	Boring with hydraulic piling rigs with power units, providing and installing cast in situ single under reamed piles of specified diameter and length below pile cap in M-25 cement concrete, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with bentonite solution and the length of the pile to be embedded in pile cap etc. all complete. (Length of pile for payment shall be measured upto to the bottom of pile cap) :				
(a)	300 mm dia piles	RM	264.60		
(b)	400 mm dia piles	RM	600.00		
ii	Extra over single under ream for providing additional bulbs in under reamed piles, under specified diameter(only the nos. of extra bulbs are to be paid).				
(a)	400 mm diameter piles	Each	120.00		
(b)	300 mm diameter piles	Each	14.00		
iii	Vertical load testing (initial) of piles in accordance with IS : 2911 (Part-IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification & above 50 tonne and up to 100 tonne	per test	1.00		
iv	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in-charge.				
(a)	All kinds of soil	CUM	80.79		
v	Filling with available fly ash and earth (excluding rock) in trenches or embankment in layers (each layer should not exceed 15 cm), with intermediate layer of compacted earth (Soil density of 98%) after every four layers of compacted depth of fly ash, sides & top layer of filling shall be done with earth having total minimum compacted thickness 30 cm or as decided by Engineer -in-charge, including compacting each layer by rolling/ ramming and watering, all complete as per drawing and direction of Engineer -in - charge.	CUM	396.12		
vi	Supplying and filling in plinth with crusher stone dust / coarse sand under floors including, watering, ramming and compacting in layers not exceeding 20cm in depth and dressing complete Note: - Maximum thickness of this layer shall be 20 cm.	CUM	93.00		
	<b>TOTAL FOR EARTHWORK</b>				
<b>2</b>	<b>REINFORCED/ PLAIN CEMENT CONCRETE WORK</b>				
I	<b>Plain Cement Concrete</b>				
i	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				

(a)	1:3:6 (1 Cement : 3 coarse sand (zone-III) derived from natural sources : 6 graded stone aggregate 40 mm nominal size derived from natural sources)	CUM	73.40		
ii	Exposed Concrete is composed of a mix natural and mix elements portland cement, hardest earthen material, special additives, natural grains and special polymers to create external beauty, aesthetic value and heritage effects of concrete. thickness 4mm to 6mm.(payment for providing grooves shall be made separately) First coat:- Base coat Apply of Cementous ready mix coarse dark grey color material for making of groove, applied on smooth plaster surface with the thickness of 0.75mm to 1.5mm by trowel Second coat:-Apply of Cementous ready mix fine material, applied on plaster surface with the thickness of 2mm to 3mm by trowel. with or with out groves as per requirement and with 6mm groves (if grooves requires) with masking top of dark grey colour as per approved sample, for the complete satisfaction of architect/Engineer in charge. Third coat :- Protective clear top coat sealer (water based) applied by roller/sponge.	SQM	217.40		
iii	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design at all heights directed by Engineer incharge & architects				
(a)	In 75x75 mm deep chase	RM	105.00		
<b>II Reinforced Cement Concrete</b>					
i	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete. Note: No Extra cement shall be paid.				
(a)	All works upto plinth level. Concrete of M25 grade with minimum cement content of 330 kg /cum	CUM	183.02		
(b)	All works above plinth level upto floor V level Concrete of M25 grade with minimum cement content of 330 kg /cum	CUM	503.90		
<b>Centering and Shuttering</b>					
ii	Centering and shuttering including strutting, propping etc. and removal of form for :				
(a)	Foundations, footings, bases of columns, etc. for mass concrete	SQM	364.38		
(b)	Walls (any thickness) including attached pilasters, butresses, plinth and string courses etc.	SQM	520.79		
(c)	Columns, Pillars, Piers, Abutments, Posts and Struts	SQM	887.09		
(d)	Lintels, beams, plinth beams, girders, bressumers and cantilevers	SQM	987.19		
(e)	Suspended floors, roofs, landings, balconies and access platform	SQM	1725.31		
(f)	Stairs, (excluding landings) except spiral-staircases	SQM	102.46		
(g)	Small lintels not exceeding 1.5 m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like	SQM	39.85		
(h)	Weather shade, Chajjas, corbels etc., including edges	SQM	36.33		
viii	<b>REINFORCEMENT</b> - Steel reinforcement for R.C.C. work ready to use "cut and bend" rebars of approved make from factory/workshop to construction site including placing in position and binding all complete above plinth level.				
(a)	Thermo-Mechanically Treated bars of grade Fe-500D or more.	KG	82406.96		
<b>TOTAL FOR RCC WORK</b>					
<b>3 MASONARY WORK</b>					
<b>PREAMBLES :</b>					
i	Brick work with non modular fly ash bricks conforming to IS:12894, class designation 10 average compressive strength in super structure above plinth level up to floor V level in :				
(a)	Cement mortar 1:4 (1 cement : 4 coarse sand)	CUM	186.53		
(b)	Cement mortar 1:6 (1 cement : 6 Coarse sand)	CUM	28.54		

ii	Brick work with common burnt clay modular bricks of class designation 7.5 in foundation and plinth in:				
(a)	Cement Mortar 1:6 (1 cement: 6 sand).	CUM	12.96		
iii	Half brick masonry with non modular fly ash bricks of class designation 10, conforming to IS :12894, in super structure above plinth and upto floor V level.				
(a)	Cement mortar 1 : 4 (1 cement : 4 coarse sand)	SQM	432.19		
iv	Extra for providing and placing in position 2 Nos 6mm dia. M.S. bars at every third course of half brick masonry.	SQM	213.56		
<b>TOTAL FOR BRICK WORK</b>					
<b>4</b>	<b>WALL FINISH</b>				
<b>PREAMBLES</b>					
i	6 mm cement plaster of mix :				
(a)	1:3 (1 cement : 3 fine sand)	SQM	2117.94		
ii	12 mm cement plaster of mix :				
(a)	1:4 (1 cement: 4 fine sand)	SQM	578.80		
(b)	1:6 (1 cement: 6 fine sand)	SQM	2042.86		
iii	15 mm cement plaster on rough side of single or half brick wall finished with a floating coat of neat cement of mix :				
(a)	1:4 (1 cement : 4 sand)	SQM	496.83		
(b)	1:3 (1 cement : 3 sand)	SQM	220.09		
iv	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) finished with a top layer 6 mm thick cement plaster 1:6 (1 cement : 6 fine sand).	SQM	865.53		
v	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	SQM	3458.80		
vi	Distemping with 1st quality acrylic distemper (ready mixed) having VOC (Volatile Organic Compound ) content less than 50 gram/ litre, of approved brand and of required shade and colour complete to give and even shade.				
(a)	New work (one or more coats)	SQM	4807.79		
vii	Finishing walls with Acrylic Smooth exterior paint of required shade :				
(a)	New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	SQM	856.93		
viii	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications :				
(a)	Painting wood work with Deluxe Multi Surface Paint of required shade. Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primer applied @0.75 ltr/10 sqm of approved brand and manufacture	SQM	159.57		
(b)	Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @0.90 ltr/10 sqm over an under coat of primer applied @ 0.80 ltr/ 10 sqm of approved brand or manufacture.	SQM	209.21		
ix	Applying two coats of sealer (special silicate water based water repellent protector) with spray gun and allowing sufficient drying time for 1st coat and 2nd coat is allowed to dry for 8 to 12 hrs on exterior stone façade and stone jali. At an approximate coverage of 50 to 70 Sq.f./Ltr.	SQM	217.40		
x	Providing and applying flakes textured homogeneous wall finishing system consisting of a two component system of dry flakes (9.5kgs per/pack) made of a special grade of heat treated China clay with rigid homopolymer coated with fade resistant pigments and a 100% acrylic polymer Bonding agent (5kgs/pack) applied thickness of the coating being between 0.8-1.2mm, to be applied in single coat, on a cured, smooth level plaster surface without keying, as per the shades/ combinations approved, as per manufacturers directions for usage, to be applied by approved applicator of manufacturer, as per direction/ supervision of the engineers-in-charge inclusive of one coat of primer on the base at all heights etc all complete.	SQM	2328.48		
<b>TOTAL FOR FINISHING WORK</b>					
<b>WOOD WORKS</b>					
<b>PREAMBLES</b>					

i	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid door/window/terrace windows & decorative other Frames/Chowkhat comprising of virgin PVC polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) fabricated with miter joints after applying PVC solvent cement and screwed with full body threaded star headed SS screws having minimum frame density of 750 kg/ cum, screw withdrawal strength of 2200 N (Face) & 1100 N (Edge), minimum compressive strength of 58 N/mm <sup>2</sup> , modulus of elasticity 900 N/mm <sup>2</sup> and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixed in position with M.S hold fast/lugs/SS dash fasteners of required dia and length complete as per direction of Engineer-In- Charge. (M.S hold fast/lugs or SS dash fasteners shall be paid for separately). Note: For WPC solid door/window frames, minus 5mm tolerance in dimensions i.e depth and width of profile shall be acceptable. Variation in profile dimensions on plus side shall be acceptable but no extra payment on this account shall be made.				
(a)	Frame size 50 x 100 mm	RM	146.80		
(b)	Frame size 65 x 125 mm	RM	53.00		
(c)	Frame size 45 x 70 mm	RM	65.40		
ii	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid decorative type flush door shutter of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm <sup>2</sup> , modulus of elasticity 850 N/mm <sup>2</sup> and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant. WPC to be laminated with PVC foil of minimum 14 microns thick of approved design pasted with hot melt adhesive on both faces of shutter and fixing with stainless steel butt hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel butt hinges and necessary S.S screws shall be paid included)				
(a)	35 mm thick	RM	50.99		
iii	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid plain flush door shutter of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm <sup>2</sup> , modulus of elasticity 850 N/mm <sup>2</sup> and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel butt hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel butt hinges and necessary S.S screws shall be paid separately)				
(a)	30 mm thick	SQM	23.07		
iv	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of door shutter to be measured).	SQM	50.99		
v	Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt/ suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.				
(a)	1.0 mm thick.	SQM	42.44		
vi	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete :				
(a)	300x16 mm	EACH	26.00		
(b)	250x16 mm	EACH	12.00		
vii	Providing and fixing ISI marked oxidised M.S. sliding door bolts with nuts and screws etc. complete :				
(a)	250x16 mm	EACH	4.00		

viii	Providing and fixing ISI marked oxidised M.S. door latches conforming to IS:5930 with screws etc. complete				
(a)	250x20x6 mm	EACH	26.00		
ix	Providing and fixing ISI marked stainless steel tower bolt black finish, (Barrel type) with necessary screws etc. complete				
(a)	150x10 mm	EACH	85.00		
x	Providing and fixing ISI marked oxidised M.S. handles conforming to IS:4992 with necessary screws etc. complete :				
(a)	125 mm	EACH	84.00		
xi	Providing and fixing bright finished brass hanging type floor door stopper with necessary screws, etc. complete.	EACH	26.00		
xii	Providing and fixing factory made UPVC white colour sliding glazed door comprising of UPVC multi-chambered frame with in- built roller track and sash extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to UPVC profile), appropriate dimension UPVC extruded glazing beads, UPVC extruded interlock and UPVC extruded Inline sash adaptor (if required), EPDM gasket, wool pile, zinc alloy (white powder coated) handle with key on one side of extreme panels along with zinc plated mild steel multi point locking having transmission gear with keeps, zinc alloy (white powder coated) crescent lock (if required), stainless steel (SS 304 grade) body with adjustable double nylon rollers (weight bearing capacity to be 120 kg), G.I fasteners 100 x 8 mm size for fixing frame to finished wall and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, including drilling of holes for fixing hardware's and drainage of water etc. After fixing frame				
(a)	Three track three panels sliding door made of frame 116 x 45 mm & sash 46 x 82 mm both having wall thickness of 2.3 ± 0.2 mm and single glazing bead/ double glazing bead of appropriate dimension. (Area of door above 5.00 sqm)	SQM	7.80		
	<b>TOTAL FOR WOOD WORK</b>				
<b>6</b>	<b>STEEL WORKS</b>				
i	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.				
(a)	Fixed to openings /wooden frames with rawl plugs screws etc.	KG	2685.75		
ii	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
(a)	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	KG	1728.00		
iii	Providing and fixing stainless steel ( Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	KG	352.80		
iv	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.				
(a)	Hot finished welded type tubes	KG	600.00		
v	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2 mm and braced with flat iron diagonals 20x5 mm size, with top and bottom rail of T-iron 40x40x6 mm, with 40 mm dia steel pulleys, complete with bolts, nuts, locking arrangement, stoppers, handles, including applying a priming coat of approved steel primer.	SQM	11.52		
	<b>TOTAL FOR STEEL WORK</b>				
<b>7</b>	<b>ALUMINIUM WORK</b>				
	<b>PREAMBLES</b>				



i	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (including Glazing, paneling and dash fasteners to be paid for separately) :				
	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)				
(a)	Powder coated aluminium (minimum thickness of powder coating 50	KG	2031.20		
ii	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):				
(a)	With float glass panes of 4.0 mm thickness (weight not less than 10kg/sqm)	SQM	63.17		
(b)	With float glass panes of 5 mm thickness (weight not less than 12.50 kg/sqm)	SQM	84.08		
iii	Toughened glass 12 mm thickness	SQM	17.40		
iv	Providing and fixing 12mm thick toughened glass railing complete height of 1400mm with top 50m X 50mm teak wood hand railing finish with PU polish glass fitted with 45 mm dia SS glass holding studs.	RM	9.00		
v	Aluminium troughed profile sheet 0.56mm thick with center to center pitch of 200 mm, depth of 32 mm, overall profile width 1092 mm, cover width 1000mm)	SQM	630.00		
<b>TOTAL FOR ALUMINIUM WORK</b>					
<b>8</b>	<b>WATER PROOFING WORK</b>				
	<b>PREAMBLES :</b>				
	<b>Sunken Waterproofing</b>				
i	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : (a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours. (b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	SQM	182.11		
ii	Providing and laying water proofing treatment on roofs of slabs by applying cement slurry mixed with water proofing cement compound consisting of applying: (a) after surface preparation, first layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm (b) laying second layer of Fibre glass cloth when the first layer is still green. Overlaps of joints of fibre cloth should not be less than 10 cm. (c) third layer of 1.5 mm thickness consisting of slurry of cement @ 1.289 kg/sqm mixed with water proofing cement compound @ 0.670 kg/sqm and coarse sand @ 1.289 kg/sqm. This will be allowed to air cure for 4 hours followed by water curing for 48 hours. The entire treatment will be taken upto 30 cm on parapet wall and tucked into groove in parapet all around. (d) fourth and final layer of brick tiling with cement mortar (which will be paid for separately. For the purpose of measurement the entire treated surface will be measured.	SQM	840.04		
iii	Grading roof for water proofing treatment with				
(a)	Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size)	CUM	10.83		
iv	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x 1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	EACH	10.00		
<b>TOTAL FOR WATER PROOFING WORK</b>					

9	<b>FLOOR FINISHING</b>				
	<b>PREAMBLES</b>				
i	Providing and laying factory made chamfered edge Cement Concrete paver blocks in foot path, park & lawns driveway or light & traffic parking etc. of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of course sand, compacting and proper embedding/ laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand, all complete as per manufacturer's specifications & direction of Engineer in-Charge.				
(a)	80mm thick Cement concrete paver block of M-30 grade with approved colour, design & pattern	SQM	612.00		
ii	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-				
(a)	Polished Granite stone slab of all colour and texture except Black, Cherry/Ruby Red	SQM	5.76		
(f)					
iii	Granite stone work 18mm thick of any colour in riser of steps, skirting, dado and pillars laid on 12 mm average thick cement mortar 1:3 (1 cement:3 sand) and jointed with white cement slurry mixed with pigment to match the shade of slab.	SQM	145.27		
iv	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.				
(a)	Size of Tile 600x600 mm	SQM	690.69		
v	Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/sqm including grouting the joint with white cement & matching pigments etc. complete.				
(a)	Size of Tile 600x600 mm	SQM	70.40		
vi	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick bed of cement mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ sq.m including pointing the joints with white cement and matching pigments etc., complete.	SQM	194.17		
vii	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), Jointing with grey cement slurry @ 3.3 kg/sqm including pointing the joints with white cement and matching pigment etc., complete.	SQM	287.54		
viii	Providing and laying rectified Glazed Ceramic floor tiles of size 300x300 mm or more (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick Cement Mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including pointing the joints with white cement and matching pigments etc., complete.	SQM	89.52		

ix	Providing and laying gang saw cut 30 mm thick, mirror polished pre moulded and pre polished machine cut granite stone of required size and shape of approved shade, colour and texture in footpath, flooring in road side plazas and similar locations, laid over 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement mixed with matching pigment, epoxy touch ups etc. complete as per direction of Engineer-in-Charge.				
(a)	With granite stone of colour black, cherry/ruby red of area less than 0.50 sqm	SQM	101.10		
x	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edges to give high gloss finish etc. complete at all levels.				
(a)	Granite stone slab colour black, Cherry/Ruby red				
	Area of slab upto 0.50 sqm	SQM	35.52		
xi	Providing and laying tactile tile (for vision impaired persons as per standards) of size 300x300x9.8mm having water absorption less than 0.5% and conforming to IS: 15622, of approved make in all colours and shades in outdoor floors such as footpath, court yard, multi modals location etc., laid on 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as per direction of Engineer-in-Charge.	SQM	150.00		
<b>TOTAL FOR FLOORING WORK</b>					
<b>10</b>	<b>MISC. WORKS</b>				
i	Providing and fixing stone slab with table rubbed, edges rounded and polished, of size 75x50 cm deep and 1.8 cm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) as per direction of Engineer-in-charge and finished smooth.				
(a)	Granite Stone of approved shade	SQM	1.65		
ii	Providing & fixing false ceiling at all height including providing & fixing of framework made of special section, power pressed from M.S. sheets and galvanised with zinc coating of 120 gms/ sqm (both side inclusive) as per IS : 277 and consisting of angle cleat of size 25mm wide x 1.6mm thick with flanges of 27mm and 37mm, at 1200mm c/c, one flange fixed to the ceiling with dash fastener 12.5mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25 x10 x0.50mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I channels 45 x15 x 0.90mm running at the spacing of 1200 mm c/c, to which the ceiling section 0.5mm thick bottom wedge of 80mm with tapered flanges of 26 mm each having lips of 10.5mm, at 450mm c/c, shall be fixed in a direction perpendicular to G.I intermediate channel with connecting clip made out of 2.64mm dia x 230mm long G.I wire at every junction, including fixing perimeter channels 0.50mm thick 27mm high having flanges of				
	partitions with the help of Rawl plugs at 450mm centre, with 25mm long dry wall screws @ 230mm interval, including fixing of Calcium Silicate Board to ceiling section and perimeter channels with the help of dry wall screws of size 3.5 x25mm at 230mm c/c, including jointing & finishing to a flush finish of tapered and square edges of the board with recommended jointing compounds, jointing tapes, finishing with jointing compounds in three layers covering up to 150mm on both sides of joints and two coats of primer suitable for boards, all as per manufacture's specification and also including the cost of making opening for light fittings, grills, diffusers, cut outs made with frame of perimeter channels suitably fixed, all complete as per drawings, specificaton and direction of the Engineer in charge but excluding the cost of painting with:				
(a)	8 mm thick Calcium Silicate Board made with Calcareous & Siliceous materials reinforced with cellulose fiber manufactured through autoclaving process.	SQM	642.07		
iii	Providing & fixing fly proof wire gauze to windows, clerestory windows & doors with M.S. Flat 15x3 mm and nuts & bolts complete				

	Stainless steel (grade 304) wire gauze of 0.5 mm dia wire and 1.4 mm aperture on both sides	SQM	44.37		
iv	Providing and fixing circular/ Hexagonal cast iron or M.S. sheet box for ceiling fan clamp, of internal dia 140 mm, 73 mm height, top lid of 1.5 mm thick M.S. sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/ M.S. sheet box by means of 3.3 mm dia round headed screws, one lock at the corners. Clamp shall be made of 12 mm dia M.S. bar bent to shape as per standard drawing.	EACH	25.00		
v	Neat cement punning	SQM	37.80		
vi	Providing laying, testing and commissioning of 'C' class heavy duty MS pipe confirming to IS 1239/3589 i/c fittings like elbows, tees, flanges, reducer, jointing with nuts bolts, gaskets and welding etc. and fixing the pipe on wall/ceiling with suitable hangers, clamps, supports, as required and painting with two or more coats of synthetic. Enamel paint of required shade complete as directed by Engineering-in-Charge.				
	50 mm dia	RM	15.00		
vii	Providing fixing, including testing and commissioning the following size of flanged type sluice valve of cast iron body and bronze/ gun metal seat confirming to class PN 1.6 of IS: 14846/IS: 780 complete with bolts and nuts, rubber insertions etc. as per specification complete as required.				
	50mm dia	EACH	1.00		
viii	Providing, installation, testing and commissioning of gun metal valves of following sizes as required.				
	25 mm dia	EACH	2.00		
ix	Supplying and fixing dia,15m long, RRL hose pipe with following diamale and female gun metal couplings duly binded with GI wire, rivets etc. confirming to IS 636 (type-A)as required				
	50 mm dia	EACH	6.00		
x	Providing and fixing first -Aid hose reel with MS construction spray painted in post office red, confirming to IS 884 with up to date amendments,complete with the following asrequired.) (a) 30-36m long 20mm (nominal internal) dia water hose thermoplastic (textile reinforced ) type -2 as per IS 12585 (b) 20mm (nominal internal) dia gun metal globe valve and nozzle. (c) Drum and brakets for fixing the equipments on wall. (d) Connections from riser with 40 mm dia stop valve (gun metal) and M.S. pipe	EACH	6.00		
xi	Supplying & installation of approved make required capacity 3 phase, 50 Hz, 415V, centrifugal mono-block pump, with starter i/c single phase preventer, connections, base channel foundation etc. as required as per specifications but excluding pipe and connection cable.				
	5.0 HP head metre 15-30, discharge LPM 825-250	EACH	1.00		
xii	Design supply & installation of suspended Spider Glazing system designed to withstand the wind pressure as per IS 875 (Part-III). The Suspended System held with Spider Fittings of SS-316 Grade Steel of approved manufacturer with glass panel having 12 mm thick clear toughened glass held together with SS- 316 Grade Stainless steel Spider & bolt assembly with laminated glass fins 21 mm thick. The Glass fins and glass panel assembly shall be connected to Slab/beams by means of SS- 316 Grade stainless steel brackets & Anchor bolts and at the bottom using SS channel of 50x25x2mm using fastener & anchor bolts, non staining weather sealants of approved make, Teflon/ nylon bushes and separators to prevent bi-metallic contacts, all complete to perform as The complete system to be designed to accommodate thermal expansion & seismic movements etc. The joints between glass panels (6 to 8 mm) and gaps at the perimeter & in U channel of the assembly to be filled with non staining weather sealant, so as to make the entire system fully water proof & dust proof.				
	The rate shall include all design, Engineering and shop drawing including approval from structural designer, labour, T&P, scaffolding , other incidental charges including wastage, enabling temporary services all fitting fixers nut bolts, washer, Buffer plates, fastener, anchors, SS channel laminated glass etc. all complete. For the purpose of payment, actual elevation area of Glazing including thickness of joints and the portion of Glass panel inside the SS channel shall be measured.	SQM	62.88		
<b>TOTAL FOR MISCELLANEOUS WORK</b>					

<b>11</b>	<b>TUBEWELL</b>				
	<b>PREAMBLES</b>				
i	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer - in-charge, upto 90 metre depth below ground level.				
(a)	All types of soil				
	300 mm dia	RM	60.00		
(b)	Rocky strata including Boulders.Upto 90 metre depth.				
	300 mm dia	RM	30.00		
(c)	Rocky strata including Boulders. Beyond 90 metre depth.	RM	30.00		
ii	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings& accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.				
(a)	100 mm nominal size dia	EACH	30.00		
iii	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 plain slotted (having slot of size 1.6/3.2 mm) mild steel threaded and socketed / plain bevel ended pipe (type A) of required dia, conforming to IS: 8110, of reputed and approved make, having wall thickness not less than 5.40 mm, including painted with outside surface with two coats of anticorrosive bitumastic paint of approved brand and manufacture, including hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer -in-charge.				
(a)	100 mm nominal size dia	EACH	30.00		
iv	Gravel packing in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer- in charge.	EACH	0.45		
v	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for bore well of:				
(a)	100 mm clamp.	EACH	1.00		
vi	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete.				
(a)	100 mm clamp.	EACH	1.00		
vii	Supplying & installation of required capacity of single phase, 50 Hz, 220V, deep well submersible pump stainless steel body, as per IS of approved make, suitable for 4"/6 " tube well with control panel starter suitable for submersible pump with dry run protection, connections, including clamp,\ bore cap etc. as required as per specifications but excluding pipe, SS/Nylon wire rope and connection cable.				
(a)	2 HP with 20-22 stages, head metre 147-42, discharge LPM 15-55	EACH	1.00		
viii	Supplying and laying of approved make HDPE pipe as per IS:4984 and IS:14333 with latest amendment for installation of submersible pump with necessary connection, socket/couplings, tees, etc. as required (PE-63 & working pressure 6 kgf/sq cm)				
(a)	32 mm Outer Dia.	RM	50.00		
ix	Supplying and laying of approved make nylon rope 12 mm thick complete with binding for support of pump and motor.	RM	55.00		
	<b>Total For Tubewell</b>				
<b>12</b>	<b>PLUMBING</b>				
	<b>PREAMBLES</b>				
i	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.				
(a)	110 mm diameter	RM	120.00		

ii	Providing and fixing on wall face unplasticised - PVC moulded fittings/accessories for unplasticised Rigid PVC rain water pipes conforming to IS 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.				
	Bend 87.5°				
(a)	110 mm bend	EACH	20.00		
iii	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete				
(a)	110 mm	EACH	80.00		
iv	Providing and fixing to the inlet mouth of rain water pipe PTMT (an Engineering Thermoplastic) grating square (Slit) 150 mm square with a height of 8 mm and weighing not less than 100 gms.				
(a)	Providing and fixing to the inlet mouth of rain water pipe PTMT (an Engineering Thermoplastic) grating square (Slit) 150 mm square with a height of 8 mm and weighing not less than 100 gms.	EACH	10.00		
<b>Total For Plumbing</b>					
<b>13</b>	<b>SANITARY WORK</b>				
i	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100mm sand cast Iron P or Strap, UPVC P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete including cutting and making good the walls and floors wherever required :				
(a)	White Vitreous china Orissa pattern W.C. pan of size 580x440mm with integral type foot rests	EACH	15.00		
ii	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete including cutting and making good the walls and floors wherever				
(a)	W.C. pan with ISI marked white solid plastic seat and lid	EACH	6.00		
iii	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350mm and 340x410x265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :				
(a)	One urinal basin with 5 litre white P.V.C. automatic flushing cistern	EACH	1.00		
(b)	Range of two urinal basins with 5 litre white P.V.C. automatic flushing cistern.	EACH	3.00		
(c)	Bottle trap	EACH	4.00		
iv	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:				
(a)	White Vitreous China Wash basin size 630x450 mm with a pair of 15 mm C.P. brass pillar taps	EACH	21.00		
v	Providing and fixing white vitreous china pedestal for wash basin completely recessed at the back for the reception of pipes and fittings	EACH	21.00		
vi	Providing and fixing unplasticised Rigid PVC soil and waste pipes conforming to IS: 13592 Type B including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion. Single socketed pipes for working pressure of 4 kg/sqcm. (including of all fitting fixtures & clamps.)				
(a)	75 mm diameter	RM	137.00		
(b)	110 mm diameter	RM	118.00		

vii	Providing and fixing unplasticised PVC moulded fittings/ accessories for unplasticised Rigid PVC soil and waste pipes conforming to IS: 13592 Type A including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion.				
	Coupler				
(a)	110 mm	EACH	6.00		
	Single tee with door				
(a)	75x75x75 mm	EACH	12.00		
(b)	110x110x110 mm	EACH	18.00		
	Single tee without door				
(a)	75x75x75 mm	EACH	28.00		
(b)	110x110x110 mm	EACH	16.00		
	Bend 87.5°				
(a)	75 mm bend	EACH	20.00		
(b)	110 mm bend	EACH	12.00		
viii	Providing and fixing Unplasticised - PVC pipe clips of approved design to Unplasticised - PVC soil and waste pipes by means of bombay nail of required length including and making good the wall etc. complete				
(a)	75 mm	EACH	26.00		
(b)	110mm	EACH	26.00		
ix	Providing and fixing UPVC trap of self cleaning design complete. Including cost of cutting and making good the wall and floors. 100 mm inlet and 75 mm outlet	EACH	32.00		
x	Cutting chases in brick masonry walls (clay brick/flyash brick/AAC blocks) for following diameter sand cast iron/ centrifugally cast (spun) iron pipes and making good the same with cement concrete 1:3:6 (1 cement : 3sand :6 graded stone aggregate 12.5 mm nominal size) including necessary plaster and pointing in cement mortar 1:4 (1 cement : 4 sand) :				
(a)	100 mm dia	EACH	16.00		
(b)	75 mm dia	EACH	20.00		
xi	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete				
(a)	Semi rigid pipe 40 mm dia	EACH	28.00		
xii	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :				
(a)	Circular shape 450 mm dia.	EACH	21.00		
xiii	Providing and fixing toilet paper holder: C.P. brass	EACH	6.00		
xiv	Providing and fixing CP brass towel rail of approved quality and make				
(a)	450x20mm	EACH	21.00		
xv	Providing and fixing CP brass soap dish of approved quality and make	EACH	21.00		
xvi	Providing and fixing CP brass Urinal spreader of approved quality and make	EACH	11.00		
xvii	Providing and fixing C.P. brass grating of approved quality and make conforming to IS: specification 100 mm dia.	EACH	32.00		
xviii	Providing and fixing coupler for PVC pipes & fittings waste/rain water/drainage disposal of superior Indian make (as approved by Engineer incharge) i/c jointing with rubber rings, adhesive, lubricant, solvent cement PVC clips or burried underground i/c making necessary chases and holes in walls, floors or trenching complete with making good or i/c excavation and refilling as per site requirement with testing etc.complete. FOR WASH BASIN CONNECTION (40mm diameter)	EACH	28.00		

xix	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. :Concealed work, including cutting chases and making good the walls etc				
(a)	25 mm nominal outer dia Pipes.	RM	20.00		
xx	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes having thermal stability for hot and cold water supply including all CPVC plain and brass threaded fittings. This included jointing of pipes and fittings with onestep CPVC solvent cement, trenching, refilling and testing of joints complete as per direction of Engineer-in- Charge. External Work				
(a)	20 mm nominal outer dia Pipes.	RM	20.00		
(b)	25 mm nominal outer dia Pipes	RM	35.00		
(c)	32 mm nominal outer dia Pipes.	RM	30.00		
(d)	40 mm nominal outer dia Pipes	RM	45.00		
xxi	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):				
(a)	25 mm nominal bore	EACH	5.00		
(b)	32 mm nominal bore.	EACH	4.00		
(c)	40 mm nominal bore	EACH	2.00		
xxii	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete				
(a)	25 mm nominal bore	EACH	2.00		
xxii	Providing and fixing unplasticised PVC connection pipe with brass unions :				
	30 cm length				
(a)	15 mm nominal bore	EACH	45.00		
xxiii	Providing and placing on terrace (at all floor levels) polyethylene water storage tank ISI : 12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank	PER LITRE	4000.00		
xxiv	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.				
(a)	15 mm nominal bore	EACH	28.00		
xxv	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931				
	15mm nominal bore	EACH	45.00		
xxvi	Providing and laying below ground unplasticised PVC pipe to with stand working pressure of 4 kg/cm <sup>2</sup> solid waste pipes conforming to IS:13592 and IS:4985 including jointing with seal ring conforming to IS :5282 leaving 10mm gap for thermal expansion all necessary fittings etc. complete. Excavation to be paid separately.				
(a)	110 mm diameter OD (min. wall thickness 3.2mm)	RM	20.00		
(b)	160 mm diameter OD (min. wall thickness 4.0mm)	RM	20.00		
xxvii	Providing and laying cement concrete 1:3:6 (1 cement: 3sand: 6 graded stone aggregate 20 mm nominal size) all-round PVC. pipes including bed concrete as per standard design				
(a)	110 mm diameter PVC. Pipe	RM	20.00		
(b)	160 mm diameter PVC. Pipe	RM	20.00		
xxviii	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. :Concealed work, including cutting chases and making good the walls etc.				
(a)	15 mm nominal outer dia. Pipes.	RM	45.00		
(b)	20 mm nominal outer dia. Pipes.	RM	30.00		
(c)	25 mm nominal outer dia. Pipes.	RM	20.00		



xxix	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings. This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge : External work				
(a)	20 mm nominal outer dia. Pipes.	RM	20.00		
(b)	25 mm nominal outer dia. Pipes.	RM	35.00		
(c)	32 mm nominal outer dia. Pipes.	RM	30.00		
(d)	40 mm nominal outer dia. Pipes.	RM	45.00		
xxx	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)				
(a)	25 mm nominal bore	EACH	5.00		
(b)	32 mm nominal bore.	EACH	4.00		
(c)	40 mm nominal bore	EACH	2.00		
xxxii	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :				
(a)	25 mm nominal bore	EACH	2.00		
xxxiii	Providing and fixing uplasticised PVC connection pipe with brass unions :				
(a)	30 cm length				
	15 mm nominal bore	EACH	45.00		
xxxiv	Providing and placing on terrace (at all floor levels) polyethylene water storage tank ISI : 12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank	PER LITRE	4000.00		
xxxv	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gm, 15 mm nominal bore	EACH	28.00		
xxxvi	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931 :				
(a)	15mm nominal bore	EACH	45.00		
xxxvii	Providing and laying below ground unplasticised PVC pipe to with stand working pressure of 4 kg/cm <sup>2</sup> solid waste pipes confirming to IS:13592 and IS:4985 including jointing with seal ring confirming to IS :5282 leaving 10mm gap for thermal expansion all necessary fittings etc. complete. Excavation to be paid seperately.				
(a)	110 mm diameter OD (min. wall thickness 3.2mm)	RM	20.00		
(b)	160 mm diameter OD (min. wall thickness 4.0mm)	RM	20.00		
xxxviii	Providing and laying cement concrete 1:3:6 (1 cement: 3sand: 6 graded stone aggregate 20 mm nominal size) all-round PVC. pipes including bed concrete as per standard design:				
(a)	110 mm diameter PVC. Pipe	RM	20.00		
(b)	160 mm diameter PVC. Pipe	RM	20.00		
xxxix	Constructing brick masonry manhole in cement mortar 1:4 ( 1 cement : 4 sand ) R.C.C. top slab with Cement Concrete 1:2:4 mix (1 cement : 2 sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:2:4 mix (1 cement : 2 sand : 4 graded stone aggregate 20mm nominal size) inside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard				
(a)	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :				
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	EACH	4.00		
<b>TOTAL SANITARY WORK</b>					
<b>14 ROAD &amp; DRAIN WORK</b>					
i	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth, lead up to 50m and lift up to 1.5m, as directed by Engineer-in-Charge				
(a)	All kinds of soil	CUM	45.36		

ii	Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing, rolling with vibratory roller 8-10 tonnes in stages to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting to the required density as per clause 404 of specification.				
	Grading - II (53 to 22.4 mm)				
(a)	Using Screening Type-B (11.2 mm Agg.)	CUM	25.20		
iii	<b>Dry Lean Cement Concrete Sub -Base</b>				
	Construction of dry lean cement concrete Sub-base over a sub-grade or drainage layer with coarse and fine aggregate conforming to IS :838, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 1:5, aggregate gradation after blending to be as per tabl 600-1, cement content not to be less than 150 kg/cum, optimum moisture content to be determined during trial lenth 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 finisher with electronic sensor, compacting with 8-10 tonnes vibratory roller, finishing and curing as per clause 601 of specification complete in all respect.	CUM	25.20		
iv	<b>Cement Concrete Pavement</b>				
	Construction of un-reinforced, dowel jointed, plain cement concrete pavement M-30 grade concrete over a prepared sub base with cement , 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, admixtures as approved, curing compound, finishing to lines and grades as per drawing as per IRC 15 2011 and as per relevant clauses of section 602 of specifications complete but excluding cost of steel in dowel bar and tie rods etc.	CUM	50.40		
v	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
	1:3:6 (1 Cement : 3 coarse sand(zone-III) derived from natural sources : 6 graded stone aggregate 40 mm nominal size derived from natural sources).	CUM	15.12		
vi	Brick work with common burnt clay modular bricks of class designation 7.5 in foundation and plinth in:				
	Cement Mortar 1:6 (1 cement: 6 sand).	CUM	12.96		
vii	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets, sunken floor, etc., up to floor five level, excluding the cost of centering, shuttering and finishing				
	1:1½:3 (1 cement : 1½ coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural	CUM	2.59		
viii	12 mm cement plaster of mix :				
	1:6 (1 cement : 6 sand)	SQM	113.40		
ix	Neat cement punning	SQM	113.40		
x	Providing & Fixing of Precast RCC drain cover of size 750x600 x70mm(thickness) with 6 holes, manufactured by using M-30 grade of concrete reinforced with 8mm dia Tor Steel @100mm c/c both ways, manufactured by vibro compaction process using joint less FRP moulds, so at to achieve shuttering finish on five faces @top face will have broom finish etc	EACH	135.00		
<b>TOTAL ROAD &amp; DRAIN WORK</b>					
<b>15</b>	<b>HORTICULTURE</b>				
i	Trenching in ordinary soil up to a depth of 60 cm including removal and stacking of serviceable materials and then disposing of surplus soil, by spreading and neatly levelling within a lead of 50 m and making up the trenched area to proper levels by filling with earth or earth mixed with sludge or / and manure before and after flooding trench with water (excluding cost of imported earth, sludge or manure).	CUM	50.00		

ii	Supplying and stacking of good earth at site including royalty and carriage upto 5 km lead complete (earth measured in stacks will be reduced by 20% for payment).	CUM	60.00		
iii	Supplying and stacking sludge at site including royalty and carriage (sludge measured in stacks will be reduced by 8% for payment)	CUM	15.00		
iv	Supplying and spreading as directed by Engineer incharge at site dump manure from approved source, including carriage upto 5 km lead complete (manure measured in stacks will be reduced by 8% for payment) :	CUM	10.00		
(a)	Screened through sieve of I.S. designation 4.75 mm				
v	Rough dressing the trenched ground including breaking clods	SQM	113.00		
vi	Spreading of sludge, dump manure and / or good earth in required thickness as per direction of Engineer-in-charge (Cost of sludge, dump manure and / or good earth to be paid separately).	CUM	85.00		
vii	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge	CUM	85.00		
viii	Grassing with Selection No.1 grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn, free from weeds and fit for mowing including supplying good earth, if needed (the grass and good earth shall be paid for separately):				
(a)	With grass Turf	SQM	100.00		
ix	Maintenance of Grassing ground done by Seeding Method as mentioned in Item No.28.10.6 from the stage of germination to first cut i.e. approximately 45 days.	SQM	100.00		
x	Digging holes in ordinary soil and refilling the same with the excavated earth mixed with manure or sludge in the ratio of 2:1 by volume (2 parts of stacked volume of earth after reduction by 20% : 1 part of stacked volume of manure after reduction by 8%) flooding with water, dressing including removal of rubbish and surplus earth, if any, with all leads and lifts (cost of manure, sludge or extra good earth if needed to be paid for separately)				
(a)	Holes 60 cm dia, and 60 cm deep	EACH	12.00		
xi	Providing and planting different variety of plants of approved quality and sizes as mentioned including making pits of required size at site, refilled with B.C. Soil mixture manuring and pesticide etc. complete (to be paid separately) including watering and 90 days maintenance from the date of final bill as per direction of Engineer-in-Charge complete in all respect (B.C. Mixture paid separately).				
(a)	Alpinia Verigated, Alternanthera species, Aspyragus Myerri, Aspyragus Springenii, Aspidistra, Canna (regular, Dwarf), Chlorodendron Inermii, Chlorophytum (Green), Chlorophytum verigated, Coffea Chinensis, Dianella Verigated, Durranta (Goldiana, Green, Verigated), Euphorbia Milli hybrid, Ipomea (Golden leaves), Iresine herbstii, Juniper Prostata, Juniper Africana, Ophiopogon plant, Ophiopogon jaburan, Portulacaria Afra (jade Plant), Schefflera Green, Schefflera verigated, Setcreasea Purpurea, Syngonium (Butterfly) species, Syngonium miniature, Syngonium Dwarf, Syngonium variegated, Tradescantia, Wadelia Trilobata, Zebrina Tradescantia, Pendasas, Spider Lily Black, Spider Lily verigated, Aclypha (Red, Green,Mini), Lantana (Red, Yellow, Purple, White, verigated), Haemalia Mini and similar plants	EACH	12.00		
xii	Budded Roses of H.T variety and miniature Roses.	EACH	20.00		
xiii	Plant Creeper Rose Varieties	EACH	20.00		
xiv	Standard Roses H.T. Variety	EACH	20.00		
xv	Providing of Rotomoulded circular planters of different sizes				
(a)	Upper dia 40cm and height 31cm	EACH	40.00		
xvi	Providing of rotomoulded planters of square shape of different sizes.				
(a)	40cm x 40 cm x 37cm	EACH	20.00		
	<b>TOTAL FOR HORTICULTURE</b>				
<b>16</b>	<b>FIRE FIGHTING WORKS</b>				
	<b>PREAMBLES</b>				

i	6 zone control panel for fire alarm system with following:- 100 Watt amplifier racks suitable for operation on 230V AC/24V DC supply conforming to IEC-268-3 complete with all accessories as required 2 Nos. (one to act as standby) Talk back master station with LED PTT (Press to talk) push button for operation on 230V AC/24 V DC supply conforming to IEC-268 for simplex mode of operation/communication suitable for 20 Nos.talk back unit 1 set. Announcement control desk suitable for selection of different zones selectively and ON ALL CALL switch with visual indication etc., complete as required 1 Set. Amplifier change over switch for inter changing amplifier 1 No. Monitor panel for loudspeaker complete output selector ON/OFF switch, fuse visual indications etc. complete as required 1 No. Gooseneck microphone with stand and ON/OFF switch 1 No. Mains ON/OFF switch, fuse indication lamps, DC and AC voltmeters & Ammetres terminal blocks etc. complete as required 1 Set. Battery charger trickle cum boost to take complete load of fire alarm & PA system complete with all accessories				
	Micro processor based. Intelligent Addressable Main Fire alarm panel , Central Processing Unit ,with the following loop module and with each loop capacity of 120 detector per loop with total of 240 detectors and devices with loop length up to 2 kmtr, network communication card, minimum 320 character graphics, LCD display with touch screen or other keypad and 1000 event history logs in the non volatile memory (EEPROM) power supply unit at 230+ 5 % V, 48 Hrs back-up with 24 volt sealed maintenance free batteries with automatic charger. The panel shall have facility to connect printer to printout logs and facility to have integration with analog voice evacuation system( which is part of the schedule of work under SH: PA System) and shall be complete with all accessories . The panel should be compatible for integration with IBMS system with open protocol Bacnet/IP , complete as per specs and as required for following loops.	Each	2.00		
ii	Fire panel : Providing, fixing, testing & commissioning microprocessor based main fire alarm panel and indicating panel solid state modular card type pulsar, timer for dual stage alarm facility with indicators, standby battery ,complies to IS 2189:1999.2 x 16 character backlit LCD display lamp test features. Complete with integral power supply and battery charger for SMF battery. NO/NC contacts for both fire and fault. Switches to enable on board operation. LCD and LED Indication for open, short circuit, Isolate, fire in each zone. reset, lamp test, silence, isolate, short, open, fire continuous buzzer for fault and intermittent buzzer for fire battery charger box, operating voltage 220 Volt mains A.C. input/24V D.C. output etc. complete in all respect.				
(a)	4 zone fire panel	EACH	2.00		
iii	Smoke detector (ionization type) : Providing &fixing of ionization type smoke detectors as per IS: 11360-1985 of dual chamber, 12/24 volt DC, ionization source-less than one micro curiemaximum Americium 241, twin visual alarm indicator (LED's) "Blink" in stand by and "steady" in alarm complete in all respects.	EACH	2.00		
iv	Providing and fixing of carbon-di- oxide type fire extinguishers consisting of welded M.S. cylindrical body, squeeze lever discharge valve fitted with pressure indicating gauge internal discharge tube 30 cm long high pressure discharge hose,discharge nozzle, suspension bracketconforming to IS : 15683 finished externally with red enamel paint and fixed to wall with brackets complete with internal charge.				
(a)	Capacity 3.0 kg	EACH	3.00		
v	Supplying & fixing of fire extinguisher/refills as per IS specification				
(a)	4 buckets set with sand, self-supported M.S. stand i/c shed duly painted with red colour as per IS.	EACH	2.00		

vi	<p>Supplying, installation, testing &amp; commissioning of main control and indicating panel made out of 16 SWG MS sheet to accommodate the following items duly powder coated in approved colour with louvers for ventilation, locking arrangement, audio and visual indication for fire alarm and public address system, monitoring system including connections, interconnections etc complete as required.</p> <p>10 Zone panel for fire alarm system</p> <p>250 Watt amplifier racks suitable for operation on 230V AC/24V DC supply conforming to IEC-268-3 complete with all accessories as required - 2 Nos.(one to act as standby)</p> <p>Talk back master station with LED PTT (press to talk) push button for operation on 230V AC/24 V DC supply conforming to IEC-268 for simplex mode of operation/communication suitable for 20 Nos.talk back unit -1 set.</p> <p>Announcement control desk suitable for selection of different zones selectively and ON ALL CALL switch with visual indication etc. complete as required -1 set.</p> <p>Amplifier change over switch for inter changing amplifier -1 No.</p> <p>Monitor panel for loudspeaker complete with output selector, ON/OFF switch, fuse, visual indications etc. complete as required- 1 No.</p> <p>Gooseneck microphone with stand and ON/OFF switch- 1 No.</p> <p>Main ON/OFF switch, fuse indication lamps, DC and AC voltmeters &amp; ammeters, terminal blocks etc. complete as required -1 set.</p>				
	Battery charger trickle cum boost to take complete load of fire alarm & PA system complete with all accessories including providing & fixing of 2 nos.12 volt, 60 AH each sealed maintenance free batteries -1 set.	Each	1.00		
vi	Internal hooter: Providing &fixing of internal hooter with working AC Voltage 220V A.C./24V D.C. current consumption, sound output 120 DB, material M.S. sheet	EACH	1.00		
vii	Supply, Installation testing and commissioning of the IP dome camera shall be equipped with a 1/2.8 2 MP progressive scan CMOS imager to capture full HD 1080p (25/30 fps) images, a 3.6 mm fixed lens, and a waterproof (IP66) enclosure. As a true day/night solution, the camera shall use smart IR technology and provide up to 98 ft (30 m) of IR illumination. The camera shall accept PoE (802.3af) or 12 VDC power input. min. illumination:-0.1 lux @F1.2, AGC ON, 0 lux with IR video compression :- H.264, noise reduction: 3DNR,backlight compensation : BLC/HLC/DWDR, encode mode:- CBR/VBR (freely adjustable in CBR, 5 levels in VBR). UL listed	EACH	20.00		
<b>TOTAL FIRE FIGHTING SYSTEM</b>					
<b>17</b>	<b>RAIN WATER HARVESTING</b>				
i	Providing and fixing of unplasticised rigid PVC rain water harvesting filter kit UV protected with filter, PVC valve, conforming to IS: 1392, working pressure 4 kg\sqcmTypeB, minimum capacity 20 kilolitre/ hour, of approved makeincluding all accessories like unplasticied PVC pipe clips of approved design with bombay nail of required length including making good the wall etc. complete for designed catchent area.				
(a)	75mm diameter PVC pipe, having wall thickness 3.2 mm for 100 m2 catchment area	EACH	5.00		
ii	Supplying, filling, spreading and leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads and lifts, all	CUM	5.40		
iii	Supplying, filling, spreading and leveling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads and lifts, all complete as per direction of Engineer-in- Charge.	CUM	3.24		
iv	Supplying, filling, spreading and leveling coarse sand of size range 1.5 mm to 2 mm inrecharge pit, in required thickness over gravel layer, for all leads and lifts, all complete as per direction of Engineer-in- Charge.	CUM	2.16		
v	Borewell adaptor for connecting Rain Water Harvesting pipe line to borewell.				
(a)	Borewell adaptor 110mm	EACH	4.00		
vi	Making khurras 45x45 cm with average minimum thickness of5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	EACH	8.00		

vii	Providing and fixing M.S. holder bat clamps of approved design to C.I. or S.C.I. rain water pipes embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 gradedstone aggregate 20 mm nominal size) and cost of cutting holes and making good the walls etc. :				
(a)	100 mm diameter	EACH	64.00		
viii	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.				
(a)	110 mm diameter	RM	88.00		
ix	Providing and fixing on wall face unplasticised - PVC moulded fittings/accessories for unplasticised Rigid PVC rain water pipes conforming to IS 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.				
	Bend 87.5°				
(a)	110 mm bend (minimum wall thickness 2.2mm)		16.00		
x	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams.		8.00		
<b>TOTAL RAIN WATER HARVESTING</b>					
<b>18</b>	<b>BUILDING ELECTRICAL WORK</b>				
	<b>Point Wiring &amp; Conduits</b>				
i	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, with piano type switch, phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.				
(a)	Group A	EACH	32.00		
(b)	Group B	EACH	90.00		
(c)	Group C	EACH	80.00		
ii	3 Pin 6 Amp socket outlet on separate board				
(a)	Medium point	EACH	10.00		
iii	Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, 2 way piano type switch, phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.	EACH	8.00		
iv	Wiring for twin control light point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed steel conduit, 2 way piano type switch, phenolic laminated sheet, suitable size MS box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.	EACH	6.00		
v	Point wiring (excluding metallic switch box & sheet but including switches, sockets) for 3 pin 6 Amp. socket outlet point with 1.5sq. mm. PVC insulated cable FRLS with copper multi strand conductor ISI marked in concealed rigid P.V.C. conduit (HMS) ISI marked of suitable size and 1.5sq. mm. PVC insulated copper earth continuity conductor of green colour inside conduit with required materials as per specification on same board.	EACH	36.00		
vi	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required.				
(a)	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	RM	265.00		
(b)	4 X 2.5 sq. mm + 2 X 2.5 sq. mm earth wire	RM	165.00		
(c)	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	RM	135.00		
(d)	2 X 10 sq. mm + 1 X 6 sq. mm earth wire	RM	95.00		
vii	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, with piano type switch, phenolic laminated sheet, suitable size M.S. box and earthing the point with 1.5 sq.mm. FRLS PVC insulated copper conductor single core cable etc. as required.				
(a)	Group A	EACH	10.00		
(b)	Group B	EACH	12.00		
(c)	Group C	EACH	13.00		
(d)	Extra Long - l	EACH	2.00		

viii	Supply and fixing PVC conduit ISI marked FRLS along with the accessories in concealed system etc. as required				
(a)	PVC. conduit 25 mm (HMS)	RM	35.00		
ix	Supplying and fixing following Modular base & cover plate on existing modular metal boxes etc. as required				
(a)	3 Module	EACH	6.00		
(b)	4 Module	EACH	24.00		
(c)	6 Module	EACH	12.00		
(d)	8 Module	EACH	12.00		
(e)	12 Module	EACH	6.00		
x	Wiring for sub-mains with PVC insulated cable FRLS withcopper multi strand conductor ISI marked in surface rigid steel ISI marked conduit of suitable size (conduit included) including accessories long neck threaded type, connection painting etc, as required as per specification. (Refer General Notes for Classification of Conduit Wiring Point No.11)				
	3 Wire sub main				
(a)	10.0 sq. mm. cable	RM	35.00		
xi	Supplying of metal clad ISI marked busbar chamber made of heavy gauge iron sheet complete with copper strip and busbar supports as per specification conforming to IS -4064				
(a)	32 Amp 415 VOLTS, 4 way	EACH	1.00		
xii	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
(a)	Single pole	EACH	20.00		
(b)	For Triple pole	EACH	1.00		
xiii	12 way, SPN, double door, MCB DB	EACH	2.00		
xiv	Supplying and fixing call bell/ buzzer suitable for single phase, 230 V, complete as required.	EACH	8.00		
xv	Supply and fixing in position LED lamp of approved make				
	12 Watt250Volt	EACH	105.00		
xvi	Supply and fixing of rechargeable inverter LED Bulb, reduces to 40-50% (emergency application) with Lithium Ion battery 2600mAh, backup upto 5 hrs. having color temp upto 6500K, IP-20 rating, THD (Total harmonic distortion) <20%				
(a)	9W, Rechargeable Inverter LED Bulb	EACH	10.00		
xvii	Supply and fixing of approved make step type modular electronic fan regulator including connection etc. as required on existing board				
(a)	100 Watt (1 module)	EACH	36.00		
xviii	Supplying, erection and testing of approved make electric Ceiling fan of double ball bearing complete with standard down rod, canopy, hanging shackle, Aluminium blades, without regulator, A.C. 230-250 volts including connections with all necessary material complete of approved as required confirming to IS :374/2019 with upto date amendments.				
(a)	Ceiling Fan Ornamental 1200 mm Sweep, with minimum air delivery 210 m <sup>3</sup> /min and service value ≥ 4.00 as per BEE.	EACH	36.00		
xix	Supplying, erecting and testing of approved make exhaust fan heavy duty with mounting frame, blades AC 230-250 complete connection and including, frame bolt/anchor hole fasteners etc. complete finished and as required.				
(a)	380mm sweep RPM 900 /1400	EACH	12.00		
xx	Supply and fixing M.S. down rod 14 SWG (2mm) thick for ceiling fan including threading, painting, making holes etc. as required complete. Note: For new works difference of installed & standard down rod length shall be paid.	EACH	36.00		
xxi	Supplying, fixing & testing of approved make of non - integral type CFL roadway lighting consisting of powder coated sheet steel housing with epoxy white powder coated CRCA sheet steel gear tray, clear acrylic cover complete with all accessories (without lamp) including fixing on existing G.I. pipe, pole with connection and all required material suitable for -				
(a)	For 1 x 85W Retrofit CFL/LED (Without control gear)	EACH	8.00		

xxii	Supply and fixing Led tube rod comprising of LED tube with nonintegral/ integral driver, upto 6500K color temp having 40000 burning hrs life with minimum @ L 70, system lumen output should be minimum with system efficacy > 100 lm/Watt. LED driver PF > 0.95 & THD < 20%. The colour rendering index of LED light should be more than 70. Submission LM 79- 08/IS16106 (2012), IEC60598, IEC61347/c connection wire, testing etc. to complete the job.				
(a)	Tube light LED 1 X 12Watt Integral i/c batten aluminium body, PC	EACH	60.00		
xxiii	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. (but without charcoal/ coke and salt ) as required.	EACH	2.00		
xxiv	Add extra for using salt and charcoal/coke for G.I. plate or copper plate earth electrode as required including excavation and refilling the pit in all type of soil, murrum				
(a)	Add extra for using salt and charcoal/coke for G.I. plate or copper plate earth electrode as required including excavation in hard rock and refilling the pit with black soil.	EACH	2.00		
xxv	Supplying and laying 6 SWG G.I. wire at 0.50 metre below ground level for conductor earth electrode, including connection/ termination with GI thimble etc. as required.	RM	20.00		
xxvi	Supplying and drawing following pair, 0.5 mm PVC insulated copper conductor unarmoured telephone cable in existing surface/concealed, steel/PVC conduit as required.				
(a)	Telephone wire 0.5 mm, 10 Pair	RM	110.00		
xxvii	Supply, installation testing and commissioning of telephone tag block krone connector with enclosure complete as mentioned below :-				
(a)	10 Pair	EACH	10.00		
xxviii	Supply, fixing and testing of RJ 11 telephone jack modular (1 Module)	EACH	2.00		
xxix	Supplying and laying of submersible flat cable ISI marked 3 core copper wire of suitable size with proper clamping of approved make				
	6.0 sq.mm multi strand	EACH	120.00		
xxx	<b>CABLING &amp; WIRING</b>				
	Supplying & laying of 2x1.5 sqmm fire alarm armoured cable, 600/1000V rated with annealed copper conductor having XLPE insulation, steel wire armouring & FRLS outer sheath complete as required.	EACH	60.00		
xxxi	Supply, installation, testing and commissioning of EPABX system consist, no. of extension, no of junction, no. of expandable eport, operating console, current on max. load with ISDN compatible of approved make and labor as required as per specifications.				
	EPABX system consists of 16 nos. extensions, 8 nos of junction & upto 64 nos. of expandable eport, with one operating console, 1.35 Amp max. current	EACH	1.00		
xxxii	Supplying, fixing essential additional accessories to EPABX system of approved make with all necessary material as required as per specifications.				
(a)	EPABX system digital phone with 2 line display (32 characters) with 8 programmable keys	EACH	16.00		
xxxiii	Supply, installation, testing, commissioning, and final testing of automatic lift complete in the shaft well and pit already constructed as per CPWD specification including automatic rescue device (ARD), All standard equipments, accessories and control equipments as per manufacturer's design and as per CPWD specification (Part III LIFTS) on turnkey basis, Conforming to NBC/statutory norms and fulfilling following requirements				



<p>(i) Type: Passenger lift.  (ii) Load: As specified elsewhere from 4 passengers (272Kg) to 26 passengers (1768Kg) (for each person standard weight 68Kg.).  (iii) Speed: 1.00 metre/sec. or less as required.  (iv) Control: ACV3F, 32bit microprocessor integrated serial communication control system with RMS (remote monitoring system)/BMS (building monitoring system) supporting software.  (v) Motor/machine: Permanent magnetic synchronous gearless motor.  (vi) Operation: Simplex collective selective with/without lift attendant.  (vii) Total rise: About 3 mtrs. (approx) two stops only.  (viii) Landings: All floors on same side.  (ix) Floors served: G+1.  (x) Signals: Digital car position indicator, car travel direction indicator inside car &amp; at all landings, voice annunciator with suitable music shall be provided in the lift car.  (xi) Shaft size: As per manufacturer's design and as per CPWD specification (Part III LIFTS), Shaft to be constructed separately.</p>				
<p>(xii) Guide rail: As per manufacturer's specification.  (xiii) Lift &amp; car size: As per manufacturer's design and as per CPWD specification (Part III LIFTS).  (xiv) Car entrance: As per manufacturer's design and as per CPWD specification (Part III LIFTS).  (xv) Landing entrance: As per manufacturer's design and as per CPWD specification (Part III LIFTS).  (xvi) Car door: S.S. (stainless steel) hairline finish centre/telescopic opening door with vision panel.  (xvii) Landing door: S.S. (stainless steel) hairline finish centre/telescopic opening door with vision panel. (xviii) Door operation: Automatic electric power operated door, full height infrared curtain with multiple criss/cross light beams.  (xix) Car interior: S.S. (stainless steel) panel with hair line finish on all sides.  (xx) Car floor: Anti skid PVC flooring on heavy duty M S (mild steel) platform.  (xxi) Car ceiling &amp; lighting: S. S. (stainless steel) finish with aesthetic appearance with LED ceiling lights</p>				
<p>(xii) Guide rail: As per manufacturer's specification  (xiii) Lift &amp; car size: As per manufacturer's design and as per CPWD specification (Part III LIFTS).  (xiv) Car entrance: As per manufacturer's design and as per CPWD specification (Part III LIFTS).  (xv) Landing entrance: As per manufacturer's design and as per CPWD specification (Part III LIFTS).  (xvi) Car door: S.S. (stainless steel) hairline finish centre/telescopic opening door with vision panel.  (xvii) Landing door: S.S. (stainless steel) hairline finish centre/telescopic opening door with vision panel. (xviii) Door operation: Automatic electric power operated door, full height infrared curtain with multiple criss/cross light beams.  (xix) Car interior: S.S. (stainless steel) panel with hair line finish on all sides.  (xx) Car floor: Anti skid PVC flooring on heavy duty M S (mild steel) platform.  (xxi) Car ceiling &amp; lighting: S. S. (stainless steel) finish with aesthetic appearance with LED ceiling lights  (xxii) Carventilation: Pressure fan/blower fan (car fan with automatic sleep timer shall be provided).</p>	EACH			

	<p>(xxiii) Emergency lighting in car: Battery operated emergency lighting in the lift car.</p> <p>(xxiv) Intercom system: Battery operated intercom system in lift car, machine room and ground floor/control room.</p> <p>(xxv) Emergency alarm: Battery operated alarm bell system in lift car &amp; control room / ground floor.</p> <p>(xxvi) Position of machine room: Directly above the hoistway.</p> <p>(xxvii) Electric power supply: AC 415 V, 3 phases 50 Hz &amp; AC 230 V 1phase 50Hz terminated in machine room.</p> <p>(xxviii) Fire man switch : Fire man switch at machine room/terminal landing</p> <p>(xxix) All car panel buttons and all floor switches must be with Braille language as per lift act.</p> <p>(xxx) Audio visual indication in the lift car showing overloading shall be provided such that doors keep open till excess load is removed.</p> <p>(xxxi) Spring buffer/hydraulic buffer shall be provided</p> <p>(xxxii) Mechanical over speed governor, door key holes in the floor doors shall be provided.</p> <p>(xxxiii) 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</p>				
	<p>(xxxiii) 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 machines etc</p> <p>(xxxiv) In the hoist way fascia plate shall be provided.</p> <p>(xxxv) Permanent wiring in lift machine room and lift well with proper no. of light points, with fixtures, exhaust fan, plug points and 3 phase 440V power supply shall be made in lift shaft by the department, machine room or at desired level.</p> <p>(xxxvi) Car top safety barricade shall be provided. (xxxvii) ARD (automatic rescue device): Solid state inbuilt automatic rescue device (ARD) automatically rescues passengers trapped in the lift car in between floors in the event of power failure. Automatic operation and immediate action in the event of mains failure, capable of moving the lift to the nearest landing, opens the automatic door of the lift car and floor. Sealed maintenance free battery backup with automatic charging unit and autochangeover device on mains failure.</p>				
(a)	6 Passenger (408 Kg.)	EACH	1.00		
xxxiv	Add extra for higher speed to item 44.1				
(a)	For higher speed 1.5 metre/Sec (For 4-10 Passengers)	EACH	1.00		
xxxv	Add extra to item no. 44.1 for every additional floor beyond initial G+ 1 floor (additional stops beyond two stops) provides all necessary additional parts/equipments as per manufacturer's requirement.				
(a)	Cost for each additional floor : upto 9 stops (For 4-10 Passengers)	EACH	3.00		
xxxvi	Add extra to item no. 44.1 for machine room less (MRL) lift in place of machine room directly above the hoist way				
(a)	Extra cost for machine room less (4-13 Passenger)	EACH	1.00		
xxxvii	SPLIT AC (inverter model) :- Supply, installation, testing and commissioning of Split type wall mounted air conditioning unit of following capacity including indoor, outdoor unit fitted with inverter based rotary compressor, copper condenser and first charge refrigerant R410A. The condensing unit working range should be capable for providing cooling between +/-5 deg. C to 50 deg. C & heating within 0 deg. C to 15 deg. C including connection of copper pipe of required size upto 3 mtr., insulation, cordless remote control, auto air swing louvers, wall stand for outdoor unit, connection copper lead wire, condensed water outlet pipe 2 mtr. complete etc as required. Outdoor/indoor units should be of same make				
(a)	1.5 TR star rating 3 star	EACH	8.00		
<b>VRV/VRV AIR-CONDITIONING SYSTEM</b>					
xxxviii	VRV/VRV outdoor AC unit:- Supply installation testing and commissioning of VRV /VRV /MRV outdoor units with following multiple inverter based scroll type compressors, electronic expansion valve, R 410A/ecofriendly green refrigerant, cooling & heating mode both options, special pre-coated fin type heat exchanger, low noise direct driven propeller condenser fans in each module with top discharge including internal wiring, microprocessor controls, safety. The condensing unit should be capable of providing cooling between +/- 5deg. C. to 48 deg. C & heating within 0 deg. C to 15 deg. C, COP not less than 3.3. Each system should have the provision to combine maximum 3 nos compressor in each outdoor unit, every single outdoor unit should not have more than maximum Capacity 20 HP (3 phase) each compressor complete as per specification. Outdoor/indoor units				
(a)	22 HP	EACH	2.00		

xxxix	VRF/VRV indoor AC unit (wall mounted):- Supply installation testing and commissioning of wall mounted indoor split unit comprising of copper evaporator, electronic expansion valve, blower, motor, filter pad, auto air swing louvers, and temperature & on/off display with provision of discharge angle setting by wireless remote controller including internal wiring, controls complete as per specification. (Single phase/three phase)				
(a)	1.33TR	EACH	4.00		
xl	VRF/VRV indoor AC unit (ceiling mounted 4 way):- Supply installation testing and commissioning of 4 way round flow ceiling suspended/mounted cassette type unit comprising of copper evaporator, electronic expansion valve, blower, motor, filter pad, auto air swing louvers, temperature & on/off display with inbuilt drain pump & decorative panels including internal wiring, controls. Dimension in terms of length & width should not be more than 950mmX 950mm with wireless remote controller. (Single phase/three phase)				
(a)	2.08 TR	EACH	12.00		
xli	Copper piping: - Supply, installation, testing and commissioning of interconnecting copper refrigerant pipe work (19mm/13mm thick) duly insulated with elastomeric nitrile rubber type tubular insulation between indoor & outdoor units as per specifications. And exposed piping should be wrapped with glass woven cloth and lag coating for vapour barrier and weather protection. Joints shall be covered with nitrile rubber tape of 3 mm thick complete as per specification.				
(a)	25 mm O.D. wall thickness ≥ 1.2mm (insulation – 19 mm thick)	RM	20.00		
xlii	Drain piping :- Providing and fixing of CPVC, 6Kg/cm2 drain water piping with fittings, support and insulated with 6 mm thick closed cell elastomeric nitrile rubber insulation complete as per specification.				
(a)	20 mm dia ID	RM	20.00		
xliii	Supply, installation, testing and commissioning of UPS with isolation transformer & battery for backup, having three phase input with ground (R- Y-B-N-G), Voltage range 190v AC-478v AC (based on load %), line low transformer (0-50% :190v/51-100% : 305v ± 3% VAC), line low comeback +25 - 35 VAC ( ± 3%), line high transfer 478 VAC ( ± 3%), line high comeback 461 VAC ( ± 3%), frequency range 46 - 54 Hz, power factor 0.99, Total harmonic distortion (current)-THDi (<5% with full load, having output voltage 220 VAC/230 VAC/240 VAC, voltage regulation ± 1%, frequency 50 Hz ± 0.1 Hz, Synchronization range 46 -54 Hz, voltage distortion ≤ 2 % (linear load) & ≤ 5 % (nonlinear load), having pure sine wave output waveform, crest factor 3 : 1, efficiency (AC - AC) 94%, power factor 0.9, having inbuilt isolation transformer, over load 101 - 109% : 5 Min, 110 - 129% : 1 Min, 130 - 150% : 10 sec, having SMF/VRLA battery type, transfer time line mode to battery mode 0 ms, inverter to bypass, ECO mode 0 ms, bypass to inverter 0 ms, ECO to inverter mode < 10 ms, when bypass voltage of frequency is out of range, having features Eco mode, Fan speed control, EPO function, frequency converter mode & parallel function (optional) up to 4 units.				
	LED status (normal mode/load on battery/load on bypass/system fault), Audible alarm (main failure alarm, low battery alarm, UPS warning, overload, fault & bypass mode etc.), protections (advance electronic protection for device, safety backed with MCBs, fast acting fuses, high speed pulse blanking, electronic overvoltage/under voltage), connections (terminal block for input/bypass/battery & output), static bypass, communication interface RS 232/USB port for software interface, intelligent slot for SNMP (optional). UPS installation with all required material arrangements as required as per IS specification.				
	10 KVA (3 phase input & 1 phase output)				
(a)	For 60 minute backup, min. 16000 VAH	EACH	1.00		
xliv	Supplying & installation of required capacity of three phase, 50 Hz, 415V, deep well submersible pump steel body, as per IS of approved make, suitable upto 6 " tube well with control panel starter suitable for submersible pump with dry run protection, single phase preventer, connections, including clamp, bore cap etc. as required as per specifications but excluding pipe and connection cable.				
(a)	3 HP with 20-35 stages, head metre 167-51, discharge LPM 25-90	EACH	1.00		
<b>TOTAL FOR BUILDING ELECTRICAL WORKS</b>					
19	<b>STP 10 KLD</b>				

i.	<p>Designing and preparing good for construction civil, mechanical and electrical shop drawings of conventional/package unit of a Sewage Treatment Plant(STP)/Effluent Treatment Plant (ETP) as per manufacturer/vender's design and specification consisting of treatment units complete for meeting up to date/target parameters of treated effluent conforming to Madhya Pradesh Pollution Control Board (MPPCB), MoEF GOI guidelines, National Green Tribunal guideline 30.4.2019 and technical specifications codes of practices as published by the Bureau of Indian Standard (BIS) and latest version of "Manual on Sewerage and Sewage Treatment" published by the Central Public Health And Environmental Engineering Organization (CPHEEO). The work shall include supplying, installing, testing and commissioning of electromechanical equipments, instruments, pipes, valves, pumps, and gauges etc. as per approved technical specifications, layout and drawing of STP/ETP. Most of the electro-mechanical unit will be placed below ground under road/greenarea/as per site condition, Contract shall be applicable.</p> <p>2- Treated water effluent testing shall be got done by the vender from Pollution Control Board (PCB) approved laboratory only covering parameters such as - BOD, COD, TSS, PH, O&amp;G, TKN, TP and E COLI etc.</p> <p>3- Main power supply with earthing up to main control panel of STP/ETP shall be provided by the owner/department. The electrical panel which will be supplied by the vender will also include all the required NO/NC contacts and provision for BMS connectivity.</p> <p>4- Detail specifications of components shall be as per manufacturer stipulation and preamble both.</p>				
	<p>Package MBBR STP Technology</p> <p>Primary treatment –</p> <ul style="list-style-type: none"> <li>- Manual Bar Screen</li> <li>-Oil, Grease Trap and Grit Removal System</li> </ul> <p>Secondary treatment –</p> <ul style="list-style-type: none"> <li>-Raw Sewage Transfer Pump (01set)</li> <li>- Air Blower(01set) and Diffuser System</li> <li>- Anoxic Tank with Agitator</li> <li>- MBBR Tank with Media</li> <li>- Tube/Lamella settler tank with Tube Media</li> <li>-Clear water Tank With Chlorine Dosing system and Chlorine Dosing Pump(01set)</li> <li>-Sump Pump (01set)</li> <li>-Plant/Interconnecting Piping And Valves</li> <li>-Manual/PLC Based Electrical Control Panel - Incoming/Outgoing Feeder</li> <li>-Cable Laying With Cable Tray -Earthing Systems</li> </ul>				
(a)	10KLD	Each	1.00		
<b>TOTAL FOR STP 10KLD</b>					
<b>Solar Panel</b>					
i	Grid Solar Power Plant 10KW	Each			
	MONO-DCR- 520 W (ADANI)				
<b>TOTAL FOR SOLAR PANEL</b>					
<b>CCTV Camera</b>					
i	CP Plus Make IR LED Indoor Bullet/dome IP camera (Day/night vision) 2 Mega Pixel 3.6 mm IP Cameras	Nos.	32.00		
	CP plus make 32 Channel Standalone NVR System with 2 Hard disk connectivity Facility with 8 MP Support camera. (CP-UNR-4K4322-V2,160MBPS)	No.	1.00		
	8+2 Channel POE switch	No.	4.00		
	D-LINK MAKE 8 PORT GIGA SWITCH	No.	1.00		
	RJ 45 Connector	No.	80.00		
	Hard disk 4 TB MAKE SEGATE SURVILLANCE	No.	2.00		
	RECK FOR NVR + POE 4U	No.	3.00		
	WHITE BOX FOR CAMERAS	No.	32.00		
	CAT-VI WIRE MAKE D-LINK @305 MTR	No.	2.50		
	WIRING IN PVC PIPE WITH LABOUR CHARGES				
	CAMERAS INSTALLATION CHARGES	Nos.	32.00		
	32 INCH LED MONITOR	No.	1.00		
<b>TOTAL FOR CCTV CAMERA</b>					
<b>SINAGES</b>					
i	10"X8" Room Identification Sign - S.S 304 Quantity brushfinish sign with side	Nos.	5.00		
	12"X4" Room Identification Sign - S.S 304 Quantity brush finish sign with side	Nos.	6.00		
	Toilet Signage- 6"X6" S.S brush finish 3D plate with all text & graphics etched into surface & black filled	Nos.	5.00		
	In case of Fire Use Stairs- 5"X14" S.S brush finish 3D plate with all text & graphics etched into surface & black filled	Nos.	6.00		
<b>TOTAL FOR SIGNAGES</b>					
<b>CANOPY WORK</b>					

i	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.				
(a)	Hot finished welded type tubes	kg	4627.14		
ii	Aluminium profile sheet 0.91mm thick with center to center pitch of 175 mm, depth of 46mm, top crest width of 41mm, bottom valley width of 80mm, overall profile width of 1144mm, cover width 1050mm	Sqm	155.68		
iii	Providing at all heights, levels and locations Aluminium profile industrial troughed sheet of Alloy 31500/31000/40800, conforming to IS 1254, IS 737, IS 2676. The sheet shall be fixed using self drilling/self tapping SS screws of size 5.5x65 mm with EPDM seal complete upto required pitch in horizontal, vertical or curved surfaces i/c cutting to size and shape where required as per specifications, detail drawings and direction of Engineer-in-Charge. The rate shall be inclusive of all screws, seal, ridge, labour, scaffolding, machinery for fixing and approved sealant where required etc. but excluding the cost of purlins, rafters and trusses.				
(a)	0.91 mm thick, the profile detail width 1044/920 mm, cover width 1000/875 mm.	Sqm	239.50		
<b>TOTAL FOR CANOPY WORK</b>					