

***TENDER***

***FOR***

**Construction of occupational Safety & Health Training Institute cum  
office complex at Kakkanad, Kochi**

**PART-III  
PRICE BID CONDITIONS**

**TENDER NO. HITES/IDS/17/58 dated 04.11.2017**

**November 2017**



**HLL INFRA TECH SERVICES LIMITED**  
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## **1 COMMERCIAL CONDITIONS**

1.0.1 The tendered rate shall inter alia be deemed to include for the provision of all materials, process, operation and special requirements detailed in the particular specification irrespective of whether these are mentioned in the description of equipment schedule and Bill of quantities or not. It is an express condition of the contract that the tendered rates for various items in the Bill of Quantities shall be deemed to include for the full, entire and final condition of the contractor respective items of the works in accordance with the provision of the contract.

1.0.2 The tendered rate shall include for all taxes, duties including GST applicable FOR Government works and shall be quoted on the works contract basis for Construction of occupational Safety & Health Training Institute cum office complex at Kakkanad, Kochi.

1.0.3 The tendered rate shall remain firm and free from variation due to rise in the cost of materials/equipment, labour or any other reasons whatsoever during the contract period and valid extension on the case may be.

### **1.1 UNIT RATES**

1.11 Only approved work will be measured on completion and priced as per rates quoted against the respective items.

### **1.2 BRIEF DESCRIPTION OF PRICING**

1.2.1. Unforeseen difficulties for which provision has not been made in the tender will in no way relieve the successful tenderer from the full execution of the work.

1.2.2 The price quoted shall be the final amount for this finished work.

### **1.3 INCOME TAX**

Any payment to the contractor as per contract will be made after deducting income tax as per the rules and regulations.

### **1.6. SUBMISSION OF BILL**

1.6.1. The contractor shall from time to time prepare and submit interim bills of the work executed and on completion of the contract, he shall prepare and submit the final bill. The measurements sheets in support of the interim and final bills shall be prepared by the contractor on the basis of measurements taken by him jointly with the project engineer and the said measurement sheets shall be submitted by him with the relevant bill.

### **1.7. EXTRA ITEMS**

The contractor is bound to carry out any items of work necessary for the completion of the job even though such items may not have been included in the schedule of probable quantities or rates, such items being necessary or essential for completing the job. Variation order in respect of such additional items and their quantities will be issued in writing by the employer.

1.7.1 All shavings, cuttings and other rubbish as it accumulates from time to time during the progress of work and on completion including that of the sub-contractors and special tradesman and all materials condemned by the project engineer shall be cleared and removed from the site by the contractor without any extra charge.

1.7.2 All measuring steel taps, scaffolding, ladders instruments and tools that may be required for taking measurements shall be supplied by the contractor.

### **1.8. OVER TIME WORK**

If the contractor is required to work night or on holidays in order to maintain the time schedule he shall take prior approval from the Engineer-in-charge. He should

also provide and maintain at his own cost sufficient lights as may be necessary to enable the work to proceed satisfactorily during the night.

1.8.1. The contractor shall give full facilities to all other contractors working on site. He shall also arrange his programme of work so as not hinder the progress of other trades. The decision of the Engineer-in-charge on any point of dispute between the various parties shall be final and binding.

1.8.2. It is specifically pointed out that the contractor shall not be entitled to any compensation whatsoever on account of delay in procurement or supply of controlled materials and the rates quoted in the contract are fixed till the completion of the contract.

1.8.3. The contractor shall co-operate with other agencies appointed by the owners for the work to proceed smoothly with the least possible delay and to the satisfaction of the owners, architects and the consultants.

1.8.4. The owners shall provide a source for power supply at one convenient point at site. The contractor shall at his own cost install a separate meter at the said source and lay additional cables from the said source also at his own cost. For the electricity consumed by the contractor he shall pay the owner the actual cost at the rate charged by the local authority for power for constructional purposes. The contractor shall also obtain the necessary permit for utilizing power for constructional purposes.

## **2 SPECIAL CONDITIONS**

### **2.1. EXECUTION WORK**

2.1.1. The whole of the work as described in the contract (including bills of materials, specification and all drawings pertaining thereto) and as advised by the

Engineer-in-charge from time is to be carried out and completed in all parts to the entire satisfaction of the Employer. Any minor details of construction which are obviously and fairly intended, or which may not have been definitely referred to in this contract, but which are usual construction practice and essential to the work, shall be included in this contract.

## **2.2. CERTIFICATE OF COMPLETION**

- 2.2.1 The contractor shall intimate to the Engineer-in-charge in writing as and when the works are completed and put into beneficial use in order to enable the consultants to check certify to the owners to take over the plants.
- 2.2.2 The work shall not be considered as completed and put into beneficial use until the consultants have certified in writing that the same has been completed and put into beneficial use.
- 2.2.3 The defects liability period of one year shall commence from date of such completion or any specific date mentioned therein.

**ALL ROWS SHALL BE FILLED, THIS IS MANDATORY**

**ABSTRACT**

<b>Sl. No.</b>	<b>Item</b>	<b>Amount</b>
1	Civil works	
2	Plumbing works	
3	Septic tank	
4	Electrical works	
5	ELV	
6	Air Conditioning	
7	Lifts	
8	Fire fighting system	
	<b>GRAND TOTAL</b>	
	<b>Note: Price should be inclusive of all taxes and duties including GST applicable for Government works</b>	

**Signature of the Contractor with dat**

CIVIL						
Item No	DSR code	Details of items	Quantity	Unit	Rate in words and figures	Amount in words and figures
1	2.31	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30 cm measured at a height of 1m above ground level and removal of rubbish upto a distance of 50 m outside the periphery of the area cleared.	560.00	m2		
2	2.6.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed. All kinds of soil	1330.00	m3		
3	2.26.1	Extra for every additional lift of 1.5m to 3.0m in excavation /banking excavated or stacked materials. All kinds of soil	550.00	m3		
4	2.26.1 X2	Extra for every additional lift of 3.0 m to 4.5m in excavation /banking excavated or stacked materials. All kinds of soil	320.00	m3		
5	2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil.	85.00	m3		



6	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m	920.00	m3		
7	1.1.2 .8	Conveying and disposing off excavated excess earth from the site as per the direction of Engineer in-charge	480.00	m3		
8	2.27 anal ysis	Supplying and filling in plinth with quarry dust under floors, including watering, ramming, consolidating and dressing complete	4.00	m3		
9	2.34. 1	Supplying chemical emulsion in sealed containers including delivery as specified Chlorpyriphos/ Lindane emulsifiable concentrate of 20%	22.00	ltr.		
10	2.35. 3.1	Treatment of soil under existing floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12 mm diameter holes and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing floor : With Chlorpyriphos/Lindane E.C. 20% with 1% concentration	40.00	m2		
11	4.1.8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	21.00	m3		

12	4.1.5	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 : 6 graded stone aggregate 20 mm nominal size).	52.00	m3		
13	5.37	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of oncrete, improve workability without impairing strength and durability as per direction of the Engineer-in-charge.				
		(Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately)				
a	5.37.1	All works upto plinth level.	230.00	m3		
b	5.37.2	All works above plinth level upto floor V level.	268.00	m3		

14	5.34	Extra for providing richer mixes at all floor levels. Note:- Excess/ less cement over the specified cement content used is payable /recoverable separately.				
a	5.34.1	Providing M-30 grade concrete instead of M-25 grade BMC /RMC. (Note:- Cement content considered in M-30 is @ 340 kg/kg/cum)	240.00	m3		
15	5.35	Add for using extra cement in the items of design mix over and above the specified cement content therein	273.00	ql.		
16	5.9	Centering and shuttering including strutting, propping etc. and removal of form for :				
a	5.9.1	Foundations, footings, bases of columns, etc. for mass concrete.	120.00	m2		
b	5.9.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	350.00	m2		
c	5.9.3	Suspended floors, roofs, landings, balconies and access platform.	900.00	m2		
d	5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	975.00	m2		
e	5.9.6	Columns, Pillars, Piers, Abutments, Posts and Struts.	680.00	m2		
f	5.9.7	Stairs, (excluding landings) except spiral-staircases.	77.00	m2		
g	5.9.1 6.1	Edges of slabs and breaks in floors and walls. Under 20 cm wide	400.00	m2		
h	5.9.1 9	Weather shade, Chajjas, corbels etc., including edges.	77.00	m2		

17	5.11.1	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc. including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured) Suspended floors, roofs, landing, beams and balconies (Plan area to be measured).	820.00	m2		
18	5.22.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete Thermo-Mechanically Treated bars.	69720.00	kg		
19	7.1.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) upto plinth level with : Cement mortar 1:6 (1 cement : 6 coarse sand)	5.00	m3		
20	6.1.2	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in: Cement mortar 1:6 (1 cement : 6 coarse sand)	7.00	m3		
21	6.4.2	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in : Cement mortar 1:6 (1 cement : 6 coarse sand)	230.00	m3		

22	6.12. 2	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundations and plinth in.cement mortar 1:4 (1 cement : 4 coarse sand)	160.00	m2		
23	6.15	Extra for providing and placing in position 2 Nos. 6mm dia. M.S. bars at every third course of half brick masonry.	160.00	m2		
24	8.13	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 over 20 mm (average) thick base of cement mortar 1:4,laid and joined 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 EIC. Polished granite stone slab jet black,cherry red,elite brown,cat eye or equivalent. (Lowest retails price not less than Rs. 2000/m2)	215.00	m2		

25	8.2.2 .2	Providing and fixing 18mm thick gang saw cut mirror polished premoulded and prepolished) machine cut for kitchen platforms, flooring, vanity counters, window sills , facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) with 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. Granite of any colour and shade: Area of slab over 0.50 sqm.(Lowest retails price not less than Rs. 2000/m2)	120.00	m2		
26	8.5	Extra for providing opening of required size & shape for wash basins/ kitchen sink in kitchen platform, vanity counters and similar location in marble/Granite/stone work including necessary holes for pillar taps etc. including moulding, rubbing and polishing of cut edges etc. complete.	10.00	nos		
27	11.4 1.2	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's 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) including grouting the joints with white cement and matching pigments etc., complete.Size of Tile 600x600 mm: (Lowest retail price not less than Rs. 900/m2)	200.00	m2		

28	11.4 6.2	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), including grouting the joint with white cement & matching pigments etc. complete. Size of Tile 600x600 mm (Lowest retail price not less than Rs. 900/m <sup>2</sup> )	30.00	m <sup>2</sup>		
29	11.4 0	Providing and laying rectified Glazed Ceramic floor tiles 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) including pointing the joints with white cement and matching pigments etc., complete (Lowest retail price not less than Rs. 500/m <sup>2</sup> )	65.00	m <sup>2</sup>		

30	11.3 6	Providing and fixing 1st quality ceramic glazed wall tiles 300x450 mm size conforming to IS : 15622 (thickness to be specified by the manufacturer ) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete.(Lowest retail price not less than Rs. 400/m2)	180.00	m2		
31	9.14 7A	Providing and fixing factory made uPVC white colour casement/ casement cum fixed glazed windows comprising of uPVC multi chambered fram, sash and mullion (wherever required) extruded profiles duly reinforced with 1.60 ± 0.2 mm thick galvanized mild steel section made from roll forming process fo required length (shape and size according to uPVC profile), uPVC extruded glazing beads of appropriate dimension, EPDM gasket, stainless steel (SS 304 grade) friction hinges, zinc alloy (white powder coated) casement handles, GI fasteners 100 X 8mm size for fixing frame to finished wall, plastic packers, plastic caps and necessary stainless steel screws etc.				



		Profile of frame and sash shall mitred cut and fusion welded at all corners , mullion (if required) shall also fusion welded including drilling of holes for fixing hardwares and drainage of water etc. After fixing frame, the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over baker rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-charge. (Single/ double glass panes and silicon sealant shall be paid separately)				
a)	9.14 7A. 1	Casement window single panel with S.S. Friction hinges (300 x 19 x 1.9mm) made of (small series) frame 47 x 50 mm & sash 47 X 68 mm both having wall thickness of $1.9 \pm 0.2$ mm and single glass pane glazing bead of appropriate dimension (Area of window up 0.75 sq.m)	5.10	m2		

32	9.14 7D	Providing and fixing factory made uPVC white colour sliding glazed window upto 1.5m in height dimension 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 of uPVC extruded glazing beads and uPVC extruded interlocks, EPDM gasket, wool pile, zinc alloy (white powder coated) touch locks with hook, zinc alloy body with single nylon rollers (weight bearing capacity to be 40kg), 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 the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-charge. (single/double glass panes, wire mesh and silicon sealant shall be paid separately)				
		Note: For uPVC frame and sash extruded profiles minus 5% tolerance in dimension i.e. In depth & width of profile shall be acceptable				

a)	9.14 7D.3	Two track two panels sliding window made of (big series) frame 67 x 50 mm & sash 46 x 62 mm both having wall thickness of $2.3 \pm 0.2$ mm and single glazing bead/ double glazing bead of appropriate dimension.	56.00	m2		
b)	9.14 7D.5	Three track three panels sliding window made of (big series) frame 116 x 45 mm & sash 46 x 62 mm both having wall thickness of $2.3 \pm 0.2$ mm and single glazing bead / double glazing bead of appropriate dimension.	9.00	m2		
33	21.3. 2	Providing and fixing glazing in uPVC 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: With float glass panes of not less than 5.50 mm thickness	54.00	m2		
34	9.48. 2	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.Fixed to openings /wooden frames with rawl plugs screws etc.	1110.00	kg		

35	9.12 1	Providing and fixing Fiber Glass Reinforced plastic (FRP) Door Frames of cross-section 90 mm x 45 mm having single rebate of 32 mm x 15 mm to receive shutter of 30 mm thickness .The laminate shall be moulded with fire resistant grade unsaturated polyester resin and chopped mat. Door frame laminate shall be 2 mm thick and shall be filled with suitable wooden block in all the three legs. The frame shall be covered with fiber glass from all sides. M.S. stay shall be provided at the bottom to steady the frame.	72.00	m		
36	9.12 2.2	30 mm thick Fiberglass Reinforced Plastic (F.R.P.) flush door shutter in different plain and wood finish made with fire retardant grade unsaturated polyester resin, moulded to 3mm thick FRP laminate all around, with suitable wooden blocks inside at required places for fixing of fittings and polyurethane foam (PUF)/ Polystyrene foam to be used as filler material throughout the hollow panel, casted monolithically with testing parameters of F.R.P. laminate conforming to table - 3 of IS: 14856, complete as per direction of Engineer-in-charge.	26.00	m2		
37	10.5. 1	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6mm angle iron and 3mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer:Using M.S. angels 40x40x6 mm for diagonal braces.	17.00	m2		

38	10.1 7	Providing and fixing M.S. fan clamp type I or II of 16 mm dia M.S. bar bent to shape with hooked ends in R.C.C. slabs, beams during laying including painting the exposed portion of loop, all as per standard design complete.	50.00	Each		
39	10.2 8	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.)	590.00	kg		
40 (a)	9.15 7.1	Providing and fixing Pre-laminated medium density fibre board IS: 14587:1998 marked, with one side decorative lamination other side balancing lamination Grade-I (exterior grade) in shelves with screws and fittings wherever required, edges to be sealed with PVC edge bending tape 2.00 mm thick of approved brand (fittings to be paid separately). Pre-laminated with decorative lamination one side and otherside balancing lamination exterior Grade - I MDF Board 18 mm thick confirming to IS:14587 for cupboard, shelves, partitions etc.	200.00	m2		

40(b)	9.72. 6	Providing and fixing bright finished brass butt hinges with necessary screws etc. complete 75x40x2.5 mm mm for cupboards	150.00	Each		
40 (c)	9.72. 7	Providing and fixing bright finished brass butt hinges with necessary screws etc. complete 50x40x2.5 mm mm for cupboards	150.00	Each		
41	9.90	Providing and fixing special quality chromium plated brass cupboard locks with six levers of approved quality including necessary screws etc. complete.				
a)	9.90. 3	Size 65 mm	150.00	Each		
b)	9.90. 4	Size 75 mm	15.00	Each		
42	12.4 5.1	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to	175.00	m2		

		<p>centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with 12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- Part I</p>				
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43	12.5 2	<p>Providing and fixing tiled false ceiling of approved materials of size 595x595 mm in true horizontal level suspended on inter locking metal grid of hot dipped galvanized steel sections ( galvanized @ 120 gsm/sqm, both side inclusive) consisting of main "T" runner with suitably spaced joints to get required length and of size 24x38mm made from 0.30mm thick (minimum) sheet, spaced at 1200mm center to center and cross "T" of size 24x25mm made of 0.30mm thick (minimum) sheet, 1200mm long spaced between main "T" at 600mm center to center to form a grid of 1200x600 mm and secondary cross "T" of length 600mm and size 24x25mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600mm panel to form grids of 600x600mm and wall angle of size 24x24x0.3 mm</p>				
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		and laying false ceiling tiles of approved texture in the grid including, wherever, required, cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main "T" runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x 1.6 x mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200mm center to center along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete at all heights as per specifications drawings and as directed by Engineer-in-charge.				
	12.5 2.2	GI Metal Ceiling Lay in perforated Tegular edge global white colour tiles of size 595 x 595 mm and 0.5 mm thick with 8 mm drop; made of GI sheet having galvanizing of 100 gms/sqm (both sides inclusive) and 20 % perforation area with 1.8 mm dia holes and having NRC (Noise reduction coefficient )of 0.50, electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending and perforation, and backed with a black glass fiber acoustical fleece.	175.00	m2		

44	12.5 2.3	12.5mm thick square edge PVC Laminated Gypsum Tile of size 595x595mm, made of Gypsum plasterboard; manufactured from natural gypsum as per IS 2095 part I and laminated with white 0.16mm thick fire retardant PVC film on the face side and 12micron metalized polyester on the back side with all edges sealed with the face side PVC film which goes around and wraps the edges and is bonded to the edges and the back side metalized polyester film so as to make the tile a completely sealed unit.	33.00	m2		
45	13.5. 1	15 mm cement plaster on rough side of single or half brick wall of mix : 1:4 (1 cement: 4 coarse sand) to the inside walls	2000.00	m2		
46	13.2. 1	15 mm cement plaster on the rough side of single or half brick wall of mix :1:4 (1 cement: 4 fine sand) for outside walls	1330.00	m2		
47	13.2 2	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof. 10m to 13m	250.00	m2		
48	13.2 2 x2	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof. 13m to 16m	150.00	m2		
49	13.2 2 x3	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof. 16m to 19m	80.00	m2		
50	13.1 6.1	6 mm cement plaster of mix : 1:3 (1 cement: 3 fine sand) for under side of roof slab	550.00	m2		

51	4.2.3	Providing and laying cement concrete 1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) as per direction of Engineer-in-Charge.to the top of roof slab for providing necessary slopes	23.00	m2		
52	13.9.1 + 13.21	Cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement.12 mm cement plaster including providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturers. to the top surface of sunshade	820.00	m2		
53	13.80	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.	2530.00	m2		
54	13.43.1	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface :	2880.00	m2		
55	13.47.1	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade New work (Two or more coats applied @ 1.43 ltr/ 10 sqm. over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm).	1330.00	m2		
56	13.60.1	Wall painting with acrylic emulsion paint of approved brand and manufacture to give an even shade: Two or more coats on new work. Inside of walls	2530.00	m2		
57	13.61.1	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :Two or more coats on new work.	110.00	m2		

58	16.1	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth with lead upto 50 metres.	230.00	m2		
59	16.7 9	Providing, laying, spreading and compacting graded stone aggregate (size range 53 mm to 0.075 mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paverfinisher in sub- base/ base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.	230.00	m3		
60	16.6 8	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of fine sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	300.00	m2		

61	16.6 9	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	1.50	m3		
62	11.2 0.3	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand). Dark shade using ordinary cement.	125.00	m2		

63	21.1. 1.2	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. (Glazing, paneling and dash fasteners to be paid for separately) : For fixed portion Powder coated aluminium (minimum thickness of powder coating 50 micron)	530.00	kg		
64	21.1. 2.2	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). Powder coated aluminium (minimum thickness of powder coating 50 micron)	390.00	kg		

65	21.2. 2	Providing and fixing 12mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge. Pre-laminated particle board with decorative lamination on both sides.	27.00	m2		
66	21.3. 3	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): With float glass panes of not less than 8 mm thickness	39.00	m2		
67	21.4. 2	Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg., for doors, including cost of cutting floors , embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge. With brass cover plate minimum 1.25 mm thickness.	17.00	Each		

68	21.1 2.2	Providing and fixing aluminium tubular handle bar 32 mm outer dia, 3.0 mm thick & 2100 mm long with SS screws etc .complete as per direction of Engineer-in-Charge.Powder coated minimum thickness 50 micron aluminium tubular handle bar	34.00	Each		
69	21.1 3	Providing and fixing 100mm brass locks (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete	27.00	Each		
70	9.82	Providing and fixing bright finished brass hanging type floor door stopper with necessary screws, etc. complete.	27	Each		
71	22.5	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	36	m2		



72	25.1	Providing and supplying aluminium extruded tubular and other aluminium sections as per the architectural drawings and approved shop drawings, the aluminium quality as per grade 6063 T5 or T6 as per BS 1474, including super durable powder coating of 60-80 microns conforming to AAMA 2604 of required colour and shade as approved by the Engineer-in-Charge. (The item includes cost of material such as cleats, sleeves, screws etc. necessary for fabrication of extruded aluminium frame work. Nothing extra shall be paid on this account).	980.00	kg		
73	25.2	Designing, fabricating, testing, protection, installing and fixing in position semi (grid) unitized system of structural glazing (with open joints) for linear as well as curvilinear portions of the building for all heights and all levels, including:				
		a) Structural analysis & design and preparation of shop drawings for the specified design loads conforming to IS 875 part III (the system must passed the proof test at 1.5 times design wind pressure without any failure), including functional design of the aluminum sections for fixing glazing panels of various thicknesses, aluminium cleats, sleeves and splice plates etc. gaskets, screws, toggles, nuts, bolts, clamps etc., structural and weather silicone sealants, flashings, fire stop (barrier)-cum-smoke seals, microwave cured EPDM gaskets for water tightness, pressure equalisation & drainage and protection against fire hazard including				

		b) Fabricating and supplying serrated M.S. hot dip galvanised/Aluminium alloy of 6005 T5 brackets of required sizes, sections and profiles etc. to accommodate 3 Dimensional movement for achieving perfect verticality and fixing structural glazing system rigidly to the RCC/ masonry/structural steel framework of building structure using stainless steel anchor fasteners/ bolts, nylon seperator to prevent bimetallic contacts with nuts and washers etc. of stainless steel grade 316, of the required capacity and in required numbers.				
		c) Providing and filling, two part pump filled, structural silicone sealant and one part weather silicone sealant compatible with the structural silicone sealant of required bite size in a clean and controlled factory / work shop environment , including double sided spacer tape, setting blocks and backer rod, all of approved grade, brand and manufacture, as per the approved sealant design, within and all around the perimeter for holding glass.				
		d) Providing and fixing in position flashings of solid aluminium sheet 1 mm thick and of sizes, shapes and profiles, as required as per the site conditions, to seal the gap between the building structure and all its interfaces with curtain glazing to make it watertight.				

		e) Making provision for drainage of moisture/ water that enters the curtain glazing system to make it watertight, by incorporating principles of pressure equalization, providing suitable gutter profiles at bottom (if required), making necessary holes of required sizes and of required numbers etc. complete. This item includes cost of all inputs of designing, labour for fabricating and installation of aluminium grid, installation of glazed units, T&P, scaffolding and other incidental charges including wastages etc., enabling temporary structures and services, cranes or cradles etc. as described above and as specified.				
		The item includes the cost of getting all the structural and functional design including shop drawings checked by a structural designer, dully approved by Engineer-in-charge. The item also includes the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working structural glazing as specified, cleaning and protection till the handing over of the building for occupation. In the end, the Contractor shall provide a water tight structural glazing having all the performance characteristics etc. all complete as required, as per the Architectural drawings, as per item description, as specified as per the approved shop drawings and as directed by the Engineerin-, Charge.				

		Note:- 1. The cost of providing extruded aluminium frames, shadow boxes, extruded aluminium section capping for fixing in the grooves of the curtain glazing and vermin proof stainless steel wire mesh shall be paid for separately under relevant items under this subhead However, for the purpose of payment, only the actual area of structural glazing (including width of grooves ) on the external face shall be measured in sqm. up to two decimal places.				
		Note:-2. The following performance test are to be conducted on structural glazing system if area of structural glazing exceeds 2500 Sqm from the certified laboratories accredited by NABL(National Accreditation Board for Testing and Calibration Laboratories), Department of Science & Technologies, India. Cost of testing is payable separately. The NIT approving authority will decide the necessity of testing on the basis of cost of the work, cost of the test and importance of the work. Performance Testing of Structural glazing system Tests to be conducted in the NBL Certified laboratories				
		1. Performance Laboratory Test for Air Leakage Test (-50pa to – 300pa) & (+50pa to +300pa) as per ASTM E-283-04 testing method for a range of testing limit 1 to 200 mVhr”				
		2. Static Water Penetration Test. (50pa to 1500pa) as per ASTM E-331-09 testing method for a range up to 2000 ml.”				

		3. Dynamic Water Penetration (50pa to 1500pa) as per AAMA 501.01- 05 testing method for a range upto 2000 ml”				
		4. Structural Performance Deflection and deformation by static air pressure test (1.5 times desing wind pressure without any failure) as per ASTM E-330-10 testing method for a range upto 50 mm”				
		5. Seismic Movement Test (upto 30 mm) as per AAMA 501.4-09 testing method for Qualitative test” Tests to be conducted on site				
		6. Onsite Test for Water Leakage for a pressure range 50 kpa to 240 kpa (35psi) upto 2000ml”	145.00	m2		
74	25.3	Providing, assembling and supplying vision glass panels (IGUs) comprising of hermetically-sealed 6-12- 6 mm insulated glass (double glazed) vision panel units of size and shape as required and specified, comprising of an outer heat strengthened float glass 6mm thick, of approved colour and shade with reflective soft coating on surface # 2 of approved colour and shade, an inner Heat strengthned clear float glass 6mm thick, spacer tube 12mm wide, dessicants, including primary seal and secondary seal (structural silicone sealant) etc. all complete for the required performances, as per the Architectural drawings, as per the approved shop drawings, as specified and asdirected by the Engineer-in-Charge.				

		The IGUs shall be assembled in the factory/ workshop of the glass processor. (Payment for fixing of IGU Panels in the curtain glazing is included in cost of item No.26.2) For payment, only the actual area of glass on face # 1 of the glass panels (excluding the areas of the grooves and weather silicone sealant) provided and fixed in position, shall be measured in sqm.				
		(i) Coloured tinted float glass 6mm thick substrate with reflective soft coating on face # 2, + 12mm Airgap + 6mm Heat Strengthened clear Glass of approved make having properties as visible Light transmittance (VLT) of 25 to 35 %, Light reflection internal 10 to 15%, light reflection external 10 to 20 %, shading coefficient (0.25- 0.28) and U value of 3.0 to 3.3 W/m <sup>2</sup> degree K etc. The properties of performance glass shall be decided by technical sanctioning authority as per the site requirement.	140.00	m <sup>2</sup>		
75	25.4	Extra for openable side / top hung vision glass panels (IGUs) including providing and supplying at site all accessories and hardware for the openable panels as specified and of the approved make such as heavy duty stainless steel friction hinges, min 4 -point cremone locking sets with stainless steel plates, handles, buffers etc. including necessary stainless steel screws/ fasteners, nuts, bolts, washers etc. all complete as per the Architectural drawings, as per the approved shop drawings, as specified and as directed by the Engineer-in-Charge.	14.00	m <sup>2</sup>		

76	25.7	Designing, fabricating, testing, installing and fixing in position Curtain Wall with Aluminium Composite Panel Cladding, with open grooves for linear as well as curvilinear portions of the building, for all heights and all levels etc. including:				
		a) Structural analysis & design and preparation of shop drawings for pressure equalisation or rain screen principle as required, proper drainage of water to make it watertight including checking of all the structural and functional design.				
		b) Providing, fabricating and supplying and fixing panels of aluminium composite panel cladding in pan shape in metallic colour of approved shades made out of 4mm thick aluminium composite panel material consisting of 3mm thick FR grade mineral core sandwiched between two Aluminium sheets (each 0.5mm thick). The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF/ Lumiflon based fluoropolymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc.				

		c) The fastening brackets of Aluminium alloy 6005 T5 / MS with Hot Dip Galvanised with serrations and serrated washers to arrest the wind load movement, fasteners, SS 316 Pins and anchor bolts of approved make in SS 316, Nylon separators to prevent bi-metallic contacts all complete required to perform as per specification and drawing				
		The item includes cost of all material & labour component, the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working curtain wall with aluminium composite panel cladding, cleaning and protection of the curtain wall with aluminium composite panel cladding till the handing over of the building for occupation. Base frame work for ACP cladding is payable under the relevant aluminium items.				
		The Contractor shall provide curtain wall with aluminium composite panel cladding, having all the performance characteristics all complete , as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings and as directed by the Engineer-in-Charge. However, for the purpose of payment, only the actual area on the external face of the curtain wall with Aluminum Composite Panel Cladding (including width of groove) shall be measured in sqm. up to two decimal places.	25.00	m2		



77	8.9.1 .2 Anal ysis	Stone tile (polished) work for wall lining over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and cement slurry @ 3.3 kg/sqm including pointing in white cement complete...:18mm thick Granite of any colour and shade.to the front side of lift room	20.00	m2		
78	8.3.2	Providing edge moulding to 18mm thick granite stone including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge: to the front side of lift room	16.00	m		
79	7.23. 1.3	Stone work (machine cut edges) for wall lining etc. (veneer work) upto 10 metre height, backing filled with a grout of average 12 mm thick cement mortar 1:3 (1 cement : 3 coarse sand) including pointing in white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade : (To be secured to the backing and the sides by means of cramps and pins which shall be paid for separately) : Granite stone - exposed face fine dressed with rough backing:50 mm thick.	72.00	m2		
80	7.39	Extra for stone work for wall lining on exterior walls of height more than 10 m from ground level for every additional height of 3 m or part there of: 10.0m to 13.0m	25.00	m2		
81	7.39 x2	Extra for stone work for wall lining on exterior walls of height more than 10 m from ground level for every additional height of 3 m or part there of. 13.00m to 16.00 m	9.00	m2		

82	7.25	Providing and fixing stainless steel cramps of required size and shape for anchoring stone wall lining to the backing or securing adjacent stones in stone wall lining in cement mortar 1:2 (1 cement : 2 coarse sand) including making the necessary chases in stone and holes in walls wherever required.	144.00	kg		
		<b>Total amount</b>				

PLUMBING WORKS						
Item No	DSR code	Details of items	Unit	Quantity	Rate in words and figures	Amount in words and figures
1	17.1.1	Providing and fixing water closet squatting pan (Indian type W.C. pan ) with 100mm sand cast Iron 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 : White Vitreous china Orissa pattern W.C. pan of size 580x440mm with integral type foot rests. (Make: Hindware, Jaquar, Parryware). Materials should be selected by the Engineer in charge	Each	1		

2	17.3.1	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous china flushing cistern & C.P. flush bend with fittings & C.I.brackets, 40mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete including painting of fittings and brackets, cutting and making good the walls and floors wherever required : W.C. pan with ISI marked white solid plastic seat and lid.(Make: Hindware, Jaquar, Parryware): Materials should be selected by the Engineer in charge	Each	9		
3	17.5	Providing and fixing white vitreous china flat back half stall urinal of size 580x380x350mm with white PVC automatic flushing cistern, with fittings, standard size C.P. brass flush pipe, spreaders with unions and clamps (all in C.P. brass) with waste fitting as per IS : 2556, C.I. trap with outlet grating and other couplings in C.P. brass including painting of fittings and cutting and making good the walls and floors wherever required : (Make: Hindware, Jaquar, Parryware): Materials should be selected by the Engineer in charge				
a	17.5.2	Range of two half stall urinals with 5 litre P.V.C. automatic	Each	2		

4	8.10.2	Providing and fixing stone slab 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. Granite Stone of approved shade.	Sqm	1.50		
5	17.7.2	Providing and fixing wash basin/counter 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 White Vitreous China Wash basin size 630x450 mm with a single 15 mm C.P. brass pillar tap (Make: Hindware, Jaquar, Parryware): Materials should be selected by the Engineer in charge	Each	9		
6	17.10.2.1	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS 13983 with C.I. brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required : Kitchen sink without drain board 610x510 mm bowl depth 200 mm. (Make: Hindware, Jaquar, Parryware): Materials should be selected by the Engineer in charge	Each	1		

7	17.28.2.2	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.Flexible pipe 40 mm dia	Each	10		
8	17.32.2	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 :Rectangular shape 453x357mm				
a	17.32.2	Rectangular shape 453x357mm	Each	9		
9	17.34.1	Providing and fixing toilet paper holder :C.P. Brass	Each	11		
10	17.69.2	Providing and fixing PTMT Waste Coupling for sink, of approved quality and colour.Waste coupling 38 mm dia of 83 mm length and 77mm breadth, weighing not less than 60gms.	Each	1		
11	17.73.2	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fitting arrangement of approved quality and colour.600mm long towel rail with total length of 645mm, width 78mm and effective height of 88mm, weighing not less than 190gms.	Each	10		

12	18.7	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Make: Supreme, Finolex, Astral <b>Internal work - Exposed on wall</b>				
a	18.7.1	15 mm nominal outer dia .Pipes.	Metre	2.00		
b	18.7.2	20 mm nominal outer dia .Pipes.	Metre	70.00		
c	18.7.3	25 mm nominal outer dia .Pipes	Metre	35.00		
d	18.7.4	32 mm nominal outer dia .Pipes.	Metre	20.00		
e	18.7.5	40 mm nominal outer dia .Pipes.	Metre	45.00		

13	18.8	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. Make: Supreme, Finolex, Astral <b>Concealed work including cutting chases and making good the walls etc.</b>				
a	18.8.1	15 mm nominal outer dia .Pipes	Metre	55.00		
b	18.8.2	20 mm nominal outer dia .Pipes	Metre	65.00		
c	18.8.3	25 mm nominal outer dia .Pipes.	Metre	5.00		
14	18.9	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.Make: Supreme, Finolex, Astral <b>External work</b>				
a	18.9.3	25 mm nominal outer dia .Pipes.	Metre	30		

b	18.9.4	32 mm nominal outer dia .Pipes.				
			Metre	30		
15	18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :				
a	18.17.1A	20 mm nominal bore				
			Each	8		
b	18.17.1	25 mm nominal bore				
			Each	2		
c	18.17.2	32 mm nominal bore				
			Each	2		
d	18.17.3	40 mm nominal bore				
			Each	2		
e	18.17.4	50 mm nominal bore				
			Each	2		
16	18.18	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete				
a	18.18.1	15 mm nominal bore				
			Each	1		
b	18.18.2	20 mm nominal bore				
			Each	2		
c	18.18.3	25 mm nominal bore				
			Each	2		
17	18.21	Providing and fixing uplasticised PVC connection pipe with brass unions :				



a	18.21. 1.1	30 cm length 15 mm nominal bore	Each	5		
b	18.21. 2.1	45 cm length 15 mm nominal bore	Each	22		
18	18.33. 1	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm. top diameter, 160 mm bottom diameter and 180 mm deep ( inside) with chained lid and RCC top slab 1:2:4 mix (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominal size ) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design : With common burnt clay F.P.S.(non modular) bricks of class designation 7.5.	Each	1		

19	18.37. 1	Constructing masonry Chamber 60x45x50 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for water meter complete with C.I. double flap surface box 400x200x200 mm (inside) with locking arrangement and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 ( 1 cement : 5 fine sand:10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design : With common burnt clay F.P.S.(non modular) bricks of class designation 7.5.	Each	1		
20	18.51. 1	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.: 15 mm nominal bore: Make:Jauqar, Hindware, Parryware, crome	Each	11		
21	18.52. 1	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.:15 mm nominal bore.: Make:Jauqar, Hindware, Parryware, crome	Each	9		

22	18.53. 1	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931 a) 15 mm nominal bore:15mm nominal bore: Make:Jauqar, Hindware, Parryware, crome	Each	31		
23	18.58. 2.1	Providing and fixing PTMT grating of approved quality and colour.:Rectangular type with openable circular lid.150 mm nominal size square 100 mm diameter of the inner hinged round grating	Each	17		
24	18.64	Providing and fixing PTMT swivelling shower, 15mm nominal bore. Weighing not less than 40gms.Make:Jauqar, Hindware, Parryware, crome	Each	9		
25	18.65	Providing and fixing PTMT soap Dish Holder having length of 138mm, breadth 102mm, height of 75mm with concealed fitting arrangements. Weighing not less than 106 gms.	Each	19		
26	18.76. 1	Cutting holes up to 30x30 cm in walls including making good the same: With common burnt clay F.P.S. (non modular) bricks.	Each	20		
27	18.77	Cutting holes up to 15x15cm in R.C.C. floors and roofs for passing drain pipe etc. and repairing the hole after insertion of drain pipe etc. with cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including finishing complete so as to make it leak proof.	Each	20		

28	12.41.2	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. 110 mm diameter	Metre	95		
29	12.42	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.				
a	12.42.1.2	Coupler: 110 mm	Each	25		
b	12.42.3.2	Single tee with door: 110x110x110 mm	Each	6		
c	12.42.5.2	Bend :110 mm	Each	20		
d	12.42.6.2	110 mm Shoe	Each	6		
30	12.44	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams.	Each	8.00		

31	12.43.2	Providing and fixing unplasticised - PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50mm 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. 110 mm	Each	95		
32	19.4	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design : 100x100 mm size P type With common burnt clay F.P.S. (non modular) bricks of class designation 7.5				
a	19.4.1.1	100x100 mm size P type With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	1		
b	19.4.2.1	150 x 100 mm size P type. With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	3		
c	19.4.3.1	180x150 mm size P type With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	2		

33	19.7	Constructing brick masonry manhole in cement mortar 1:4 ( 1 cement : 4 coarse sand ) with R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size), inside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design :				
a	19.7.1 .1	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		
b	19.7.3 .1	Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (heavy duty) 560 mm internal diameter, total weight of cover and frame to be not less than 208 kg (weight of cover 108 kg and weight of frame 100 kg) : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	3		
34	19.8	Extra for depth for manholes				

a	19.8.1 .1	Size 90x80 cm With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Metre	2		
b	19.8.2 .1	Size 120x90 cm With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Metre	3		
35	19.16	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910 on 12mm dia steel bar conforming to IS : 1786 having minimum cross section as 23 mmx25mm and over all minimum length 263 mm and width as 165mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	Each	120		

36	18.48 A	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 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.Circular tank	ltr.	10000		
37	LMR	Providing, Fixing, Testing & Commissioning of <b>full way brass valve</b> of brass body with threaded / flanged joints complete with nuts, bolts, gaskets, washers etc.15mm dia bronze valve	Each	2		
38	MR	Providing & fixing of CP <b>Health faucet. Hand operated spray unit (instand type)</b> .Make:Jauqar, Hindware, Parryware, crome., (Lowest retail price not less than 1200/each. Materials to be selected by the Engineer in charge)	Set	9		
39	M.R.	Providing and fixing UPVC SWR pipe for soil, waste and vent pipe to IS : 13592 of SWR quality, including all fittings, like EG : Bends, Tees, Elbows, Collars, junction, inspection doors, cowls, offsets, access pipes, jointing with rubber ring / solvent cement by application of leak proof adhesive like FRP paste including cutting holes in walls and floors and making good. clipping to walls and slabs, trenching, refilling etc. complete Make: Supreme, Finolex, Prince				
a)	MR	50mm dia UPVC SWR Type B pipe	Mtr.	25.00		



b)	M.R.	63mm dia UPVC SWR Type B pipe	Mtr.	35.00		
c)	M.R.	75mm dia UPVC SWR Type B pipe	Mtr.	120.00		
d)	MR	90mm dia UPVC SWR Type B pipe	Mtr.	30.00		
e)	M.R.	110mm dia UPVC SWR Type B pipe	Mtr.	90.00		
f)	M.R.	160mm dia UPVC SWR Type B pipe	Mtr.	65.00		
40	MR	Providing and fixing PVC pipe 10kg/cm2 including all fittings, like : Bends, Tees, Elbows, Collars etc.jointing with rubber ring / solvent cement by application of leak proof adhesive like FRP paste including cutting holes in walls and floors and making good. clipping to walls and slabs, trenching, refilling etc. complete Make: Supreme, Finolex, Prince				
a	MR	50 mm PVC pipe 10kg/cm2	Mr	35.00		
41	M.R.	Providing and fixing <b>PVC floor trap</b> self cleansing design with or without vent arm complete including cutting and making good the walls and floors.Make:Supreme,Finolex,Prince etc.,110mm dia inlet 110mm dia outlet	Each	17		

42	M.R.	Supply, erection and commissioning of 2HP Centrifugal pump for a discharge of 167 litres/minute with a total head of 40m including cost of panel board, valves, pressure gauge, specials and fittings etc. complete	Each	2		
		<b>Total amount</b>				<b>0.00</b>

SEPTIC TANK FOR 50 UERS						
Item no.	DSR 2012	Item Description	Unit	Quantity	Rate in words and figures	Amount in words and figures
	Code No.					
1	2.6.1	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 disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed.:All kinds of soil	m3	40.00		
2	2.26.1	Extra for every additional lift of 1.5m or part thereof in excavation/banking excavated or stacked materials . All classes of soil	m3	13.00		
3	4.1.5	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 : 6 graded stone aggregate 20 mm nominal size).	m3	2.00		

4	4.1.3	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) for inside slopping of tank	m3	1.00		
5	5.37.1	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement including cost of 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 the Engineer - in - charge.				
		(Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately). All works upto plinth level.	m3	11.00		
6	5.35	Add for using extra cement in the items of design mix over and above the specified cement content therein.	ql	5.50		
7	5.9	Centering and shuttering including strutting, propping etc., and removal of form for,				
A	5.9.1	Foundations, Footings, bases of columns,etc for mass concrete.	m2	4.00		

B	5.9.2	Walls any thickness including attached pilasters, buttresses, Plinth and string courses etc.	m2	90.00		
C	5.9.3	Suspended floors, roofs, landings, Balconies and access platform	m2	15.00		
8	5.22.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto Plinth level.: Termo – Mechanically Treated Bars	kg	1100.00		
9	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc., in layers not exceeding 20cm in depth: consolidating each deposited layer by ramming and watering etc complete, and form uniform level for flooring concrete .	m3	31.00		
10	1.1.2 (8)	Conveying from site and disposing off the excess earth as per the direction of engineer in charge.	m3	23.00		
11	13.9.1	Cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement :12 mm cement plaster	m2	105.00		

12	LMR	Providing and fixing UPVC SWR pipe for soil, waste and vent pipe to IS : 13592 of SWR quality, including all fittings, like EG : Bends, Tees, Elbows, Collars, junction, inspection doors, cowls, offsets, access pipes, jointing with rubber ring / solvent cement by application of leak proof adhesive like FRP paste including cutting holes in walls and floors and making good. clipping to walls and slabs, trenching, refilling etc. complete Make: Supreme, Finolex, Prince				
A	LMR	160mm dia UPVC SWR Type B pipe	m	20.00		
13	LMR	Providing and fixing C.I. M.H.cover with frame (Heavy duty) 560 mm internal diameter, total weight of cover and frame to be not less than 208 kg (weight of cover 108 kg and weight of frame 100 kg) :	Each	6		
13	19.32.1	Making soak pit 2.5 m diameter 3.0 metre deep with 45 x 45 cm dry brick honey comb shaft with bricks and S.W. drain pipe 100 mm diameter, 1.8 m long complete as per standard design.With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	2		
		<b>Total amount</b>				

### ELECTRICAL WORKS

Item No	DSR code	Details of items	Unit	Quantity	Rate in words and figures	Amount in words and figures
<b>DSR ITEMS</b>						
<b>1. Wiring</b>						
1	1.10.3	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 Type PVC conduit with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sqmm, FRLS PVC insulated copper conductor single core cable etc. as required.	Point	150		
2	1.11	Wiring for twin control light point with 1.5sq.mm FRLS PVC insulated copper conductor singlecore cable in surface/ recessed PVC conduct, 2 way modular switch, modular plate, suitable GI box and earthing the point with 1.5 Sq mm FRLS PVC insulated copper conductor single core cable etc as required	Point	5		
3	1.14	Wiring for circuit/submain wiring along with earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/recessed PVC conduit as required.				

a.	1.14.1	2 x 1.5 sq.mm + 1x1.5 sq.mm earth wire	m	750		
b.	1.14.2	2 x 2.5 sq.mm + 1x 2.5 sq.mm earth wire	m	600		
c.	1.14.3	2 x 4 sq.mm +1x 4 sq.mm earth wire	m	400		
d.	1.14.4	2 X 6 sqmm + 1 x 6 sqmm earth wire	m	50		
e.	1.14.6	2 x 16 sqmm + 1 x 6 sqmm earth wire	m	20		
f.	1.14.8	4 x 4 sq.mm +1x 4 sq.mm earth wire	m	50		
4	1.22	Supplying and fixing of following sizes (nominal size) on surface or in recesss with suitable size of phenolic laminated sheet cover in front including painting etc as required.				
a.	1.22.11	200mm x 150mm x 100mm deep	Each	10		
b.	1.22.16	250mm x 300mm x 100mm deep	Each	10		

5	1.25	Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	Each	10		
6	1.26	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	50		
7	1.31	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 5/6 amps modular switch, connection etc. as required.	Each	30		
8	1.32	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc. as required.	Each	12		
9	1.33	Supply and fixing 3 pin, 6A ceiling rose on the existing junction box / wooden block including connection etc as required.	Each	35		
10	1.38	Supply and fixing call bell / buzzer suitable for single phase, 230 volts, complete as required.	Each	5		



11	1.41	Installation, testing and commissioning of prewired, fluorescent fittings / compact fluorescent fitting / LED of all types, complete with all accessories and tube etc. directly on ceiling /wall, including connections with 1.5 sq.mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	Each	150		
12	1.44	Installation, testing and commissioning of ceiling fan including wiring the down rod of standard length (upto 30 cm.) with 1.5 sq.mm FRLS PVC insulated, copper conductor, single core cable etc. as required.	Each	10		
13	1.50.1	Installation of exhaust fan upto 450mm sweep in the existing opening, including making good the damage, connection, testing, commissioning etc. as required.	Each	12		
14	1.56	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 2 nos 3 pin 5/6 amps modular socket outlet and 2nos 5/6 amps modular switch, connection etc. as required. (for light plugs to be used in non residential buildings.)	Each	10		
<b>2. MCCB, MCB &amp; DBs</b>						

15	2.3	Supplying and fixing following way single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface/ recess complete with tinned copper busbar, neutral busbar, earth bar, din bar, interconnection, powder painted including earthing etc. as required. (But without MCB/ RCCB/ Isolator)				
a.	2.3.3	12 way double door	Nos	2		
b.	2.3.4	16 way double door	Nos	3		
16	2.4	Supplying and fixing following way horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface/ recess complete with tinned copper busbar, neutral busbar, earth bar, din bar, interconnection, powder painted including earthing etc. as required. (But without MCB/ RCCB/ Isolator)				
a	2.4.1	4 way Double Door	Nos	2		

17	2.5	Supplying and fixing following way surface / recess mounted vertical type, 415 volt, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 100amps tinned copper busbar, common neutral link, earth bar, din bar, for mounting MCB's, (but without MCB's and incomer), as required. (Note: Vertical type MCB TPDB is normally used where 3 phase outlets are required).				
a.	2.5.2	8 way Double door	Each	2		
18	2.1	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "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.	2.10.1	Single pole	Each	65		
b.	2.10.4	Triple pole	Each	12		
19	2.11	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	Each	10		

20	2.12	Supplying and fixing following rating, double pole, 240 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a.	2.12.1	40 amps	Each	5		
21	2.13	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a.	2.13.1	40 amps	Each	2		
b.	2.13.2	63 amps	Each	2		
22	2.14	Supplying and fixing following rating, double pole, (single phase and neutral), 240 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a.	2.14.1	25 amps	Each	4		

b.	2.14.2	40 amps	Each	1		
23	2.15	Supplying and fixing following rating, four pole, (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a.	2.15.1	25 amps	Each	2		
b.	2.15.2	40 amps	Each	1		
24	2.18	Supplying and fixing 20 amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top along with 20 amps 'C' series, SP, MCB in sheet steel enclosure on surface or in recess, with chained metal cover for the socket outlet and complete with connections testing and commissioning etc, as required.	Each	10		

25	2.20	Supplying and fixing 30 amps, 415 volts, TPN industrial type, socket outlet, with 4 pole and earth, metal enclosed plug top along with 30amps 'C' series, TPN, MCB in sheet steel enclosure on surface or in recess, with chained metal cover for the socket outlet and complete with connections testing and commissioning etc, as required.	Each	3		
<b>3. Cable Tray</b>						
26	4.1	Supply and installing following size of perforated hot dipped GI cable trays(galvanisation thickness not less than 50 microns) with perforations not more than 17.5% in convenient sections, jointed with connectors, suspended from the ceiling with GI suspenders / fixed to walls with suitable GI clamps, including bolts and nuts, bends, reducers, Tees, cross members etc as required.				
a.	4.6.2	150 mm width x 50 mm depth x 1.6 mm thickness	m	100		
<b>4. Earthing</b>						
27	5.2	Earthing with G.I. earth pipe 4.5 metre long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.	Each	5		

28	5.6	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Set	2		
29	5.7	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.	m	50		
30	5.9	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm)	m	50		
31	5.14	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	m	20		
32	5.15	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing along with existing surface / recessed conduit / submain wiring / cable as required.	m	50		
33	5.18	Providing and fixing 4 mm dia copper wire on surface or in recess for loop earthing along with existing surface / recessed conduit / submain wiring / cable as required.	m	70		

<b>5. MV Cable Laying</b>						
34	7.1	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
a.	7.1.1	Upto 35 sq. mm	m	70		
35	7.7	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
a	7.7.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	m	100		
b.	7.7.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	m	10		
c.	7.7.3	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	m	20		
36	7.8	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required.				



a.	7.8.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	m	50		
b.	7.8.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	m	5		
<b>6. MV Cable Jointing &amp; End Termination</b>						
37	9.1	Supplying and making end termination with brass compression gland and aluminium / copper lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
a.	9.1.26	3.5 C x 120 sq.mm	Nos	2		
b.	9.1.22	3.5 C x 50 sq.mm	Nos	2		
c.	9.1.21	3.5 C x 35 sq.mm	Nos	4		
d.	9.1.20	3.5 C x 25 sq.mm	Nos	4		
e.	9.1.32	4C x 10 sqmm	Nos	2		
f.	9.1.32	4C x 6 sqmm	Nos	4		
g.	9.1.32	4C x 4 sqmm	Nos	2		

<b>NON DSR ITEMS</b>					
<b>7. LT Panels</b>					
38		Supply, Installation, Testing & Commissioning of <b>Main panel</b> , cubicle type, made out of min 2mm thick CRCA sheet (load bearing), totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system, including internal wiring with suitable size wires, rotary handle, spreaders, 3mm thick gland plate, hinged type door with neoprene gasket / PU etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.			
		<b>Incomer</b>			
		200A TPN 25kA MCCB with thermal magnetic release with adjustable OL, SC and EF protection - 1 nos.			
		<b>Busbar</b>			
		1 Set of 200 A TPN busbars of high conductivity electrolytic quality Aluminium alloy and suitable size earthing conductor through out the panel for its earthing.			
		<b>Instruments</b>			
		2A, C curve SP MCB - 3 nos.			
		RYB indication lamp, LED type - 3 nos.			

		1 No 3 phase Digital Multi function meter to read V, A, F, kW, kWh, Acc class 1.				
		200/5A 5VA class 1 resin cast CT - 1 set				
		<b>Outgoing.</b>				
		100A, TPN MCCB, thermal magnetic having adjustable O/L, SC protection - 2 nos.				
		63A, TPN MCCB, thermal magnetic having adjustable O/L, SC protection - 3 nos.				
		40A, TPN MCCB, thermal magnetic having adjustable O/L, SC protection - 3 nos.				
			Each	1		
<b>8. UPS</b>						

39		Supply, Installation Testing and commissioning of double conversion, DSP Based, True on line UPS system with 415V +/- 15% V,50Hz,3Ph Input & 230V,1Ph,50 Hz , Output, RS 232 ports, monitoring software , O/L.S.C. protections & self diagnostic features,LCD Display Panel for Functions & all parameters, complying with IEC standards. Convertors,Invertors, rectifiers & Battery Charger shall utilize PWM technology with IGBT. Battery Back up time of 30 minutes with required No of 'SMF Battery with Battery management System, housed in suitable Cabinet /stand,Static ByPass, complete with Internal wiring & all accessories to be provided. The System shall have in-built P.F.correction(Output > 0.9) & shall ensure THD as per latest International standards. The efficiency of UPS shall be not less than 93% .				
a		20 kVA with Individual Battery Bank	Set	1		
<b>9. LT Cable</b>						
40		Supply of the following size 1.1kV grade XLPE insulated PVC sheathed, armoured Aluminium conductor power cable confirming to IS 7098 (part 1) ammended upto date.				

a		3.5 C x 120 sq.mm	m	15		
b		3.5 C x 50 sq.mm	m	15		
c		3.5 C x 35 sq.mm	m	30		
d		3.5 C x 25 sq.mm	m	60		
e		4 C x 10 sqmm	m	30		
f		4 C x 6 sqmm	m	50		
g		4 C x 4 sqmm	m	50		
<b>10. Light Fittings and Fans</b>						

		Note:All lightning Luminaire shall have fixed with Electronic Ballast, starters, control gears and necessary all connected accessories, supporting bracket/chain suspender, balance socket, suspension conduit, hooks, clamps, screws, connectors, terminal, flexible wire with flexible hose & gland from light point to lighting luminaries, CABLING /WIRES UPTO WIRING POINT FROM LUMINAIRES etc.. complete as required without any extra cost.				
41		Supply and installation of recess mounted Round LED 12 W down light in die-cast aluminium housing including high efficiency diffuser provides soft glare free light, driver etc including all required mounting accessories complete. (Crompton LSCRM-12-CDL /Wipro -LD90-141-XXX-65-XX).	Nos	8		
42		Supply and installation of recess mounted Round LED 18 W down light in die-cast aluminium housing including high efficiency diffuser provides soft glare free light, driver etc including all required mounting accessories complete. (Crompton LCDD-18-CDL /Havells LHEBJNP7IN1WO18 /Wipro -LD90-231-XXX-65-XX ).	Nos	40		

43		Supply of 20W LED Batten surface mounting luminare with Decorative box type fitting with high efficiency PMMA diffuser including all necessary accessories complete. (Crompton DMLN1LT8-16/LTT8-20/Havells LHFYBWP1TB1W020-LHLDDDBXEUL7Z020 /Wipro - W10 921208/LL13-181-65SE ).	No	40		
44		Supply of 9/10 W LED Batten surface mounting luminare with Decorative box type fitting with high efficiency PMMA diffuser including all necessary accessories complete. (Crompton LCTL-9-CDL/Havells LHEWEBP7IN1WO10 / Wipro-LL20-III-XXX-65-NE ).	No	6		
45		Supply and installation of compact Recess mounted 36W LED luminaire with High translucent diffuser gives soft glare free light & complete with electronic driver including all required mounting accessories complete. (Crompton LCTLR36-FO- CDL /Havells LHECDIL7PN1W036 / Wipro - CRCO 10R036HP57G1)	No	30		
46		Supply and installation of compact surface mounted 36W LED luminaire in MS housing with opal diffuser & complete with electronic driver & high brightness including all required mounting accessories complete. (Crompton LCTLS36 CDL /Havells LHEWEBP7NL1W036 /Wipro - CRCO 10S036HP57G1 ).	No	20		

47		Supply and installation of surface mounted Round 18 W LED down lighter in powder coated white finish with integrated electronic driver, including all required mounting accessories complete. (Crompton LCDSPL R 18 CDL /Havells LHEAAGP7IA1WO18 /Wipro -LD80-171-XXX-60-SM ).	No	40		
48		Supply of 20 W LED tube light Surface mounting industrial type corrosion resistant IP66 luminaire with polycarbonate body, polycarbonate cover, SS toggles etc including all necessary accessories complete. (Crompton IPFC111LT8-16/ Havells LHEKAWN7PZ6J020j/Wipro)	No	20		
49		Supply and installation of 30W LED, IP66, flood light luminaire with high pressure die cast housing, high power LED including all accessories like driver, installation accessories etc as required. (Make: Crompton LFLE 30 CDL /HaVELLS LHEPBFUEIN6W030/ Wipro - LF06-211-XXX-30-XX)	no	2		
50		Supplying and fixing ISI marked PVC angle battren with 15 W CFL lamp including all connections as required.	no	10		
51		Supply and installation of Wall fan 400 mm sweep, 230V.1Ph, complete with Openable mesh Cover ,string Operated etc as required. (Make: Crompton WMSDX120 / Havells Swing / Usha Max Air white )	No	10		



52		Supply of ceiling fan 1200 mm sweep,230V,1Ph, 5 star rated complete with double ball bearing, motor blades, down rods, canopy, capacitor etc complete as required. (Usha Technix Decorative (5 star rating) / Crompton High Breeze plus (5 star) / Havells ES -50 Premium 5)	No	10		
53		Supply of 250 mm sweep ventilating fan complete with louvers and cable from ceiling rose / connector to fan. (Crompton Brisk Air /Havells Ventil Air-DX WHT/BLK /Usha Crisp Air )	No	12		
<b>11. Metering cabinet</b>						
54		Supply, Installation Testing and commissioning of a.Three phase LT TOD meter b.CT 200/5 5VA resin cast -4 nos c.200A TPN SDF in SS enclosure d.HRC Fuse - 3 nos	set	1		
<b>12. Miscellaneous</b>						
55		Supply and fixing anodised aluminum glass framed shock treatment chart.	Each	2		
56		Supply & laying ISI marked following electrical grade chequered type rubber insulation mat as per IS 15642.				
a.		2m x 1m x 6 mm for 415V grade	Nos	2		
		<b>Total Amount</b>				

ELV WORKS						
Item No	DSR code	Details of items	Unit	Quantity	Rate in words and figures	Amount in words and figures
<b>FIRE DETECTION AND ALARM SYSTEM - ADDRESSABLE TYPE</b>						
	<b>DSR 2016</b>	<b>DSR ITEMS</b>				
1		Supplying and installing following size of perforated <u>GI cable trays(galvanisation thickness not less than 50 microns)</u> with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with GI suspenders including bolts & nuts, required bends, tees, reduces etc as required.				
	4.6.4	150 mm width X 50 mm depth X 1.6 mm thickness	mtrs	50		
		<b>SUB TOTAL FOR DSR ITEMS</b>				
		<b>NON DSR ITEMS</b>				
2	LMR	Supply, installation, testing & commissioning of Addressable <u>Fire Alarm Control panel</u> with battery back up for 8 hours normal operation and 15 minutes alarm operation. The Panel Shall be <u>2 loop capacity</u> . The panel shall consisting with 80 character LCD display, RS 485 for networking, loop cards, network cards,in built battery, power supply unit etc.	No	1		

3	LMR	Supply, Installation, Testing & Commissioning of Addressable Smoke detector with base, Junction box, cable termination by using gland & locknut and other accessories as required. <u>(Above false ceiling Smoke Detector)</u>	No	30		
4	LMR	Supply, Installation, Testing & Commissioning of Addressable Smoke detector with base, Junction box, cable termination by using gland & locknut and other accessories as required. <u>(Below false ceiling Smoke Detector)</u>	No	40		
5	LMR	Supply, Installation, Testing & Commissioning of Addressable Multi sensor detector with base, Junction box, cable termination by using gland & locknut and other accessories as required. <u>(Multi Sensor Detector)</u>	No	5		
6	LMR	Supply, Installation, Testing & Commissioning of <u>Response indicator</u> for all detectors located above false ceiling	No	30		
7	LMR	Supply, Installation, Testing & Commissioning of Analogue Addressable <u>Fault isolator module</u> including cable termination by using gland & locknut. It shall be capable of monitoring shorted loop circuit and automatically restore communications when abnormal condition is corrected.	No	2		

8	LMR	Supply,Installation,Testing & Commissioning of Analogue Addressable <u>Interface module</u> including cable termination by using gland & locknut. It shall be capable of providing voltfree contact rated at 24v DC, 2A.It shall communicate between flow switches / tamper switches installed in fire protection system & FACP and avail status of the system.	No	1		
9	LMR	Supply,Installation,Testing & Commissioning of <u>Horn / Strobe</u> rated at 82 dBA @ 3m for audible annunciation and 75cd flashing at 1 Hz for visual indication.	No	4		
10	LMR	Supply,Installation,Testing & Commissioning of Addressable Single action <u>Manual pull station</u> having an integrally mounted addressable module that monitors and reports contact status.	No	4		
11	LMR	Supply laying and termination of <u>2 Core x 1.5 Sq.mm cable</u> , Armoured Screened FRLS Twin Twisted PVC Insulated copper cable along with all accessories. Cable shall be terminated in devices and control panel by using properly sized cable gland & locknut. Cable shall be installed on wall/slab by using GI saddles at regular interval as per the specifications.	Mtrs	600		
		<b>SUB TOTAL FOR NON DSR ITEMS</b>				
		<b>TELEPHONE, DATA AND TV SYSTEM</b>				
		<b>DATA SYSTEM</b>				
		<b>DSR ITEMS</b>				

12	1.21.2	Supplying and fixing of <u>25 mm Medium class PVC conduit</u> along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.	mtrs	200		
13	1.21.3	Supplying and fixing of <u>32 mm Medium class PVC conduit</u> along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.	mtrs	50		
		Supplying and fixing of <u>GI box</u> of following size modules, alongwith modular base & cover plate for modular switches in recess etc as required.				
14	1.27.1	1 or 2 Module (75mmX75mm)	No	35		
	1.53	Supply and drawing of UTP <u>4 pair Cat 6 LAN cable</u> in the existing surface/recessed PVC conduit as required.				
15	1.53.1	one run	mtrs	50		
16	1.53.2	two run	mtrs	300		
17	1.53.3	three run	mtrs	150		
		<b>SUB TOTAL FOR DSR ITEMS</b>				
		<b>NON DSR ITEMS</b>				
		Supplying and fixing following <u>modular switch/ socket</u> on the existing modular plate & switch box including connections but excluding modular plate etc as required.				
18	LMR	RJ 45 socket	No	35		
19	LMR	Supply and installation of Cat-6 shuttered <u>24 port patch panel</u>	No	2		

20	LMR	Supply and installation of <u>9U rack</u> with Front glass door, Rear Perforated door with handle Lock & key. Front/Rear 19" mounting angles, top, bottom open, RAL 9005 with all other accessories	No	3		
21	LMR	Supply installation testing & commissioning of 24 port semi managed ethernet Switch	No	2		
		<b>SUB TOTAL FOR NON DSR ITEMS</b>				
		<b>TELEPHONE SYSTEM</b>				
		<b>DSR ITEMS</b>				
22	1.18.2	Supplying and drawing <u>2 pair, 0.5 sq mm FR PVC insulated copper conductor</u> , un armoured <u>telephone cable</u> in the existing surface/recessed steel/ PVC conduit.	mtrs	650		
23	1.21.2	Supplying and fixing of <u>25 mm Medium class PVC conduit</u> along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.	mtrs	400		
24	1.21.3	Supplying and fixing of <u>32 mm Medium class PVC conduit</u> along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.	mtrs	50		
25		Supplying and fixing following <u>modular switch/ socket</u> on the existing modular plate & switch box including connections but excluding modular plate etc as required.				
	1.24.6	Telephone socket	No	25		

26		Supplying and fixing of <u>GI box</u> of following size modules, alongwith modular base & cover plate for modular switches in recess etc as required.				
	1.27.1	1 or 2 module( 75 mmx75 mm)	No	25		
		<b>SUB TOTAL FOR DSR ITEMS</b>				
		<b>NON DSR ITEMS</b>				
27	LMR	Supply,laying and termination of <u>20 pair telephone cable</u> , 0.5mm copper PVC insulated,unarmoured telephone cable drawn in the existing cable tray	mtrs	50		
28	LMR	Supply,laying and termination of <u>20 pair telephone terminal block</u> housed in engineering plastic box with transparent hinged door	No	2		
29	LMR	Supply,installation,testing and commissioning of EPABX with the following specifications: 1. 56 Analog Extensions with CLI Expandable to 150 Ports 2. 05 Port Analog trunk with CLI and Power Failure Transfer and with Protection modules. 3. 01nos PRI. 4. 01nos Operator Console with 30 Direct selection Keys. 5. 08 Port Voice Guidance to announce Extension Busy status, Wake up call announcement and other important telephone features, Auto Attendant facility for Welcome message announcement. 6. 02Nos -100 pair MDF(wall mountable) 7. 01 No. Call Billing and monitoring Software. 8. Charger/UPS with Batteries for backup of 01 hours.	No	1		
		Total Amount				

### HVAC Works

Item No.	DSR code	Description of items	Unit	Qty	Rate in words and figures	Amount in words and figures
1	MR	Supply, installation, testing and commissioning of Air Cooled <b>High Wall mounted Split Air Conditioner</b> of following capacity consisting of high wall mounted type room unit (fan coil) with cordless remote control and one number outdoor condensing unit comprising of energy efficient suitable rotary compressor for operation on single phase, 230 V, 50Hz supply, fixing the outdoor unit on a raised platform as per manufacturers recommendation and fixing of room (fan coil) unit on wall, standard 4 m distance refrigerant copper piping with 13mm nitrile rubber insulation, providing and making interconnection between room & condenser as per site conditions, comprising of 1" dia drain PVC pipe with insulation 4m, canvas connections, full electrical cabling from power plug near indoor unit and to outdoor unit, ODU MS stand, first charge refrigerant gas, suitable stabilizer etc complete as required.				
A		1.0 TR 5 star rated as per BEE	Nos	4		
B		1.5 TR 5 star rated as per BEE	Nos	2		



C		2.0 TR 5 star rated as per BEE	Nos	3		
2	MR	<p>Supply, installation, testing and commissioning Ceiling Suspended <b>Cassette type room Air-conditioner</b> following capacity unit three phase 415V, compact cooling coil, electronic expansion valve, suction air grill, full electrical cabling from power plug near indoor unit and to outdoor unit, in built drain pump coated with silver ions to prevent slime, mould and bacterial growth, air filter with anti-mould and anti bacterial treatment &amp; decorative panel. Out door unit with highly energy efficient Compressor with copper coils, first charge refrigerant gas and with MS stand. Unit to be capable of maintaining <math>22\pm 1^{\circ}</math> C indoor condition with cordless remote with various features like 3 speed, auto manual selection etc also. Unit capable of 30 meter maximum interunit piping length and 15 maximum installation level difference. Decorative panel to be part of supply of units.</p>				
A		3 TR 5 star rated as per BEE	Nos	2		

3	MR	Supply, installation, testing and commissioning of suitable hard drawn <b>copper refrigerant piping</b> for above machines with 13 mm nitrile rubber insulation interconnecting the condensing unit to evaporating unit for above units as per site condition.	Rmts	33		
4	MR	Supply, installation, testing and commissioning of <b>drain piping</b> of hard PVC pipe and fittings, insulated with 12 mm thick nitrile rubber.				
A	MR	25mm	Rmts	20		
B	MR	32mm	Rmts	10		
C	MR	40mm	Rmts	10		
5	MR	SITC of <b>underdeck insulation</b> with 20mm thick closed cell elastomeric Nitrile rubber density of 40Kg/m <sup>3</sup> on ceiling with necessary adhesive, fixtures 600x600 mm GI wire netting, supports etc.	Sq mts	120		
6	MR	<b>Fresh air Piping</b>				
	MR	Supply and Installation of <b>PVC pipe</b> connecting to the <b>fresh air</b> port in the indoor unit.				
A	MR	100 MM	Rmts	20		
		<b>Total Amount</b>				

### ELEVATOR WORKS

Item No	DSR code	Details of items	Unit	Quantity	Rate in words and figures	Amount in words and figures
1	MR	Supply, installation, testing & commissioning of electric traction type elevator of following capacities and type suitable for operation on 415 V, 3 phase, 50 Hz AC supply, having AC variable voltage and variable frequency type traction control, machine room less, speed of 1.00 Mtr/sec, electromagnetic brake system, simple operations, operating control panel with luminous buttons, overload warning indicator, battery operated alarm bell, LED type emergency light, intercom suitable for hook up to EPABX, infrared ray sensing door protection for full height, reverse phase relay on controller, fireman's switch at ground floor,				
		digital car positions indicator in car and at all positions indicator in car and at all floors with Up/DOWN direction, all signal fixtures in stainless steel faceplates, light fixtures, ventilation fan, etc complete with all accessories including automatic rescue device in the event of power failure etc., Complete with necessary scaffolding, electrical panel, logic control panel and shaft lighting etc required for the erection of the elevators as required.				

i)		Machine Room Less Type with the traction motor placed on top of the hoistway and elevator shall be of gearless type (suitable for lift well size 2100mm (D)X 1900mm(W)) complete as per technical specification, simplex full collective operation with/without attendant. Car/Hoistway Entrance, protected by stainless steel hairline doors and clear center /side opening min 800mm wide X 2000mm height. <b>10 passengers</b> (Minimum) capacity (minimum 680 Kgs) Passenger , car size of 1000mm wide x1650mm deep x 2200mm Height Inside dimensions and entrance at front side on all the serving floors, provided with matt finish stainless steel panel on all four side and ceiling as per specifications.				
	a	3stops &3 openings ,Total travel height is approximately 13 M	No	1		
<b>TOTAL FOR SITC OF ELEVATOR</b>						

FIREFIGHTING WORKS						
Sl. No	DSR No.	DESCRIPTION	UNIT	QTY	Rate in words and figures	Amount in words and figures
1		<b><u>FIRE FIGHTING SYSTEM</u></b>				
1.1	MR	Supply, installation, testing and commissioning of electrically driven high pressure centrifugal <b>fire hydrant / sprinkler pump</b> , suitable for automatic operation consisting of the following:				
		a) Horizontal, split casing, high pressure singlestage, singleoutlet, centrifugal pump, suitable for operation on 415 volts $\pm$ 6%, 3 phase, 50 HZ AC supply. The installation shall be complete with flexible coupling and coupling guard as required. Fire pump shall have CI casing, CS diffusers, bronze impeller (hard finished and dynamically balanced) and SS (304) Shaft with mechanical seal, capable for delivering <b>2280 LPM at outlet head of 56.m &amp;</b> suitable HP and ensure a minimum pressure of 3.5 Kg/Sqcm at the farthest or top most hydrant/sprinkler. The installation shall be complete with necessary pressure gauge with gun metal shut off cock on delivery side. (The pump should be tested and assembled for bench mark at factory and shall be approved by the Local fire Authority).				
		Pump shall be capable of furnishing not less than 150% of rated capacity at a head of not less than 65% of the rated head. The shut off head shall not exceed 120% of rated head.				

		b. Squirrel cage induction motor, TEFC type suitable for operation on 415 volts, 3 phase 50 HZ A.C supply, for the above pump with synchronous speed of 2900 RPM, conforming to IP 55 protection & class F insulation. The motor shall conform to IS 325-1978 (up to date) with flexible coupling and coupling guard complete as required.				
		c. Common base plate for (a) and (b) from M.S. Channel for required size.				
		d. Suitable cement concrete foundation with cement concrete plaster (design and drawing to be provided by the Contractor while the foundation will be done by others) complete with anti-vibration arrangement of cushy foot mountings and provide necessary earthing as per IS standards.	Set	1		
1.2	MR	Supply, installation, testing and commissioning of <b>jockey pump</b> (pressurisation pump) comprising of the following:				
		a.Horizontal Multistage centrifugal pump, suitable for operation on 415 volts $\pm$ 6%, 3 phase, 50 HZ A.C supply. The installation shall be complete with Flexible coupling and coupling guard, complete as required. Jockey pump shall be of stainless steel construction.				
		The pump head and base shall be CI GG20 construction and impellers, diffusers, shaft sleeve, seal bush & pump shaft shall be in SS 304 material. The pump shall be provided with mechanical seal The system shall be complete with necessary pressure gauge with gun metal shut off cock on delivery side (The pump should be tested and assembled for bench mark at factory and shall be approved by the Local fire Authority).				

		b. Squirrel cage induction motor TEFC type for operation on 415 V, 3 phase 50 HZ AC supply for the above pump with a synchronous speed of 2900 R.P.M. with flexible coupling and coupling guard etc. as required.				
		c. Common base plate for (a) and (b) from M.S. channel as required size.				
		d. Suitable cement concrete foundation with plaster, (design and drawing to be provided by the Contractor while the foundation will be done by others) complete with Antivibration arrangement of cushy foot mounting and provide necessary earthing as per IS standards.				
		For pump defined above & of duty as follows :				
		<b>Hydrant &amp; Sprinkler System</b>				
		<b>Flow : 180 LPM</b>				
		<b>Head : 56m</b>	Set	1		
1.3	MR	Supply, installation, testing and commissioning of <b>Diesel Engine driven high</b> pressure centrifugal fire hydrant / sprinkler pump, suitable for automatic operation consisting of the following:				

		a) Horizontal, split casing, high pressure singlestage singleoutlet, centrifugal pump, suitable for operation on 415 volts $\pm$ 6%, 3 phase, 50 HZ AC supply. The installation shall be complete with flexible coupling and coupling guard as required. Fire pump shall have CI casing, CS diffusers, bronze impeller (hard finished and dynamically balanced) and SS (304) Shaft with mechanical seal, capable for delivering <b>2280 LPM at outlet head of 56m</b> to ensure a minimum pressure of 3.5 Kg/Sqcm at the farthest or top most hydrant / sprinkler. The installation shall be complete with necessary pressure gauge with gun metal shut off cock on delivery side. (The pump should be tested and assembled for bench mark at factory and shall be gotten approved by the Local fire Authority). with diesel tank of 200 litter MS tank with support stand & fuel guage				
		Pump shall be capable of furnishing not less than 150% of rated capacity at a head of not less than 65% of the rated head. The shut off head shall not exceed 120% of rated head.				
		b. Squirrel cage induction motor, TEFC type suitable for operation on 415 volts, 3 phase 50 HZ A.C supply, for the above pump with synchronous speed of 1450 RPM, conforming to IP 55 protection & class F insulation. The motor shall conform to IS 325-1978 (up to date) with flexible coupling and coupling guard complete as required.				
		c. Common base plate for (a) and (b) from M.S. Channel for required size.				
		d. Suitable cement concrete foundation with cement concrete plaster (design and drawing to be provided by the Contractor while the foundation will be done by others) complete with anti-vibration arrangement of cushy foot mountings and provide necesssary earthing as per IS standards.	Set	1		
1.4	MR	<b>CONTROL PANEL</b>				



		Fabrication, Supplying, Installation, Testing and Commissioning of Electrical control panel of cubical construction, floor mounted type, fabricated out of 2mm. thick CRCA sheet, compartmentalized with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 7 tank treatment process, cable alley, inter connection, having switchgears and accessories mounting and internal wiring, earth terminals, numbering etc. complete in all respect, suitable for operation on 415 V, 3 phase, 50 Hz. AC supply with enclosure protection class IP 42 required.				
		(A) COMMON PANEL IN FIRE PUMP HOUSE				
		<b>INCOMER</b>				
		(a) 125Amps. TPN isolator				
		(b) Voltmeter (0-500 Volts) with selector switch.				
		(c) Ammeter (0-125 Amps) with selector switch & CT's etc.				
		(d) Set of 3 Phase indicating lamp.				
		(e) Set of Al. bus bar 125 Amps.				
		<b>OUT GOING</b>				
		(a) <b>Main Fire pump</b> 100Amps. TPN isolator for suitable HP fully automatic star delta starter with over load protection, current sensing type single phase preventer complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/ OFF operation.				
		(b) <b>Jockey pump</b>				

		20 Amps. TPN fuses for two Jockey Pumps fully DOL starter with over load protection, current sensing type single phase preventer complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/ OFF operation.				
		<b>(c)Diesel Engine Control.</b>				
		(a) 2 Pole MCB 16Amps				
		PLC Control for Diesel Engine comprising:-				
		(i)Auto/Manual selector switch & 3 attempt starting device, timers and relays as required, push buttons, start/stop in manual mode.				
		(ii)Indication lamp for High/Low Lub. Oil pressure, High Water Temp. and Engine ON indication.				
		(iii)SMBS Battery charger suitable for 12 V/ 24 V DC with boost and tickle selector switch, 0-30 V DC volt meter, 0-20A DC Ammeter				
		(iv)All standard relays and accessories for automatic operation of diesel engine.				
		<b>e)</b> All automatic operation of Main Pump, Sprinkler Pump & Jockey Pump as per IS/CPWD specification attached	No	1		
1.5	MR	<b>POWER CABLING</b>				
		Supply and Laying of below sized XLPE insulated PVC sheathed Aluminum conductor armored cabling to the incoming and outgoing of fire pump panel including necessary termination, glanding, necessary connections etc				
1.5.1		3.5 x 70 sq mm	Meters	45		
1.5.2		3 x 16 sq mm	Meters	40		

1.6	MR	Providing & fixing <b>MS Class 'C' diesel engine exhaust pipe</b> (including all fittings, clamps, steel support) of suitable dia for the engine. The pipe shall be provided with 12 mm thick supercra ceramic fibre rope (65mm dia)	RM	18		
1.7	MR	Providing, fixing, testing and commissioning of <b>precharged air vessel</b> (size 450 mm dia & 2000 mm height) for pressurization of hydrant / sprinkler system complete with adequate pressure switches (as per design / requirement) with valves to operate as per operating sequences including 25 mm dia drain valve, air release valve with stop cock on the top, 25 mm dia inlet with isolating valve duly painted from inside and outside complete as required.	Nos.	1		
1.8	MR	Supply, installation, testing and commissioning of industrial type pressure switch having 1/4" BSP(F) connection IP:32 enclosure protection, phosphor bronze bellows as sensing element, SDPT contact system, switch rating 6A Inductive/10A resistive 380 V AC, 0.2A Inductive/10A resistive 250V DC suit with ball valve etc. complete as required.	No.	3		
1.9	MR	Providing and fixing in position the industrial type pressure gauges with gun metal/brass valve complete as required .	No.	4		
1.10	MR	Supplying and applying thick readymade wrapping & coating 4mm thick material over one coat of coal tar primer for underground pipes	Sq.Mtr	40		
1.11	MR	Providing and fixing <b>forged brass ball valve</b> with forged brass ball suitable for operating pressure of not less than 16 kg / sq.cm of the following size.				
1.11.1		25 mm dia	No.	5		

1.12	MR	Supplying, fixing, testing and commissioning of following BUTTERFLY VALVE (MANUAL) with C I body SS disc nitrile sheet & O ring & PN 16 pressure rating as specified				
1.12.1		150 mm dia	No	12		
1.12.2		100 mm dia	No	2		
1.12.3		65 mm dia	No	3		
1.13	MR	Supplying, fixing, testing and commissioning of following NON - RETURN VALVE with dual plate of C I body SS plates vulcanized NBR seal flanged end & PN16 pressure rating as specified				
1.13.1		150 mm dia	No	4		
1.13.2		100 mm dia	No	1		
1.14	MR	Providing and fixing <b>CI 'Y' strainer</b> suitable for operating pressure of 16 Kg / sqcm with SS 304 perforated sheet basket including rubber gasket, flanges, nuts, bolts and washers, complete as required.				
1.14.1		150 mm dia	No.	2		

1.14.2		100 mm dia	No.	1		
1.15	MR	Providing and fixing of <b>spring loaded relief valve</b> suitable for pressure of 16 Kg / sqcm including flanges nuts bolt and washer etc. complete as required.				
1.15.1		25 mm dia	No.	1		
1.16	MR	Providing & fixing <b>SS fire hydrant single landing valve</b> with 80 mm NB. flanged inlet, brass spindle controlled 63 mm dia female instantaneous outlet type. SS coupling, blank cap, chain, twist release type lug & all accessories Conforming to IS standards with ISI mark. Including fixing with anchor fastener and flanged tapping from wet riser.	No.	6		
1.17	MR	Providing & fixing swinging type <b>First Aid hose reel in red colour drum</b> with 30 mts. long and 19 mm dia heavy duty thermoplastic water hose, globe valve stop cock, terminating with SS coupling & nozzle of 6mm outlet with shut off valve conforming to IS:12585 complete with MS socket for tap-off, drum and brackets (including painting) for fixing on wall with anchor fastener, bolts & nuts conforming to IS:884-1969 complete as required.	No.	3		
1.18	MR	Providing & fixing <b>non-perlocating, rubber reinforced lined fire hose pipe</b> (as per IS : 636, Type A) of 63 mm dia and length as described below. The hose shall be rated for burst pressure of 35.7 Kg/sqcm. Hose shall be complete with ISI marked brass male & female coupling (IS:903) bound & rivetted to hose pipe with copper rivets & 1.5 mm copper wire.				

	MR	15 m length	No.	12		
1.19	MR	Providing and Fixing SS 63 mm dia instantaneous pattern <b>branch short pipe</b> , 20 mm dia nozzle conforming to IS standard, suitable for inter connection to hose pipe coupling complete as required.	No.	6		
1.20	MR	Providing and fixing standard <b>firemans axe</b> with heavy rubber handle.	No.	1		
1.21	MR	Supply, installation, testing and commissioning of weather proof hose cabinet having the size of 750x600x250mm made of 16gauge MS Sheet with full front glass door and locking arrangements suitable to accommodate 2 nos 15m long hose pipes and 1 No. branch pipe. The cabinet shall be painted to scarlet red color outside and white inside.	No.	6		
1.22	MR	Providing & fixing <b>SS fire brigade connection</b> (suction collecting head) consisting of 4 No. 63 mm dia instantaneous type male couplings with built-in check valves, 1 No. 150 mm dia sluice valve, (1 No. 150 mm dia non-return valve) and 150 mm dia flanged outlet complete with bolts, nuts and rubber insertions as required and as per IS standards	No.	1		

1.23	MR	Providing, laying, jointing and testing of following sizes of MS 'C' class pipes, heavy grade, conforming to IS-1239 with all accessories like all fittings (for pipes upto 50mm dia threaded forged steel fittings and for pipes above 50 mm dia MS fitting with welded joint shall be used) including tees, elbows, reducers, union, flanges, rubber gaskets, GI nuts bolts, washer including supporting / fixing the pipe on floor/wall/ceiling with clamps, hangers (using anchor fastners) as per specification. Pipe sleeve of suitable higher size shall be provided wherever the pipes are crossing the walls / floors and sealing the sleeves with glass wool in between & fire sealant compound at either end all as per Project Manager's requirements including cutting holes and chases in brick, RCC work and making good the same to original conditions complete in all respects.				
		All hangers, clamps, brackets etc. shall be of galvanized iron unless specified otherwise and then supply of the same shall also be included for rates under this head. Welding of any kind on the galvanized support / hanger shall not be permitted.				
		Providing two coats of synthetic enamel paint of approved shade over a coat of primer. Prior to application of primer the surface should be cleaned for any dirt, rusts, rough substance etc. Including painting of legends both direction arrow				
1.23.1		25 mm dia	RM	124		
1.23.2		32 mm dia	RM	18		

1.23.3		40 mm dia	RM	12		
1.23.4		50 mm dia	RM	48		
1.23.5		65 mm dia	RM	42		
1.23.6		80 mm dia	RM	24		
1.23.7		100 mm dia	RM	20		
1.23.8		150 mm dia	RM	150		
1.24	MR	Supply, installation, testing and commissioning of <b>electrically operated water flow switches</b> (Vane type) including tamper switch and accessories, complete with tap off socket arrangement as required, with potential free contact with 2 Nos. NONC.	No.	1		
1.25	MR	Providing & fixing brass quartzoid sprinklers (UL approved) of 15 mm dia size, suitable for sustaining the pressure on the seat & water hammer effect. The type & temperature rating shall be as follows :				



1.25.1	MR	Supply, installation, testing and commissioning of approved make 15mm dia brass Sprinkler heads, quick response, designed to operate at 68 deg. Celsius etc. with necessary fittings etc of Pendant type	No.	46		
1.25.2	MR	Supply, installation, testing and commissioning of approved make 15mm dia brass Sprinkler heads, quick response, designed to operate at 68 deg. Celsius etc. with necessary fittings etc of upright type.	No.	11		
1.26	MR	Supplying, fixing, testing & commissioning of Sprinkler Flexible Hose 1000 mm in length, Unbraided, UL Listed along with all necessary accessories like Nipple threaded , Reducing Nipple threaded, Large Bracket with Bolt, Small Bracket with Bolt, clamps, reducer collar, Meter Square Bar etc complete as per spec.	No.	46		
1.27	MR	Providing and fixing C.I Sluice valves(with cap) complete with bolts, nuts, rubber insertions etc.(Class-II)				
		150 mm dia	No.	1		
2		<b><u>FIRE EXTINGUISHERS</u></b>				
2.1	MR	Supply, installation, testing and commissioning of following types of extinguisher with provision of wall bracket (fixed with anchor fastner) or floor mounted.				

2.2	MR	ISI marked (IS:2878) Fire Extinguisher, <b>Carbon-di-oxide type capacity 4.5 Kg.</b> Flat base including valve, discharge hose of not less than 10 mm dia, 1M long and complete in all respects including initial fill with CO2 gas conforming to IS:307-1966 filled to a filling rate of not more than 0.667 and wall suspension bracket.	No.	6		
2.3	MR	<b>ABC (Powder Type) Fire Extinguisher.</b> In HP Mild Steel Cylinders ISI marked fitted with pressure indicating gauge, internal tube, squeeze lever type valve fully charged with ABC powder (Mono Ammonium Phosphate) pressured by Nitrogen complete in all respects including wall suspension bracket and conforming to IS:1349-1993.				
2.3.1		4 Kg	No.	8		
2.3.2		9 Kg	No.	1		
2.4	MR	Supplying and installing at approved location approved make fire buckets of 24 gauge galvanized steel sheet, standard 9 litre capacity and of round bottom shape, painted white inside and red outside and black on the bottom, inscribed with letters "FIRE" in black and gold. Cost shall be inclusive of providing MS stand for 2 nos of fire buckets, or , duly painted over a coat of primer.	No.	1		
3		<b>SIGNAGES:</b>				

3.1		Providing and installing in position the following type of sign boards made out of 3mm thick rigid PVC board with computer cut with texts written to recommended height in photolumiscent material complete vide technical specifications with mirror fasteners. Sizes and mounting height of the board shall be as per technical specification.				
3.1.1	MR	Signage -"IN CASE OF FIRE, USE STAIRS UNLESS INSTRUCTED OTHERWISE"	No.	2		
3.1.2	MR	Fire extinguisher/Manual Call Point and other life safety related signage's	No.	17		
3.1.3	MR	Fire order (as per consultant drawings) - 750 x 450mm	No.	2		
3.1.4	MR	Action by security in case of fire - 750 x 450 mm	No.	1		
3.1.5	MR	Assemble point 750 x 400 mm	No.	1		
3.2	MR	Providing and installing in position the Fire safety Plan to a recommended scale and at suggested locations	No.	2		

3.3	MR	Photo luminescent type Fire exit signage's with image & supplementary text. As per per suitable image and directional arrow and (Size = 150mm x 400mm)	No.	2		
		<b>GRAND TOTAL</b>				